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THE PACIFIC RURAL PRESS

Vol. LXXXI. No. 1. SAN FRANCISCO, SATURDAY, JANUARY 7, 1911. Forty-first Year.

CALIFORNIA STATE



Pioneer Water-mill in Napa County—A Suggestion for the New Year.

Oh, listen to the water-mill, through all the live-long day,
As the clicking of the wheels wear hour by hour away:
How languidly the autumn wind doth stir the withered leaves
As on the field the reapers sing, while binding up the sheaves!
A solemn proverb strikes my mind, and as a spell is cast,
"The mill will never grind again with water that is past."

The summer winds revive no more leaves strewn o'er earth and main,
The sickle never more will reap the yellow garnered grain:
The rippling stream flows ever on, aye tranquil, deep, and still,
But never glideth back again to the busy water-mill.
The solemn proverb speaks to all, with meaning deep and vast,
"The mill will never grind again with water that is past."

Oh, clasp the proverb to thy soul, dear loving heart and true,
For golden years are fleeting by and youth is passing, too;
Ah! learn to make the most of life, nor lose one happy day,
For time will ne'er return sweet joys neglected, thrown away:
Nor leave one tender word unsaid; thy kindness sow broadcast—
"The mill will never grind again with water that is past."

Oh! the wasted hours of life, that have swiftly drifted by,
Alas! the good we might had done, all gone without a sigh;
Love that we might once have saved by a single kindly word;
Thoughts conceived but ne'er expressed, perishing unpenned, unheard.
Oh! take the lesson to thy soul, forever clasp it fast,
"The mill will never grind again with water that is past."

Work on while yet the sun doth shine, thou man of strength and will,
The streamlet ne'er doth useless glide by clicking water-mill;
Nor wait until tomorrow's light beams brightly on thy way,
For all that thou can'st call thine own lies in the phrase, "to-day";
Possessions, power, and blooming health, must all be lost at last—
"The mill will never grind again with water that is past."

Oh! love thy God, and fellow-man thyself consider last,
For come it will when thou must scan dark errors of the past:
Soon will this fight of life be o'er, and earth recede from view,
And heaven in all its glory shine where all is pure and true.
Ah! then thou'lt see more clearly still the proverb deep and vast,
"The mill will never grind again with water that is past."

—D. C. McCallum.

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Jan. 3, 1910:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.31	11.06	17.53	54	36
Red Bluff	.00	5.25	10.45	62	36
Sacramento	.00	2.26	7.39	62	34
San Francisco	T	2.91	8.68	62	43
San Jose	.00	1.24	5.35	64	28
Fresno	.00	1.88	3.73	60	28
Independence	.00	1.67	3.71	56	22
San Luis Obispo	.00	1.91	6.32	66	34
Los Angeles	.00	1.08	5.48	72	42
San Diego	.00	2.13	3.33	68	40

The Week.

Naturally, there is some apprehension over the continued drouth, and it is indeed undesirable—chiefly, however, in the shortening of the planting season and the consequent rush of work, which is wasteful and not conducive to good performance. The ideal season is one which keeps the men and teams busy most of the time and does not encourage skimping for the sake of getting through. The late coming of rains does not always mean a shortage for the season; in fact, there have been a number of years in which there has been plenty from a late start. The Chronicle cites several in this way: "The rainfall to December 31, 1854, was only 3.79, but the seasonal record shows a precipitation of 23.76 inches, several inches above the normal. In 1877 the season promised to be a dry one. At the end of the year the fall was only 4.88 inches, but the succeeding months brought the seasonal fall up to 35.18 inches. The following seasonal year was somewhat like its predecessor. December 31 showed a precipitation of only 2.97 inches, but the season ended with a total of 24.44 inches. Curiously enough, in 1905 the fall to December 31 was also 2.97 inches, and the precipitation for the season was 20.42 inches. The rainfall for the present season to date has been 2.91 inches. Those who see the comparative figures of normal fall and seasonal fall to date last year, and fear that the comparison presages a dry year, may be reassured by the above citations, which prove, if rainfall figures in California prove anything, that 1910-11 may turn out to be a wet seasonal year."

We remember distinctly some of the years mentioned and the depression into which some apprehensive people allowed themselves to fall during the holidays—a state of mind which appeared altogether unnecessary when the rains began to fall generously, about the middle of January. We remember also that we allowed ourselves to fall into some of these forebodings and how we solemnly resolved not to repeat the offense against the trustworthy sequence of seedtime and harvest in California, where in fact the husbandman's reward is at least as sure as in other parts of the world. Of course, the rainfall is a less important factor in California production than formerly, because of the extension of irrigated agriculture, and a really dry year has much less than its former significance, and though this fact does not lessen the desirability of a generous rainfall, it should free people to a certain extent from the doubt and discouragement which dry skies in earlier times engendered.

The clear lesson of the season is to proceed confidently with whatever improvements seemed rational and warranted, and not to abandon them for the year. The free planting of fruit trees, which recent marketing experience in numerous localities seemed to justify, should be carried out as planned. California has a long planting season, and, though early work is desirable, later work is largely done, and if pursued with a little extra care in planting and cultivation, and watering if need be, will give good results, and the year saved is well worth the effort. This fact has particular force in the pushing of improvements on the hundreds of colony farms which recent subdivision enterprises have brought into being. It is a great deal better to proceed confidently and do whatever the character of the season may require, than to be discouraged now and be sorry afterward.

Speaking of colony farming, which is now proceeding so largely upon an alfalfa basis, reminds us that California has just lost a chance to Colorado. Last week they had a banquet in Colorado in celebration of the opening of an alfalfa mill. Alfalfa appeared in every dish placed on the board. Biscuits were made of alfalfa-meal, the turkey was stuffed with alfalfa, "mashed" alfalfa took the place of potatoes, and alfalfa leaves were cooked like spinach. Alfalfa salad was served, and for beverages there were alfalfa tea and alfalfa cider. At the end of the repast there were toothpicks made of alfalfa straw. It seems to us that California lost a chance in this alfalfa banquet, because some of our new colony enterprises could have worked out the scheme much more elaborately than Colorado did—if the sketch of the menu as above was at all complete. It is possible to do much better than they did. One has to understand first that the undertaking is not a joke but a rational feeding experiment. In Oriental countries where animal flesh is little used, much greater use is made of legumes, the composition of which includes vegetable protein analogous to that of meat. Many dishes scattered through the menu from soup to cheese, which did not enter into the Colorado scheme, very acceptable to the taste and rational in nutritive contents, could be made of alfalfa by a qualified vegetarian chef. The Colorado people really only played with a very interesting undertaking, but still, they are entitled to full credit for priority in the matter.

How can the English rosarians endure the thought of American-grown roses at the queen's table? And yet, it seems to be no new thing, though it has never come to our knowledge before. A New York dispatch says that one hundred American Beauty roses have just been shipped from the greenhouses of a New Jersey grower, for the Christmas table of Alexandra, the queen-mother of England. They are the largest and finest roses and of the longest stem to be found. Those are the specifications under which orders for the royal table have been filled every year at this time for a long period. The grower himself selects the flowers and personally packs them. His roses have been going to the palace of England's sovereign for many years. They went to Queen Victoria when she was alive, and King Edward's table was decorated with them every yuletide. Why the English rose-growers do not produce something to beat the New Jersey grower, with his handicap of three thousand miles shipment, we cannot imagine.

A loyal Californian, Mr. H. H. McCloskey, of San Francisco, has figured out some interesting comparisons from the recently published population figures of the different States, as follows:

"First—The gain in population of the State of California (892,496) was exceeded by only two States, New York and Pennsylvania, placing California as the third in the Union in actual increase of population.

"Second—The increase of population in California was greater than that of the following twelve states combined: Wyoming, Nevada, Delaware, Arizona, Vermont, Utah, Montana, New Hampshire, Rhode Island, Maine, Tennessee, and Maryland.

"Third—The gain in the population of California was greater by nearly 100,000 than the total gain of the five Southern States, Louisiana, Kentucky, Virginia, South Carolina, and Maryland."

It is hard to realize, but probably true, that metropolitan children know more about lions, tigers, and the like than they do about cows. This fact explains the action of the New York park commissioner, who proposes to add a Jersey cow to the Central Park menagerie as an educational exhibit for the children of the city. It was represented to him that there are thousands of pupils in the public schools that never have seen a cow and have a crude conception as to the source of the city's milk supply. There are sheep and goats in the park, and the commissioner thinks the children should have a chance to become familiar with all domestic animals. The milking will be done in the paddock where the children may see it. This enterprise proceeds upon the assumption that the city's milk supply comes from the cow, which is perhaps a little violent.

As we go to press this week the State government is passing from the hands of Governor Gillett to the guidance of Governor Johnson. Governor Gillett's record is dignified and statesmanlike, and he retires to the ranks of citizenship with the good opinion of all. In his message to the Legislature with which his administration closes, he makes many forcible recommendations, two of which we cite as close to our line of work for the promotion of the agriculture of California. He says in one paragraph:

"The adoption of Senate Constitutional Amendment No. 1 has worked a change in the source of revenue for our State University. On account of increasing attendance and other demands, the Legislature of 1909 increased the ad valorem tax to 3 cents, to be used for the support, maintenance and permanent improvements of the University.

"It was specifically provided that not less than 25 per cent of the amount thus raised should, for a period of ten years, be used to construct and equip permanent buildings. Under the authorization of this statute, the Regents very properly adopted plans for such work, and are now proceeding to make the improvements contemplated.

"The amount which would be raised each year by the 3-cent tax levy would be about $700,000, of which about $175,000 could be used for permanent improvements. This money is now lost to the University, and it must depend upon direct appropriations for its support and for improvements. It is plainly the duty of the Legislature to provide for the maintenance of the present high standard of this institution, and for carrying out the plans of the Regents for its improvement. We must not take a step backward with our edu-

cational institutions, least of all with our University. Its magnificent progress, its splendid achievements along educational lines, its rapid increase in attendance, make imperative the demand that this magnificent institution shall be fostered and encouraged by wise legislation and upbuilt by liberal appropriations."

Of a new and very popular phase of University work for agriculture, the University Farm at Davis, Governor Gillett said: "Generous provision was made by the Legislature of 1909 for increase of equipment and for maintenance of instruction on the farm. The increase in the number of students, however, has outrun all provision which has been made. In order to carry on the work of the farm and school in accordance with the high practical standard which has been set and which was intended by the Legislature, more buildings are needed, with a corresponding increase in the number of instructors and in maintenance funds. The location of the farm near a small village makes it impossible for students to find living accommodations outside the farm, and dormitories must be provided. The present dormitory was filled to capacity several weeks before the opening of school last fall—and some of the students have been living in tents. It is evident to one familiar with the facts that the aims of the farm school are meeting with wide approval throughout the State. There is a demand for the kind of instruction which is given at the farm. In a comparatively short time the school will have hundreds of students. The efficiency of its work will always be hampered if buildings are overcrowded, equipment inadequate, and instructors overworked. The highest interest of the State requires that its citizens shall be educated and prosperous, and the liberal encouragement of all means looking toward this end is one of the most essential aims of government. The greatest educational opportunity of the present lies in the development of such institutions as this which is growing upon the University Farm."

Queries and Replies.

Sunflower Growing.

To the Editor: Will you kindly give us some information on sunflower seed? The best time for planting it, and what is the market for it? There seems to have been a large demand for seed lately, although we do not know for what purpose, and who is buying it?—Subscriber, San Jose.

We do not quite understand the occasion for it, but there seems to be a general desire on the part of those making vegetable oils to get larger supplies of suitable materials. For some reason the cotton seed available for oil-making does not give oil enough to supply the demand, for when we were going through the Southern States a few weeks ago we saw notices of meetings between oil-makers and farmers, held with the idea of largely increasing the peanut product because the oil-makers were willing to sign contracts at prices which they claimed would be profitable to growers. There seems to be, at the same time, an agitation of the desirability of sunflower growing, which is another piece of the same cloth, because both peanut oil and sunflower-seed oil are good salad oils and can be sold for salad oil, providing no reference is made in the label to the olive. Although it would not answer the same uses, it is interesting to note that linseed-oil makers are more hungry for flaxseed than ever before, and are trying to contract for local production of it. Sunflowers can be grown about as cheaply as corn, and about in the same way. Reports of yields place them at from four to eight tons of heads to the acre. The heads require drying and then the seed can be thrashed out with flails or held against slowly revolving spiked cylinders which will tear the seed from the matrix. According to some Eastern experiments, the crop has been pronounced not nearly as profitable as corn, but that report depends upon available price, and we do not know just how that runs at present. The only safe way to handle a crop in California would be to find out what oil-makers, like the Pacific Oil & Lead Works of San Francisco, are willing to contract for, and try a moderate amount at first, to see whether the product can be handled at a profit or not. There is, of course, the small employment of sunflower seed as a poultry food, but for fowls it has to be used considerately because of the high fattening properties.

Probably Growing Too Fast.

To the Editor: I would like to ask a few questions regarding walnut growing. We have in contemplation the purchase of a certain walnut grove, and the crop this year did not seem to be sufficient for such a ranch. The trees are all fine, even trees, 10 and 12 years old, respectively, and we were informed that the crop was lighter this year, because the trees were growing so vigorously and put most of their energy into the new wood. Now, is there any special fertilizer which will make the trees bear more and not prompt such heavy growth? If there is such a certain fertilizer to increase the crop, would you please advise us as to what it is?—A. F., Los Angeles.

If your adviser is right in his diagnosis of the trees as neglecting to bear because of excessive vegetative growth, it would be certainly better not to apply any fertilizer at all during the coming year, but allow the trees to assume more steady habit and possibly even to encourage them to do so by using less cultivation and water. If you wish to experiment with some of the trees, give them an application of superphosphate and potash, say five pounds of the former and two pounds of the latter to each tree, properly distributed over the land which it occupies. You certainly should not use any form of nitrogen. An experiment of this kind would indicate to you whether these special fertilizers would accomplish anything, or whether the tree would correct itself in bearing, if growing conditions are not so favorable.

Plants for Dry, Hot Places.

To the Editor: I am twelve miles northwest of Riverside. What kind of apple do you think would do best in a dry, hot climate? What do you think of the Early Richmond cherry in such a place? What species of the acacia is thought to be most drought resistant? Is there any publication on drought-resistant trees and plants?—Reader, Wineville.

Apples which are most likely to succeed in a dry situation are those which ripen their fruit very early. The Red Astrachan is on the whole the most satisfactory, but there are many places which are altogether too dry and hot for any kind of apple. Whether cherries would succeed or not you can only tell by trying. The probability is that the trees would not live through the summer if your soil becomes very dry. The most hardy cherries are the sour or pie cherries and the Early Richmond is one of this group. We are not sure which acacia will stand most drouth. The lophanta is a very hardy species. If you will write to the Experiment Station at Tucson, Arizona, and ask for their publications concerning trees and plants for arid conditions, you will find that they contain many interesting suggestions of plants which it would be desirable for you to try.

Potatoes and Frosts.

To the Editor: Can I keep frost off of potato tops by building smudge fires? I would like to plant about February 1, but we usually have a few light frosts here during March. If I were to turn water in the field when too cold, would that keep the frost off, and if so, would I have to turn water down each row, or would one furrow full of water to about every fourth or sixth row be enough?—B. V. E., San Bernardino.

You can certainly prevent frost by smudging for potatoes just as you can for other vegetables. The potato, however, needs little protection of this kind and will endure a light frost which would be destructive to tomatoes, melons, and other more tender growths. Unless you have a very frosty situation, you can certainly grow potatoes without frost protection, and they should be planted earlier than February first if the ground is in good condition. The great secret of success in growing potatoes in southern California is to get a good early start before the heat and drought come on. Water will protect from frost if the temperature only goes to about 28° and does not stay there too long. The more water there is exposed the longer may be the protection, but probably not against a lower temperature.

Probably Must Be Pulled Out.

To the Editor: In our lawn prepared last winter, a great deal of red clover has grown, to the detriment of the grass. Is there any remedy for this, short of digging up the lawn and sowing it over again?—Suburban, San Rafael.

We know of no process of removing red clover which would not also injure other plants, except the old process of pulling or digging out the undesirable plants. When the ground is moist the leaves and stems can be gathered up and the plant quite easily pulled out. At other times it can be extirpated by the ordinary process of weeding, gathering the stems so that the root can be clearly seen and then cutting out the root crown with a sharp trowel or other similar instrument. As red clover has a fibrous root, the removal of the crown will prevent its starting again.

Insecticides.

To the Editor: Will you please tell me if whale-oil soap is particularly beneficial to old orange and lemon trees, and why is it better than any other good soap? Also, is it advisable to apply whitewash after using the soap, when the trunks are exposed to the sun?—H. T., Santa Ana.

Whale-oil soap has more effective insect-killing qualities than common soap, but is little used at the present time, owing to the superior efficiency of kerosene and distillate emulsions, miscible oils, and other cheaper insecticides. The whitewash is always desirable to prevent sunburn on the trunk or large limbs which are not fully shaded by the foliage.

Poultry Manure for Gardening.

To the Editor: Can you inform me how to prepare and how to apply chicken maure in orchard and on vegetables?—R. E., San Jose.

The main thing to observe is not to use it in excess, as it is very energetic and may injure plants. By mixing with dry earth, which is not only a good absorbent but distributes the material through a greater bulk, it becomes very available for garden purposes. One or two tons of clean chicken manure can be safely used upon an acre of orchard or garden land, provided it is evenly distributed and not allowed to collect around the roots of single plants.

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Horticulture.

A SQUARE DEAL FOR THE NURSERYMAN.

[From an address by Mr. George C. Roeding, of Fresno, at the Fruit Growers' Convention at Stockton.]

The nurserymen of California are becoming more and more surrounded by a complication of horticultural laws, so that they are constantly facing propositions which make it very difficult for them to do business beyond the confines of their respective counties. This is not an insinuation that the horticultural commissioners of the State are willfully trying to injure the nursery business, but nevertheless the fact exists that influences are often brought to bear on commissioners which work serious injury to the nursery interests, and they can be regarded as nothing more than restrictions of trade, with absolutely no equity in law to support them.

I am going to show you by actual facts just what has occurred in several instances. In December, 1906, I read a paper in Hanford on this very same subject, in which I expressed my views relative to the unfairness to the nurserymen of many of the county ordinances. At that time I quoted from an opinion given by Hon. U. S. Webb, Attorney General of California, which I take the liberty of again repeating, as I think it should be impressed upon your minds:

"Your fourth question is as follows: 'If County Boards of Supervisors have authority to pass a horticultural quarantine law, can they pass a general ordinance declaring any or all nursery stock or grapevines brought into their county from any part of the world a nuisance, without any inspection of the stock?

"It is my opinion that ordinances so sweeping in their nature as you describe would be held by the courts to be unreasonable and void, as arbitrarily declaring that to be a nuisance which was not in fact a nuisance. To make an occupation indispensable to the health of the civilized man, and the use of the property necessary to carry it on, a nuisance by a mere arbitrary declaration in a county ordinance and suppress it as such, is simply to confiscate the property and deprive the owner of it without due process of law."

Cases in Fresno County.—I want to say further that the Hon. H. Z. Austin, Superior Judge of Fresno county, rendered a decision against the Supervisors of Fresno county, in which the county was compelled to pay damages because a lot of grape cuttings, which were shipped from Contra Costa county to Fresno county, were destroyed by the Horticultural Commissioners, although the cuttings were not diseased. They claimed the right to do so under the ordinance which peremptorily prohibited the importation into Fresno county of grapevines or cuttings north of a certain boundary line established by our Supervisors.

Tulare Transactions.—A few years later phylloxera was found in Fresno county, and what was the result? Tulare county passed an arbitrary ordinance, in the very height of the nursery season, causing me to have several thousand dollars' worth of orders for grapevines canceled, which were ready for delivery. In my paper read at Hanford, I expressed my opinion of the unfairness of this ordinance, and had the pleasure of learning later in the day during this session that the Supervisors proposed to fight the matter to the bitter end. What was my surprise to learn that within a month, a new ordinance had been framed permitting the shipment of grapevines into that county, providing the nurseryman gave a bond of $5000 to cover his delinquencies. Did I give the bond? Why, of course. Now our vines are shipped into Tulare county without any restrictions. What was the reason for this sudden change of heart? Not my paper—oh, no! It was because a certain nurseryman who was formerly a citizen of Fresno county had changed his residence to Tulare county and had grapevines growing in Fresno county. They did not want to fight a citizen of their own county, so the ordinance was modified.

In Stanislaus.—Stanislaus was the next county to fall in line with its prohibitive law. And what happened? One of the Supervisors who voted for this ordinance, came up to Fresno county, purchased two carloads of grapevines and shipped them into his county. What was the reason? None other than that the varieties wanted were difficult to obtain and the prices charged in his county for grapevines were unreasonable. The vines were passed without a word of protest. What would have happened to Roeding had he made this shipment?

Kings, Also.—Even Kings county had to have its little axe out. What did it do? Made it compulsory for the nurserymen shipping stock into the county, as well as the purchaser, to give a bond of $5000 before stock would be delivered to him.

Quarantine Stations Objectionable.—It is useless to say any more of these restrictions, for it would take up too much of your time. I can not, however, forget Tulare county's latest. It has quarantine stations compelling the shipment of all stock to specific points before the stock can be transported to destination. Primarily this ordinance was framed for the purpose of protecting the citrus interests of this county. As practically all the citrus trees are shipped in carload lots, it worked no great hardship, but with deciduous shipments it certainly played havoc, for it meant the unpacking of bales and boxes, work which must necessarily be done with much care in the nursery. The tearing apart of these packages, which it was out of the question to put together properly again, has been the cause in many cases of having stock reaching destination in bad condition, and the consequent strained relations between the nurserymen and purchasers.

At the meeting in June, there was a tendency on the part of certain commissioners to adopt this same ordinance in other counties. I beg of you not to do so. Gentlemen, give the nurserymen of California a little respite and do not throttle them any more than you have already done. I want to reiterate that our State law serves every purpose; live up to it, and no man in the fruit or nursery business will have reason to complain.

Who Introduces Pests?—You must all concede that a nurseryman is a benefactor. Who has grown the trees, vines, and plants which have made California's name famous in the horticultural world, if it is not the nurserymen? Who is responsible for the introduction of the best fruits of the Old World, and the introduction in many cases of new varieties of fruits, if it is not the nurseryman? Is the average nurseryman not a responsible citizen, trying to make an honest living by producing trees which every fruit grower must have? Then why go on passing restriction upon restriction, making it more difficult year after year for him to conduct his business?

Who is it that invariably introduces a new pest into a locality? It is not the nurseryman, but usually some amateur fruit grower who with no other object in view than to save a few cents on his purchase of trees, introduces a disease or insect which not only costs the State, but the nurseryman as well, thousands of dollars, the pest in many cases being of such a nature that eradication even by the most rigorous measures, is utterly impossible.

The Principle Involved.—California with her wonderful resources has taken the lead in the horticultural world, and it must be conceded that more has been done to advance our horticultural and viticultural interests along modern commercial lines, not only as compared with every State in the Union, but I believe I am not making a rash statement when I say that she stands supreme over every nation of the world. Her horticultural laws are the basis for the laws for every State and Territory engaging in the fruit business, and, strange as it may seem, it is nevertheless a fact that the States seem to vie with each other in seeing how much severer, how much more drastic they can make their laws to restrain the nurserymen from doing business.

I am pleased to say that there is hardly a man among the old commissioners in California whom I do not esteem as a friend. I have no great personal grievance; I have been accorded the fairest treatment by these men as far as their ordinances will permit. This fight I am making is one of principle. I don't want to hear the old story that 'we are not fighting you or any other nurseryman except on your shipments of grapevines.' I want to say in reply to you, if an ordinance which so effectively prevents the shipment of grapevines into a county may be so easily enforced, what is to prevent the adoption of measures which will be equally effective against any other class of stock?

In conclusion, I wish to say that I hope to live to see the time when the stigma which is attached to a man engaged in the nursery business may be removed, and when the nurserymen and horticultural commissioners will join hand in hand in the upbuilding of this great garden spot of ours, by making better, finer, cleaner fruit and maintaining a standard which will make us a world power in every branch of horticulture.

OLD FRUITING ROSES.

To the Editor: In reference to your correspondence about the fruit rose, permit me to inform you that we have planted on this place two kinds of fruiting roses, Rosa rugosa and Rosa villosa. Of the Rosa rugosa there are two kinds, one with red and the other with white beautiful flowers. The fruits are quite an important article commercially in Germany and are exported to Mexico, and to the United States as well, I believe. They are employed in the manufacture of fine confectionery. In Turkey it is also an important article. PABLO HOFFMANN.

Meoqui, Chi., Mexico.

Fruit Marketing.

THE CALIFORNIA FRUIT EXCHANGE.

[From an address by Mr. J. L. Nagle, General Manager, at the State Fruit Growers' Convention, Stockton, Cal.]

Probably all here are in a measure familiar with the California Fruit Growers' Exchange of Los Angeles, and I presume that most are also familiar with the California Fruit Exchange of Sacramento. These two organizations are the only ones of any magnitude in the United States today, operating in the fruit industry, that maintain their own exclusive selling agency. These two institutions, closely allied and affiliated with each other in the interests of the fruit growers of California, are living monuments to the successful operation of a co-operative marketing system.

Several years ago the producing and marketing conditions of the south demanded for the grower a change, in order that that industry, in which he was interested, and which practically was the support of the south, be put upon a profitable basis. At the time the California Fruit Growers' Exchange, then the Southern California Exchange, was organized, the citrus industry of the south was not operating on a profitable basis. You are undoubtedly as familiar with the results of the change brought about by the organization of the Southern California Fruit Exchange as I am, and I will not, therefore, go into details, but simply have this to say, that co-operation in the south, despite the attacks that have been brought against it by commercial interests, is a gigantic success and has done more for California than anything else in the history of our State.

About ten years ago the deciduous fruit growers of the north began to realize that the conditions under which they were operating were anything but satisfactory, the returns from their orchards and vineyards were unprofitable, and it became evident that in order to place themselves upon a footing whereby they could, in a measure, control a portion of the shipments in this section of the State, that the only solution to the problem was an organization in the north, instituted on the same lines as that of the south.

Strengthen the Exchanges.—There is nothing in existence today that is of greater benefit to the fruit interests of the State than these two organizaions of which I have been talking. It is absolutely necessary, not only for the protection of the industry, but for the betterment of conditions, that these two organizations be supported and strenghened. It is within the power of the growers of California today, it is within their grasp—an advantage that is not offered to any other fruit-producing State in the Union—to control the marketing of their product, to demand better railroad conditions, to correct the evils that now exist in certain auction markets of the

United States. In so far as it is within our power, the California Fruit Exchange has attempted to right these things, and in a measure we have been successful; but it requires strength and power, and we can not obtain either without the hearty support of those who are most directly interested.

This Year's Work.—The Exchange has completed this season the most successful year it has had in its history. Eastern conditions were such that at times we realized that we were having considerable difficulty to market our products to advantage, but with our system working as a unit, each and every man throughout the country advising us of marketing conditions, keeping us posted as to the daily receipts in the different markets from the various fruit sections of the country, we overcame the most acute difficulties, and our records will show that, despite the fact that the entire shipments from California this year are some 1200 cars less than last year, our tonnage is greater than it has ever been before, and more money has been returned to the growers through the Exchange than ever before in our history.

The State of Georgia shipped more cars this season than ever before. Texas had an enormous tonnage also, and as the greater portion of their fruit was of fine quality, it naturally made competition from that State very keen. Even in the face of the tremendous output from these two States, we have been able to effect a wider and broader distribution of our fruit than ever before. We have opened up newer markets for the Exchange, having distributed our shipments in over 100 different districts in the United States and Canada. We are handling the shipments from 17 associations in the State, and we have so distributed their fruit that only 19 cars not originally billed to auction, were sold through that medium. Eight hundred and fifty cars were sold in the different auction markets, and of this number 531 were originally billed to the auction. These cars were made up as follows:

133	cars of	peaches;
60	" "	pears;
11	" "	apricots;
97	" "	plums;
5	" "	mixed varieties;
427	" "	grapes;
18	" "	apples.

The balance of our cars, or 70% of our shipments, were sold at private sale at an average net per car in excess of the auctions.

Interesting Figures.—To give you an idea of the record made by the Exchange in some of its shipments, I beg to submit to you the following figures:

The Florin Fruit Growers' Association, one of the oldest and most successful associations in the State, shipped through the California Fruit Exchange this season 169 cars of grapes, the gross sales of which realized $225,820, an average of $1336 per car. Those cars were distributed in five auction markets and the distribution was so equal that there was only a difference of $4 per car in the average gross sale in the four principal markets, Boston, New York, Philadelphia, and Chicago.

We shipped from Monterey six cars of pears, the gross of which amounted to $10,600. We consider this a remarkable sale, especially from the fact that these pears were mostly Beurre Clairgeau and some Winter Nellis, and most of these cars contained a good many half-boxes.

From the Paradise Fruit Growers' Union, of Paradise, in Butte county, we handled the entire shipment of that union. All of these were Bartletts and were sold at private sale, netting the grower $1.52½ per box.

If time would permit I would be glad to furnish you with a record of our shipments from the various sections of the State, which would give you an idea of the most equitable distribution that any organization now operating in this State is in a position to offer to the grower.

Our ten years of successful marketing, our increase in business one year after another, clearly demonstrates the success of our system. Without meaning to detract from legitimate operations carried on by commercial companies, in my judgment millions can be added to the fruit-producing interests of this State by the further strengthening and support of the organization now operating for and in the interests of the grower.

The Future.—I predict that within three years the deciduous fruit growers of California, through their organization, the California Fruit Exchange, will control at least one-third of the shipments from this State. When that time comes, they will then be in a position, powerful enough to force an issue in certain eastern markets that will react with just benefits to the industry; that it will be the means of disposing of certain methods now in existence in this State and most harmful to the interests of the grower. These things it will be impossible to accomplish—but they are most necessary to the protection and salvation of this business—without the united support of the growers from every section of the State.

If we are to continue raising fruit for Eastern shipment, if we hope to be in a position to successfully compete with the immense shipments that are bound to go forward to the Eastern markets within the next three or four years, if we hope to be able to market our products at a profitable advantage, and if we hope to realize the full market value of our fruits, I can conceive of no better way and of no surer method than to control the marketing through your own institution.

There are certain counties in this State whose value lies in their fruit interests, and unless these interests can be protected and placed upon a paying basis, disaster is bound to follow and react to the discredit of California. The only salvation for this industry at present and in the future lies in the support of growers for their own marketing and selling system.

Forestry.

EUCALYPTUS NOTES.

To the Editor: The commercial growing of eucalyptus hardwood timber in California, like all other new industries of great promise, is sure to receive some setbacks, owing to very unnecessary exaggeration of the net returns from the planting of these trees, or from the investment in stock of any of the companies promoting such enterprises. It is unfortunate, of course, that overestimating should at any time be indulged in, the more so because some statements that have been made are not only misleading but more seriously reprehensible as being entirely incorrect.

In a laudable endeavor to counteract exaggerated statements, some forestry officials have gone to the other extreme, so that statements they have made are no nearer the actual facts than are the former. Estimates as to number of board-feet on an acre of eucalyptus trees, the height or diameter at a given age, are valueless, because, practically, there are no commercial plantations from which such figures may be drawn.

Let some observations be made, then, under the following postulates:

1. The eucalyptus hardwood industry is new in California.

2. The eucalyptus is the most rapid-growing semi-tropic hardwood tree known.

3. Provided sufficient root moisture is available, some species of eucalyptus find a most congenial home in California, and the growing of such can not fail to be a very profitable investment.

A New Industry.—A recognition of the truth of these postulates will do much to explain the many contradictory assertions that are made. Several species of eucalyptus have been grown in California for over half a century. These, for the most part, were planted on the nurseryman's recommendation as the fastest-growing shade-tree. Occasionally, as the years passed by, some plantations were made as windbreaks, and, more rarely, with the object of cutting wood for fuel and fence-posts.

A few of these "blue gums" may be seen growing almost all over the State, and in the larger valleys, about isolated ranch-houses, they are a distinctive figure on the landscape. But never did a hint drop as to the possibility of these trees being a demonstration of a future hardwood development. They were, indeed, more often considered a nuisance, a robber of other crops, a tree which should be grubbed up and cut into indifferent firewood. Change of ownership of any land invariably resulted first in the removal of these useless and obnoxious "blue gums."

As a hardwood industry, eucalyptus growing is about three years old, a veritable "infant", with all that is implied thereby. How, then, can officialdom make tabulated statements as to board-feet per acre, net profits, and so forth? A small grove here and there, or even a hundred or two acres in some particular spot is certainly far from sufficient on which to base estimates as to the economic value of an industry which, as a growing crop, may extend over hundreds of miles of a country of most varied soils, climates, and degrees of humidity.

The unwisdom of the authorities who sent men to draw up such statements is plainly apparent. Such men were very much in the position of reporters who may be sent out by a newspaper for a "scoop", or at least for some item which shall furnish excitement, whether or not the material may exist or be forthcoming as a basis for the story.

Growth of Eucalyptus.—The eucalyptus is the most rapid-growing semi-tropic hardwood tree known. This must be accepted as a fact by any impartial investigators. Not only is it the fastest-growing hardwood, but the fastest growing of any semi-tropic tree. While eucalyptus hardwood timber has been imported from Australia for years, it was only the alarming shortage of domestic or indigenous hard timbers that caused attention to be drawn to the following proposition: "If we import Australian eucalyptus hardwood timber, and if the trees thrive in California, why not grow them here?"

Conditions for Growth.—The most casual investigator does not need to listen to any exaggerated stories as to the growth of the eucalypts in California, which brings us to a brief consideration of postulate number three, qualifying number two, and that is, that the tree must have sufficient moisture and nutriment if satisfactory results are to be obtained.

Bret Harte used to speak of the coyote as "an outcast in gray," and, in like manner, the eucalypt, though an 'imported citizen', might, until three years ago, well have been called "an outcast in green"—planted, it is true, but only to be contemptuously grubbed up and made into firewood. And, if a farmer had a piece of land that would grow nothing profitably, it was thought fit for the despised "blue gum." This ability to grow among rocks or in a swamp was, in fact, a great, and often its only recommendation.

If the student will read Baron von Mueller or other writers conversant with this most marvellous genus of eucalypts, he will find that the largest, straightest, and tallest trees are always found where moisture is abundant, such as the ravines and gulches in the mountains of Australia.

The growth depends upon conditions and environment. The writer was recently at Mr. Pickstone's place near Santa Clara, and saw there a grove of 18 months' old Eucalyptus globulus that had averaged about two feet of growth every month, and are now from 30 to 40 feet high. These, too, are planted 4 by 4 feet apart, in very rich land, and abundantly irrigated. On a hillside where the soil is shallow and rocky, and but little fog, the same trees made about two inches of growth monthly. These are extreme cases, but it only shows that when the eucalypt is said not to 'make good,' the fault is not with the eucalypt. The difference in growth is almost as marked when the planting is made in separate lots, but in similar soil, one lot being well cultivated for several years, and the other lot receiving very little care.

It is this great variation in the growth of the eucalypt, owing to the conditions under which it is grown, that makes it impossible to give a just or even approximate estimate on the board-feet per acre in a certain number of years. This is rendered the more impossible when it is remembered that eucalyptus trees in California have generally been planted where no other crop would flourish.

Notes on Species.—Among some fifty different species of eucalyptus in our experimental plantations at Morganhill, the following are found to be worthy of note as peculiarly adaptive, the obser-

vations extending over a period of six years.

E. Viminalis.—The tallest and most majestic of all. Grows all the year, the tenderest growth never frost-bitten. Lowest temperature, 18 degrees. One tree at three years old was blown down during a storm, so that some roots were broken. It was grubbed out, and measured 21 feet by 5¾ inches diameter at 3 feet from the ground. A part of the trunk was sent to A. C. Rumble Hardwood Mfg. Co., San Jose, and was reported on later by Mr. Rumble as working up splendidly, taking a fine polish. This variety has not been generally recommended for its timber value, but this test should place it in a much higher rank commercially. It grows best where there is plenty of moisture, as do all others, but also beats all others in growth on a steep hillside.

E. Rudis.—As hardy as the preceding, but not so rapid in growth in a cool climate. In the heat of the San Joaquin valley, with plenty of water, it grows much faster. It makes a strong, tapering trunk, and stands well in strong winds.

E. Saligna.—Also perfectly hardy, at least in a temperature of 18 degrees; quick growing, but more slender than rudis; lateral branches small and insignificant.

E. Goniocalyx.—Perfectly hardy, very strong grower, with large, deep-green leaves.

E. Polyanthema.—In appearance, the opposite of the preceding; foliage very light, blue-green. This, like globulus, is very variable, as are all seedlings to some extent. Some of the polyanthemas bloom so early and profusely that their growth is completely dwarfed; some have very small, roundish leaves, and some have roundish leaves two inches in diameter. Those that do not blossom so freely grow more rapidly, and maintain an upright habit. It is a strikingly beautiful tree, and stands first choice as a street or shade tree.

E. Gunnii.—Classed as a mountain eucalypt. Its habit of growth for the first two or three years is very sprawling and crooked, as though being accustomed to bearing a weight of snow. As soon as its leaves begin to change from their globular form to a scimitar-like shape, the tree straightens itself, and grows rapidly and quite erect.

E. Urnigera.—This species is reported as having stood zero weather in New Zealand. The young leaves are dark-green, very small, roundish; stems wiry. Becoming older, leaves assume a crescent-shaped form, but small and slender. As a mountain eucalypt it may be a slow grower, but in good soil it holds its own well with any others.

E. Stuartiana.—A tree that seems to grow naturally for poles, the side branches remaining small and shedding very early.

E. Rostrata.—As a young tree it is often inclined to grow rather crooked, but soon overcomes the habit, and shoots upward very fast. While rostrata loves moisture, it came rather as a surprise to find it growing faster than others on a steep hillside. This is doubtless due to its deep rooting, as it is claimed to make 40% more root than top for several years.

E. Tereticornis.—Leaves broader than preceding, but, as it gets older, it much resembles rostrata. A plantation of several thousand trees three years old alongside of rostrata shows a rather stronger and more upright growth.

E. Amygdalina.—Likes plenty of moisture and not too much heat; grows well during a temperature of 18 degrees.

E. Diversicolor.—A magnificent grower. This and globulus are the only ones in this list that were at all affected in 14 degrees of frost, so that a mild coast climate would be preferred.

E. Globulus, or Blue Gum.—So far as California planting is concerned, the forerunner of all the eucalyptus, and therefore the best known. In some seasons of heavy frost it is severely injured, as was the case in the winter of 1909-10. At five years old it has the largest diameter at the base, but owing to two setbacks by frost, is more branching, while viminalis of the same age is ten to fifteen feet taller.

Blue gum seedlings are very liable to sport, the variations being often noticeable in the one-year-old plant. Some have not the blue color, but are darker green and hardier, not being affected in a temperature of 18 degrees after they have attained a height of twenty or more feet. Some are bushy in habit, forming a dense, roundish-oval head, and blossoming earlier than the others. These peculiarities, however, are not perpetuated by seed, and those who expect individual peculiarities of a sport or variant to be reproduced will be disappointed.

Some species, like cornuta and corynocalyx, we have discontinued propagating. The former likes neither hot sun nor severe frost, and the latter was almost all killed by the freezes of a year ago. Many others we are still trying, and will report later on them.

All of the above, bearing in mind the qualified statements in reference to diversicolor and globulus, may safely be planted anywhere in California where the temperature falls to 18 degrees, and how much lower it is not possible to say. The writer's first experience with eucalyptus in California was in April 1876, assisting Prof. E. P. Heald in planting some blue gum seedlings on the bank of a creek in Napa valley. Subsequently, viminalis were planted in that part of the State, then called red gum, and these were for many years the only species propagated to any extent in northern California.

Morganhill. LEONARD COATES.

CHANGE IN AREA OF MONTEREY NATIONAL FOREST.

The President has signed a proclamation eliminating 21,527 acres from the Monterey National Forest, California, and adding 7690 acres. These changes are the result of a careful field examination made by the U. S. Department of Agriculture in pursuance of a general plan for the correction of all National Forest boundaries.

Only the San Benito and Pinnacles divisions of the Forest are affected by this proclamation; no changes are made in connection with the coast or Monterey division. Along the northern and eastern boundaries of the San Benito division, eliminations are made of brush and grass lands which are so heavily alienated as to render National Forest administration impracticable. The only addition made is of a strip of land adjacent to the western boundary of the Forest, forming the watershed between Laguna creek and San Benito river. This area contains a stand of oak with some scattering digger pine and Coulter pine.

The most noticeable change made by this proclamation is the elimination of the entire Pinnacles division of the Forest, in T. 16 and 17 S., R. 7 E. This area has no valuable timber and is of no value from a watershed point of view. This division received its name from a peculiar rock formation widely known as the Pinnacles. The importance of this formation from a scenic point of view led to the withdrawal of 2080 acres as the Pinnacles National Monument. The effect was to bar the area from all forms of disposal under the public-land laws. The elimination of the surrounding area as a portion of the National Forest does not in any way change the status of the National Monument withdrawal, except that the area will now be under the jurisdiction of the Department of the Interior.

The unappropriated portions of the lands eliminated by this proclamation will be restored to settlement and entry after they shall have been advertised in the local papers by the Secretary of the Interior.

Viticulture.

VINE STUMP PULLING.

To the Editor: I have about five acres of old muscat vines which I wish to clear out. Is there any way by which I could pull them out with teams? Anything in this line will be appreciated.

Hanford. SUBSCRIBER.

The ease with which a vine stump can be extracted depends largely upon whether the soil has favored deep rooting or not. We have seen Muscats in some shallow soils where they could almost be kicked out, and vines in other places which would hold a strong team. We give a number of contrivances which have been found good under various conditions:

With Wagon Gear.—Take the back running-gear of a common lumber wagon, including the reach, for a lever, and two short pieces of log-chain, say about two feet in length, with hook in one end and ring in the other. Lightly nail or tie a strip of inch board on top of the bolster, and another on the outside to protect the paint, then loop one piece of the chain about the reach inside the axletree, bring the loose end over to hang behind. Let one man now raise up the front end of the reach and another loop the ring of short chain No. 2 over the stump of the vine to be taken out, and place the hook in the link of the chain on the wagon, high up as possible. Bring down the lever and hook up the chain two or three times and the job is done. Vines are said to have been taken out at the rate of more than one a minute by this simple process.

Another Wagon Way.—Take the front wheels of a stout farm wagon, tie a strong chain, one end to either end of the axletree, quite near the wheels, letting the chain form quite a long loop. Hitch the team on to the tongue and drive straddling the rows of vines to be pulled. Let one man attach the chain under the heads of vines by a single twist, or even without this twist in the chain the vines can be pulled up as fast as the team can walk.

A Chain and Fulcrum.—Take a strong mule or a team and a 10-foot chain. Make a half-hitch with the chain around a vine near the ground, and attach it to the mule's whiffletree. Then take a piece of 2 by 4 scantling about 4 feet long, place one end on the ground and the other under the chain, leaning at an angle of 45 deg. toward the vine. Start the team and the vine will be lifted out of the ground. Unfasten the chain and hitch to the next, and so on. The whole job is an easy and speedy one.

Citrus Fruits.

THOSE MAGNESIAN MALADIES.

To the Editor: Referring to remarks in your issue of December 24, 1910, under the caption "Magnesia Cracking Oranges," I wish to say magnesia is indeed a "cause-all" for orange troubles in the same way that gophers or protracted drought would be a cause-all.

As a matter of fact, the mottled leaf and excess of magnesia are, according to my observation, almost invariably found associated; and where the oranges are splitting most extensively, there these conditions I find to be most severe. There are doubtless other causes for the splitting of oranges, just as there are of chlorosis. As I understand the matter, generally speaking, the peel of the orange, like the leaf, elaborates its own tissue, while the fruit proper is the joint product of the leaves in general. When, from any cause, the growing leaves cease growing, the peel, being subject to the same law of growth, experiences a like arrest of development, while there is no evidence showing that the activity of the older leaves is lessened, or at least so quickly as that of the younger ones. Thus the enlargement of the inner fruit, after that of the envelope has been arrested, or before the latter has commenced—as is produced by large supplies of water following a period of drought—ruptures the envelope as a result of internal pressure. This last-named combination of circumstances is often noted in Florida, followed by the splitting of the fruit.

The writer believes this soil abnormality is responsible either directly or indirectly for many—though not all—citrus troubles in southern California, this suspicion having been already confirmed by experience with regard to mottled leaf in a number of instances.

I contend, therefore, that the urgent need of the southern California orange orchards (with some exceptions, of course) is lime.

Los Angeles. R. R. SNOWDEN.

The Irrigator.

DEMONSTRATIONS OF IRRIGATION VALUE.

In his annual report recently submitted to the President, Secretary James Wilson, of the United States Department of Agriculture, devotes much space to the irrigation investigations conducted by his department. As is well known to those interested in the subject of irrigation, the irrigation investigations have resulted in the accumulation of a vast quantity of information about the progress and practice of irrigation throughout the West. In recent years, in addition to the general investigations heretofore conducted, much attention has been given to assisting new settlers on the many public and private irrigation projects that have opened new irrigated land for occupancy.

"During the past year," says the secretary, "the office of experiment stations, while maintaining most of the old lines of work in its irrigation investigations, has endeavored to modify its plans so as to meet the demands for information on the new issues which are constantly arising.

"This is particularly true as regards the assistance which has been given to the new settlers. The task of converting desert land into productive fields is not easy under the most favorable conditions, but when the one who attempts it knows little or nothing about irrigated farming the difficulties are greatly increased. Those in charge of irrigation investigations in the West have, therefore, devoted a considerable portion of their time to advising the newcomers as to the methods best adapted to their individual needs. This personal advice, supplemented by practical bulletins, has done much to prevent mistakes and to safeguard the settler from either partial or total failure.

"So widespread an interest has of late been created in the East regarding irrigation as to the conditions and possibilities of different districts, the series of bulletins on irrigation prepared by this department in co-operation with Western State engineers and others has done much to furnish the information desired. Of this series, ten bulletins have already been published and four more are being prepared. When complete, the irrigation conditions as regards climate, soil, water supply, extent of land, crops, etc., of each State and Territory in the West will be accurately described.

"In former days water for irrigation purposes was both plentiful and cheap, and in attempting to use it much was wasted. In many parts of the West the old wasteful methods still prevail, although the value of water has increased many fold. The results of seepage measurements of irrigation channels obtained by the department, coupled with the high price of water rights and the rise in value of agricultural products, have induced many companies to line their main canals. As a result, many channels which formerly lost from 20 to 30 per cent of their total flow are now practically water tight. In many cases such improvements would not have been made if the attention of the managers had not been called by our engineers to the large losses sustained and the best means of preventing this waste. In other cases farmers used large amounts of water without realizing how excessive was the use until measurements were taken. When the irrigators of the San Joaquin valley in California first began to apply water on what had been dry-farmed grain fields they frequently used over nine feet. Now about one-third of this amount is found to be ample. The water users of Greely and neighboring districts in Colorado used to think their crops would burn up unless they had a miner's inch of water to the acre. Now they are raising crops on the same ground that are worth about four times as much with one-fourth the water formerly used. They are learning that cultivation takes the place of irrigation to a great extent.

"The demonstration farms established in former years have been maintained. These have been of great value during the past year in showing, among other things, the benefits to be derived from the use of scanty water supplies on small fields in connection with dry farming. At the Cheyenne farm during the past season, 54 bushels of oats were raised per acre with the application of only 8 inches of irrigation water, while the crop grown without irrigation was practically a failure. Alfalfa yielded 4805 pounds of hay per acre with the application of 13.3 inches, while the unirrigated field yielded only 550 pounds. Beardless barley, with the application of 9.7 inches of water, yielded 31 bushels per acre; that unirrigated and raised on summer fallowed ground yielded only 2½ bushels. At Gooding, Idaho, 8.8 tons of red clover was harvested from land which received only 19 inches of irrigation water. These results show what can be done with a limited supply af water when properly applied.

"The need of investigating the questions which arise in connection with the use of water in irrigation is so keenly felt by the people of the West that several Western States are now co-operating with the department in the prosecution of these studies. For years the States of California and Utah have given dollar for dollar for the purpose of carrying on this work. The States of Idaho and Wyoming are likewise contributing considerable sums for the co-operative investigation of problems peculiar to these States. In time it is expected that many other States will enter into co-operative arrangements with the Department for the investigation of irrigation problems.

"In many sections of Louisiana, Arkansas, and Mississippi the ravages of the boll weevil have made the growing of cotton unprofitable and the producers are substituting other crops. Experiments with the growing of rice have proved that it can be grown there profitably. In consequence, large areas of cotton land have been planted to rice during the past season and costly failures are quite certain to result unless proper methods are followed. These farmers as a rule know but little about pumping plants, the building of levees for rice irrigation, the quantity of water to apply, and the proper time of application. It has therefore been found necessary to detail a man to the field to devote his entire time to a study of rice irrigation and to work out, if possible by experiments, better and cheaper methods than those now in vogue. A farmers' bulletin on the irrigation of rice for the benefit of beginners will soon be published.

"The widespread drouth of the past summer throughout most of the humid regions has greatly increased the interest in the irrigation of gardens, truck farms, and the demands on the one agent we have been able to detail to this work have been far greater than he could meet. The advantage of irrigation as an insurance against the long dry spells for some of the crops has been brought out in a striking manner on several farms where experiments were conducted this summer. As a result of adding both moisture and fertilizer to the soil on experimental plats in Iowa by irrigation with sewage, the yield of beets was increased one and one-half times, that of timothy was doubled, while the yield of bluegrass was ten times as great as on the non-irrigated plats.

"At Neenah, Wis., it was found that irrigation prolonged the bearing season of strawberries ten days and increased the yield 50%. On the same field irrigated carrots yielded 50%, and irrigated onions 150% more than the non-irrigated crops.

"The utilization of a flowing well at Albany, Ga., in irrigating corn, the past season, quadrupled the yield, and as the result of an experiment conducted by this department, wells are now being sunk in this district for the irrigation of corn, cotton, and legumes in order to insure against droughts, to introduce scientific rotation, and to increase the profits from small farms."

The irrigation investigations maintain State headquarters in nearly every Western State and Territory, and in some cases, as in California, the States provide one-half of the funds used in carrying on the work. The California headquarters are in the Agricultural Building of the University of California at Berkeley, and information or bulletins about the work in this State may be had on application to Frank Adams, in charge, at the above address.

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The Garden.

STRAWBERRY CULTURE.

Written for the PACIFIC RURAL PRESS
By Mr. G. H. HOPKINS, Burbank,
Los Angeles.

Any good garden soil will do for strawberries, though we prefer the sandy loam. Such a soil is easier to work, and we believe the berries will stand up longer than when grown on heavy soils, and this is an important matter to consider when growing strawberries for market.

There are many varieties of strawberries to choose from that will do well in the different parts of the Pacific Coast region. Of these, some are what are known as pistillate varieties, that is, they have imperfect blossoms and will not bear fruit unless set between rows of bi-sexual varieties. The perfect bi-sexual blossoms have both anthers and pistils, thus fertilizing their own bloom. Therefore, it becomes necessary to set such varieties in rows alternating with the bi-sexual varieties. In such cases it is also necessary to choose varieties that will bloom at the same time. For instance, if one wished the Crescent or Warfield—both early varieties—they should be planted with such varieties as the Klondike, Jesse, etc. Such varieties as Bubach and Haverland could be planted with Lady Thompson, Nick Ohmer, Glen Mary, or any strong midsummer variety. Some of the perfect-blooming varieties are rather weak as pollenizers and they will do better when planted with other bi-sexual varieties. It is a fact that many of our best berries, both in quality and quantity of fruit, are of the pistillate varieties.

Of the bi-sexual varieties that do well on the Pacific Coast we may mention the Brandywine, Lady Thompson, Klondike, Marshall, Jesse, Nick Ohmer, Excelsior, Oregon Ironclad, Arizona, Dollar, and E-1 or Enhance as probably the most widely known, and they are all good varieties for either the home table or for market. In the following descriptions of these varieties, when it is said that a berry is extra early, early, medium, or late, it is meant that at that season they are at their best as to size and quality. To illustrate:

The Excelsior is an extra-early variety and in California it is larger in size and better eating in the winter or early spring than in the summer-time. At the latter period it is sour, small, and faded in color.

The Brandywine is what is known as a late berry. While it will often bear in the winter and early spring, if warm enough, the berry does not color up, is sour and coarse, and stringy in texture. On the other hand, during June and July it is one of the handsomest of berries and one of the best for the table.

The Brandywine is planted more extensively than any other variety on the Coast. It does well from Washington down to southern California. It appears to do well along the coast and in the hot interior valleys. It grows large, is generally of an even, cone shape; color, a beautiful red, clear to the center, and possessing a flavor unsurpassed. The foliage is large, leaves broad and heavy and of upright growth. Fruit stems strong and of good length.

The Lady Thompson is a fine berry for the table and nearby markets. Bright red in color, top shaped, medium to large in size; a good pollenizer; has strong, erect fruit-stems and will stand considerable dry weather. Ripens about two weeks after the Excelsior. Lady Thompson does particularly well in the Southwest.

The Klondike is a grand berry in certain localities, but is rather fickle, as in other localities, under what seems to be the same conditions, it proves a failure. It is a large, bright red berry, rather tart; a good shipper. The foliage is tall, with narrow, dark-green leaves. Early.

The Marshall is a berry grown quite extensively in the San Joaquin valley. It is a large berry when grown under favorable conditions. Blood-red in color, sweet and delicious in flavor. The plant is a strong, upright grower with large, round leaves. Its season is late.

The Jesse is an early berry, following the Excelsior. It is large, rather round in shape, fine for the table and nearby markets. Plants strong and full of vitality. Will yield large crops of big berries.

Nick Ohmer does well in Washington and Oregon, and is grown quite extensively in those States, and of late is becoming popular in California. It is a fancy berry and is noted for its size and beautiful crimson color. The berries are uniform in size, conical in shape and of good flavor. The plants are rank of growth, with broad, dark-green leaves, turning to russet in the fall. The bloom is large and rich in pollen.

Other varieties will be discussed at another time.

GARDEN OPERATIONS.

Did you ever grow kohl rabi? In some catalogues it is classed with the cabbages. It is more like a turnip, however, though it has the flavor of both the turnip and the cabbage. The eatable part grows above the ground and is shaped something like the turnip. When grown quick on rich soil it is very tender, and is really good eating. Sow in rows same as turnips.

Turnip seed may be sown now, but unless in a warm location we would prefer to wait 30 days. To be at its best, the turnip should grow quickly or it will not be tender. There are both white and yellow varieties. For the home garden, sow often, as they become tough if left long in the ground after reaching maturity. One ounce will sow 150 feet of drill.

Sow the turnip radishes now in small quantities. Choose a warm, sunny location and rich soil, so they can be rushed into an early growth.

While it is best to depend upon standard varieties in vegetables for the home garden, it is well enough to try some of the novelties in a small way.

Try a wildflower garden this year. Choose a somewhat out-of-the-way place where environment will correspond. All of the seedsmen have such collections and some are making a specialty of them. Sow broadcast before or during a rain. The Delphimiun cardinalis (scarlet larkspur), D. Parryi (blue larkspur), Emmenantha penduliflora (whispering bells), Dodecatheon cleveland (shooting star), Loyia glandulosa (white daisy), the wild columbine, the California fuchsia, the eschscholtzia (California poppy), and the solanums are some of the California wildflowers that may be sown.

If you have a natural location for ferns they will form a grand addition to the garden. They delight in a cool, shady place, and require enough water to keep the soil damp but never wet, that is, where water will stand around them. The drainage must be good, either by having a loose friable soil or by a natural slope. Transplant when the soil is warm. Wild ferns from the mountains are quite easily handled in early spring time.

Try some of the Early Savoy cabbage. They are crisp and tender, and always pay well when sold on the market.

Beets may be sown this month. The old Early Egyptian or Crosby's early



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Egyptian are probably the earliest of any. The Eclipse is also a good variety for winter planting. They are globe shaped, having a larger top than the Egyptian varieties. Sow rather thickly if any are wanted for greens. Ordinarily, about one ounce to 50 feet of drill.

MARKET GARDENING.

The great majority of the families who are daily coming into the State are buying small acreage, from one acre up to five and ten. In the big valleys where land is cheaper, they are buying in blocks of ten to forty acres. They are mostly well-to-do people and generally are either those who have been farming in the East and have a few thousand ahead and want a small place for a home and to give them a little work, or they are retired merchants from the small inland villages of the East who want a home where they can enjoy our climate and incidentally "raise a few chickens" and a "few vegetables." There are others, too, who come with barely enough money to get here. Such have generally been able to find work in orchards or vineyards, and often the whole family will be so employed until they can make a payment on ten acres. Then a house goes up, crops go in, and in a year's time a wonderful transformation has taken place. But with all these new homes that are being opened up all over the State, the Chinaman still holds the vegetable trade. Many buy small places with the intention of growing vegetables for market, and, finding the "chinks" supplying the people of the towns, they hesitate about going into it, and it is on account of their pride. The Chinaman has no social standing, therefore they would be considered in the same class should they be seen delivering vegetables. Now we believe that it is the Chinaman that is in disgrace, and not the business of growing and selling vegetables. Anyhow, we find that most of this class of home-builders are raising a few chickens, a few berries, perhaps, keep a few cows and pigs, raise a little alfalfa and some potatoes. We have seen white people peddling berries that would think it a horrible thing to peddle vegetables. Now the real facts are that anyone with a market nearby, good soil, and good care, can and should make $300 to $500 per acre growing vegetables. They can do this, and if attention is paid to fertilizing, their land will continue to grow richer each year. It doesn't pay to ship a great distance on account of transportation charges, and also for the reason that the stuff will not bring as high prices as vegetables grown nearer that market; but where one can have a market, the proposition is a good one, whether sales are made direct to the consumer or in the markets of town or city.

When it comes to shipping vegetables to the city market we again find the Chinaman, and also the Jap, with their loads of vegetables. But the writer believes that an intelligent white man can get more from an acre, vegetables or cash, than the Orientals. It will require, besides rich soil, careful planning, so that as soon as one crop is off, another is ready to put in. To sum up, it means constant cropping, constant care, and 50 to 75 loads of manure per acre. Under such conditions it can be made to pay.

There is another important factor, however, which we must not overlook, and that is the marketing of the produce. Taking the Los Angeles market as an example, the Americans put up a better pack than the Chinese or the Japanese, whether of vegetables, berries, or orchard fruits. It certainly does not pay to haul inferior produce to market. There is not only the loss on transportation, but it hurts the better grades with which it is packed. Not only that, but we have always noticed that it was always the oversupply of inferior produce in any line that caused the slump in prices, which always affects the better grades. If 25% of all fruit and vegetables that are usually marketed were left in the orchard or field, a big saving would be made in transportation, and better prices would be received for what was sold. Another thing to remember, too, is that it pays to pack in a case or crate that is not only uniform in size but in good repair, if not new. So we find that the main thing in marketing produce is a fancy article and an honest pack in a nice box or crate. Put up in this way, one will get the highest prices, and many times a premium.

Now is a good time to begin to plan next year's campaign. And if you feel like you wanted to compete with the Chinaman, rest assured that if you have the knack of growing good, big vegetables, combined with a little business ability, you need have no fear of the result.

In future papers we will take up the different crops as grown around Los Angeles, order of rotation, and how sold in the largest public market in the world.

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Correspondence.

HAYWARD CHAT.

To the Editor: The hills in Alameda county are getting beautifully green, the land is being turned with the plow, and grain, peas, and horse-beans are rapidly going into the ground; fully a month later this year, however, than last. To a person who has never before seen it, the plowing of the steep hillsides—and there are some comparatively so surrounding the Castro valley—the sight is a revelation. And it is said that the cutting and stacking of the hay that is grown on the hillsides is even more of a wonder. The writer will watch the operation with much pleasure and interest when harvest-time has rolled round.

Latterly the writer had the pleasure of a visit to a place that is an exponent of climatic advantages, in the shape of the Morse Nurseries, situated about two miles south of Hayward, in the low, rich bottom-lands, where it is said that the soil is 20 feet deep. As we drove through to the packing-sheds, the sight was bewilderingly beautiful in the variety of roses in bloom. Tea-roses, and hybrid perpetuals; bush-roses and climbers; baby ramblers, and baby roses that didn't ramble; flowering shrubs and trees of every variety and description.

In the line of eucalyptus was a tree that closely resembles a pepper tree in foliage, with the same thick texture of leaf possessed by the larger-leaved eucalyptus, and with the branches having the weeping habit so strongly that it very closely resembles the weeping willow in shape and style. When asked if it were hardy, Mr. Frank Oliveria, who was doing the honors of the place, replied: "Yes, so hardy that Mr. Morse is setting them all around his home place. They are sure to prove a very welcome and decorative addition to the already large variety of eucalyptus grown in the State, and without doubt they will be largely used in the decoration of parks and city homes, because they at once combine beauty and cleanly habit, and, above all, they do not breed fungous growth."

On the subject of fungous growth, the writer recently heard Mr. James T. Barber, for six years secretary of the State Horticultural Society of Kentucky, and who has been in the Rogue River valley of Oregon for the last year. He said: "In southern Oregon they will not tolerate these cypress hedges you have here; they are cutting out everything in the cypress line, for they breed fungous disease. Just look at these orchards; nine out of ten of them are literally alive with scale. It is only a question of time till the trees are dead. It doesn't look very encouraging to a new man who wants to come in here and put out an orchard, to put trees among so much disease. There is no use for one man to take care of his orchard and spray, if his neighbors neglect theirs; this work has to be done by the community to be effectual." Upon this he took up an apricot limb that had been trimmed from an orchard on Castro hill, and said: "Just look at that; it doesn't take a microscope to see scale on this limb; you can just rub it off with your fingers. And the moss! Moss is a parasite, and, like the mistletoe, lives on the sap of the tree it is growing on. Spraying with lime and sulphur ought to begin right now, when the rains are commencing, and then it ought to be done again in the spring, before the blooms come; that is the only way that scale and moss can be gotten rid of; one spraying in the spring is not enough. What is needed in this section is a good live horticultural officer who will strike right from the shoulder and who has power to

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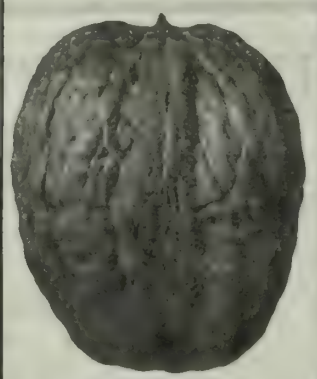
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compel that the work of spraying be done. Up in Rogue River valley, the Government sent Mr. O'Gara; he was working on a salary of $2000 per year. Jackson county thought so much of his work that it employed him to stay, at a salary of $5000; this because the Government does not keep a man in one place longer than two years. The Government would not accept his resignation, and rather than give him up, they gave him an indefinite furlough. They have a strong organization, and the inspector's work is backed up by the organization; if a man will not spray, and he persists in not spraying, then they lay the ax at the root of his trees, and they are not even made into kindling-wood, but burnt in the brush heap, to get rid of the disease. One man whose trees were so treated was game about it; he said, 'I wanted them out, anyway; I wanted the land for town lots.' But every orchardist is not where the town-lot proposition would interest him. The most of them get busy spraying. That is what is needed in this section."

[Doing this is not as easy as writing about it. Alameda county has horticultural officers to whom you can appeal, and they will go as far as the law allows them to go. The insects which smut the hedges are not the same as those on the fruit trees.—EDITOR.]

But of the nursery again: When asked why it is that roses bought of a nursery do not sprout from the bottom, Mr. Oliveira replied: "Because the part that goes under the ground is disbudded. The roots do not come, as most people suppose, from the buds, but from the end of the cutting, and so the buds do no good as far as roots are concerned; when they are left on, they do damage by ruining the shape of a rosebush."

This is surely quite an item to the woman who likes to raise her own roses from slips, as is so easily done in this climate. The majority of their roses are grown on Baltimore Belle roots and grafted, because this variety is such a strong root grower.

One very noticeable and instructive feature about the place is the house of lath, where all the tiny seedlings are kept till they have grown strength enough to be put outside; lath, instead of glass, which is always used in the East. This, any farm-woman who has a fondness for flowers galore, can easily have herself. Along one end of the lath house is a raised bench, covered with glass, where the cuttings are struck, the bench being just the width of a window-sash. This, too, any woman can have.

Outside in boxes, ready for the trade as soon as the rains had come, were flats containing violets, daisies, and pansies, with numerous other bedding plants too varied to mention, likewise strawberries and hedge plants.

One new plant that is fine for a ground cover, the writer was told, is the Spergula, which is planted in rows nine inches apart, when it soon covers the ground with a thick mat that is studded with tiny little white flowers, beautiful in the extreme.

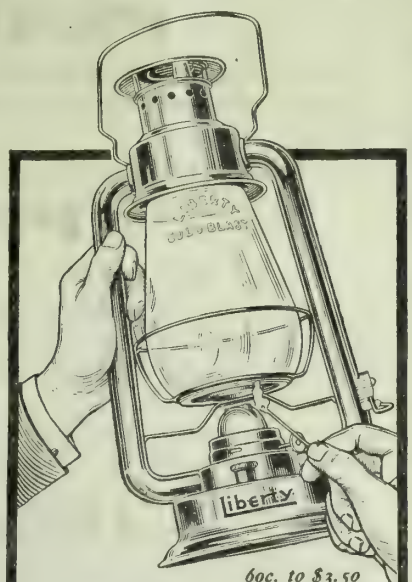
Then there is the Irish Yew, brought from across the water, and tiny seedlings of the Sequoia gigantea, the California Big Trees. The pepper seedlings, that were now of planting size, and in ravishingly luxuriant profusion, put the writer in mind of Texas and of how, during my sojourn in that State, I so longed to find a pepper tree; but only one did I ever see, and that was in the yard of the dormitory of a girls' college at San Antonio. The president of the college had been in California one winter, and had become so enamored of the pepper tree that he brought two home with him. Said he on the subject: "One of them died, but the other has stood two of our changeable winters; I believe it is going to grow here and thrive; it is a beautiful tree, but our northers are not good for tender growth. Maybe we can educate them to be hardy."

Blessed is the man who lives in a climate where such beautiful trees will thrive.

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Hayward.



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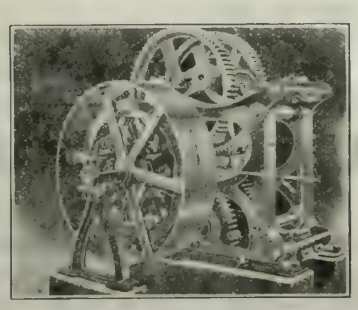
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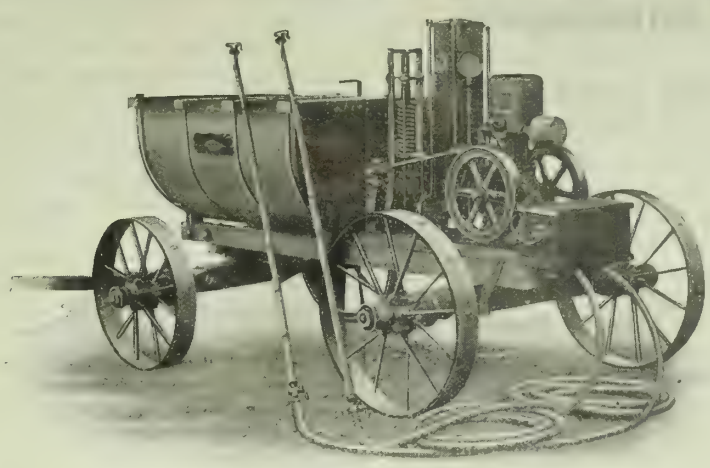
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ST. LOUIS AND NEW YORK, U. S. A.

POMONA PUMPS
FOR DEEP WELLS

BUILT FOR FARM OR IRRIGATION PURPOSES



WATER RAISING FROM DEEP WELLS OUR SPECIALTY
POMONA, CALIF., OR PORTERVILLE, CALIF.



Bean Power Sprayers

ARE EASY TO HANDLE

They're built exceedingly light, are very compast, and set low down. They can be hauled without trouble where many power outfits would be absolutely useless.

The advantages of a Bean Power Sprayer are demonstrated at their best in densely planted, wet, or hilly orchards. Every outfit is thoroughly tested before it leaves the factory—and we back up every sale with a guarantee that settles every doubt a buyer may have.

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It's the most complete book we ever published. In it are illustrated and described all Bean Power Sprayers, Hand Pumps, sprayer parts, accessories, materials, etc. A copy free for your name.

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The Citrus Fruit Growers of California use thousands of tons of Tankage annually

Tankage is the best form of Organic Nitrogen.
HUMUS-FORMING. ALL AVAILABLE.

We are the largest Pacific Coast producers of High-Grade Tankages in perfect mechanical condition and of

"GOLD BEAR" FERTILIZERS

Will ship direct to you no agent near you

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WESTERN MEAT COMPANY
Fertilizer Department,
SAN FRANCISCO, CAL.



RHODES DOUBLE CUT PRUNING SHEAR

Pat'd June 2, 1903.

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

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CHICO NURSERY COMPANY

GROWERS OF HIGH GRADE NURSERY STOCK

Prompt attention given to orders sent in by mail. Write us for prices on Apples, Peaches, Pears, Cherries, Plums, Prunes, Apricots, Almonds, Eng. Walnuts, Blk Walnuts, Figs, Grape Vines and Berries. Ornamental Trees, Flowering Shrubs and Roses. Catalog free.

CHICO NURSERY COMPANY, Chico, Cal.

EUCALYPTUS TREES GENERAL NURSERY STOCK

4,000,000 Eucalyptus Trees. Large Stock of Fruit Trees

ORANGE COUNTY NURSERY & LAND CO., FULLERTON, CAL.

Entomological.

THE NEW FEDERAL INSECTICIDE REGULATIONS.

The Insecticide Act of 1910 became effective on the first of January. Joint regulations for its enforcement have just been issued by the secretaries of the Treasury, of Agriculture, and of Commerce and Labor. The act forbids the manufacture or sale in Federal territory of adulterated or misbranded insecticides and fungicides, especially mentioning Paris green and lead arsenate. It also forbids interstate shipment of such articles, and this is its most important feature.

Under the regulations, samples of insecticides and fungicides are to be collected by purchase by agents of the U. S. Department of Agriculture, and analyzed or examined by such chemist or examiner as the Secretary of Agriculture may designate. If a sample then appears to be adulterated or misbranded, a private hearing before the Secretary or his representative will be given to the party from whom the sample was obtained and to others interested, who may appear personally or by attorney and may submit oral or written evidence. If it still appears that the act has been violated, the proper United States attorney will be informed of the facts. Provision is made for State officials to co-operate in reporting violations to the Secretary of Agriculture. The latter will ordinarily make his requests for prosecutions to the Attorney General, but in special cases directly to the proper United States attorney. After judgment has been rendered by a court, the judgment will be published by the Secretary of Agriculture, within 30 days.

Paris green is considered adulterated if it does not contain at least 50% of arsenious oxide; on the other hand, it must not contain arsenic in water-soluble form equivalent to more than 3½% of arsenious oxide; and no substance may be mixed with it if it contains more than 50% of water, or if its total arsenic is equivalent to less than 12½% of arsenic oxide, or if it contains arsenic in water-soluble forms equivalent to more than 0.75 of a per cent of arsenic oxide, or if any substance is mixed with it so as to lower its strength. If lead arsenate contains more than 50% of water it must be labeled "lead arsenate and water", and the extra percentage of water must be plainly stated. Any other insecticide or fungicide is considered adulterated if its strength or purity fall below the standard under which it is sold, or if any substance has been wholly or partially substituted for it, or if any valuable ingredient has been even partially removed, or if it is intended to be used on vegetation and is injurious to vegetation. If the designation of an article imports the presence in it of a certain substance, that substance must be present in the customary amount.

Any insecticide or fungicide is misbranded if the label bear any statement, design, or device that is false or misleading in any particular, either as to the character of the article or as to the place of manufacture. And the term "label" is defined so as to include any circulars, etc., that are packed with the article or referred to either on the label or on the circulars accompanying the article. If the contents are stated in terms of weight or measure, they must be correctly stated. If an insecticide or fungicide (other than paris green or lead arsenate) contains arsenic in any form, the total amount of arsenic and the amount of water-soluble arsenic must each be stated on the label. The amount of inert substances (often called "filler") must also be stated.

If the name of the manufacturer is given on the label, it must be the actual manufacturer; if the name given is not that of the actual manufacturer, the phrase "packed for ....," "distributed by ....," or some equivalent phrase, must be used with the name.

The dealer may relieve himself of responsibility by securing from the wholesaler or from the manufacturer a guaranty that the article is not "adulterated or misbranded within the meaning of the Insecticide Act of 1910." This places the responsibility upon the guarantor. The wholesaler or manufacturer may file with the Secretary of Agriculture a general guaranty covering every package of a particular kind of article. The guaranty will receive a serial number; this number is to appear on every package of goods sold under that guaranty, together with the words "Guaranteed by (name of guarantor) under the Insecticide Act of 1910." If a general guaranty is not filed, an individual guaranty may be attached to each bill of lading.

The law and the regulations apply also to imported goods, imported lead arsenate or paris green being treated as being intended for use as an insecticide unless the contrary is shown. The Treasury Department and the Department of Agriculture will co-operate in taking samples of imported goods. If upon examination and after a hearing it appears that a consignment may not lawfully be imported, the Secretary of Agriculture will report the findings to the Secretary of the Treasury, and the goods will be refused admission.

Regulation 12 provides that "all matter required by the act to be stated on the label of an article must be plainly and correctly stated on the face of the principal label in type sufficiently clear and in position sufficiently prominent to attract the immediate attention of the purchaser." This regulation, however, will not be strictly enforced until July 1, 1911. In the meantime, such required statements may be made by means of a "sticker or paster or supplemental label."

FERTILIZE

and double the productiveness of your farm. If your farm or orchard is not producing all you think it should, for the amount of hard work you are putting in on it, possibly it is time that you should consider the question of fertilizing.

The entire question is scientifically treated in ou book, "Farmers' Friend," mailed free to any address.

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310 Sansome St., San Francisco. 503 Central Bldg., Los Angeles.

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For fall and winter planting; also Flower Seeds for fall sowing.

NEW CATALOGUE just out; send for a copy. **Now is the time to sow Payne's Royal Exhibition Pansy Seed,** the best strain on the Pacific Coast. **Giant Perfection Stocks** and **Christmas Flowering Sweet Peas.**

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Seedsman and Nurseryman, 345 S. Main St., Los Angeles, Cal.

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BOOK ORDERS NOW FOR THE FOLLOWING STANDARDS:

PEACHES

Tuscan, Orange, Phillips, Levi, Foster, Triumph, St. John, Early Crawford, Elberta, Muir, Lovell, Fay-Elberta, and Salway.

Peaches have paid growers more profits in the last 25 years than any other fruit.

APPLES

Alexander, Red Astrachan, Gravenstein, White Astrachan, Jonathan, Rome Beauty, Spitzenburg, Bellflower, Newton Pippin, Grimes Golden Pippin, Ortley, McIntosh Red, Winesap, Wagner, Winter Banana, Arkansas Black, and many others.

Get in your orders now for Gravenstein, Jonathan, Spitzenburg, Yellow Newton Pippin, White and Red Astrachan, Alexander. They always sell out first.

CHERRIES

Black Tartarian, Bing, Black Oregon, Black Republican, Royal Ann, Lambert.

Cherries are great money makers. The above varieties always sell out early.

Also all standard varieties of

Plums, Prunes, Apricots, Almonds, Pears, Quinces, Persimmons, Figs, Oranges, Lemons, Etc.

Our trees are selected, thrifty, well-rooted and true to name.

WRITE US AT ONCE.

Fay Elberta: The improved Elberta. The best peach of the season. Write for descriptive circular.

The Silva-Bergtholdt Co.

200 Orchard Street, Newcastle, Cal.

TREES TRUE TO NAME. The SILVA-BERGTHOLDT CO. NEWCASTLE, CALIF. PLACER NURSERIES

PEACH TREES

True to Name. Strong and Vigorous

Including Muirs, Lovells, Albertas, Tuscan, and Phillip Cling and all leading varieties. Also a full line of Pears, Plums, Prunes, Cherries, Apples, Apricots, Almonds, Walnuts and Chestnuts. A full stock of Thrifty Vines. Write for prices on amount you need.

OAKDALE NURSERY, W. F. Wheeler, Prop., OAKDALE, CAL.

MARTINEZ NURSERY

ESTABLISHED 1884

Leading varieties of Pear, Apple, Plum, Prune, Peach, Apricot and Almond Trees. Grape Vines. Orange and Lemon Trees. Ornamentals, etc.

Catalogue and prices on application.

THOS. S. DUANE, Prop., Martinez, Cal.

Eucalyptus in Variety

The best that 40 years experience can produce, being grown slow, in the cool atmosphere of the coast, are more hardy and more vigorous than those grown in the hot interior of the State. Correspondence invited.

W. A. T. STRATTON, Petaluma, Cal.

GRAFTED WALNUTS

San Jose Mayette and Concord; blight re isting. Best commercial nuts; send for samples.

Eucalyptus Trees

No better stock grown; prices very reasonable.

General Fruit Tree and Ornamental Stock

Our 1911 Horticultural Calendar now ready, price 15c. Catalogue free.

34 years experience in California.

LEONARD COATES NURSERY CO., Inc., MORGANHILL, CAL.

Live Stock and Dairy.

ECONOMICAL BEEF PRODUCTION.

The Nebraska Experiment Station has just issued a bulletin which gives the results of several experiments which should be of interest to the California stockmen, especially in regard to the selection of "feeders." It is the judicious buying of stock cattle which gives the profits when the butcher takes the animals off the stock feeder's hands. In these experiments individual records were kept in groups of six steers each. This was for the purpose of making a study of animal conformation and quality as affecting gains. Complete measurements were taken on each of the steers used in both experiments, fifty-four head in all. In each group of six steers were different types—some low-set and smooth, possessing quality, while others were more rangy in build and rough in appearance. The results of both experiments woulu indicate that the more rangy and rougher types make practically as large gains per day as the more compact, smoother cattle, but it was found that these lower-set, more compact types took on flesh more rapidly, were fatter, and sold for a higher price per pound at the close of the experiment.

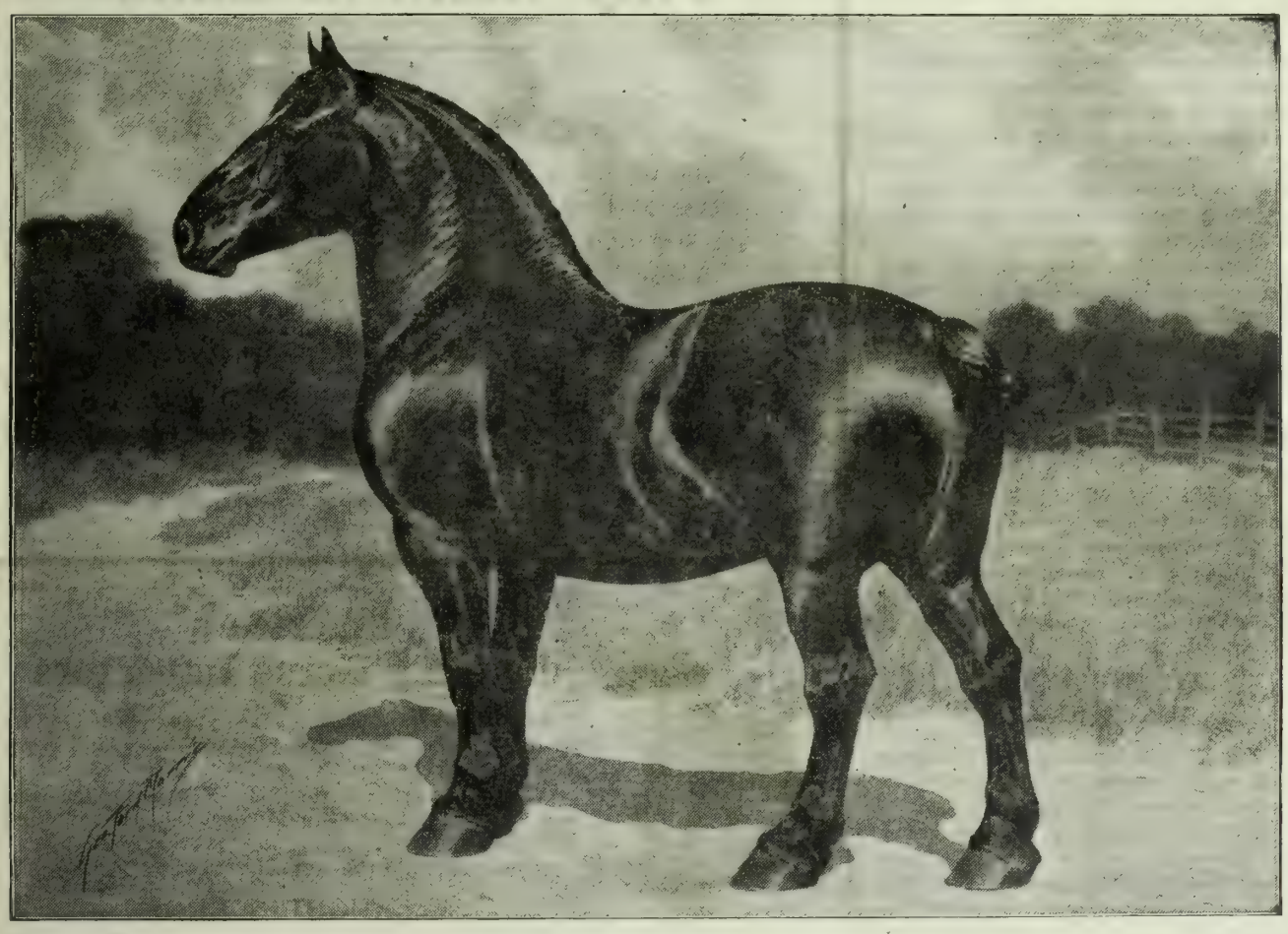
It was found in these experiments that the depth of body and size of the middle girth is an important factor in making daily gains. A difference in gains of not less than six-tenths of a pound per day was found in all groups, the steers of a given group being fed in the same manner. With hardly an exception it was found that the best and most economical gainers were large and roomy in the region of the paunch. The greater number of the best gainers were also large in heart girth, although there were a number of exceptions to this. That there is a great variation in the capacity of cattle to make gains in the feed-lot is made evident in these experiments. It is hoped that by following up this work some conclusions may be drawn as to the relation of external conformation to gaining capacity, in order that there may be more definite knowledge as to what types will most economically convert into beef the foodstuffs grown upon our farms.

A WONDERFUL PERCHERON.

California presents to the draft-horse breeder practically a virgin field that is pregnant with possibilities. Our even climate and succulent grass the year through gives a growth to the young colt which is only beaten by the valley of La Perche, France, the home of the Percherons.

An example of what this famous valley can produce is seen in the wonderful two-year-old Percheron, Intime, which McLaughlin Bros. of Columbus, Ohio, and Oakland, Cal., imported into this country. This gem of the drafters was given a first prize at the recent Chicago International over 153 other colts entered. Intime was foaled March 25, 1908, and weighed 1970 pounds last December. Although he has this grand weight and size, his action is as clean, fast, and true as a roadster's. This horse is also beautifully made, with a setting and quality that attracted universal attention.

The two-year-old Percheron stallion class, where Intime won the honors, had the largest list of entries ever made at any show of draft horses in the history of horse shows. The arena at the yards was not large enough to accommodate this large number, so, after some culling was done in the stables, there were 77 colts led into the ring for the judges to pass upon. At no previous show has a like number of horses ever been exhibited in a ring at the same time. It was such an exhibition in numbers and quality as will always remain in the memories of those that had the opportunity of seeing it. The colts were led into the ring at 2 o'clock and it was after 5 before all had been examined and the awards made. Yet, notwitnstanding this long time, the amphitheatre remained crowded until the end. Interest among the spectators never waned during the examination of this extraordinary ring of draft stallions.



Intime, Champion Two Year Old Percheron in America, Owned by McLaughlin Bros.

INSURING HORSES.

Several high-priced draft stallions have died lately in California. Many farmers would invest in stallions, but they fear to have so much money in horseflesh which is liable to die on their hands any day. J. H. S. Johnstone, of the Live Stock World, had the following to say on this topic recently:

"Insurance of pure-bred horses is becoming more and more a part of the importing business. For many years the great drawback to the introduction of the system of insurance into the business was the dearth of reliable companies that could be depended upon to pay their debts promptly. Now no such drawback exists. Horses may be insured for stated proportions of their value, at a reasonable rate, against death from any cause, and in case of death the claims are met promptly. This makes it possible for importers to extend credit to deserving and reliable beginners, who in the absence of the insurance feature could not indemnify the vendors sufficiently in the event of a total loss. Moreover, while stallions can not be insured for their total value, and some of the companies at least only issue indemnities, the owner of a $1500 or $2000 stallion must of necessity feel much more comfortable if he is carrying a $1000 indemnity than if he is running the whole risk himself."

COCOANUT MEAL FOR STOCK.

The farmers are using more concentrates in their live stock rations. This is especially true of cocoanut meal, which is the residue left after the oil has been crushed from the cocoanut. Its popularity is due to two reasons—its large protein content and cheapness. Bran, which sells for $31 per ton, contains only 15.7 per cent protein, while this meal has 19.7 per cent. As protein is very valuable for milk production, a small amount of cocoanut meal can be fed cows and re-

HORSES AND CATTLE.

GEO. C. ROEDING, Fresno, Cal. Breeder Holstein-Friesian Cattle. Young heifers and bulls for sale.

JOHN LYNCH, breeder of Registered Short-horns; milk strain. High class stock. First-class dairy breeding. Smooth cattle. Best pedigree. P. O. Box 321, Petaluma, Cal.

BULLS AND COWS FOR SALE—Short-horned Durhams. Address E. S. Driver, Antelope, Cal.

N. H. LOCKE CO., Lockeford, Cal. Jerseys. Service Bulls and Bull Calves for sale.

SWINE

STUDAMS & CUNNINGHAM, Mills, Cal. Registered O. I. C. swine.

BERKSHIRE AND POLAND-CHINA HOGS. Both sexes. C. A. Stowe, Stockton, Cal.

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroughbred Berkshires.

GEO. V. BECKMAN, Lodi, San Joaquin Ci., Cal. Registered Poland-China Hogs, both sexes.

G. A. MURPHY, Perkins, Cal. Breeder of Champion Herd of Berkshires; also Short-horns.

H. B. WINTRINGHAM, Middletown, Lake Co., Cal. Breeder of Tamworths.

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H.H.H LINIMENT

SHOULD BE IN EVERY HOME AS A SAFE-GUARD AGAINST SORE THROAT, SWELLINGS, SPRAINS, RHEUMATISM, NEURALGIA, STIFF JOINTS, LAMENESS, STOMACH CRAMPS, DIARRHOEA, Etc.

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IT DOES THE WORK.

Proteina SOY BEAN OIL MEAL

THE WORLD'S BEST FOR ALL FARM ANIMALS

Calves grow better.
Milk increases.
Hens lay more eggs when fed on it.
Send for circulars giving proof.

46% Protein
10% Fat

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Book on HOME TREATMENT of HORSES, CATTLE, SHEEP and SWINE

Address VETERINARY DEPT.
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FOR SALE

FOUR THOROUGHBRED AYRSHIRE BULLS, Aged 12 to 20 Months.

If you don't want tuberculosis, breed the Ayrshires.

J. W. & J. D. McCORD
Phone Red 123. Hanford, Cal.



HERCULES HARNESS SADDLES HORSE COLLARS

They Last Longer

The only sure way to get a HOME Industry Harness is to look for the Hercules stamp. Made by W. DAVIS & SONS, San Francisco, Cal. Your Dealer has our Catalogue

HOLLISTER HORSE MARKET

1814-1856 Market St., San Francisco

LIVE STOCK DEALERS AND AUCTIONEERS

Horses and Mules bought and sold or handled on commission.

A. H. SCOFIELD, Manager

sults obtained which would require a larger amount of some higher priced feedstuffs. Henry, in his recent book on "Feeds and Feeding," gives the following feeding ration, to be fed each day for every 1000 pounds of live weight. A cow giving 11 pounds of milk per day should have 25 pounds of dry matter, 1.6 pounds of protein and 10 pounds carbohydrates. A cow producing 16.6 pounds of milk should get 27 pounds of dry matter, 2 pounds of prtein and 11 pounds of carbohydrates. A cow giving 22 pounds of milk daily should have 29 pounds of dry matter, 2.5 pounds of protein and 13 pounds of carbohydrates.

In every hundred pounds of cocoanut meal there is 89.7 pounds of dry matter, 19.7 of crude protein and 41.2 pounds of carbohydrates. Alfalfa hay contains 11.1 pounds of protein for every 100 pounds and 39 pounds of carbohydrates. Barley hay contains only five pounds of protein in every 100 pounds. It will be seen from these tables that an excellent balanced ration can be made with cocoanut meal on account of the large amount of protein. On sections where there is no alfalfa hay three or four pounds of cocoanut meal mixed with the hay and some root crop makes an excellent ration.

THE DAIRY INTERESTS OF CALIFORNIA.

The recent report of the State dairy bureau shows a wonderful improvement in the dairy business during this last year. There are 398,598 milk cows in California, which produced 45,989,141 pounds of butter this last year. Merced county shows a gain of $259,000 over the production in 1909. The total value of the dairy products of this county were $2,331,632. The total number of dairy cattle is 23,470.

Fresno has the highest number of cows in the State, with 30,000, and the product was 3,290,825 pounds of butter. Sacramento county has 6150 milk cows and in the year produced 1,102,012 pounds of butter.

The annual value of dairy products for the two years, 1909 and 1910, as shown by the report, is given in the following table:

	1909.	1910.
Butter	$13,186,044	$14,403,798
Cheese	632,331	724,212
Condensed milk	360,618	756,599
Market milk and cream condensed.	9,025,000	9,050,000
Calves produced on dairies	1,800,000	9,650,000
Skim-milk and butter milk	1,316,970	1,400,000
Casein	29,145	75,000
Totals	$26,350,108	$28,256,609

BISHOP BROS.' SHROPSHIRE PURCHASES.

The Shepherd's Journal, one of the leading sheep papers of the country, says:

"Bishop Bros., San Ramon, Cal., are to be complimented on their Shropshire purchases at the International. We are of the opinion that their selection from the great flocks represented at this, the greatest of all live stock shows, have never been equaled by any one breeder or firm of breeders. This firm came with the idea of purchasing nothing but stock that would be a credit to the State of California, and they are getting the cream of that which was available from the leading flocks on exhibition, both American and Canadian. They carried out their ideas to the letter. Shepherd Wynn Hughes was very discriminative in his selections and sought the highest ideals in Shropshire type and conformation and got it without regard to cost. It is safe to say that California never before has received such a consignment of high-class Shropshires, and if the San Ramon flock of Shropshires and Wynn Hughes at its head does not make its mark with such material in its makeup, then there must be something wrong with California's climate."

DAIRY NOTES.

Corcoran is soon to have an evaporated milk plant. D. M. Herrin will have charge of this new plant, which will be run in connection with the Corcoran Creamery Company.

An immense dairy barn is being built on the Neff ranch near Biggs. It is 180 feet by 120 feet and 30 feet high. When completed this barn will hold 350 tons of loose hay and will afford shelter for 150 dairy cows.

At the recent meeting of the California Creamery Operators' Association, San Luis Obispo was decided upon as the place where the next annual convention will be held.

Articles of incorporation for the Lapenheim Creamery Company were filed recently. The principal place of business will be at Hardwick.

A meeting was recently held at Calexico and the Calexico Creamery Association was formed, with J. M. Edmunds as president, Benjamin Vilier vice-president and T. T. Miller secretary.

Thornton Glide is levelling and checking 115 acres of land near Davis, where he will plant alfalfa. When this land is all in, Mr. Glide will have about 300 acres in alfalfa.

A Holstein cow at Syracuse, N. Y., has broken the world's seven-day butter record. In one week she produced 37.28 pounds.

Stoddard Jess, who owns 640 acres of alfalfa land near Corcoran, recently rented this property to several dairymen on a basis of $15 per acre per year with monthly payments. Mr. Jess will furnish the water for irrigating the alfalfa.

LIVE STOCK NOTES.

C. M. Blowers of Hanford sold 300 hogs to San Francisco butchers. The price paid was 7 cents a pound. Many of the porkers averaged 300 pounds apiece.

Many of the alfalfa growers around Hermiston, Oregon, are receiving 23 cents a pound for their alfalfa seed.

Charles Ward of Oroville recently purchased 1000 head of sheep from Arthur Sweetser of Honcut. Most of the animals were wethers with one year's fleece, and the price paid was $4.50 per head.

In Chino valley, the southwestern part of San Bernardino county, there are some 8000 head of cattle being fattened for the market. A large percentage of these animals are being finished on beet pulp.

Frank Lewis, who has 800 sheep in Tivy valley, reports that green feed is very plentiful in that section and that the prospects are very encouraging. Lambing will soon commence with his flock.

One hundred head of mules which were at work on the dam closing up the Colorado river break are being put up at El Centro pending a settlement of the difficulties over the entry of these mules into Mexico in connection with this work.

The Tule Indians near Porterville have sent a protest to the Department of the Interior asking that they be allowed to turn their cattle and horses on the government reserves at 50 cents a head and the other stockmen kept out. At this time the feed is very short and there is not enough pasture even to carry the Indian cattle through.

J. D. McCoy, an old time Ventura pioneer, recently died. Mr. McCoy brought the first span of blooded horses into California. He brought them over the plains in 1851.

On account of the low price of lambs this year there was only one invoice of Canadian lambs shipped into the United States, while last year there were 106 invoices, covering from one to six cars each.

Hides and skins to the value of $34,600 were exported from Prince Edward Island to the United States last year. The prices paid were: beef hides, 12½ cents a pound; calve's skins, $1.20 per skin; sheep pelts, 30 to 70 cents apiece.

According to recent statistics of Uruguay there are 43,000 farms or ranches in that country. Some 2,000,000 acres are devoted to agriculture and about 39,000,000 acres is given up to pasturage.

The export of wool from Chile is rapidly increasing. The exports in 1908 amounted to 27,700,000 pounds. One sheep ranch last year clipped 9,280,000 pounds.

There is a demand for American mules in South Africa, to be used in the mines. The mule desired must be 14½ hands high, deep girth, good bone and short legged and be from 4 to 7 years old. Contract prices are $250 each, delivered at Cape Town.

Fifth Annual Sale of Short-Horns

BY

HOWARD CATTLE COMPANY

San Francisco, January 13, 1911.

All Bulls--Big Bulls
Fifty Head of Bulls

Nine sons of Imp. Straight Archer 209098
Sons of Oxford Grand Duke 10th 203800
Sons of Lord Victor 304257
Sons of Red Favorite 235269
A son of Cumberland Chief 301999
Sons of Pride of Birch Hills 217295
and sons of other famous bulls

FOR CATALOGUE APPLY TO
HOWARD CATTLE COMPANY
641 Mission Street, San Francisco.



America's Leading Horse Importers

At the six World's Fairs since 1900, our Percheron Stallions have won every Championship, and every first prize except two.

At the recent California State Fair our Percherons and French Coach Stallions won 14 Gold Medals and both Championships.

When you want the best come to us.

McLAUGHLIN BROS.,
OAKLAND, CALIFORNIA COLUMBUS, OHIO

ARGO FLOOR OIL

Pratt's Animal and Poultry Regulators The best on the market

C & S AXLE GREASE—30 years of satisfaction.
H & L AXLE GREASE—for 60 years in constant use.
THE ONLY PERFECT LUBRICANTS
Use only one-fourth of what you would use of any other.
WHITTIER COBURN CO.
San Francisco Manufacturers.
AGENTS WEATHERPROOF COMPO ROOFING

ARGO COAL OIL

HOGS AND DAIRYING.

Hogs and dairying are about as inseparable as corned-beef and cabbage. This phase of hog raising was ably handled by Donald McInniss in an address before the Washington State Dairymen's Association. He said in part:

In regard to the particular breed suited to our climate and markets, I shall advocate no special breed, for it is rare that any two men see any breed of hogs alike, hence, having no desire to get into a controversy, I will simply say that any early-maturing breed is good stock to start with. Some breeders go into detail as to the shape of the sow, but in my judgment the shape of the sow does not matter greatly if she is a good feeder, prolific, reasonably quiet, and easy to handle. In the matter of using pure-breds, it is generally better to use good stock in preference to grades, providing the results are as satisfactory, but it frequently happens that the pure-breds are not nearly as prolific or as good mothers as the grades, and my experience has been that in most cases good grade sows are far mort profitable on the average dairy-farm than pure-breds.

Where grade sows are used, the choosing of a boar is a serious matter. He should by all means be a pure-bred, compactly built, and an easy fattener. If the right blood is in him, he will stamp this trait on all his offspring. In this part of the country a sow can farrow most any time of the year, providing proper quarters are prepared for her. The end of February or the beginning of March is the best time for the spring litter. The sows should be fed plenty of skim-milk with a small amount of bran, and the pigs should have access to a trough of skim-milk where the sow cannot get, so they will be good drinkers and not miss their mother or become stunted when weaned, which should be in time to breed the sows for the fall litter. The fall litter should be farrowed not later than September 1, so as to give the young pigs a good start before cold weather, and enable the sows to be again bred in time for the spring litter. It is very necessary that the young pigs be taught to drink as early as possible. The breeding of the sows should be attended to as faithfully as the breeding of the cows, and not let go haphazard, for the sow is simply a machine and the loss of working-time of the machine constitutes some of the wastes of the dairy and should be guarded against. If bred systematically, the two litters can be had year after year, and each fit in just right, as I will show later on. After the spring litter is weaned they should have all the milk they will drink clean, with a little middlings or ground wheat in it—the milk fed with as much of the animal heat in it as possible, for there is some vital force or virtue in the animal heat that we know not of. In addition to this they should have the run of a small pasture lot. Be sure the fence surrounding this is good, as no animals love more to roam than a bunch of young pigs, and many a dairyman knows to his sorrow the mischief they can get into and the damage they can do. I wish to place great stress on the matter of pasture. It is not only cheap food, but healthy; gives them good, large, strong stomachs, good digestion, and puts good legs under them. This all counts when the pig is put in to fatten, which should be when about five months old. They should then be given all the skim-milk they can drink and a small amount of ground wheat. They can be fattened on straight skim-milk, but much better and with more satisfaction with the grain, which also makes a better quality of meat, and should be killed off in time to give the sows and fall pigs the milk and before they become too heavy, the demand in this market being for light pork.

The milk fed to this litter of pigs should be worth from 25 to 30 cents per hundred pounds. Under this method of raising and fattening, the pig will seldom go off his feet when crowded, and will have cost the dairyman very little to raise. Having gotten the spring litters to market, as you will probably notice before it becomes flooded with stubble hogs, we will now direct our attention to the fall litters. Follow the same rule as in the spring, and get the pigs drinking as quickly as possible. Put all the milk into them you can, so as to have them in good shape before the winter sets in. Greater care should be taken at this time of the year to see that the milk is fed warm, as a lot of cold milk fed to young pigs chills them and is harder on them than on larger pigs. The main idea to be kept in mind is to feed these by-products in such a condition as to get the best results, and to do this the milk should never be cold or sour.

LOS ANGELES AS A STOCK MARKET.

About 400 cattle, 1000 sheep and 600 hogs are killed every day in Los Angeles. The yearly output paid for live stock is between $10,000,000 and $11,000,000. Most of the butchers' stock comes from the San Joaquin valley and Utah. Recently the Hauser Packing Company bought two steers from Alamatos. One weighed 2300 pounds and the other 2100 pounds. They had been fed eight months on sugar pulp and corn. Some 400 steers raised by the Kern County Land Company near Bakersfield were recently sold in Los Angeles. These cattle had been finished on corn and they sold for 10½ cents a pound. These animals averaged 1200 pounds apiece.

DAIRY COW PRICES STILL HIGH.

At a recent sale held near Porterville dairy cows averaged $75 a head. Even better prices prevailed at the Wright & Railsback sale held near Hanford. A dairyman from Alpaugh paid the highest price for a cow, which was $152. Another cow brought $150. Young calves brought over $10 per head. A dairyman from Stanislaus county recently purchased several dairy cows near Gonzales and the average price was $100 apiece.

NEW PLANT DISCOVERIES.

An agricultural explorer of the U. S. Department of Argriculture has spent the year exploring the plant resources of southwestern Asia. Among the large number of interesting things he has secured is a variety of alfalfa from Erivan, which is said to be longer lived than the Turkestan; a species of Medicago from an altitude of over 4000 feet, which is already being utilized in the work of creating new hybrid alfalfa for the Northwest; a wild almond from the Zarafshan valley, found growing on the dry mountain-sides at an altitude of 6000 feet; a drought-resistant cherry for home gardens in the Northwest; and a collection of apricots with sweet kernels from Samarkand; the Afghasian apple and special varieties of pears for trial in the Gulf States; some remarkable olives, which have withstood zero temperatures and still borne good crops of fruit; late and early varieties of Caucasian peaches for trial in the Southwest; seeds collected in the Caucasus from wild plants of the true Paradise apple, which is used as a dwarf stock for the purpose of obtaining seedlings not infected with crown gall; scions of a newly produced crabapple, reported to be a better keeper than American crabapples; the Slew Abrikose, a variety of apricot with a skin as smooth as that of a nectarine; a remarkable drought-resistant poplar for the Middle West; and a wild strawberry, fruiting at the end of February on the dry calcareous cliffs of the Caucasus.

TANNING METHODS IN CHINA.

The following method is used to tan leather in China, according to a late consular report: The hide is put into a small pond and immersed in a thick mixture of alum and water. Fresh hides are taken out after two days, but if they had been dried under the sun they are kept in the pond for a number of days until soft and flexible.

The flexible hide is then placed on a broad bench and slowly but rather skilfully peeled by hand labor into thin sheets, which are expanded on bamboo sticks bent into bows. A number of sticks applied to one sheet keep it expanded like a drum. It is dried by a straw fire in an earthen stove with a conical cover having an opening at the top for the emission of smoke. This also gives the leather a yellowish color.

CANADIAN PEACHES IN GREAT BRITAIN.

The report of the Dominion agricultural department relative to an experimental shipment of peaches to Great Britain last autumn shows that they sold for $1.04 per case of 20 to 30 peaches. The costs to be deducted were inland and ocean freight from St. Catherines, Ontario, 13.6c. per case, and selling charges in Great Britain, including commission, 9.7c. per case, leaving a net price of 80.7c. per case f. o. b. St. Catherines. On these shipments this figured out 13c. per pound, or about 40c. per dozen to the shipper.

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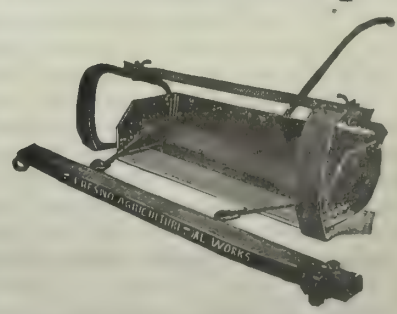
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FRESNO AGRICULTURAL WORKS

FRESNO CALIFORNIA.

THE CARE OF HORSES' LEGS.

Anything that will prevent mud fever, cracked heels, and, to a considerable extent, grease, is most opportune at this time of the year. Farm and Home, the leading English farm journal, has the following to say on this timely subject:

The acute form of erythema, popularly known as "mud fever," used to be attributed to some particular irritating property in the mud; but this idea is exploded, and it is now understood that the mud of the supposed blistering districts has no other peculiarity than its abundance and tenacity, which necessitate more and more frequent washing to get it off. Mud fever is due to washing the legs and leaving them wet, or failing to dry them properly, and experience such as "Constant Reader" possesses goes to show that this class of affection, together with the chronic erythema commonly witnessed in long-standing "cracked heels," and the eczematous eruption known as "grease," is prevented by not washing the mud off, but letting it dry on and afterward brushing it out.

WHY THE DRY SYSTEM IS USEFUL.—The explanation is simple. The coating of mud excludes the air and prevents the temperature of the skin being lowered. There is another reason why dry cleaning tends to prevent skin eruptions, particularly those referred to above, and this is intimately associated with the question of clipping the legs or trimming out the heels. We cannot here go into the evils associated with clipping the legs because it would land us into a dissertation on the disadvantages of "feather" and the drawback it is to the working horse and his working attendant, but washing is harmful because it is perfunctorily performed. If the skin of a hairy-legged horse is examined it will be found that the mud is mainly superficial and that the hair has acted as a percolator, retaining the dirt on its surface. If the legs are closely clipped, the short, stubbly, erect bristles permit direct contact between the dirt of the roads (which is not simply mud, but, in the towns especially, a conglomeration of filth) and the sensitive skin. Similar direct contact results from the perfunctory washing of unclipped legs. Sometimes, where there is one handy to the stable, as there generally is on the farm, the horses are driven into the pond, to wash themselves, or an inadequate quantity of water is employed in a bucket. This results in the dirt being washed into the skin instead of off the hair, and favors its irritation. With long hair it is impossible to dry the legs—at least, it is impossible for the the carter with a team of "feathered" horses and only a lad to assist him—and so they have to be left to dry, and the wind acting on the wet skin produces troubles. With a "feathered" champion in the care of one man—a first-class, conscientious groom, generally full of pride in his charge, who, after drying the legs with a soft rubber, hand-dubs them until the wet is all got rid of, and further proceeds to dry the part by rubbing in bran until it falls off the skin, showing that no moisture remains, and then wraps them in bandages—washing may be all very well, and particularly in the case of white legs; but it is quite impossible in the case of the working horse, even if the attendants had the inclination, which very few possess. "Constant Reader" tells us that his father was a coachman, and that even under most particular care—washing, drying, etc.—the horses almost always had mud fever annually. "Constant Reader," with a large number of horses under his charge, has, under the "dry system," never had mud fever. This dry system is very simple; it involves less labor than even perfunctory washing and attempts at drying, and may savor of negligent grooming, but it is best for the horse. It needs a small steel scraper and a set of Newmarket or flannel bandages, preferably two sets, so as to have one always dry, and, in the case of big cart horses, of double length; but we have seen both of these things improvised—the scraper out of a piece of hoop-iron and the bandages out of hay or straw bands—especially in days before the trusses were banded with strings of wire. A steel scraper, such as saddlers sell for the purpose, is not expensive, and after it has been used, always in the direction of the hair, to remove the wet and the bulk of the mud, the legs should be bandaged and left to dry while the attendant goes about other work and the horse is feeding. Horses vary in this respect very considerably, some with a defective circulation taking longer to dry than others. Horses coming in late at night are rarely quite dry until next morning, but this is found to be no drawback if the legs are bandaged as soon as the thick of the wet dirt has been scraped off. When the extremities are dry, the dandy-brush, curry-comp, and wisp will clean the skin, and in their use improve the circulation.

Horse Owners! Use

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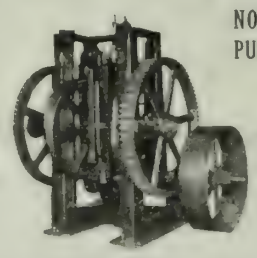
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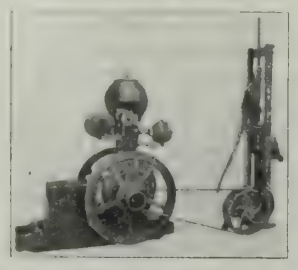
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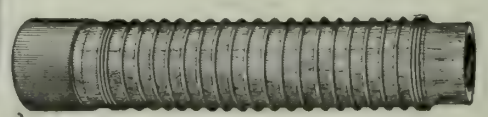
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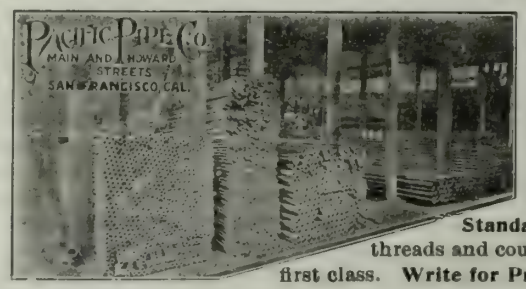
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The Poultry Yard.

FARM BREEDING STOCK.

Written for the PACIFIC RURAL PRESS
By M. RUSSELL JAMES

In farm poultry one serious mistake is usually made in gathering up the eggs for hatching, hit-or-miss. In the flush of the egg season every old scrub is making a spurt at egg production and when there is no attention paid in the selection of breeding stock, eggs from such an unprofitable source are largely used for hatching purposes.

Even if the farmer's stock is a mixed lot of mongrels, if they are vigorous and active birds and fairly good layers, he can grade them to highly satisfactory strains by selecting the pick of the flock and mating them to pure-bred males of the breed desired. An average price of $5 each will secure good pure-bred male stock for utility purposes from a well-established and reliable breeder. These will not be show birds, but they will have good shape and color and head points, and most important of all, such males must be young and vigorous. A ten-month cockerel or a cock that has just completed his first molt is the best age. No other males should be allowed to run on the farm. It is an ignorant and vulgar notion that a lot of male birds of all ages and conditions are a necessary part of the flock.

NO MALES REQUIRED EXCEPT IN THE BREEDING PENS.

The ordinary farm flock usually averages about 25 per cent roosters, and this surplus contingent is made of a nondescript lot ranging from young cockerels to scaly-legged veterans, all of which are alike in harrassing the hens and pullets, eating up the best of everything and depleting the poultry profits generally. Let it be understood that such birds are a detriment to egg production, to the market eggs and to the hens. It is both cruel to the hens and unprofitable to the business to keep them on the place, and we would advise our farm friends who have such stock on the farm to market the bunch now and use the money so obtained to purchase the necessary number of pure-bred birds for their breeding pens. Even these purchased males should not be kept longer than through the second breeding season, and it is safer to get fresh males each season, but always of the same breed and preferably of the same strain. Farmers and utility poultrymen are inclined to crossing breeds, and while there are certain points in favor of this method, first-class poultry products require pure-bred poultry.

PURE-BRED POULTRY THE MOST PROFITABLE ON THE FARM.

In the yearly net average price of the three grades of fresh eggs as given in last week's PACIFIC RURAL PRESS we noted that "seconds" averaged throughout the year 6 cents less per dozen than "firsts" and 10 cents less than "extras," also that the bulk of farm eggs come under the grade of "seconds." Mind, these three grades are fresh sound eggs, and the low grading of "seconds" is due to their being a mixed lot in size and color. Uniformity in size and color is necessary to secure top prices in the commercial egg market; it follows that uniformity in breed is necessary to obtain dependable uniformity in egg production. This calls for pure-bred fowls of one breed and to a certain extent of one strain. This uniformity is also an advantage in market poultry, and furthermore it adds to the beauty and value of the flock, thereby increasing the pride and pleasure of the poultry raiser and rendering a profit not down in the dollar schedule.

POOR BREEDING, NOT PURE BREEDING, CAUSES DETERIORATION.

Nature detests mix-ups and has made the race or breed instinct inherent to every creature. There is no crossing among the wild birds, and no deterioration. Even in well-established made-up breeds there is a constant tendency to "throw back," which if not watched and controlled would eventually end in mongrels. It takes many years of careful breeding before such breeds come any ways true to the desired type. Those who are handling some of the newer breeds at the present time have this difficulty to contend with in the sale of hatching eggs. The chicks come in off-colors and the purchasers brand the persons frauds to whom they have paid a high price for pure-bred stock.

The great cause of weakness in fancy fowls and one which has given the black eye to pure breeds in many cases is the confinement and pampering of the breeding stock. The poultryman whose mongrel stock ranges over hill and field in a state of nature and produce eggs which burst open like popcorn and turn out alert, all-alive chicks that are ready to take to the fields themselves in short order, naturally feels disgust for the "pure-bred stock" whose eggs run largely infertile or else the chicks stick to the shell, and many of those that do get out might better have stuck there.

BREEDING STOCK REQUIRE PRACTICALLY FREE RANGE.

The hen that jumps from her perch at the dawn eager for the bug-hunt as the huntsman for the chase, is full of vital life. Her blood flows like quicksilver through her veins and flames in clear red colors from her comb. It is not bugs and exercise alone which she gets, but interest. Who can say that her dreams have not been of the luscious cutworm she will find under the cabbage row in the dewy morning, the fierce but succulent potato bug hiding under the hedge row or of the joyful chase of the frisky grasshopper farther afield. The person who says that the hen is a mere machine doesn't know what he is talking about. She is as full of likes and dislikes and "nerves" as any other mother, and she must be made contented and happy if she is to produce normal vitalized offspring. Think of confining her in a stuffy coop or the corner of a dirty backyard where the most she can expect in the morning is a few musty grains in a musty pile of litter. Little wonder that her blood is thick and sluggish, her comb swollen and discolored and that there is no life or get-up in her or stamina in her chicks.

The intensive poultry culture craze of the past two or three years which has been brought about by shrewd and unscrupulous advertising will have much to answer for in deteriorated poultry, and we advise our readers to have none of it or of the stock raised under such conditions.

In the farm breeding stock the farmer has the advantage again over most other poultry raisers. He can make a few portable poultry houses and place them in a distant part of the orchard or meadow away from the general flock, where his mated pens may range happy and undisturbed and produce the hatching eggs that hatch and the chicks that live and grow and add to the profit of the poultry account.

Question Department.

CHICKEN POX. "Subscriber" in Fresno county writes: "Will you kindly answer the following questions through the RURAL PRESS? I have some turkeys with

sore heads. The sores start in little yellow patches around the corners of the mouth, and seem to spread from this point all over the head causing swelling which closes the eyes in some cases; also spreads inside of mouth and throat. What is the cause? What should be the treatment? What is the preventative?"

Our subscriber's turkeys have chicken pox, locally termed "sore-head." Chicken pox is a highly contagious disease and requires immediate treatment. In all such cases if our inquirers will inclose a stamped and directed envelope we will answer at once by mail.

This disease was formerly confined mostly to the Southern States and other hot localities, but it has spread over the Eastern States and to the Pacific Coast, where it is becoming quite common. It is caused by a parasite of a fungus nature and naturally delights in hot damp climates and filthy surroundings; still when chicken pox breaks out in the cold of a northern winter it is more deadly and difficult to handle than during the summer. It is so very contagious that one scab from a healed sore if moistened is sufficient to cause an epidemic in a whole flock of fowls of either chickens or turkeys. Consequently great care is necessary in disinfecting the quarters, removing the droppings and sprinkling air-slaked lime over the yards and under the perches, as well as in removing all affected fowls from the flock.

In the turkey State of Texas the natives say that the disease is caused by an insect similar to the jigger (chigoe), and they use salt as a remedy, either as a strong brine applied to the sores or as a salve by powdering the salt and mixing with lard. If taken in time this treat ment is always effective.

In the East the following treatment has proved effective in an epidemic of chicken pox: For every 25 hens mix a teaspoonful of calcium-suplhide powder with a pint of middlings and then add a quart of shorts or bran and moisten with sweet milk. Spread this mash out on clean boards where all may get at it readily and eat it up quickly. Apply strong brine to the sores.

One of the successful Petaluma poultrymen had an outbreak of chicken pox among his large flock several years ago, caused by contagion. The treatment which proved effective with large numbers follows: A spoonful of carbolic acid was added to the sulphur for a smudge which was lighted and placed in each poultry house after the fowls had gone to roost. As soon as the fowls began to sneeze the smudge was removed. The sores were treated by applying permanganate of potash.

In all cases where the sores or pox have become encrusted or hard they need to be softened with a little suds or by removing the top of the crust before applying the germ-killer, which latter may be either strong brine, permanganate of potash, peroxide of hydrogen or carbolated salve. It is well to give at the same time, if no other internal remedy is used, one teaspoonful each of powdered charcoal and sulphur to every pint of meal or shorts used in making an appetizing mash.

Poultry Notes.

Facts.—The farmer will never be much of a factor in the first-class poultry and egg market until he wakes up to the necessity of breeding pure-bred poultry. Some are beginning to realize this, but the vast majority still stick to the old fogy idea that a hen is a hen because she cackles and a rooster is a rooster because he crows. If this is true of poultry why isn't it true about grains? Would you think of planting poor, common corn in stead of good seed corn, and expect a good harvest? We think not. Then why should you expect common scrub poultry to yield you as much as good pure-bred stock.—Ex.

Pound Foolish and Penny Wise.—We still find people with good sense in other matters skimping the rations of their hens to economize. If these economists would consider that a few dozen of the eggs they might have secured by full rations would more than offset the extra cost of feed and still leave many dozen of profit, they might be doubtful of their economy. This is especially true during the winter season when the least shortage or change in the food supply will check egg production. It is not good to stuff the fowls the first thing in the morning; rather their food supply should be so arranged that they may eat little and often, and their activity and appetite be whetted during the day. In the evening they should be given an abundance of wholesome grains and fresh green food, so that they may go to roost with a full crop and still leave some to be eaten the first thing in the morning. It is the hen that goes to roost with a full crop that is the egg-producer always. The experienced poultryman needs no "systems" to tell the layers; he can pick them out in the dark simply by passing his hand along the perches after the hens have gone to roost. The full crops belong to the layers. The following points by an experienced poultry raiser are well put:

The old saying that the too fat hen will not lay is true. The converse that a poor hen will not lay is equally true. The hen that is in the best laying condition must have some surplus fat on her body. The poultrymen who are liberal feeders (provided they feed with some certainty of judgment) usually have hens that are good producers of eggs. Those who starve their hens or are stingy of their feed will seldom get eggs unless a few of the flock are strong fighters for supremacy at feeding time and get more than their share of the feed. A hen that has some surplus fat on her body has had her wants supplied and there has been some food to spare. She has some surplus energy. A poor hen has no surplus energy and she cannot manufacture eggs. It is all she can do to live and keep warm. The first part of the egg to be formed is the yolk, which contains 34 per cent of albumen (which is a form of the proteids) and 64 per cent of fat. The same as other animals the hen takes food into her body to maintain it. Growth of the body and production of eggs must come from the surplus after the bodily wants have been supplied Therefore no eggs will be formed until there is a surplus of fat to form the yolk.

Turkey Is King in November and December.—In every butcher shop from Maine to Oregon and from Canada to Mexico, the grand American bird holds undisputed sway. During the holiday rush, or preceding it, 678,000 turkeys valued at $1,356,000, are received in Chicago, according to the estimates made by prominent poultry dealers. The bulk of the business is so great that exact figures are impossible, but an idea of its magnitude may be secured when it is stated in the words of the largest buyer: "The cars required to contain the turkeys shipped to Chicago for Thanksgiving, Christmas and New Years would make a train seven miles long." The great Thanksgiving rush begins the Monday before Thanksgiving, but preparations are made for it for weeks, the birds being killed as fast as received, the surplus after the daily sales going into the coolers. One hundred and sixty men were engaged last year in dressing turkeys alone, several large establishments being in the business of killing and dressing poultry for other dealers. These are known as poultry slaughter houses. More than 500 turkeys are dressed during the rush season for each of the large commission houses.

Improvement among the poultry can be more readily secured if but one breed is kept rather than a large number of breeds.

POULTRY.

SULLIVANS' BUFF ORPINGTONS—1000 birds to select from. Trios, $7.50 and up. Eggs for hatching, $2 and $3. Special selection. Prices on application. Mr. and Mrs. W. S. SULLIVAN, 25 Market St., Agnew, Santa Clara Co., Cal.

PIONEER POULTRY YARDS—Standard bred Light and Dark Brahmas, Buff Cochins, R. I. Reds, Houdans, Black Minorcas, Cornish Fowls, Brown Leghorns, Bronze turkeys, peacocks, guineas and Rouen ducks. Address W. A. FRENCH, 545 W. Park St., Stockton, Cal.

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PUBLISHERS

667 Howard St., San Francisco, Cal.

The Home Circle.

Things to Forget.

If you see a tall fellow ahead of a crowd,
A leader of men, marching fearless and proud,
And you know of a tale whose mere telling aloud
Would cause his proud head to in anguish be bowed,
It's a pretty good plan to forget it.

If you know of a skeleton hidden away
In a closet and guarded and kept from the day
In the dark, and whose showing, whose sudden display,
Would cause grief and sorrow and lifelong dismay,
It's a pretty good plan to forget it.

If you know of a thing that will darken the joy
Of a man or a woman, a girl or a boy,
That will wipe out a smile or the least way annoy
A fellow, or cause any gladness to cloy,
It's a pretty good plan to forget it.

—Selected.

Aunt Anniky's Teeth.

Aunt Anniky was an African dame 50 years old and of an imposing appearance. As a waffle-maker she possessed a gift beyond the common, but her unapproachable talent lay in the province of nursing. She seemed born for the benefit of sick people. She should have been painted with the apple of healing in her hand. For the rest, she was a funny, illiterate old darkey, vain, affable, and neat as a pink.

On one occasion my mother had a dangerous illness. Aunt Anniky nursed her through it, giving herself no rest night nor day until her patient had come "back to de walks an' ways ob life," as she expressed the dear mother's recovery. My father, overjoyed and grateful, felt that he owed its result quite as much to Aunt Anniky as to our family doctor, so he announced his intention of making her a handsome present, and, like King Herod, left her free to choose what it should be. I shall never forget how Aunt Anniky looked as she stood there smiling and bowing, and bobbing the funniest little courtesies all the way down to the ground.

And you will never guess what it was the old woman asked for.

"Well, Mars' Charles," said she (she had been one of our servants and always called my father Mars' Charles), "to tell you de livin' trufe, my soul an' body is a-yearnin' fur a han'sum chany set o' teef."

"A set of teeth?" cried father, surprised enough; "and have you none left of your own?"

"I has gummed it fur a good many ye'rs," said Aunt Anniky, with a sigh; "but not wishin' ter be ongrateful ter my obligations, I owns ter havin' five nateral teef. But dey is po' sogers; dey shirks battle. One ob dem's got a little somethin' in it as lively as a speared worm, an' I tell you when anything teches it, hot or cold, it jest make me dance! An' anudder is in my top jaw, an' ain't got no match fur it in de bottom one; an' one is broke off nearly to de root; an' de las' two is so yaller dat I's ashamed ter show 'em in company, an' so I lif's my turkey-tail ter my mouf every time I laughs or speaks."

"Well," said my father, "I am going to the village tomorrow, Anniky, in the spring-wagon. I will take you with me, and we will see what the dentist can do for you."

"Bless yo' heart, Mars' Charles!" said the delighted Anniky; "you're jest as good as yo' blood an' yo' name, an' mo' I couldn't say."

The morrow came, and with it Aunt Anniky, gorgeously arrayed in a flaming red calico, a bandanna handkerchief, and a string of carved yellow beads that glistened on her bosom like fresh buttercups on a hillside.

I had petitioned to go with the party, for, as we lived on a plantation, a visit to the village was something of an event.

A brisk drive soon brought us to the center of the "Square." A glittering sign hung brazenly from a high window on its western side, bearing in raised black letters the name of Dr. Alonzo Babb.

Doctor Babb was the dentist and the odd fish of our village. He beams on my memory as a big, round man, with hair and smiles all over his face, who talked incessantly, and said things to make your blood run cold.

He motioned Aunt Anniky to a chair, into which she dropped in a limp sort of way, recovering herself immediately, however, and sitting bolt upright in a rigid attitude of defiance. Some moments of persuasion were necessary before she could be induced to lean back and allow Dr. Babb's fingers on her nose while she breathed the laughing gas; but once settled, the expression faded from her countenance almost as quickly as a magic-lantern picture vanishes, and in an incredibly short space of time her five teeth were out. As she came to herself, I am sorry to say, she was rather silly, and quite mortified me by winking at Dr. Babb in the most confidential manner and repeating over and over again, "Honey, yer ain't harf as smart as yo' thinks yo' is!"

After a few weeks of sore gums, Aunt Anniky appeared radiant with her new teeth. The effect was certainly funny. In the first place, blackness itself was not as black as Aunt Anniky. She looked as if she had been dipped in ink and polished off with lampblack. Her eyes showed but the faintest rim of white. But those teeth were white enough to make up for everything. She had selected them herself, and the little, ridiculous, milk-white things were more fitted for the mouth of a Titania than for the great cavern in which Aunt Anniky's tongue moved and had its being. The gums above them were black, and when she spread her wide mouth in a laugh, it always reminded me of a piano lid opening suddenly and showing all the black and white ivories at a glance. Aunt Anniky laughed a good deal, too, after getting her teeth in, and declared she had never been so happy in her life. It was observed, to her credit, that she put on no airs of pride, but was as sociable as ever, and made nothing of taking out her teeth and handing them around for inspection among her curious and admiring visitors. But finally destruction came upon them in a way that no one could have foreseen.

Uncle Ned was an old colored man who lived alone in a cabin not very far from Aunt Anniky's, but very different from her in point of cleanliness and order. In fact, Uncle Ned's wealth, apart from a little corn crop, consisted in a lot of fine young pigs that ran in and out of the house at all times, and were treated by their owner as tenderly as if they had been his children. One fine day the old man fell sick of a fever, and he sent in haste for Aunt Anniky to come and nurse him. He agreed to give her a pig in case she brought him through; should she fail to do so, she was to receive no pay. Uncle Ned got well, and the next thing we heard was that he refused to pay the pig. My father was usually called upon to settle all the disputes in the neighborhood; so one morning Anniky and Ned appeared before him, both looking very indignant.

"I'd jes' like ter tell yer, Mars' Charles," began Uncle Ned, "ov de trick dis miser'ble ol' nigger played on me."

"Go on, Ned," said my father, with a resigned air.

"Well, it war de fift' night o' de fever, said Uncle Ned, "an' I wuz a-tossin' an' a-moanin', an' old Anniky jes' lay back in her chair an' snored as ef a dozen frogs wuz in her throat. I wuz a-perishin' an' a-burnin' wid thirst—an' I hollered to Anniky; but lor! I might as well a-hollered to a tombstone. It wuz ice I wanted, an' I knowed dar wuz a glass somewhar on my table wid cracked ice in it. Lor! lor! how dry I wuz! I neber longed fur whisky in my born days ez I panted fur dat ice. It was pow'ful dark, fur de grease wuz low in de lamp, an' de wick spluttered wid a dyin' flame. But I felt aroun', feeble-like an' slow, till my fingers touched a glass. I pulled it to me, an' I run my han' in an' grabben de ice, as I s'posed, an' flung it in my mouf, an' crunched an' crunched—"

Here there was an awful pause. Uncle Ned pointed his thumb at Anniky, and said, in a hollow voice: "It wuz Anniky's teef."

My father threw back his head and laughed as I had never heard him laugh. Mother from her sofa joined in. I was doubled up like a jackknife in the corner. But for the principals in the affair, neither of them moved a muscle. They saw no joke. Aunt Anniky, in a dreadful, muffled, squeaky sort of voice, took up the tale:

"Nexst ting I knowed, Marsh Sharles, somebody's sheizin' me by the haid, a-jammin' it up 'gin de wall, a-jawin' at me like de angel Gabriel at de rish ol' sinners in de bad plashe—an' dar wash old Ned a-spittin' like a black cat an' a-howlin' so dreadful dat I tought he wash de debil; an' when I got de light, dar wash my beautiful chany teef a-flung aroun' like scattered seed corn on de flo', an' Ned a-swarin' he'd have de law on me."

"An' arter all dat," broke in Uncle Ned, "she purtends to lay a claim fur my pig. But I says no, sir; I don't pay nobody nothin' who's played me a trick like dat."

"Trick!" said Aunt Anniky, scornfully; "whar's de trick? Tink I wanted yo' ter eat my teef? An' furdermo', Marsh Sharles, dar's jes' dis 'bout it. When dat night set in, dar warn't no mo' hope fur old Ned dan fur a foundered sheep. Laws-a-mussy! dat's why I went ter sleep. I wanted ter hev strengt' ter put on his burial clo'es in de mornin'. But don't yer see, Marsh Sharles, dat when he got so mad, it brought on a sweat dat broke de fever! It saved him! But fur all dat, arter munchin' an' manglin' my chany teef, he has de imperdence of tryin' ter 'prive me of de pig dat I honestly 'arned."

It was a hard case. Uncle Ned sat there a very image of injured dignity, while Aunt Anniky bound a red handkerchief around her mouth and fanned herself with her turkey-tail.

"I am sure I don't know how to settle the matter," said father, helplessly. "Ned, I don't see but that you'll have to pay up."

"Neber, Mars' Charles—neber."

"Well, suppose you get married," suggested father, brilliantly; "that will unite your interests, you know."

Aunt Anniky tossed her head. Uncle Ned was old, wizened, wrinkled as a raisin, but he eyed Anniky over with a supercilious gaze and said, with dignity, "Ef I wanted ter marry, I could get a likely young gal."

All the four points of Anniky's turban shook with indignation. "Pay me fur dem chany teef!" she hissed.

Some visitors interrupted the dispute at this time and the two old darkies went away.

A week later Uncle Ned appeared, with a rather sheepish look.

"Well, Mars' Charles," he said, "I's 'bout concluded dat I'll marry Anniky."

"Ah! is that so?"

"'Pears like it's de onliest way I kin save my pigs," said Uncle Ned, with a sigh. "When she's married she's boun' ter 'bey me. Women, 'bey yo' husban's; dat's what the good Book says."

"Yes, she will bay you, I don't doubt," said my father, making a pun that Uncle Ned could not appreciate.

"An' ef she ever opens her jaw ter me 'bout dem ar teef," he went on, "I'll mash her."

Uncle Ned tottered on his legs like an unscrewed fruit-stand, and I had my opinions as to his "mashing" Aunt Anniky. This opinion was confirmed the next day when my father offered her his congratulations. "You are old enough to know your own mind," he remarked.

"I's ole, maybe," said Anniky, "but so is a oak tree, an' it's wigorous, I reckon. I's a purty wigorous sort o' growth myself, an' I reckon I'll have my own way wid Ned. I'm gwine ter fatten dem pigs of his'n, an' you see ef I don't sell 'em nex' Christmas fur money 'nough ter git a new string o' chany teef."

"Look here, Anniky," said father, with a burst of generosity, "you and Ned will quarrel about those teeth till the day of doom; so I will make you a wedding present of another set, that you may begin married life in harmony."

Aunt Anniky expressed her gratitude. "An' dis time," she said, with sudden fury, "I sleeps wid 'em in."

The teeth were presented and the wedding preparations began. The expectant bride went over to Ned's cabin and gave it such a cleaning up as it never had. But Ned did not seem happy. He devoted himself entirely to his pigs and wandered about, looking more wizened every day. Finally he came to our gate and beckoned to me mysteriously.

"Come over ter my house, honey," he whispered, "an' bring a pen an' ink an' a piece o' paper wid yer. I wants yer ter write me a letter."

I ran into the house for my little writing desk and followed Uncle Ned to his cabin.

"Now, honey," he said, after barring the door carefully, "don't you ax me no questions, but jes' put down de words dat comes out o' my mouf on dat ar paper."

"Very well, Uncle Ned; go on."

"Anniky Hobbleston," he began, "dat weddin' ain't a-gwine ter come off. You cleans up too much ter suit me. I ain't used ter so much water splashin' aroun'. Dirt is warmin'. Spec' I'd freeze dis winter if you wuz here. An' you got too much tongue. Besides, I's got anudder wife over in Tipper. An' I ain't a-gwine ter marry. As fur de law, I's a-leavin' dese parts, an' I takes de pigs wid me. Yer can't fin' dem, an' yer can't fin' me. Fur I ain't a-gwine ter marry. I wuz born a bachelor, an' a bachelor will represent myself befo' de judgment seat. If you gives yer promise to say no mo' 'bout dis marryin' business, p'raps I'll come back some day. So no mo' at present from your humble worshipper,

"Ned Cuddy."

"Isn't that last part rather inconsistent?" said I, greatly amused.

"Yes, honey, if yer says so; an' it's kind o' soothin' to de feelin's of a woman, yer know."

I wrote it all down and read it to Uncle Ned.

"Now, my chile," he said, "I'm a-gwine ter git on my mule soon as de moon rises ter-night, an' drive my pigs ter Col'water

Gap, whar I'll stay an' fish. Soon as I'm well gone, you take dis letter to Anniky, but min' don't tell her whar I's gone. An' if she take it all right, an' promises ter let me alone, you write me a letter, an' I'll get de fust Methodis' preacher I run across in de woods ter read it ter me. Den, ef it's all right, I'll come back an' weed yer flower gyardin' fur yer as purty as preachin'."

I agreed to do all Uncle Ned asked, and we parted like conspirators. Sure enough, next morning Uncle Ned was missing, and after waiting a reasonable time, explained the matter to my parents, and went over with his letter to Aunt Anniky.

"Powers above!" was her only comment as I got through the remarkable epistle. Then, after a pause to collect her thoughts, she seized me by the shoulder, saying: "Run to yo' pappy, honey, quick, an' ax him if he's gwine ter stick to his bargain 'bout de teef. Yer know he p'intedly said dey wuz a weddin' gif'."

Of course my father sent word that she must keep the teeth, and my mother added a message of sympathy, with a present of a pocket handkerchief to dry Aunt Anniky's tears.

But, "It's all right," said that sensible old soul, opening her piano-lid with a cheerful laugh. "Bless you, chile, it wuz de teef I wanted, not de man! An', honey, you jes' sen' word to dat shif'less ol' nigger, ef you know what he's gone, to come back home an' git his crap in de groun'; an' as fur as I'm consarned, you jes' let him know dat I wouldn't pick him up with a ten-foot pole, not ef he wuz ter beg me on his knees till de millennial day."

Reviewing Our Methods.

Do you try never to have an unpleasant subject discussed at table?

Do you endeavor to serve a funny story with the evening meal?

Have you noticed that a good smart talk straight from the shoulder once in a while accomplishes more reform than an every-day nagging for a month?

Do you think it is fair to make your husband feel that he is doing wrong in bringing home the chance guest unexpectedly, even if it does inconvenience you?

Is it not best to drop past delinquencies when asking for present assistance?

Can you see the good qualities of your family as plainly as the bad?

Do you own yourself in the wrong when convinced of it?

Have you sufficient strength of character to let petty grievances drop into the past?

Have you ever really considered the sweetness and significance of the old saying that "the home of a husband is in the heart of his wife?"

—Alice M. Ashton.

The Pessimist.

A certain country minister was one day visiting some of his church members, among whom was a gossiping old woman who was always complaining of something. No sooner had he sat down than she began with her grumbling.

"But," said the minister, "I don't see what you are always grumbling at. For instance, your potatoes are the best I have seen in the village."

"Ah," replied the woman, "but where's the bad ones for the pigs?"—Tit-Bits.

Ungenerous Parent.

Ethel—Rhoda's father is so stingy; even at her wedding he insisted that everything be cheap.

Ella—I heard that he went so far as to find fault because the ceremony was performed at high noon.—Chicago News.

Your Boy's Friend.

The boy and girl of 16 and 18 are the most difficult things in the world to entertain. Don't try to give a party for your boy's friends of that age in the correct manner; don't ask them to come to a party at night in their best bibs and tuckers. They will take to the wall and stare at each other and dismally eat the ice-cream you have made for them, and go home, after a perfectly miserable time.

Give your boy and his friends a candy pull, or a popcorn bee; or invite them to a picnic in the barn; or, invent an excuse for getting a few of them together informally, and then surprise them with some of the good things that mothers know how to make.

Just the very idea of solemnly going to a real "sure 'nough" party is enough to make your boy and his boy friends utterly miserable. The girls will get along better, because their instincts for such things are always more assured and keen, but even their tact will not put the half-grown boy at his ease, when attired in his Sunday clothes.

The very girls with whom those boys slide down cellar-doors and whose braids they pull and whose names they will willingly shout from one end of the village street to the other, will fill those young gentlemen with awe and distrust when arrayed in frills and guarded with a fan.

The boy will learn social grace soon enough. The first girl with whom he flirts (oh, yes, he will flirt—didn't you do it yourself when you weren't knee-high to a grasshopper?) will teach him more of social things than all the parties in the world, so let im play, in boy and girl fashion, just as long as he will.

No boy can be unhappy or constrained if he is out of doors, so your task is to amuse and feast him there.

Don't tease him about little Susie, whom he chose rather often in "follow your leader." The other boys will do that, and he will take it as the natural brutality of man to man and not be disturbed, but from you he irrationally expects blindness as to his partiality.

Your boy's friends are tremendously important elements in his career, and in the moulding of his character. It is for you to understand them and use them wisely.—Selected.

Household Hints.

Lemon is often effective in case of dandruff and will often remove warts and corns if applied daily.

Fortunately, simpler styles of hairdressing are now in vogue.

The guimpe of plain sheer tulle or net is more frequently used than that of tucks.

Of course you never starch table linen; iron it when very damp.

Small close patterns of table linen wear better and are more easily darned and mended, and when the cloth finally grows thin, may be made over into other articles, which cannot always be done with the large patterns.

When children are courteous or rude, the glory or shame reflects upon the home.

Rapid growth reduces physical and nervous strength and renders tall children often irritable and oversensitive.

When you feel the first signs of a cold, try deep breathing. Take deep breaths, hold them, then expel suddenly. Repeat at least 20 times, though 40 is better, as the more oxygen one gets into the blood the more animal heat there is in the body.

Hands and nails are kept soft and white by the daily use of a lemon instead of soap. It is said it prevents chilblains and neuralgia by rubbing the part afflicted with a cut lemon.

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AGRICULTURAL REVIEW.

CITRUS NOTES.

It has been decided that the Cloverdale Citrus Fair will open on Tuesday, February 21, and continue the rest of the week. Sonoma, Napa, Marin, Lake, and Mendocino counties are to have days. Excursions will be run from all points in California and a large attendance is expected.

W. E. Porter, who owns a 19-acre orange grove near Lindsay, received $10,000 net from his fruit this year. He sold 7000 boxes from this acreage, which was planted in 1895. This is a much larger sum than is usually made from orange groves in that locality, as $200 per acre, net, is considered the average.

A. P. Vosburg recently purchased the E. E. Graham orange grove near Porterville. The grove consists of 38 acres of oranges, lemons, and grapefruit trees. The price was $2000 per acre.

Lindsay had a very profitable orange season. It is estimated that $739,840 was paid to the orange growers of this district from January 1, 1910, to January 1, 1911. In all, 53 carloads of seedlings, 128 carloads of valencias, and 1141 carloads of navels were shipped out during this last year. Valencias averaged $2 net, while the navels averaged $1.35.

Parr & Shippey, of Zante, Tulare county, made $4100 from 1700 lemon trees so far this season. Parr & Shippey have 40 acres of lemons, set 50 trees to the acre, which net $100 to the acre, and the trees are only three years old. The average price paid for lemons was $3 per box. Some of the trees yielded three boxes each.

Ground is being plowed near League City, Texas, for a 1000-acre orange orchard. One hundred Satsuma trees will be planted to the acre, making a total of 100,000 trees. The soil is being treated especially before these trees are planted. Special plowing and cross-plowing is being indulged in.

Reports from Sicily are to the effect that the lemon crop will be about as large as it was last season. There will be some 3,000,000 boxes of fresh fruit, 700 tons of lemon oil, and 6200 tons of citrate of lime. The average price that was being paid for Sicilian lemons was $1.93 per box.

A. G. Schulz, Horticultural Commissioner of Tulare county, has been authorized by State Horticultural Commissioner Jeffrey to receive and disinfect all shipments of citrus trees or seeds sent from Florida or Louisiana in that section.

The exportation of oranges from the State of Sonora, Mexico, to Canada has received a serious setback by the refusal of buyers to accept shipments, on the ground that the fruit is infected. One grower was recently notified that 20 cars of oranges that he had shipped to a commission house in Canada were rejected because of the plague with which they were infected. The Mexican Government has been appealed to to give its aid in stamping out the disease. Up to the recent refusal of the fruit on the part of Canadian dealers, the Sonora orange growers had strenuously denied that their oranges were infected, claiming that the charge was made by California growers to shut out competition.

FOREIGN FRUIT NOTES.

Four hundred boxes of Comice pears, grown near Medford, Oregon, sold in the London market this season for $10 per box.

On account of the improved steamship service with Porto Rico, the importation of American fruit is increasing. During the past season shipments of pears, peaches, plums, cherries, and California grapes reached Porto Rico every week, causing consumers of fruit to lose the interest they formerly displayed in Spanish grapes.

Rogue river orchardists will plant 1,500,000 pear and apple trees this season. This new planting will cover 20,000 acres and bring the total orchard acreage in that valley to 85,000.

The Hawaiian honey industry, which is comparatively new, is steadily growing. It now represents an investment of $200,000, and yields annually about $70,000 worth of honey.

The area in pineapples around Honolulu is now about 5500 acres, and the sales of canned fruit in the United States have been extended, the pack being now nearly 500,000 cases annually.

THE COTTON CROP.

Up to date, the gins of the Imperial Valley Oil & Cotton Co. have turned out more than 3300 bales of cotton, and it is safe to say that from 3500 to 4000 bales in the aggregate have been harvested. All of half the crop has been picked, possibly more, and experts estimate that the total product will not exceed 7000 bales. A part of the crop will be lost to growers through the expiration of land leases at the end of the year and before completion of second picking. Many growers are using leased land, and this year's experience has shown the expediency of early planting in such cases, as the late cotton does not open in time to be harvested before January.

FOREIGN NOTES.

The Australian wheat harvest for the season of 1909-10 has beaten any of its previous records. This crop amounts to about 7,000,000 acres or about 750,000 more than any previous year. The estimate of the yield is 86,000,00 bushels.

The late, cold spring has caused a severe loss to the fruit growers of Nova Scotia. Instead of shipping out 700,000 barrels of apples, as was their custom, they only shipped some 235,000. Also, the blueberry crop was half short. This is a severe loss to the farmers of this district, as they depended solely upon their fruit.

The Russian hay crop this year is

(*Continued on Page 23.*)

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THE MARKETS.

San Francisco, Jan. 4, 1911.
(Unless otherwise noted, quotations rep present prices paid to the growers.)

Cereals.

WHEAT.

This market has been fluctuating considerably, but the general trend is upward, although actual quotations show no change. On account of the dry year, there has been considerable buying of wheat on speculation.

California Club	$1.47	@1.52½
Sonora	1.62½	@1.70
White Australian	1.55	@1.62½
Northern Club	1.47½	@1.52½
Northern Bluestem	1.55	@1.60
Russian Red	1.47½	@1.50

BARLEY.

Barley is on the upward grade, but the strength shown is due to the weather conditions. On account of the dry year, the market gets stronger each day the rain holds off. Unless rain comes within the next few weeks, barley will mount a good many points above the present quotations.

Brewing and Shipping	1.14	@1.17
Choice Feed, per ctl	1.08	@1.11
Common Feed	1.00	@1.04

OATS.

This market is also showing more firmness on account of the scarcity of rain. The demand for red feed is very good and large quantities of this commodity are being bought up.

Red Feed	$1.15	@1.30
Red Seed	1.32½	@1.40
Gray	Nominal	
White	1.45	@1.57½
Black	1.37½	@1.42½

CORN.

On account of the heavy production of corn in the East, prices are not very strong, and in fact they have a downward tendency. More corn is being brought into San Francisco at the present time than ever in the history of the industry. This has had the tendency to make the market much easier than it otherwise would be.

Eastern Yellow	$1.30	@1.35
Eastern White	1.31	@1.36
Egyptian White	1.40	@1.50
Brown	1.35	@1.42½

RYE.

As usual, this market is dull.

Rye, per ctl	$1.55	@1.60

BEANS.

Beans are showing a great deal of strength after the lull just prior to the holidays, especially black-eyes and limas. This latter bean is showing strength and predictions are that it will go up several points from now on. Bayos have fallen off, due to the heavy importation of Manchurian beans in this market. Several hundred tons of these Oriental beans are being brought in by every steamer, and they are selling for a dollar or so lower than the California product.

Bayos, per ctl		$4.75
Blackeyes	$5.25	@5.50
Cranberry Beans	3.75	@4.00
Garvanzos	2.50	@2.65
Horse Beans		2.00
Small Whites		3.00
Large Whites	2.75	@3.00
Limas		4.75
Pea	3.25	@3.50
Pink		5.00
Red Kidneys		5.00

SEEDS.

This department shows no change. Alfalfa seed is still in good demand.

Alfalfa	18@	20c
Broomcorn Seed, per ton	$20.00@	25.00
Brown Mustard, per lb		4¾c
Canary	3½@	3¾c
Flaxseed	5 @	5½c
Hemp	3 @	3½c
Millett		3 c
Timothy		9 c
Yellow Mustard		5¼c
Dried Peas, per ctl	3.75@	4.00

FLOUR.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.20	@4.60
Oregon and Washington	4.60	@4.80

Hay and Feedstuffs.

HAY.

The arrivals of hay in San Francisco are very light, due to the firmness with which it is being held in the country points. Hay raisers prefer to take chances on the prices getting better rather than send it into San Francisco where the market is very dull. In the country points hay is being used to take the place of the green feed which usually shows up at this time. Many of the country merchants are buying up large quantities of hay on speculation and hope to reap quite a harvest. Alfalfa is firm, there being a greater movement than at any time in the past. The dairymen in the Northern States are calling for California alfalfa, and as a result almost every boat takes up a lot of alfalfa hay. Also the local dairymen who have no supplies of alfalfa on hand are coming into the market.

Choice Wheat	$12.00@	14.00
Good Wheat Hay	9.50@	12.50
Other Grade Wheat	7.50@	9.50
Wheat and Oats	7.50@	11.50
Tame Oats	7.00@	11.50
Wild Oats	7.00@	9.00
Alfalfa	7.00@	13.00
Stock Hay	5.00@	6.50
Straw, per bale	35@	50c

FEEDSTUFFS.

There are two important changes in this department. Cocoanut meal, which is becoming one of the foremost dairy feeds in the State, has been reduced to $25 per ton. The other change is in rolled barley, which has gone up $2, due to the high price of the raw product.

Alfalfa Meal, per ton	$18.00@	20.00
Bran, per ton	29.00@	30.00
Cocoanut Cake or Meal		25.00
Cracked Corn	35.00@	36.00
Middlings	34.00@	36.50
Mixed Feeds	28.00@	31.00
Rolled Barley	24.00@	25.00
Rolled Oats	29.00@	31.00
Manhattan Egg Food, per ctl		15c
Shorts	30.00@	31.00

Garden Truck.

VEGETABLES.

The vegetable market is very dull, as most of the products are frost-bitten and show lack of sunshine. The strongest articles in this department are string beans, eggplant, and summer squash.

Onions: New Yellow, sack	$ 1.30@	1.50
Garlic, per lb	4@	6c
Green Peas, per lb	4@	8c
Turnips, per sack	65@	75c
Tomatoes, per crate	1.00@	1.25
Egg Plant, per lb	7@	10c
Cucumbers, per doz	80@	1.00
Summer Squash, per box	1.00@	1.50
String Beans, per lb	15@	20c
Cabbage	60@	80c
Green Peppers, per lb	5@	7c
Carrots	65@	75c
Celery, per crate	1.50@	2.00
Rhubarb, per box	75@	1.00
Mushrooms, per box	25@	1.00
Cauliflower, per doz	40@	50c

POTATOES.

Most of the potatoes are held very firmly in the hands of the speculators, so that the growers are not reaping much benefit from the present high prices. It is predicted that potatoes will be selling for $3 per sack within the next month. Sweet potatoes are also showing considerable strength and have gone up several points since our last quotations.

Salinas Burbanks, per ctl	$ 1.75@	1.90
River Whites, per ctl	1.25@	1.50
Sweet Potatoes, per ctl	3.00@	3.25
Oregon Burbanks	1.60@	1.75

Dairy Produce.

POULTRY.

The arrivals of Eastern stock still continue heavy, and they are meeting a fairly good market. The supplies of local poultry coming in are not very large. There are practically no turkeys coming into the market.

Large Broilers	$ 4.50@	5.00
Small Broilers	3.00@	4.00
Fryers	5.00@	6.00
Hens, extra	8.00@	10.00
Hens, large	6.00@	7.00
Small Hens	5.00@	5.50
Old Roosters	4.50@	5.00
Young Roosters	5.50@	6.50
Young Roosters, full grown	7.50@	8.50
Pigeons	1.75@	2.00
Squabs	3.00@	3.50
Geese, per pair	2.50@	3.00
Ducks	6.00@	10.00
Turkeys, per lb., live	19@	21c

BUTTER.

Butter has dropped down 4c. since our last quotations, and the tendency does not look very bright for any raise in price in the near future. On January 6 a large consignment of New Zealand butter is expected to arrive in the San Francisco harbor. In the previous shipments this butter was thrown out of the market on account of the boracic acid used in preserving it. It is said that this new shipment has been put up especially to meet the pure-food requirements, and its effect on the butter market will be watched with interest.

California (extra), per lb	31 c
Firsts	30 c
Seconds	27 c

EGGS.

The production of eggs is increasing every day and reports from the poultry centers are to the effect that the eggs are of much better quality than they have been for some time.

California (extras), per doz	35 c
Firsts	34 c
Seconds	33 c
Storage (extras)	30½c

CHEESE.

Cheese is very scarce at the present time and the price has gone up in consequence. Several large shipments have gone out to Southern points where a new market is being created.

Fancy California Flats, per lb	18 c
Firsts	14 c
New Young Americas, fancy	17 c

Deciduous Fruits.

FRESH FRUITS.

The last of the strawberries have come in, but they are of such poor quality that they had to be cut in price in order to get rid of them. Apples are showing much more strength than when last reported. There have been several large consignments of Oregon apples received at San Francisco and they met a greedy market.

Grapes—		
Large boxes	$ 75@	1.25
Small	65@	1.00
Apples, per box—		
Newtown	1.00@	1.15
Other varieties	35@	60c
Fancy Red, 4-tier	90@	1.25
Bellefleur	1.00@	1.25
Strawberries—		
Malinda	3.00@	5.00
Longworth	8.00@	10.00
Raspberries	8.00@	13.00
Huckleberries, per lb	12@	15c
Winter Nelis Pears	2.50@	2.75
Pomegranates, per box	1.00@	1.50
Persimmons, per box	50@	75c

DRIED FRUITS.

The dried fruit conditions over the State still continue very good. According to the Fresno Republican, 6000 tons of raisins were sold in the last 30 days at an average price of 2¾c. It is estimated that there are on hand unsold between 12,000 and 15,000 tons of raisins, but as the market is very strong, it is believed that they will easily be sold. Thompsons and Sultanas are increasing in price and 4c. has been offered for Thompsons and 3½c. for Sultanas. That Sultanas will be bringing a higher price is the opinion of many, so that a large number of the growers are holding out for 4c. The New York Journal of Commerce says: "California peaches are very firm and higher prices are confidently looked for in view of the high cost of competing fruits, especially evaporated apples, which is expected to turn attention of consumers to peaches more largely when the spring consuming season opens. According to Coast advices, there is nothing to be had in choice grades of Muirs at less than 6½c. in 25-lb. boxes f. o. b. Coast. Apricots are dull, but are not pressed for sale because the stocks in first hands are at a low ebb and distributors throughout the country are believed to be carrying unusually small supplies. California seeded raisins are firm. Most of the packers are demanding 5½c. f. o. b. Coast for fancy in 1-lb. cartons, but it is said to be still possible to buy outside brands at a quarter of a cent less. The seedless varieties are scarce, and, being under close control, are firmly held, though there has been no further advance in Coast quotations.

Evaporated Apples, per lb	9¼@	10 c
Figs, black	4½@	5 c
Figs, white	5 @	7½c
Apricots	12 @	13 c
Moorpark, fancy	13½@	14 c
Peaches	6 @	6¾c
Prunes, 4-size basis	6 @	7 c
30s, premium of 1½c.		
40s, premium of ¾c.		
Pears	9 @	13 c
Raisins—		
Loose Muscatels, in sweatbox	2½@	3 c
Thompson Seedless		4½c
Seedless Sultanas		3½c

Citrus Fruits.

The orange situation is very good and reports from the East are to the effect that the fruit this year is the sweetest ever received in these markets. The San Gabriel valley navels are being sold more rapidly this year than last. The Azusa Exchange has sent out nearly 240 carloads of navels at the present time. From Riverside comes the report that the fruit was never finer in the history of the industry. It is highly colored, of good, uniform size, and very sweet. Complaints have reached the Riverside growers, however, that some of the oranges have been decaying in transit. This is being investigated to see whether it is due to splits, blackheart, or the closing of the ventilators en route. Reports from New York say that the excellent conditions of the California oranges is hurting the sale of Florida and Porto Rico fruits. The average price of California stock has been much higher than for Florida oranges. It is estimated that 45,000 carloads of citrus fruits will be shipped out of California this season. The Riverside Press gives the figures and estimates of the number of carloads in the various orange districts. From the Riverside district, 4650 cars; Redlands district, 4600; Pomona district, 4000; Ontario-Cucamonga, 3650; Azusa-Glendora, 3500; Highland district, 2000; Covina, 1650; Fullerton-Placentia, 1300; Orange, 1200; Rialto, 1100; Alhambra-San Gabriel, 1000; Corona, 950; Duarte-Monrovia, 800; Whittier, 650; San Fernando, 550; Tustin-Santa Ana, 500; Colton, 450; Ventura county, 450; Glendale, 270; Anaheim, 270; San Diego county, 250; Moreno, 175; Bloomington, 175; Hemet, 70; and other localities in southern California, 240; making a total of 34,450 cars. Tulare county has 2380 cars, Butte county 400, and Sacramento-Placer 150. This gives the total north of Tehachapi 2930, and makes a grand total for the State of 37,380 carloads.

It is estimated that the lemon crop will be about 6800 carloads, of which 90 will come from northern California and the rest from southern California. These figures are about 4000 cars in excess of the record-breaking crop of two years ago, when California produced 38,091 carloads.

Navel oranges—		
Extra choice	$ 2.00@	2.50
Choice	1.50@	2.00
Valencias, choice to fancy	Nominal	
Choice	Nominal	
Standard	Nominal	
Tangerines	1.00@	1.50
Choice Lemons	2.25@	2.50
Fancy Lemons	3.00@	3.50
Standard	1.50@	2.00
Limes	4.00@	4.50
Grape Fruit	2.50@	3.00

Nuts, Honey, Hops, Etc.

NUTS.

The nut market is very dull at present, due to the relav from the holiday trade. It is expected to pick up, however, very shortly, and that there will be a clean-up of all varieties of nuts within the next few weeks. Reports from southern California are to the effect that the walnuts in that section have all been cleaned up.

Almonds—	
Nonpareils	16½c
IXL	15½c
Ne Plus Ultra	14½c
Drakes	13 c
Languedoc	12 c
Walnuts—Softshell, No. 1	15 c
Standard	14½c
Softshell, No. 2	11 c
Budded	17½c

HONEY.

This market still remains firm, with a good demand from all sections.

Com—White Sage	14	@17 c
Extracted—Water White	8½	@ 9 c
Light Amber	7	@ 8 c
Amber	4½	@ 5 c
Sacramento River Comb	10	@13 c

BEESWAX.

Light	27½	@30 c
Dark	23	@26 c

HOPS.

The hop market is showing more strength than usual. The reports from Santa Rosa show that 16½c. is being readily paid for hops in that locality. The Press-Democrat says that there are only 1800 bales left in the hands of the growers. This is the smallest quantity of hops on hand at this time of the year for several seasons. This scarcity of hops over the country is widespread. It is estimated that in Sacramento county

there are only 3000 bales, and in Mendocino about 320. Many of the hop raisers are holding out for 18c. and 20c., and some even think that hops will go to 25c. within the next 90 days. The effect of the recent hop growers' association is already being felt, as many of the leading growers are pooling their interests and will not let their hops go for a song.

Crop of 1910 ..... 15 @17½c

Live Stock.

DRESSED MEAT.

Beef: Steers, per lb.....	8½@ 9 c
Cows	7 @ 8 c
Heifers	8 c
Mutton: Wethers	9 @ 9½c
Ewes	7½@ 8½c
Ewes	9 @ 9½c
Lambs	10½@11½c
Hogs, dressed	10 @13 c

LIVE STOCK.

The steer market is stiffer and prime stock is scarce. Hogs are much firmer than when last reported, and the tendency is upward. Mutton is rather easy, but lambs are very difficult to get and are bringing good prices. Veal is another scarce commodity, and first-class calves are bringing top prices in order to fill this demand. The stockmen, however, are refusing to let go of their veal on account of the scarcity of beef.

Gross weight:

Steers: No. 1	5½@ 5¾c
No. 2	5¼@ 5½c
Cows and Heifers: No. 1....	4¼@ 4½c
No. 2	4 @ 4¼s
Bulls and Stags	2½@ 3¾c
Calves: Light	6 @ 6¼c
Medium	5½@ 5¾c
Heavy	4¾@ 5 c
Hogs: Grain fed, heavy.....	7½@ 8 c
150 to 250 lbs.....	8 @ 8¼c
100 to 150 lbs.....	7½@ 7¾c
Common Hogs, per lb.....	5 @ 6½c
Small prime wethers	4¾@ 5 c
Large prime wethers	4¼@ 4½c
Ewes	4¼@ 4½c
Lambs	6 @ 6¼c

WOOL.

The wool shows no change and still continues dull.

Fall Clip—	
Mountain Free	10 @12 c
Valley Fall and Lamb....	8 @11 c
Northern	8 @11 c
Southern	15 @17½c
Middle Counties	18 @19 c
Northern	18½@20 c

HIDES.

This market is weak and the supply of winter hides is not as large as usual. Much of the stock that comes in is of extra quality, however, but the tanners are not paying the best prices for it.

Wet Salt—	
Heavy Steers, over 56 lbs.	10 c
Medium	9 c
Light Steers, under 48 lbs.	8½c
Heavy Cows, over 50 lbs..	8½c
Light Cows, 30 to 50 ibs..	8½c
Kip	10 c
Veal	15 c
Calf	15 c
Dry—	
Dry Hides	18 c
Dry Bulls	15 c
Dry Kip, 10 to 15.....	17 c
Dry Veal, 5 to 10.....	17½c
Dry Calf, 7 down.....	22 c
Fall Lambs 24	@40 c
Sheep Skins—	
Long Wools .....$ 1.00@ 1.25	
Medium Wool, 6 to 9 mos.. 60@ 90c	
Short Wool, 3 to 6 mos.... 40@ 60c	
Spring Lambs ..... 25@ 50c	

HORSES.

The horse market shows no change and there is the same scarcity of first-class draft horses as has prevailed in this department for the last year. Recent sales of draft horses at San Luis Obispo county show prices around $300 apiece.

Desirable Drafters, 1700 lbs. up.	$275@300
Light Drafters, 1500 to 1650....	225@275
Chunks, 1350 to 1500 lbs.....	200@250
Wagon Horses, 1250 to 1350 lbs.	175@200
Delivery Horses, 1050 to 1250...	125@150
Desirable Farm Mares.....	135@150
Young	200
Old Mares	100@150

MULES.

A large shipment of mules was sent over to the sugar plantations of Honolulu this last week. The company buying the hybrids had considerable difficulty in getting the animals. It is said that they averaged around $233 apiece, and the animals ranged about 1100 pounds.

1200 lbs.....	$250@300
1100 lbs.....	200@225
1000 lbs.....	150@175
900 lbs.....	125@150

AGRICULTURAL REVIEW.

(*Continued From Page 21.*)

very small, and the peasants have been forced to sell a large percentage of their live stock in order to save the remaining animals. Ordinary cheap hay is selling from 15c. to 20c. for 36 pounds, while timothy hay sells for 30c. per pood or 36 pounds.

Farmers in Ontario, Canada, are selling loose hay for $14 to $16. This sells delivered in New York for $19.50 per ton in carload lots.

MISCELLANEOUS.

The citizens around Pasadena have taken up the matter of preventing the tearing up of holly every Christmas. The practice has been to tear up the holly bushes by the roots, so that it will not be long before the hills will be bare of these beautiful trees.

R. D. Robbins of Suisun recently sold 32 acres of orchard land in the Suisun valley for $13,200. Only part of this land has trees on it.

Reports show that the grain crop in Tehama county has fallen off 50% this last year. This is due to the cutting up of the grain farms into alfalfa fields and orchards.

The second carload of Turkish tobacco grown in the United States was recently shipped from Exeter. It will be sent to New York, where it will be manufactured into Turkish cigarettes. The car contained 10,000 pounds of tobacco, and it is estimated to be worth between $5,000 and $10,000. Next year this district intends increasing its acreage of Turkish tobacco.

The turkey business pays in Tulare. Patton George, who lives near Visalia, recently sold the chickens from two old turkey hens and realized $107 for them. This money was all made in one year.

Tehama county has its first flowing well near Red Bluff. This will mark a new industry in this locality, as water can now be obtained to irrigate the crops.

The Supreme Court of Oregon recently handed down a decision that will compel railroads to furnish cars on demand. An apple grower had a lot of apples that he wanted to send away, and he asked the railroad company to furnish refrigerating cars. As they did not, his apples were badly damaged and he recovered for them from the railroad company.

Clarence Howard, of Perris, recently sold 60 acres of alfalfa for $18,000.

A company of Turlock farmers was recently former for the purpose of raising and shipping cantaloupes this coming season. The officers are O. C. Roberts, Bert Hart, and Paul Nye, manager. Already 60 acres have been secured, and preparation of the ground has already commenced. The company expects to put in several hundred acres. The company expects to put in several hundred acres, and in addition will buy cantaloupes from the farmers of that locality.

The dispute between the Armsby company and the Kearney Estate has not been settled. The Kearney Estate has 700 tons of raisins which it sold to the Armsby company for 3½c. The company claims that the raisins were poorly cured and refused to buy the crop. Each side appointed arbitrators, but they can not come to an agreement, so it is expected that the companies will have to go to court.

The Chico division of the Farmers' Co-operative Union of America recently held a meeting, and George W. Curtis, sales agent for the Union, made a forecast of what he intended to do this coming year. He stated he was positive of being able to sell $60,000 worth of garden stuff this coming year, and in order to do this he will cover California and the adjoining States the coming year for markets. Mr. Curtis told how tomatoes had been sold here last summer for one cent per pound which could have been sold in Portland at a profit of from 1 to 1¾c. per pound after paying all freight and shipping charges.

E. F. Mitchell, secretary to Governor Gillett, has been appointed a member of the State Board of Agriculture to fill the vacancy caused by the death of Frank Burk.

PUBLISHER'S DEPARTMENT.

CALIFORNIA OWES MUCH TO THE RURAL PRESS.

The Mountain View Register-Leader recently published a review of our fortieth anniversary number, and while we have seen many flattering notices of this issue of the PACIFIC RURAL PRESS, no truer nor more appropriate sentiment was expressed than when the writer said: "In the furtherance of these great ends, agricultural California owes much to the PACIFIC RURAL PRESS."

We reprint below most of the article, not with the idea that we wish to impress the public that California owes the PACIFIC RURAL PRESS something and that we wish to collect, but to say that we are glad to have our efforts appreciated and trust that the paper may be many times more valuable to its readers in the future than in the past. To our friends at Mountain View we take off our hat. Here is the article:

"California's oldest and foremost agricultural journal, the Pacific Rural Press, fittingly celebrated its fortieth birthday last week by a retrospective glance across the twoscore years during which it has been so intimately and prominently identified with the agricultural progress of the State.

"It would be difficult to condense within the limit of a single newspaper issue, material more vitally significant of California's wonderful development, than is contained in the short items of the Rural's anniversary number, reproduced chronologically from its columns of forty years, or more than two thousand weekly issues, and they must have been read with more than ordinary interest by thousands on this Coast, as well as by numbers far removed from the Pacific shore, but whose gaze rests on this Western land of hope and promise and already marvelous fulfillment.

"Fruitful soil and benign climate are first factors in the fortunes of mankind, chiefly determinating the directions of the ever-swelling streams of overflowing humanity seeking favorable locations for new outlets of development, and the study of the soil's highest possibilities is gradually coming to its own in the first rank among the sciences. In the furtherance of these great ends, agricultural California owes mucn to the Pacific Rural Press.

"In no portion of the State was the Rural of the 10th inst. read with greater interest than in the Santa Clara valley, where it has many friends. It has always devoted a generous space to the valley's leading industry, and its long experience and inexhaustible prune lore are of inestimable benefit, while its columns constantly advocate and promote the best interests of the growers by inculcating judicious combination and co-operative action as a means of receiving full value for our products.

"The Santa Clara valley, through the Register-Leader, cordially unites with the whole State in wishing the Pacific Rural Press many happy returns of its birthday."

The annual review number of the California Fruit Grower was issued last week from its offices in this city. Mr. Rowley is to be congratulated upon the handsome appearance of the edition, which is made up of 88 pages. Statistical information of great value to fruit and canning interests is given, and all phases of marketing California fruits is treated in an able manner.

The California Fruit Distributors of Sacramento are sending out a very handsome 1911 calendar. It is worthy of the great institution it represents.

If you are looking for good stock to head your herd, don't fail to attend the Howard cattle sale at San Francisco, Friday, January 13.

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For catalogue and brochure of views, address President's Secretary, Mills College P. O., California.



FARM BOOKS.

The following list of books are kept in stock and are for sale at the Pacific Rural Press office:

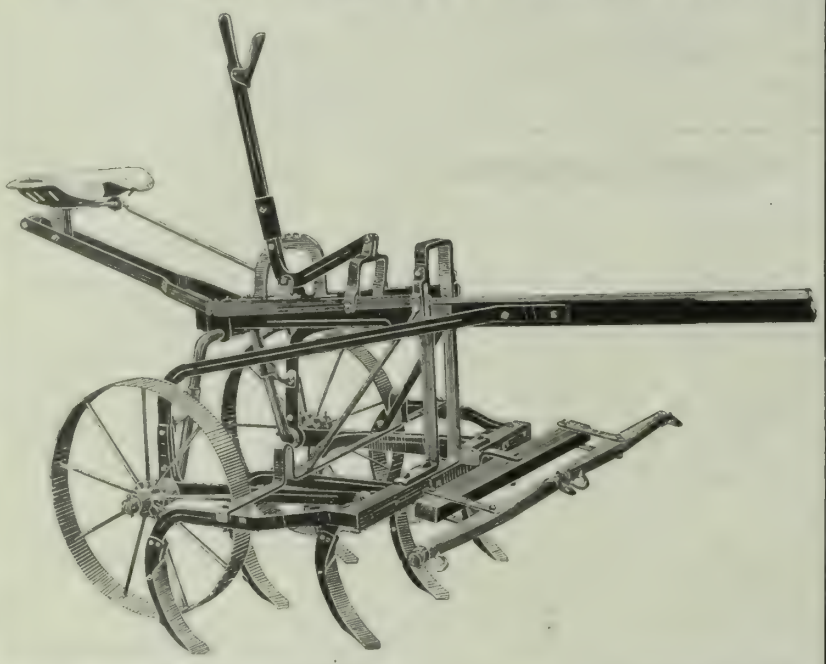
	Price
The Book of Alfalfa, by Coburn.....	2.00
Swine Husbandry, by Coburn....	1.50
Trees of California, by Jepson.....	2.50
Shepherd's Manual, by Stewart.....	1.00
The Hop, by Myrick	1.50
New Onion Culture, by Greiner	.50
Home Pork Making, by Fulton.....	.50
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Greenhouse Management, by Taft....	1.50
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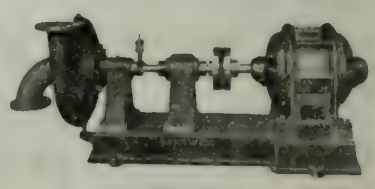
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THE PACIFIC RURAL PRESS

Vol. LXXXI. No. 2. SAN FRANCISCO, SATURDAY, JANUARY 14, 1911. Forty-first Year.

The Agricultural and Horticultural Demonstration Train.

Written for the PACIFIC RURAL PRESS by W. T. CLARKE, Superintendent University Extension in Agriculture.

At the present time, there is being operated in California what is known as an Agricultural and Horticultural Demonstration Train. Farmers men and women vitally interested in the fields and vineyards and orchards of our State, are visiting this train in great numbers at its various stops. The children of the various schools in the towns and villages visited by the train are being brought to it by their teachers and are taking a keen interest in the methods of work shown and described. During a recent run of this train which lasted for ten days, and during which time thirty-one stops were made, there were 14,217 visitors to the exhibition cars, or an average of 458 for each stop. These people were all in search of information of a kind they had reason to believe could be obtained at the Demonstration Train and from the experts accompanying it. This method of carrying reliable and valuable information to the farmers and the future farmers of our State has assumed very great proportions and is apparently getting to mean more and more each day that the effort is continued.

In view of these facts, then, a brief résumé of the fundamental ideas upon which the work is based and the methods employed in carrying out these ideas seems appropriate.

There has been done in the past, and is now being done by the Experiment Station and College of Agriculture of the University of California, an immense amount of work of great and lasting value to the State. Much of this work has become an integral portion of the practice of farmers of the State, while much of it, of equal value with the rest, has as yet not been appropriated by these workers. The Extension Division of the College of Agriculture has, in the past few years, done much through its Farmers' Institutes and meetings of similar character, to bring to the producers of the State these better methods of work that have been developed by the Experiment Station men. While much has been done through this mediumship, yet the numbers of people who could be thus reached was somewhat limited. This limitation of possible usefulness being recognized, ways and means to overcome the condition had to be devised. At this juncture, one of the great railway companies doing business in California, the Southern Pacific company, volunteered to furnish the University and Experiment Station with a fully-equipped train of cars and to run this train to all parts of the State reached by its lines. In the cars of this train, the University of California and Experiment Station agreed to place a comprehensive series of exhibits showing methods of work advocated by the institution and the results that could be obtained by following these methods on the farms of the State.



Awaiting the Coming of the Demonstration Train.

The University and Experiment Station also agreed to place men and women in charge of these various exhibits who were experts in their different specialties and whose advice could be and would be considered conclusive. Indeed, the train, when fully equipped and in running order, could be considered as a university on wheels, or, as President Wheeler of the University of California has described it, "an Evangel train bringing to the farms of the State the gospel of a better agriculture and better horticulture."

The idea of the Agricultural and Horticultural Demonstration Train had its inception then in the apparent necessity of bringing the educational work of the University and College of Agriculture to the great mass of the people, and the idea was rendered possible of consummation through the far-sighted and liberal policy of the railroad company previously mentioned.

The equipment of the train, as at present made up, comprises six exhibit cars, passenger coaches with the seats removed, and convenient tables built in; a sleeping-car and dining-car for the use of the instruction and working force, and a car for the accommodation of the train crews.



Interior of Cereal Car, Demonstration Train.

(*Continued on Page 31.*)

Pacific Rural Press

667 HOWARD ST., SAN FRANCISCO.

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Jan. 10, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum	Minimum
Eureka	1.16	12.22	18.86	52	36
Red Bluff	.62	5.87	11.19	74	36
Sacramento	.21	2.47	7.98	70	38
San Francisco	.72	3.58	9.39	72	44
San Jose	.46	1.70	5.96	74	32
Fresno	.37	2.25	4.09	72	34
Independence	.02	1.69	4.05	66	26
San Luis Obispo	2.08	3.99	7.39	78	38
Los Angeles	.78	1.86	5.93	82	48
San Diego	2.16	4.79	3.71	74	46

The Week.

Rains have come as we promised last week and we are glad we have no croaking to recall. We will not confess now how close was the struggle with ourselves as to whether we should crow or croak. It is enough for the public to remember that we crowed with such a degree of clarionism as we could muster. We have in the past had several narrow escapes from unduly knocking the skies, for we have the common agricultural disposition to find fault with the weather, and hope that current experience will give us greater resistance in the future. The rains have covered a wide area and seem to have been relatively heavier at the south than at the north, which, it must be acknowledged, is not a sign of a really good storm, which should move southward against the wind, drenching everything for several days, and having enough reserve force and water to continue its work even to the submergence of railway tracks in southern California. As we write on Tuesday the storm has not developed such desirable traits, but may still evince them. There is, however, joy enough in the present aspect because of the assurance that the drouth is broken, that dry north winds have loosened their grip upon the landscape, and that consequently confidence is restored in production and in trade, and therefore all activities of mankind are disclosing greater spirit and eagerness. The Weather Service report at the head of this column is the most interesting thing in this week's issue. Although the "seasonal" is sadly behind the "normal," it is comforting to note that it is on its way.

We fear that some distant reader may discount our claims for the increase of farming population in California when they see the census statement of the wonderful growth of California towns. Therefore, we throw out the figures boldly in our own defense. The statement from Washington is as follows: "In California's total increase in population—892,496 inhabitants—more than 83% was contributed by these municipalities, leaving less than 17% of the increase given the State by the rural districts. These cities and towns increased in the aggregate 714,113 inhabitants, or more than 90% over their total population in 1900." What we desire to point out in this connection is that our California towns do not grow by drawing people from the California country—that is, their phenomenal growth does not come from this source. Our own observation is that many more people are going from California towns to the country than are reversing the process. It is, however, very true that California towns are drawing people from all rural regions which lie beyond State lines. Thus it may be that California is really aggravating the "rush to the cities," but within the State itself it is different. We are not disposed to lament these facts, nor to lecture the factors. When a man has frozen his toes and fingers for a third of a century throwing corn to hogs from the apex of a snowdrift, or if he has dodged cyclones so long that the shadow of his hat always looks to him like a black funnel, we can not blame him much if he eschews farming and seats himself in the sun on a wharf at Long Beach and angles for yellow-tails the rest of his life. While doing so he helps Long Beach to show 800% increase in population in a decade. The valetudinarian refugee element figures largely in the upbuilding of California towns, and it is a help to the country, for the increased appetite of this element for spuds and salads is something fierce. People are apt to theorize elaborately about how to develop home markets which are best markets of all. There is nothing so effective as to people the towns with those whose constitutions are being climatically amended. Many such persons are so renovated that they beat their own records for enterprise by their undertakings for rural development. We are, in fact, dead sure of one thing, to wit: that the rush of people to the cities is a good thing—in California.

Speaking of appetites and their requirements, we must confess ourselves puzzled by the discords among the great doctors of economics. Mr. James J. Hill has held for some time that if we did not look out, there would not be food enough in the United States, and now come the New York financiers, as voiced by Bradstreet's, who advise that we ought to reduce food production just as they apply liquidation in the stock market when they overdo it. The words are these: "The situation of affairs would seem, indeed, to point to liquidation being necessary in costs of production, and past liquidation in the stock market may perhaps find a counterpart in natural products, which seem to have advanced more largely than manufactured goods." This is the statement which puzzles us. On the face of it, liquidation in agriculture ought to mean irrigation, but this defies the evident intent of the writer to mean something. Possibly the word as applied to agriculture ought to be de-liquidation and that would mean drier farming, or possibly reduction of prices so the farmer will not be inclined to keep so everlastingly busy—which would be another way to get the juice out of agriculture. Perhaps the farmers ought to do less because Bradstreet's says: "High prices of most products, and especially foods and raw materials have been a sort of endless-chain burden to labor, to manufacture, and to trade generally." To understand these things we evidently need a new science of economics to explain this reasoning, for the "endless chain," of the argument at least, seems to be this: prices have been so high that foreign nations would not buy in this country consequently the surplus food supplies have made prices so high that the food has been a burden upon labor, manufacture, and trade. Therefore prices ought to be reduced by the farmers by liquidation, just as they do in the stock market—possibly to make it worth less by putting in more water. But what is the use of talking any longer about a thing which we cannot understand?

We can understand Mr. James J. Hill better than we can the wise men of the farther east. It is a fact that Californians seem to be obsessed by the confidence that this great mover of Western mankind will enter California. We seem to be impressed with his coming as the Canaanites must have felt the approach of Moses, except that everybody regards his as a relief expedition and not a conquest. We saw a statement the other day by a high official of a railway which is suspected of having some Hill affiliation, that James the First of Minnesota is liable to enter California in three ways at once if our recent reform notions do not make it impossible for him to get money enough to buy rails and cross-ties. Meantime Mr. Hill is coming in quietly without a rail or a tie and has plumped into San Francisco without waiting at the State line for a passport. According to the city dailies, Mr. Samuel Hill, chairman of the advisory board and life president of the Washington Good Roads Association, who is a son-in-law of James J. Hill, is in California to inspect the highways of the State, and, particularly, to stimulate interest in the Pacific highway project, which it is proposed to build from the Mexican border to the British Columbia line. Mr. Hill has prepared a large map of the territory covered by the proposed highway from British Columbia to Mexico, showing the stretches of good roads that already exist. He is credited with being in California for the purpose of conferring with the California authorities to the end that in the expenditure of the $18,000,000 which has been authorized for good roads in this State, provision shall be made for completing certain sections of the great north and south highway. Good for Mr. Hill; he always has manifested skill in connecting up with idle millions, and he does not need the Great Pacific Highway for the purpose of coming on foot.

In fact it is quite otherwise, because it is expressly stated that he intends to cover the State in an auto and has appointments even to the southern border thereof. He will probably indulge in automobilious talk while he keeps an eye on the locomotivular situation. This will be quite sociable, for Mr. Robson O. Bell, head of the motor vehicle department in the office of the Secretary of State at Sacramento, is authority for the statement that last year's heavy registration has placed California third in the list of automobile-owning States. Statistics gathered by the National Highways Protective Association and issued by them, assign to California the second place in the list. Whichever is right, there are certainly enough machines to make it interesting.

And this brings us to a glowing tribute to the automobile in agriculture which we find in a pastoral by an enthusiastic agent: "Countless farmers are getting results absolutely unobtainable through the old method of horse service. The farmer gets up in the morning, does his chores, such as milking, etc., piles his milk cans on the back of his car and is off to the creamery and back again in less time than it would take to go one way by horse. Then there's the daily amount of hauling to be done, in all of which time may be cut in half by the farmer who uses a car. It costs him a great deal less to keep a small car running than it does to feed a horse, and besides he is saving in labor and time given a horse. The farmer keeps his car well oiled and the motor clean, and the service he gets from it is equal to that given by three horses. It will be only a short

time before every farmer will realize the great value and help to him in the owning of a motor car, and that the demand for the right car will be so great that the manufacturer will be swamped with orders for the car suitable for farm service."

When that deplorable condition is reached we presume Bradstreet's prescription of liquidation will apply, though perhaps surplus stock can be disposed of more effectively. We read that in Montana every auto owner has a set of block and tackle and shovels ready to be packed on the running boards, and in one case at least the owner of a car was seen to start out with a couple of sticks of dynamite in one of the side door pockets, which he explained in a most matter of fact manner: "Oh, we always carry dynamite when we start on a trip. We have to blast our way through, sometimes, when we get up in the mountain passes." What a rumpus that might make amid the milk cans!

But all this is getting too exciting. We would remind our readers that California is the first State in the Union in the production of barley, and that this advancement has been in part due to the opportunity opened by the protection against Canadian barley. This is pertinent to remark now because there is now in session at Washington a commission of high-brows which is working toward a reciprocity treaty between the United States and Canada. We read with much apprehension in the telegraphed reports the following: "The most that can be expected at this stage of the commercial relations between the United States and Canada is a convention dealing with a certain limited number of articles. It probably will include the addition of a few raw products to the free lists, reductions of duty on American manufactured articles, now largely made in Canada, and reduced duties on some Canadian agricultural staples largely used in the United States." As barley is not a great grain in the Eastern and Central States, it may not be hard for the wide-awake Canadians to slip off the duty on barley on the ground that it would not injure American producers. The fact is it would not only injure California, but other Pacific States which have exceptionally good barley conditions and produce grades of barley which cannot be grown in this country east of the Rocky mountains. We are glad to see that the San Francisco Merchants' Exchange is waking up to this issue this week and will advise our Congressmen of the situation. Individual barley growers can also do something in this line. What we are now doing in barley is but a promise of what we shall do via the Panama Canal and the Mississippi river, unless reciprocity with Canada sacrifices the chance for it.

Queries and Replies.

Gopher-Fending.

To the Editor: We have a tract of about 100 acres on which we have planted out about 1000 deciduous ornamental trees, such as maple, poplar, sycamore, etc. The soil is very rich, and the trees would do splendidly but for the gophers. They seem to have made this tract a regular breeding ground. We have employed men to trap them, and have tried various poisons, but without any material results. More than half of the trees have already been destroyed and we have very little hope for the balance unless we can exterminate the gophers. We have heard that if trees are planted in a wire mesh that this will protect them; also that if some of the gophers are inoculated with some contagious disease it will spread rapidly among them and finally exterminate them. Have you ever had any experience with either the wire mesh or such inoculation?—Suburban, San Francisco.

There is no easy way with gophers, as your experience shows. It is almost impossible to keep up with them when you plant something adjacent to tracts of uncultivated land or land which is merely cultivated for grain. The way to keep gophers from getting at the roots of individual trees is as follows:

Take galvanized wire netting, one inch mesh, three feet wide; cut down through the center, which gives you strips eighteen inches wide, the selvage on one side and pointed wires on the other. Cut this into pieces three and a half feet long and make cylinders by interweaving the wires on the cut edges. When you dig a tree hole set a cylinder in each hole with the selvage a little below the ground surface, so one can carefully hoe around the trees without interference with the wire. This sort of cage has been recommended by experienced tree planters and will keep the gophers from getting at the main root until the tree is considerably grown, and the wire will rust away so as not to interfere with its farther progress. By this time you will probably have the land subdivided and in cultivation and hundreds of people killing gophers on their own places, which will settle the case.

There is no disease now known which is capable of being distributed among these rodents.

Cutting-Back Olives.

To the Editor: I have about a dozen trees in a family orchard. They are on first-class land; no pest of any kind is apparent. The trees look healthy in every way. I do not know their age; average about 12 inches at the butt and 30 feet high. They have borne fruit, but for the last three years have not borne. I am advised to cut back to stumps, 5 or 6 feet high, and start new tops. Please advise me through the PACIFIC RURAL PRESS.—G. E. Oxnard.

It would be an interesting experiment to cut back your unsatisfactory olive trees, but not to such an extent as you mention. Thin out the branches if too thick and cut back or remove those which interfere, but to cut back to a stump as indicated would force out a very thick mass of brush which you would have to afterward go into and thin out desperately. The branches which you decide to retain may be cut back to twelve or fifteen feet from the ground. This process would have the effect of giving you plenty of new thrifty wood, which is desirable for the fruiting of the olive, but we cannot give you any guarantee that this treatment will make your trees satisfactory bearers. Are you sure they are receiving water enough? If not, give them more next summer. Also give the land a good coat of stable manure and plow under when the land is right for the plow.

Grapefruit and Nuts.

To the Editor: Peaches, pears and plums predominate in this section, but would not grapefruit, almonds and English walnuts be just as profitable? What is your idea about English walnuts on black walnut root?—Reader, Loomis.

You can expect grapefruit to succeed under conditions which favor the orange. Therefore, if oranges are doing well in your district, grapefruit might also be expected to succeed on the same soils and with the same treatment. Planting of almonds should proceed upon a demonstration that the immediate location is suited to almonds, because they are very early to start and very subject to spring frost and should not be planted unless you can find bearing trees which have demonstrated their acceptance of the situation by regular and profitable crops. English walnuts are less subject to frosts because they start much later in the season. They need, however, deep, rich land which will be sure not to dry out during the summer. English walnuts are a perfect success upon the California black walnut root.

Soil Depth and Exposure for Oranges.

To the Editor: I intend to set out an orange grove. Is it absolutely essential that they be planted on a southern slope, or will they thrive as well on any slope? What is the minimum depth of soil required for orange trees? How can I tell whether the soil is good for oranges?—Subscriber, Placer county.

It is not necessary that an orange grove should be planted on any particular slope. Trees are grown successfully on all slopes, although in particular localities certain exposures may be decidedly best, as must be learned by local observation. How shallow a soil may be for successful orange trees depends upon the skill and assiduity with which water and fertilizer are applied; on a shallow soil more fertilizer and the more frequent use of water in smaller quantities. Any soil which has grown good grain crops may be used for orange growing if the moisture supply can be regulated so that it shall never be too scant and any excess is currently disposed of by good drainage. There can be no arbitrary rule either for exposure, depth or texture, because oranges are being successfully grown on all kinds of loam from medium loam to a heavy clay loam, providing the moisture supply is kept right as indicated.

Bark-Killing by Spirits.

To the Editor: I have been told that the turpentine in prepared paints will injure or kill fruit trees when applied to cuts made by the pruning saw or shears. What is your opinion in regard to this?—W. L., Santa Rosa.

The amount of injury will depend upon the area of the bark which may be killed by the turpentine or benzine in the preparation. Some prepared paints are perfectly innocuous, as amply shown by experience. These are presumably those which are made of oil and pigments and if applied without thinning with spirits. The cheapest application, probably, and one which is perfectly safe, is a thick paint made of cheap red like Venetian red, and boiled linseed oil. It should be thick enough and sparingly used to escape running beyond the exposed surface.

Dipping Roots of Fruit Trees.

To the Editor: In planting an almond orchard would it be of any benefit to dip the young trees in a solution of bluestone and lime dissolved, and, if so, what proportions should I use?—Planter, Oakdale.

We doubt if it would serve any good purpose to dip the roots of healthy almond trees into bluestone and lime solution. If such a thing is used at all, it should be carefully prepared in accordance with the formula for bordeaux mixture, for excess of bluestone will kill roots. Healthy trees do not need such treatment, and we doubt if unhealthy ones can be rendered safe or desirable by it.

Sorghums on the Coast.

To the Editor: Will you kindly inform me if Kaffir corn or amber cane is more hardy than Egyptian corn? I have tried to grow latter variety and find Santa Cruz climate too cool. Please advise if you think the other would grow any better?—Rancher, Santa Cruz.

Some one may speak from experience near the coast. Our observation is that all sorghums find the coast north of Point Conception too cool for the ripening of a good seed crop of sorghum, though a fair growth of green forage can often be secured.

Horticulture.

HOW STANDARDIZATION WORKED IN PLACER COUNTY.

[By Mr. George D. Kellogg, of Newcastle, at the California Fruit Growers' Convention at Stockton.]

California fruit growers and shippers of the last few years have learned to their sorrow that this magnificent country of ours, the United States of America, was a fertile field with many places that could produce large quantities of excellent fruit from trees and vines which came in sharp competition with our own. To us as producers in California, situated at the uttermost extremity of the continent, with the long haul, high rates of freight and refrigeration, it became apparent that only our choice and perfect fruits could meet the competition, and a first-class pack must be guaranteed to hold our position in advance of the line in our market.

How the Work Began.—With foresight and sagacity, our State Commissioner of Horticulture grasped the situation and called a meeting of growers and shippers of Placer county, for September 29, 1909, at Newcastle, to discuss the situation; this was followed by another convention which met at Loomis, October 22, 1909, where a large number of prominent fruit growers and shippers were present. After an all-day discussion of these matters, a committee of fifteen, composed of eight growers and seven shippers, unanimously elected to recommend some plan for improving the harvesting, marketing, and shipping of our Placer county fruit, in which all parties were expected to conform to the rules adopted.

This committee met and organized at Newcastle November 11, formulated a report upon standards for fruit packed to be used, and upon plans of organization as required by the Loomis meeting. A vital portion of that report was the importance of the shippers agreeing to decline to receive by purchase, or for consignment, any fruit not packed in accordance with the standards adopted.

Mr. Jeffrey called another mass convention at Newcastle for November 22, 1909, to hear this report. Great interest was manifested at this meeting and a very representative body was present. They adopted the standards and the first report, with the following amendment: "That the committee of fifteen be instructed to formulate a plan of inspection and to appoint a committee of five as a board of inspection who were to select a sufficient number of independent inspectors, under compensation, whose duty it should be to see that the rules and regulations were properly enforced; the committee of five to be constituted a board of arbitration." All of which was unanimously adopted.

Subsequently the committee of fifteen met from time to time, perfecting the plans, and appointed a committee of five to be known as "Supervisory Inspectors", giving them full power to act in accordance with the rules and grades for the standardization of fruit, handling and packing as adopted by the mass convention, or as might be modified by them, should the necessity demand. Having perfected their work, this committee of fifteen adjourned sine die.

The Proceeding.—The supervisory inspectors met and organized; the work was put upon a business basis with a check upon every financial transaction, proper books, receipts, vouchers, and checks were provided. The assessment of ½c. per box which was authorized by the mass-meeting at Newcastle on November 22, to defray the expenses of inspectors and other necessities, was modified to ¼c. per box.

There being no statutory laws, nor any precedents to follow, an agreement was drawn up and presented for signature which included the standardization of fruits and the shipments of the same as adopted by the mass-meeting.

It is my pleasure to state that the agreement was presented for signature, and that every shipping firm doing business in Placer county, by their principals, and by the manager of each branch house, together with several of the prominent growers of the county, signed the same.

Placing ourselves under mutual agreement and the moral obligation to stand together was the secret of whatever success we may have been able to accomplish. For this mutual agreement proved to be a moral obligation resting between us, that was as strong and effective as any law could possibly have made it, without which the reform undertaking could not possibly have been carried forward.

Inspectors were appointed for the season under agreement, to be known as "Independent Inspectors", for each shipping point in the county, and were paid a salary of $100 per month, and were held to a strict accounting for their services. They proved themselves conscientious, painstaking, and competent men.

The Methods.—Before the carload shipping season fairly opened, the inspectors were sent around to the ranches to advise the growers of the movement and to make them acquainted with the standards that had been adopted for the packing of fruit, and to encourage them in thinning their fruit wherever it was necessary for the best interests of the crop; and when the car shipments began in earnest, they were stationed, under the direction of the supervisory inspectors, where they could inspect every box of fruit to be shipped.

To provide for these it was necessary to raise a fund, which could only come from an assessment on each box of fruit. The authority given by the mass-meeting to collect ½c. per box for each package sent in carload shipments was modified by the supervisory inspectors to ¼c. per box. As some of the growers hesitated upon signing the agreement on account of the assessment, we found ourselves embarrassed, inamuch as the mass convention had voted that this should be paid by the growers. This difficulty was readily overcome on the part of the fruit-shipping houses agreeing to absorb that assessment. The ¼c. was collected from the several fruit-shipping houses upon the basis of June and July shipments, which gave us a sufficient amount of money to carry the work through to the end of the season, and, by action of the supervisory board, our treasurer was instructed not to collect anything further for the months of August, September, and October. By this you will see that our entire business has been transacted upon two months' shipments only, and at ¼c. per box in carload interstate shipments; and we are glad to report a balance on hand in the fund.

In establishing a brand for the standardization of fruit, we adopted a uniform brand, signifying, for instance, that there was not over 72, 84, 96, or 108 peaches in a box. This called for several thousand stamps, and at the request of those who had signed the agreement, our supervisory inspectors took it upon themselves to get these stamps in quantity and supply the various houses at cost; this was done at a saving of from 8c. to 10c. per stamp to the buyer, showing one of the beauties of co-operation and fraternity in competition.

Our supervisory inspectors met once a week, received reports from the inspectors and petitions for a change in the rules from persons who desired them, and to strengthen the movement as best we could where we thought it necessary.

A few modifications were made in the standards established by the mass-meeting when an emergency arose, but the whole effort was made to uphold in the East the high standard of our California fruit.

Experience.—We had our difference of ideas, of course, but with a little exercise of diplomacy and tact, the rough places were smoothed down and the season closed with our ranks unbroken and with the rules for standardization of our fruits an established fact. At a large and intelligent mass-meeting called by Mr. Jeffrey at Newcastle, November 22, 1910, to hear the first annual report of the supervisory inspectors (just one year from the adoption of the standard), the Board was sustained in its actions and, by a unanimous vote, standardization had come to stay in Placer county, and the Board was re-elected, with instructions to continue its work for another year.

Errors had been made, but a great work had been accomplished, thousands of dollars saved to the growers and shippers of the county, and a just reputation for superior fruit earned in the Eastern market, as attested by complimentary letters received from various sources. One year ago it looked like leading a forlorn hope; today it is an accomplished fact, and goes to prove the old proverb, "What ought to be done, can be done."

In conclusion: The experiences of the season have led us to believe that a State law, similar to some neighboring commonwealths, governing the whole situation, would be very beneficial.

DATE GROWING IN CALIFORNIA.

Mr. C. L. Edmunds, of Mecca, who has had the advantage of adequate personal experience and observation, in the district of southeastern California which has been largely set apart in the public mind as a future source of dates for the continent, has written his conclusions for a Kansas journal, the Ellsworth Reporter. We find that some of his statements add something to the information on the subject current in this State and extract accordingly.

The Tree and Its Growth.—The tree producing the date is a palm (Phoenix dactylifera). It has leaves of the compound order with the stems nearly ten feet long on mature trees. The leaflets extend nearly to the base of the leaf-stem, which usually has several spiky thorns about as bad as hatpins to run against. The tree can be raised from seeds very easily, but seedlings are of course not as certain as to quality as the suckers from known varieties. The suckers are produced when the date tree is young, up to probably 10 or 15 years of age, and generally near the base, but they sometimes grow several feet from the ground. When suckers weigh from 15 to 20 lbs. they are removed and are either planted in a permanent position or allowed to root in some handy place and then planted in the orchard. The tree is different from most fruit-bearing vegetation in the fact that individuals are fruit-bearing or pollen bearing. The ones producing fruit must be pollenized by, generally, tying a bunch of pollen-bearing flowers onto the bunch of fruit-bearing as soon as that bunch opens. If the pollen-bearing trees always produced flowers at the same time the fruit-bearing trees bloomed, natural conditions would take care of the pollenization, but it cannot be depended on in that. Few pollen blooms are needed, so but one of these trees is needed for 20 to 50 of the fruit-bearing kind. Scarcity of land and water probably induced the artificial work, as many oases of the deserts have but very limited quantities of water, and it became necessary to raise as few pollen bearers as possible, so as to leave room for the fruit-growing trees which alone produced the crop and thereby the profit.

Raised from seed under favorable conditions these trees produce fruit sometimes in three years or even younger. One tree I know of, grown by a neighbor, had a few fruits started in twelve months and matured in about nineteen. The first fruit, however, is never very good, at least not up to the quality which is produced on older trees; in fact, until the tree has passed the offshoot-bearing stage and puts its whole energy into bearing fruit, it is neither so good a producer for quality or quantity. The first real profit from these trees comes from the sale of the offshoots, worth now from $5 to indefinite prices for rare and choice varieties. One in particular would be valued at $100 if the writer owned it, as it is very scarce even in Africa, where it comes from. The offshoots vary from none to a dozen or even more, and one authority says he thinks about five would be a fair average.

Imported Varieties.—The Bureau of Plant Industry, about six or seven years ago, sent a man to Africa and a shipment of offshoots was brought back. These were supplemented by a German who located his importation in a grove alongside the government's planting at Mecca, California. Part of the importation was planted at Mecca Other importations had been received even earlier. So, altogether, there have been more than 50 varieties from several localities in Africa and Arabia which have been planted in California and Arizona, and are now producing fruit, on some trees a hundred pounds, or more on the largest trees.

The requirement for these trees is a climate combining high and long sustained heat in the summer, very dry air, and plenty of water for irrigation. The fruit is largely sugar; one assay claims 78% of one variety. Be it remembered that no sugar is added to them; the sun and heat place the sugar naturally in the fruit. The tree grows in many places in the State, but seldom ripens its fruit except away from the cool breezes of the Pacific. The tree endures several degrees of frost, as that is often experienced on all deserts.

The date palm usually flowers in March or April, ripening the fruit, according to location and variety, from September to December. The fruits here, so far, have not proven so sticky as the imported ones, which is to our advantage, as they are more attractive and cleaner to handle. Varieties are many, from the dry, shell-like, so-called bread dates, to the soft, sugary or syrupy dates. The Arabs are said to live largely on the dry dates, which are not so sweet as the date of commerce. Some very attractive dates of large size and beautiful color are now bearing. The eyes are to be reckoned with always in buying; attractiveness is a big element in the market, whether a fruit, or possibly, a woman, in marketing the goods. So the showy fruits will bring the attention and price.

The Deglet Noor is the standard of quality so far. It has ripened early this year. The variety produces in Algeria somewhat more than 100 lbs. and at present would easily bring 25c. per pound. Sixty to seventy trees are planted on an acre.

Seedling Date Orchards.—The scarcity of offshoots and the high prices offered for them, $5 and upward, induced the Government to advocate the seedlings. The Bureau of Plant Industry furnishes seed to parties interested, and in many cases one or two-year-old trees. Then for each 250 planted according to its methods and plans it gives the planter one of the imported varieties of offshoots. This industry can be started evidently as quickly as the raising of oranges in this way, but not with known varieties of trees, as they are not to be had at prices which most people would be willing to pay. Three hundred dollars and upward an acre is needed for trees alone. So by the time suitable land, trees, water, and time, with the elements of cost, are figured, a plantation will run into money.

The time necessary to start this industry balks some, especially the young people—strange as it may seem. Youth is impatient, however, and wants quick returns, often preferring a nickel today to a dollar next year. The result, so far, is that the most conspicuous success in this business in this valley—or, it might be safely said, in the United States—has been achieved by a neighbor, James P. Reed, who started when over 70 years of age, full of the optimism of mature age. He has a grove of several thousand trees three to four years of age. Several, possibly fifty, have fruited this year, indicating color, size, and flavor, to some degree, for the mature trees of coming years.

Local Climatic Conditions.—To indicate the condition as far as temperature is concerned in this valley, which is shut off from the ocean by a mountain wall for the most part seldom less than a mile high, to two miles at the summit of the highest peak. The bottom of the valley is now somewhat more than 200 feet to its lowest point, at the level of the celebrated Salton sea, below sea-level. The summer temperature runs over 100°, sometimes for weeks at a time, every day. Sleeping outside is always comfortable, and refreshing sleep can always be had during the hot weather. In well-built adobe houses similar to the old sod houses, if well arranged, sleep can be enjoyed with few exceptions. The trouble comes from the stillness of the night not moving air enough in the rooms.

Add to location dryness of air, high temperature, and almost a cloudless sky, and we have a condition just suiting the date. To the date is added apricots, ripe on May 1, grapes last of June and on, figs with three crops for the black San Pedro. The orange is being planted, but people here know that the writer has always said that he is from Missouri as regards that fruit in this locality. It is but fair to say that some trees have done well, and also grapefruit or pomelos and lemons.

Citrus Fruits.

STORY OF A CITRUS-SCALE DESTROYER.

An enemy of the black scale of citrus trees which has made good in California is Scutellista cyanea, introduced about a decade ago and at that time irreverently dubbed "scoot" by growers who cared less for the scientific name of an agency than for the effects which it was designed to produce. It is delightful to record that the anticipated effect is being largely realized and that "scoot" really has a great power in scooting the black scale.

Professor H. J. Quayle, of the staff of the University of California Experiment Station, who has been studying citrus insects in southern California for the last two years from the University laboratory at Whittier as a base, has just furnished the Journal of Economic Entomology an excellent account of his work with this insect from which we take the more popular parts as follows:

Scutellista cyanea Motsch. is the most important insect enemy of the Black Scale (Saissetia oleae Bern.) in California. This insect was introduced into the State in 1900 by the U. S. Department of Agriculture through Dr. L. O. Howard of the Bureau of Entomology, in co-operation with E. M. Ehrhorn and Alex Craw. It is now well distributed in all parts of the State where the black scale occurs in injurious numbers. The percentage of scales parasitized also runs very high, amounting in many cases to 75 or 80%. But this varies greatly in different sections and in the same section in different years.

In spite of the frequently high parasitization by Scutellista, the black scale still remains the most important citrus insect pest in the State. Taking the citrus belt over, more control work is directed against the black than any of the other scale pests. And, with all this control work, according to a statement by G. Harold Powell of the Bureau of Plant Industry, in 1908, from one-third to one-half of the oranges of California were washed because of the sooty mold fungus resulting from black-scale infestation.

While, therefore, this parasite is well distributed, and the percentage of scales attacked is often large, as parasitization goes, yet, from a commercial standpoint, at least, the Scutellista is not often a very important factor in the control of the scale. Of course, in many places the Scutellista may not be abundant enough to check the scales. But again, where they are most numerous, the scale continues to thrive. There is not, therefore, necessarily a direct relation between the abundance of the parasite and the scarcity of the scale. It is not unusual to find the greatest parasitization where the scales are most abundant; and, again, where the scales are scarce there may be very few Scutellista. This might be answered by the fact that the Scutellista, being an egg parasite, affects only the progeny, and that the scarcity of scales should be attributed to the abundance of the parasite during the previous year. This may sometimes be the case, but there are often other and less tangible factors at work.

Many have been accustomed to judge of the efficiency of the Scutellista on the basis of the number of scales with exit-holes, but this is not the only criterion. Since the Scutellista is an egg parasite, the real test of its efficiency is in its ability to prevent young from appearing. It might seem that this is directly related to the number of exit-holes in the parent scales, but this is not necessarily so. A black scale may lay from 300 to nearly 3000 eggs, the average number being from 1500 to 2000. A Scutellista larva will mature on the minimum number of eggs, but, if they are available, it will of course consume many more. But the Scutellista larva often does not consume the maximum number of eggs, so that in large healthy scales there may be several hundred young that will appear in spite of the presence of Scutellista larva. It is because of this failure to consume all of the eggs, in the case of the larger scales, and the fact that from each one of the 10, 15, or 25% of the scales not parasitized, there may appear 2000 or more young, that a tree may continue to be badly infested, notwithstanding the large number of scales with exit-holes. This may explain why more than 700 young black scales were counted on a single orange leaf growing from a twig that had 75% of the parent scales parasitized by Scutellista. On the other hand, where the scales are small or of medium size, the Scutellista consumes all of the eggs, and must be an important factor in reducing the numbers for the succeeding year.

Since the Scutellista is generally distributed throughout the citrus belt of southern California, little can be gained by turning loose a half-dozen specimens in a grove of 10, 20, or 40 acres where there are already many hundreds or thousands, except for the moral effect on the grower. Sometimes the scale may largely disappear the following year, and sometimes the Scutellista may be a great help in this decrease, but in such cases it is on account of those already present in the grove rather than the supposed great impetus given by the half dozen introduced. Of course, the artificial introduction of Scutellista in places where they do not occur, or are not well established, should be greatly encouraged.

The good that might result from the introduction of Scutellista is often rendered negligible because the scale is not in the proper stage to be attacked. With such introductions in most places in southern California during July and August, or even later of this year, nothing was left for the Scutellista but to perish. At this season all the eggs, or nearly all, had hatched, and the parasite will not oviposit on the young scales. This is true also of those already present in the grove, and hundreds or thousands must perish unless they find some scale out of season with those that have been attacked. Indeed, this is the most serious matter in the whole Scutellista economy and is a great drawback to their rapid multiplication. This parasite was hardly intended to depend exclusively on the black scale, where there is a uniform hatch of the insect. Fortunately, in most parts of California, and possibly other places where the black scale occurs, there are enough of the so-called "off hatch" to maintain the parasite until the bulk of the scales are in the proper stage again.

The Field.

CONTROL OF BLOWING SOILS.

California has considerable areas of blowing soils both in the dune region of the ocean beaches and in the wind-swept regions of interior plains. Obviously, the same methods and the same binding plants can not be used under all the varying conditions which exist. There can hardly be a better demonstration of the effective control of drifting sea sand where the value of the land warrants the outlay, than has been made by Mr. John McLaren, superintendent of Golden Gate Park, San Francisco.

A publication on the general subject of control of blowing soils has just been prepared by E. E. Free and J. M. Westgate of the U. S. Department of Agriculture from which we take parts which may be suggestive to our readers who have problems of this nature on their hands.

Blowing of Soils under Dry Farming.—Places where blowing occurs are found largely in the semi-arid regions and are more or less directly caused by the dust mulch, the summer fallow, and similiar procedures employed as aids toward the conserving of the limited water supply. With the recent rapid spread of agriculture in these regions and the great increase in the use of these methods of moisture conservation, the number of cases of serious blowing has greatly increased. In these cases it may be impossible entirely to prevent wind damage without at the same time suffering a fatal loss of water. The damage can, however, usually be minimized by designing the scheme of farm management with this end in view. The leaving of the stubble, the use of nurse crops, and the other methods outlined will frequently be found valuable in combination and with modifications suited to local conditions. Whether a green-manuring crop shall replace the summer fallow must be decided largely with relation to the water supply. Such a crop will not only prevent wind erosion (usually severe in the case of the summer fallow), but will in nearly

every case be of other benefit to the soil. It may, however, use so much of the meager supply of water that its use is impossible. For all soils subject to blowing, the addition of humus is a valuable and not-to-be-neglected expedient. Usually, however, loams and silt are not so deficient in this constituent as are sands.

The expedient which finds its special application on loams and silts is the maintenance of a rough surface. On such soils this procedure is comparatively easy. Clods will hold together and furrows retain their shape much better than on more sandy soils. On fields subject to blowing, clods should never be broken up until the time of seeding, and not then unless it is absolutely necessary to do so to insure the proper germination and growth of the crop. Furrows when used should be run at right angles to the prevailing wind direction, and harrowing or shallow disking, also transverse to the wind direction, is often of use. As already stated, a mulch, if used, should be as far as possible of clods rather than entirely of dust.

In addition to silt soils of the ordinary types, there are in many parts of the Western States valuable soils composed in great part of volcanic ash. Because of the irregular shape and "lightness" of their component particles, these soils are unusually susceptible to blowing, and frequently need to be artificially protected from the wind either by windbreaks, light covering of straw, or covers of vegetation during the windy season. The addition of humus, rough-surface cultivation, and the various other expedients previously suggested, will be found of use. The addition of humus is especially valuable. Fortunately, each year of cultivation makes these soils better able to protect themselves. Volcanic ash is easily disintegrated, and especially so under cultivation. Fixation for a few years, with proper attention to the addition of humus, will usually so change the texture of the soil and so increase its cohesion as to greatly decrease, if not entirely remove, the danger of blowing.

Protection of Irrigation Ditches, Embankments, Etc. The expense incident to the opening up of an irrigation ditch is so great that it is important that all means be used to prevent the filling up of the same, either by the blowing in of the soil from the immediate banks or by the blowing of soil from adjacent areas. While the growth of trees or shrubs may serve to bind the immediate ditch banks, yet such a hedge may prove injurious by causing the deposition in the ditch of blown sand which would otherwise be carried clear across. The use of willows is objectionable, owing to their tendency to spread into the ditch itself. The proper solution of this difficulty would appear to be the use of some low-growing plant which will form a dense mass near the surface but offering little obstruction to the wind and causing but little deposition of the sand which it carries. Protection from blown-in sand can be provided by the erection of a suitable windbreak at such a distance from the ditch that sand-drifts which may form around it will not prove troublesome. Better still, the sand-drift may be stopped at its source. Tamarisks, Russian artemisias, and willows can be used for this windbreak, though some irrigation is usually necessary, especially when establishing them. Where the ditch runs through the sagebrush territory it may be sufficient to leave a narrow strip of uncleared sagebrush on each side. When other means fail, the banks may be seeded with rye, which can be followed by some permanent perennial grass if the same be available, or the rye can be seeded annually.

Protection of Roads.—The protection of roadways is occasionally necessary. Erosion, both by wind and by water, has in many recorded instances resulted in the lowering of highways until they are sometimes many feet below the level of the surrounding country. In the extensive loess areas of China the roads have sunk sometimes to a depth of 50 feet, with the sides approaching the vertical. In our own country it has been noted in eastern Washington that the roads have been lowered 2 or 3 feet within recent years, apparently by the blowing away from the roadbed of clouds of dust raised by passing vehicles. These injuries are so slowly produced that preventive measures are usually impracticable. The use of windbreaks along the roads may sometimes be advantageous, but is open to the disadvantage of causing deep snowdrifts if the country be subject to heavy winter snows.

Injuries to Pastures.—Wherever pastures are located on soils of a sandy nature or others which have a tendency to blow, there is always danger of starting blow-outs which may increase in size and work the destruction of considerable areas of valuable grazing land. Not only are the plants uprooted as the blow-out enlarges, but the other vegetation in the path of the drifting soil or sand is buried. These blow-outs are very apt to follow overgrazing, which may so reduce the vitality of the grasses that they will succumb during unfavorable seasons and allow the soil to commence blowing. Obviously, the best practice is to abstain from overpasturing. When the injury is done, it can best be cured by removing as large a proportion of the stock as possible and checking the expansion of the local blow-outs by brush coverings, under which rye may be started, to be followed by grasses, low shrubs, or trees. Exposed spots which experience shows to be especially susceptible to blowing should be put permanently into trees, shrubs, or some form of vegetation which will not be grazed.

Injury from Drifting Sands.—In many places, especially in deserts and on lake and sea beaches, there are large accumulations of sand which the wind has blown into great drifts or dunes, sometimes more than a hundred feet in height. These have a tendency to shift their position slowly, burying everything in their path, and where the movement of such sand dunes threatens valuable property, the problem of their control is of great moment. Along seashores the harbors are especially liable to danger from this injury. Where railroads and highways are forced to follow the shore-line or river-course along which such dunes occur, the problem of keeping the sand off the roadbed is very serious. An aggregate of over $50,000 has been spent in protective devices for the protection of Cape Cod (Massachusetts) Harbor alone. In Europe large sums of money have been spent in dune control, especially along the Baltic Sea in Germany, and in Gascony along the French coast. [This is chiefly done by planting roots of beach-grass (Ammophila arenaria) as in Golden Gate Park.—Editor.]

On the farms subject to injuries by shifting sand dunes, the problem is important, not usually because of the value of the dune lands themselves, but because of the danger of the destructive movement of dunes over fertile soil, orchards, or farm buildings. The farmer in the arid regions especially finds it often necessary to control a sand dune because of its menace to the other areas of his farm.

Trees or shrubs are usually the only form of vegetation capable of producing permanent fixation of dune sands, and the ultimate end arrived at by nearly all systems of control is the establishment of a forest or tree covering. It is manifestly impossible, however, to directly establish young trees upon the exposed areas. A considerable preliminary protection is necessary. Such mechanical devices as brush lines, scattered brush, straw, or refuse material of any kind all tend to temporarily hold the sand until grass or other herbaceous vegetation can be established. This herbaceous vegetation will usually give sufficient protection to the young trees while they are obtaining growth enough to cover the ground and constitute in themselves a permanent protection. A method which has proven very effective along the Columbia river and elsewhere is to make a preliminary seeding of rye and protect it by a thin scattering of straw over the surface. At 10-foot intervals among the rye are put sets of permanent sand-binding grasses which spread by underground rootstocks. These grasses are usually to be found growing on the sandy areas in the neighborhood. These spread and establish a permanent grass covering by the time the rye has ceased to be effective. If a good stand of rye is secured it will usually se-seed itself for several years. Following the permanent grasses and by their protection, it is usually possible to establish shrubs and trees at suitable intervals. The tree selected should be of a kind which will furnish a dense growth near the surface of the ground rather than a tall trunk, branchless at the bottom. Where there is plenty of moisture in the soil, willows are very well adapted to this purpose. Cottonwoods are of perhaps more universal application. Pines have been much used abroad, but do not seem to be adapted to American conditions.

For checking the movement of a dune, either as an end in itself or as a means toward forestation or fixation with grasses or other plant covering, a particular form of fence has proved very useful. This is constructed after the fashion of an ordinary board gate, with horizontal boards and openings the same size as the boards. This is placed on the crest of the advancing dune and braced in two directions with poles. As the fence becomes buried it is raised at intervals; and since the fence checks the advance of the crest of the dune the advance of the entire dune is stopped.

These fences have been in practical use in checking the advance of dunes along the Columbia river, where they were a danger to the railroad right-of-way and to valuable irrigated farm lands. Such fences have also proved very valuable in retarding the formation of large blow-outs and in filling them with sand blown in from elsewhere.

Summary.—The effect of wind in blowing soils is in the aggregate of much importance in the humid sections, although the process is slower and less obvious than in the drier regions. The good effect of the shifting of soil lies in the mixing of the soil particles and the renewing of the surface layers. The evil effects occur principally in the arid and semi-arid regions. The most practical means of control lie in the proper adjustment of the cropping and tillage system so as to provide at the critical stages a protection of either plants or rough surface soil. Increasing the humus content of the soil also reduces the danger of blowing. When the land is used for intensive farming, brush lines, straw covering, hedges, or windbreaks of trees constitute the most efficient protection.

The Irrigator.

THE IRRIGATION OF POTATOES.

An observing writer in The Irrigator, a journal of the irrigated region of the Northwest, gives the following very rational outlines of potato growing by irrigation:

There is no particular number of times during the season that potatoes should be irrigated. The idea that there is, is fundamentally false, although it is followed by some growers and usually accompanied by failure. The question is simply whether or not the plant, at a given time, is in need of water.

Before planting potatoes, the land should be irrigated, no matter how damp the soil may appear to be at the time of planting. The ground should be ditched with an ordinary hay ditcher and the water run over it for a period that will vary from one to four days. If land is new from sagebrush it will probably need to be watered three or four days. You can judge whether it has been watered enough when the ground is thoroughly soaked, in fact muddy. In this first watering you can hardly get the ground too wet, so that the moisture will go down into the soil eight or ten feet, thus providing, for six weeks or two months, plenty of moisture from beneath. After the ground has dried out sufficiently for a horse to stand upon it, it should be plowed deeply. It should then be harrowed down fine, when it is ready to be planted. Potatoes may be planted 12, 15, or 18 inches apart, depending on the richness of the soil, and the use of a large piece of seed is advisable. It pays to give the plant plenty of sustenance at the start. The potato patch will not need watering now until it is in bloom, if these directions have been completely followed out. Keep cultivating after the plants come up continually, and don't be afraid to cultivate with the spike-tooth harrow after they are four or five inches high, as the very few that you will damage with the cultivator-teeth will be nothing compared with the benefit derived. While the plants are in bloom, it is a wise plan to keep an eye on the patch from day to day, and if you find any place, as you look over the field, where the vines are turning dark in color, it means that they need water and it is time to begin irrigating.

In any event, the plants should be irrigated before they have gone out of bloom, for the reason that it is at the time of blossoming that the tubers set, and the number of tubers which will set upon the plants depends in a measure upon the amount of moisture in the soil. Of course, if your plants turn dark before blossoming, it means that there is not enough moisture in the soil, and you had better irrigate, but this will not occur if sufficient irrigating has been done in the beginning.

After the first irrigating, when the plants are in bloom, the only rule which can be given is to irrigate the patch as often as it is necessary to keep the soil four or five inches below the surface of the ground nicely moist, so that when you reach your hand in and bring out a handful of it in the grip of the hand, and open the hand again, the dirt will clearly show the indentation of the fingers and be fairly moist. A year ago, on the potato patch which the writer grew, it was necessary to irrigate about every five days, because the hot weather was drawing the moisture out of the soil, and the earth was too dry beneath the surface. Of course, it is possible to irrigate potatoes too much, but generally more failures result from giving them too little water. However, no man's advice will help you in this matter, and your success will depend upon applying the rules of nature with good judgment.

In ditching between the rows for the water to run, ditch as deeply as possible. This is very important, as in running the water through the ditch great pains should be taken that the top of the water in the ditch is not high enough to be applied directly to the tubers. A small stream running a long time in the bottom of the ditch is better than a big stream running a short time.

Incidentally, potatoes are as difficult a crop to raise by irrigation as there is, and a man who is considering going into it on an extensive scale should consider very carefully the risk that he is running if he has not had previous experience with the particular crop. "Second growth" renders potatoes unsalable, and at best the price received is so variable from year to year that it is much of a gambling proposition, even with an experienced grower, who only expects to make a profit by sticking to it year in and year out, taking the years of high prices with the years of low prices.

A potato plant feeds from the roots, and the tubers grow with nourishment secured from the roots and do not grow independently; that is to say, the potato itself does not take any nourishment from the soil, but secures its nourishment from the root. How important this fact is will appear, if you go into potato growing, when you become worried, perhaps, as to whether or not you are getting a second growth on your potatoes, because this fact has an immediate bearing on what causes this second growth. Many growers would tell you that second growth is caused by too much water, but I am firmly convinced that it is caused by too little water, and when the ground becomes dry the growth of the plant is suspended and the tuber ceases its process of continuous growth in every direction, and the starting or fixing process begins in the tuber preparatory to maturing. If the ground ever dries out sufficiently to stop the continuous growth of the plant, it begins to mature. When a subsequent irrigation comes, there is a stimulation to start the plant growing again, and since it has begun to mature, the tuber cannot continue growing in every direction, but starts to grow out of one or more eyes and forms new potatoes which are attached to the main potato.

THE AGRICULTURAL AND HORTICULTURAL DEMONSTRATION TRAIN.

(*Continued From Page 25.*)

In the exhibit cars the following divisions are represented by collections of very comprehensive illustrative material: Field Crops (Agronomy); Soils; Fertilizers; Animal Industries; Veterinary Science; Dairy Industry; Horticulture; Viticulture; Irrigation; Birds and Mammals; Entomology; Plant Diseases; Poultry; Medical Entomology and Parasitology; Home Economics; Honey Production; University Farm School. Each of these exhibits is intended to be suggestive in character and is calculated to bring out questions from the visitor. Indeed, it would be impossible to get together an exhibit that would cover completely every possible phase of any given problem in agriculture. In the work of the Demonstration Train, this fact is recognized, and so the exhibits are purposely made suggestive and provocative of questions. The expert in charge of an exhibit is prepared to take up with the visitors the discussion and answer of these questions, and so the full educational value of the work is brought out.

While the California Demonstration Train is not the first of the kind to be sent out on its educational mission, it today stands the most pretentious and comprehensive effort of the kind ever undertaken. Other States have, in the past, sent out such trains; indeed, twenty-six trains were in the field in various parts of the Union during the fiscal year ended June 30, 1910. These trains, for the most part, confined their efforts to quite limited fields of instruction, most of them covering but two or three different phases of agricultural work. This is impossible in such a State as this, where an almost infinite variation in the topics to be presented exists. So the California Demonstration Train covers, in its work, seventeen different divisions. This means from seventeen to twenty-four experts from the College of Agriculture and Experiment Station are in the field on each run of the train, answering questions and giving valuable advice. When we consider that 73,663 people visited the California train during the year ending June 30, 1910, that this train was in actual operation for sixty-eight days in the time mentioned, and made 223 stops, the possible extent of its influence educationally may be in some measure conceived. The train will during the present season make some 250 stops and will probably be in commission some eighty days.

Finally, it is not supposed by the most sanguine workers on the Demonstration Train that it will give to the visitor a complete education in agricultural matters. Far from it. What it has accomplished in the past and may be hoped to do in the future is to answer conclusively certain specific questions; to point the way to visitors to where their problems can and will be taken up and studied to a satisfactory finish.

The Agricultural and Horticultural Demonstration Train is to be considered as a "way shower," pointing to better agricultural practice; to better returns from the farm; to more satisfactory living conditions for those who dwell upon and work these farms.

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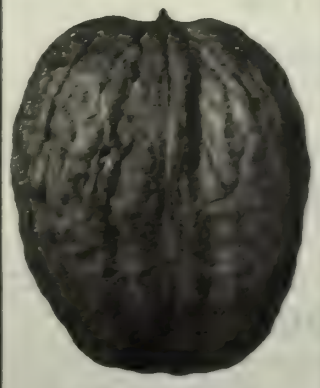
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The Garden.

GARDEN CALENDAR.

Written for the PACIFIC RURAL PRESS by MR. G. H. HOPKINS, Burbank, Los Angeles County.

FLOWER GARDEN.—Sow the hardy annuals, including sweet peas. Hot-beds may be prepared for sowing seeds of the half-hardy annuals and for cuttings.

VEGETABLE GARDEN.—Sow seeds of lettuce, radish, beets, cabbages, cauliflower, kale, endive, broccoli. Prepare hot-beds for starting tomatoes, eggplants, peppers, etc. Plant asparagus, cabbage, cauliflower, horse radish and rhubarb.

SMALL FRUITS.—Plant strawberries, blackberries, dewberries, loganberries, etc.

GARDEN OPERATIONS.

Cabbages are an important crop with market gardeners. Anyone with a good loam soil can have marketable heads the year around by a little planning. There are certain times when the price is low, but usually they bring good prices.

Cauliflower does well all along the coast, and is a money-maker for the market gardener and a welcome addition to the home garden. The cauliflower requires a deep rich soil. Prepare the ground the same as for cabbages. Plant in rows two or three feet apart and fifteen to eighteen inches in the row, according to varieties. Transplant when six to eight weeks old. Irrigate freely to keep plants growing. One ounce of seed to 2000 plants. As cauliflower heads best in cool weather, plant or sow early varieties, like Henderson's Early Snowball.

Broccoli is very similar to cauliflower, and cultural directions are practically the same. Early Purple Cape is one of the best varieties. Heads purplish brown. Broccoli is hardier and more easily grown than cauliflower.

ASPARAGUS.

Asparagus, or "grass," as it is commonly called by those who grow and handle it, does well over a large portion of California and is one of the most important crops of the market gardener. Its availability for transportation and the demand for it from the canners, all tend to bring good prices to the grower. It does best on a deep sandy loam. The soil must not only be rich at planting time, but must be kept so by annual dressing of stable manure. It is too early at this time to sow the seed, but those who have not raised the plants may purchase them of the seedmen, and they may be planted this month. As asparagus is a rank feeder, its roots penetrateing the soil deeply, it is necessary that the ground be plowed deep and thoroughly worked. Cultivate often. Two-year-old plants are usually used. Plant in rows four feet apart and about eighteen inches apart in the row. At this distance it will require about 7000 plants per acre. Plant in furrows deep enough to cover the crown an inch or so. Some of the larger stalks may be cut the year after planting.

Verbenas make a superb bedding plant. The flowers are gorgeous in their coloring and the plants easily started from seed or cuttings.

At this time of the year rhubarb is pretty sure to send up seed stalks, but they should be cut out as fast as they appear, as the process of ripening seed will soon exhaust the plants.

In California, where all conditions are ideal for raising flowers, one cannot see so many different varieties as may be seen in the Eastern States during the summer time. Especially is this true true with hardy annuals and perennials. As a rule petunias are seen more often than any other flower, except the geranium. There are many of the hardy and half-hardy annuals that only need a little water and care to make a dazzling display, lasting all summer.

STRAWBERRY CULTURE.

The Excelsior is probably the earliest strawberry that is successfully grown in California. Its largest berries are grown in the winter and early spring. It is quite round in shape, color usually crimson, sometimes fading. The berry is quite tart, yet has a rich strawberry flavor. On account of this flavor and its firm texture it is much desired by the canners for preserving. Fruit stems short, berries and blossoms quite protected by the leaves.

The "A-1," or "A" berry, as known by some, is a variety that will yield big crops of medium to large berries, running through a season from last of April until shut off by frost. It is deep red in color clear through. It is also a good preserving berry. The only thing one can say against the A-1 is that it is somewhat irregular in shape, so that it cannot be packed as nicely as most berries. The Dollar is another extra early berry, very similar to the Excelsior in shape and flavor. It has been a prominent variety in the central part of the State for quite a number of years, but of late appears to be running out in many localities.

The Oregon Iron-Clad or Hood River berry does well throughout Oregon and Washington. It is a big red berry of good flavor and withall a good shipper. Season late.

Pride of Cumberland is an extra large bright red berry. It does well grown by the hill system, as when so grown will make a crown system and plant of immense size. The berry is of uniform size and one of the best for long distance shipping that we know of. Late.

All of the varieties herein mentioned are bi-sexual, having perfect blossoms.

PLANTING ROSES.

There is no better time than January for planting roses. They are in their most dormant condition this month. As there is nothing particularly attractive about a rose bush when not in bloom, most planters prefer to have the rose garden to one side where the plants will not be conspicuous during their dormant period. When in blossom they will be conspicuous anywhere. Usually they should be massed or planted in groups, so that plants will appear as part of the background, looking from either the lawn or from the street or highway. If it is desired to set out individual plants use some of the tea roses like Duchesse de Brabant, which can be made to bloom almost constantly in California. In considering varieties one should remember that some roses are particular as to their care, it being necessary to pamper them to considerable extent. They must be pruned just so, must have a rich soil and are quite susceptible to disease. Other varieties there are which appear to do well under the most careless attention. Most writers say roses should be planted on a heavy soil, but all of us do not have an adobe or clay soil, yet we can have roses under most any sort of conditions as found in California, or in fact anywhere west of the Rocky mountains where there is water. Heavy soil may be cold or too wet, in which case spade in sand until made mellow. Sandy soil may be improved by spading in compost or well rotted cow manure.

Many new homes are under way at all

times in our coast country, and a proper arrangement of lawn, plants and trees so that they may dwell in harmony ever after is quite a difficult though important matter. Many times the nature of tree or plant is unknown to the planter. They all look nice in the nursery, so many of us buy whatever takes the fancy and they are planted without regard to their future growth. Therefore it is quite necessary that we look forward a few years to see how they will appear.

SOWING FLOWER SEEDS.

The seed of hardy annuals can be sown this month in the open ground, but great care should be used in preparing the seed bed and sowing the seed. The soil should be like the proverbial ash heap and moist. The seeds of many varieties are so tiny that one is apt to cover them too deep, then because they do not show up we blame the seedsman. It is easier to get the plants and set them out, but the cost is a great deal more, and there is enjoyment in watching the little things start, following the different changes in leaf and branch, and watching for the first appearance of the bud.

DEWBERRY.

There are several varieties of dewberries that do well in California, among which may be mentioned the Premo, Austin, Lucretia, and Gray's Gardena. The latter is catalogued by some of the nurseries as Gardenia. As we understand it the berry was introduced by a Mr. Gray of Gardena, Cal., and called Gray's Gardena. At any rate it is an immense cropper, though the berries are not so sweet as the Lucretia. But they are, however, a better market berry, as they will stand up longer. The Austin berry yields a very fair crop and the berries are of good size. We have had berries of that variety that were larger than the Mammoth blackberry. Dewberries may be trained on a trellis or pruned back into a low bush. In some localities where it is extremely hot the latter mode is preferable, as the berries will be more shaded than on a wire. Dewberries come on to the market a little ahead of the blackberries, so that anyone having a warm location may get good prices for some little time before the regular crop comes on. Plant in rows six or seven feet apart and three feet apart in the row if grown in bush form, or four feet if put on a trellis. Dewberries are propagated from the tip. They also send up a few suckers, but such plants are not so good as the tip plants and should be cut out.

Every family have a home of their own should have berries of some kind, especially where water is handy for irrigation. And there are many places along the coast where one can raise one crop at least of strawberries, blackberries and dewberries without irrigation. Under such conditions keep the cultivator going, or cultivate early and apply a good mulch to the ground. Berries are something that are not improved by hauling around through the dust all day, as is often the case with those offered for sale by the peddlers.

The Mammoth blackberry, with wonderful capacity for spreading, will make a fine covering for an arbor, or equally good for hiding some unsightly spot. The vine is really quite ornamental, especially when in bloom, besides raising an abundant crop of berries.

We get a good many inquiries about currants and gooseberries, and it may be well to state here for the benefit of those who have but recently come into the State that it is useless to plant either in southern California or in the hot interior valleys. The only places where they will do at all well are in the coast districts or in the mountain valleys.

POSSIBLE MARKETS FOR CALIFORNIA WINES.

In answer to inquiries as to the probability of introducing California wines into Argentina, Consul-General Bartleman forwards a communication from Alasdair Macintosh, of Macintosh Brothers, which gives the most direct and positive information relative to the subject:

"Some four years ago I started the importation of California wines, and for many months gave all my time and efforts to pushing the sale of same. At the same time a large sum of money, many thousands of dollars, was spent in advertising, and a fair sale was obtained for the wines, and most of the first-class hotels were persuaded to stock the wines, and at the present moment all the principal hotels and restaurants in Buenos Aires have the wines quoted on their lists. However, California wines have not obtained the position in this market that they should have, seeing that they have so many fine qualities, and we think it is for the following reasons:

"The general Argentine wine-drinking public prefers either a wine composed of 25 per cent of wine imported from France, Spain, and Italy mixed with Mendoza (Argentine) wine, or the Mendoza wine alone.

"For these reasons it is our opinion that there will never be a large sale of California wines in the Argentines, as California could not compete with the European article on account of freights, and I could hardly conceive any respectable firm mixing them with the crude wines of the country and selling them as California wines so as to be able to compete in price with the Spanish, French and Italian wines.

"Another phase of the subject is that much the largest proportion of the Argentine working classes is composed of Spaniards and Italians, who drink no wines but of their own country, and when they do not drink these they consume the Mendoza article."

STRAWBERRY PLANTS

For the fancy trade, try the NICK OHMER STRAWBERRY. It is extra large, of a beautiful color and will do well wherever the Brandywine will. We have other varieties, too.

BURBANK CRIMSON WINTER RHUBARB. Strong plants that will yield marketable stalks the coming season, ready for delivery. Also Grapevines, Mammoth Blackberries, Loganberries, Dewberries, and Phenomenal berry plants.

Write for prices stating quantities wanted. Address

G. H. HOPKINS & SON,
BURBANK, CAL.

TREES

A fine stock of French and Imperial prunes, apples, plums, peaches and general fruit stocks also palms, roses and other ornamental plants Send for price list.

PLEASANT VIEW NURSERY
A. F. Scheidecker, Prop.
SEBASTOPOL, CAL.

FOR SALE

American River Grape Cuttings.

Almeria, Gros Coleman, Black Muscat, Black Morocco, all other leading varieties.

C. B. CUNNINGHAM,
Mills, California.

Ask for SNOW'S GRAFTING WAX

IN USE ALL OVER THE STATE
For sale by all the large groceries, or
D. A. SNOW, Lincoln Avenue, San Jose, Cal.

WRITE FOR CATALOGUE and PRICES

FRUIT TREES

BOOK ORDERS NOW FOR THE FOLLOWING STANDARDS:

PEACHES

Tuscan, Orange, Phillips, Levi, Foster, Triumph, St. John, Early Crawford, Elberta, Muir, Lovell, Fay-Elberta, and Salway.

Peaches have paid growers more profits in the last 25 years than any other fruit.

APPLES

Alexander, Red Astrachan, Gravenstein, White Astrachan, Jonathan, Rome Beauty, Spitzenburg, Bellflower, Newton Pippin, Grimes Golden Pippin, Ortley, McIntosh Red, Winesap, Wagner, Winter Banana, Arkansas Black, and many others.

Get in your orders now for Gravenstein, Jonathan, Spitzenburg, Yellow Newton Pippin, White and Red Astrachan, Alexander. They always sell out first.

CHERRIES

Black Tartarian, Bing, Black Oregon, Black Republican, Royal Ann, Lambert.

Cherries are great money makers. The above varieties always sell out early.

Also all standard varieties of

Plums, Prunes, Apricots, Almonds, Pears, Quinces, Persimmons, Figs, Oranges, Lemons, Etc.

Our trees are selected, thrifty, well-rooted and true to name.

WRITE US AT ONCE.

Fay Elberta: The improved Elberta. The best peach of the season. Write for descriptive circular.

The Silva-Bergtholdt Co.

200 Orchard Street, Newcastle, Cal.

TREES TRUE TO NAME. The SILVA-BERGTHOLDT CO. NEWCASTLE, CALIF. PLACER NURSERIES

PEACH TREES

True to Name. Strong and Vigorous

Including Muirs, Lovells, Albertas, Tuscan, and Phillip Cling and all leading varieties. Also a full line of Pears, Plums, Prunes, Cherries, Apples, Apricots, Almonds, Walnuts and Chestnuts. A full stock of Thrifty Vines. Write for prices on amount you need.

OAKDALE NURSERY, W. F. Wheeler, Prop., OAKDALE, CAL.

MARTINEZ NURSERY

ESTABLISHED 1884

Leading varieties of Pear, Apple, Plum, Prune, Peach, Apricot and Almond Trees. Grape Vines. Orange and Lemon Trees. Ornamentals, etc.

Catalogue and prices on application.

THOS. S. DUANE, Prop., Martinez, Cal.

Eucalyptus in Variety

The best that 40 years experience can produce, being grown slow, in the cool atmosphere of the coast, are more hardy and more vigorous than those grown in the hot interior of the State. Correspondence invited.

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GRAFTED WALNUTS

San Jose Mayette and Concord; blight resisting. Best commercial nuts; send for samples.

Eucalyptus Trees

No better stock grown; prices very reasonable.

General Fruit Tree and Ornamental Stock

Our 1911 Horticultural Calendar now ready, price 15c. Catalogue free.
34 years experience in California.

LEONARD COATES NURSERY CO., Inc., MORGANHILL, CAL.

AGRICULTURAL REVIEW.

WITH THE HORTICULTURAL COMMISSIONERS.

E. Volck has been reappointed Horticultural Commissioner and Entomologist of Santa Cruz county. Volck has been very active in the campaign against the codling moth.

Horticultural Commissioner Galloway, of Sonoma county, reports that many acres of Gravensteins are being planted around Sebastopol.

Horticultural Commissioner Schell, of Fresno county, says that he inspected 500,000 deciduous trees grown by our standard nurseries and found them in fine condition. But on inspecting the nurseries conducted by Orientals he had to condemn many trees. In one nursery alone he caused the destruction of over 100,000 peach trees for black peach aphis and head-root rot.

Horticultural Commissioner Mills, of Oroville, reports that he found it necessary to fumigate several Palermo orchards. He found a large section of the country around Paradise infested with Johnson grass.

County Horticultural Commissioner Schultz, of Tulare county, in his monthly report to the Board of Supervisors, asked why other counties bounding Tulare, including Fresno, Kings, and Kern, were not complying with the State law as regards a rigid inspection of importation of trees, vines, and fruits. It was declared that the activities of Tulare county in this regard were being largely nullified by the laxity of its neighbors. It was recommended that resolutions be drawn up by the Horticultural Board to be sent to the State Horticultural Commission, to Governor Johnson or others interested to learn why the provisions of the law were not being enforced.

ADVANCE IN WINE PRICES.

"The large independent wineries of San Joaquin, Sacramento, Fresno, and Los Angeles counties have advanced the prices on sweet wines with the sub-rosa consent, it is said, of the California Wine Association. All sweets have been advanced 6c. for carload lots of new wines, and, according to C. A. Wetmore, an expert on the wine situation, there is a gentlemen's agreement to maintain this status if no rate-cutting is indulged in. This means that port wines in large wholesale lots, without cooperage, are being offered at 22 and 23c. per gallon instead of 16 and 17c., as was the case when the price of grapes was sent down to ruinously low figures. Twenty-two cents, says Wetmore, means about $16.50 per ton for grapes, including cost of wine-making."

It is said that the control of wine prices will insure members of co-operative plants a return of at least $13 per ton for their grapes. The California Wine Association is expected to net a handsome profit by reason of the low prices paid for grapes last fall and to declare a dividend in February.

FRUIT GROWERS' LOBBY.

The fruit growers of California are to be protected and their interests helped at the present session of the Legislature. At the recent meeting of the State Fruit Growers in Stockton, State Horticultural Commissioner Jeffrey was empowered to appoint a committee to look after the legislative interests of the organization. Marshall De Motte, a large grower of Tehama county, and a man of wide experience in the fruit industry, will head the committee. Assisting him will be the following named men:

Malcolm Glenn, Assistant Attorney General, Sacramento; Earl Morris, Horticultural Commissioner, San Jose; Geo. C. Roeding, nurseryman, Fresno; E. Franklin, fruit grower, Colfax; T. H. Ramsey, manager Cone ranch, Red Bluff; A. F. Call, fruit grower, attorney, Corona; C. C. Teague, lemon grower, Santa Paula; H. W. Wrightson, president Farmers' Union, Fowler; Prof. A. J. Cook, biologist, Claremont; D. Barnicott, fruit grower, Newcastle; Frank T. Swett, viticulturist, Martinez.

FRUIT.

Ely Snider, of Davis, sold his 1911 Bartlett pear crop on the trees to the Earl Fruit Co. at $100 per acre. Mr. Snider had nothing more to do with the grove except to care for and cultivate it.

C. W. Mann, of the U. S. Department of Agriculture, took out some grapes at Fresno that he had kept in cold storage for a year. The grapes are in perfect condition and look as fresh as when they were picked from the vines.

The Eugene (Oregon) Fruit Growers' Association, in its recent report, shows that it has shipped out 51 carloads of apples to Eastern points, bringing in a revenue of $25,000. The prices ranged from $1.25 to $2.25 per box.

The dry weather for the past three or four weeks has hurt the new olive crop around San Fernando. Many growers say that the fruit has shriveled very badly and the percentage of pickling olives will be materially decreased. It is said that the irrigation at this time does not remedy the difficulty, as the tree is dormant and the sap does not flow sufficiently to fill out the fruit. The fruit is being picked as fast as possible and sent to the oil mills where a smaller price is paid than if it was kept for pickling.

NORTHERN CITRUS FAIR.

The seventh annual convention of the Western Fruit Jobbers' Association, with a membership of 500 firms, the National League of Commission Merchants, with a membership of 700 firms, and International Apple Shippers' Association, with a membership of 400 firms, gives a total of 1600 firms that will meet together in Sacramento on February 15 to 18. This total of 1600 firms really represents about 4000 delegates, as many firms have a number of representatives.

The last convention was held in Denver, and this is the first time that these business men have ever been induced to visit the Pacific Coast. The national secretary states that 1200 delegates will be present with the possibility that this may be increased to 1500.

These men handle annually $115,000,000 worth of California products, and it is for their instruction and education that the Northern California Citrus Fair has been proposed.

VEGETABLES.

Potato growers in Washington are being paid $23 per ton for the potatoes at the edge of the field. This is a record price for that State.

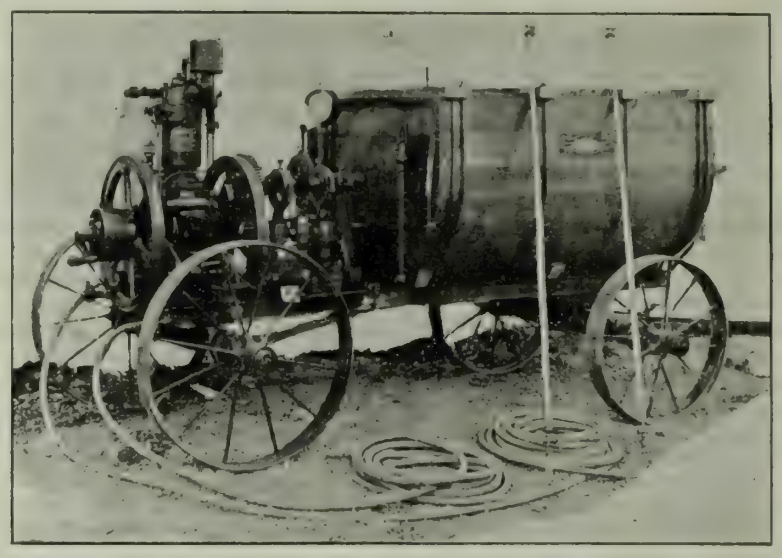
Stag Kee and Chin Bow, Chinese vegetable growers, are planting 2000 acres of land near Lodi to potatoes and 200 acres to onions.

Reports from Stockton are to the effect that the celery growers had an exceptionally good year, although the crop was light. Several large shipments have been made to the East.

Three thousand dollars per acre was made on the celery lands near Aberdeen, Wash. This record was made by J. H. Hale, who averaged on an acre some 37,000 plants. Mr. Hale has been engaged in the business for 16 years.

FARMERS' MEETINGS.

The annual meeting of the Florin fruit



The Bean Giant Power Sprayer

The Most Reliable High Pressure, Large-Capacity Sprayer in the World

The Bean Giant Power Sprayer is but 9 feet long from end to end, and but 4 feet 8 inches from the ground to the top of the tank. The Bean Giant is not top heavy and is easily hauled where most sprayers would be at a serious disadvantage—on hilly ground, for instance, or where the soil is wet or very soft.

The entire outfit weighs only from 1600 to 1800 lbs., according to equipment, which also adds to the ease of handling. The unique construction of the Bean Giant enables it to be used in the most densely planted orchards. It is very compactly built and will make very short turns.

The best standard engines are used and all Bean Giant Sprayers have the Giant Three-Cylinder Power Pump, which assures large capacity, even pressure, and a minimum of wear and strain. The cylinders are porcelain lined and are absolutely non-corrosive. Besides, they can't fill with grit and dirt—they're upright.

Don't buy a power sprayer till you've studied the Bean Giant.

SEND FOR OUR NEW CATALOG

It describes the Bean Giant, the Bean Challenge, the Bean Pony, and all Bean power outfits, hand pumps, pump accessories, and spray materials. Sent free for your name.

BEAN SPRAY PUMP CO.

"Everything for Spraying"

211 West Julian St., SAN JOSE, CAL. Also Cleveland, Ohio

TREES

All Varieties True to Name— Ornamental Deciduous Citrus

We particularly invite your attention to our magnificent line of fruit trees, guaranteed to give absolute satisfaction.

APPLES CHERRIES
PEACHES PEARS
PRUNES PERSIMMONS
POMEGRANATES PLUMS
CALIMYRNA FIGS
ALSO ADIRATIC TYPES OF FIGS

OLIVES

We have still a fair stock of all leading pickling and oil sorts to offer, but they are going fast; so don't delay placing your orders.

SMALL FRUITS

BLACKBERRIES LOGANBERRIES
CURRANTS RASPBERRIES
GOOSEBERRIES STRAWBERRIES

GRAPE VINES

The leading shipping and table sorts are in strong demand. Also raisin grapes, Muscat, Sultana and Thompson Seedless. We list only the best and quote at reasonable prices.

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East San Jose and Edenvale,
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BULBS

For fall and winter planting; also Flower Seeds for fall sowing.
NEW CATALOGUE just out; send for a copy. **Now is the time to sow Payne's Royal Exhibition Pansy Seed,** the best strain on the Pacific Coast. **Giant Perfection Stocks** and **Christmas Flowering Sweet Peas.**

THEODORE PAYNE
Seedsman and Nurseryman,
345 S. Main St., Los Angeles, Cal.

SURPLUS TREES

1100 Jonathan Apples, 4-6 feet.
300 E. Spitzenberg, 4-6 feet.
400 E. Spitzenberg, 3-4 feet.
230 Winter Banana, 4-6 feet.
130 Y. N. Pippin, 4-6 feet.
130 R. I. Greening, 4-6 feet.
400 Santa Rosa Plums, 4-6 feet.
250 Santa Rosa Plums, 3-4 feet.
400 Almonds, leading varieties, 4-6 ft.
Also assorted apples, peaches, cherries, plums, prunes, shade and ornamental trees. Write for prices.

T. J. TRUE,
Stanislaus Nursery, Modesto, R. D. 1.

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READY TO MAIL
The leading Seed Catalog of the West—Lilly's Catalog. Your 1911 crop depends on GOOD seed—send for this Catalog and get the best. Write now to the
CHAS. H. LILLY CO., Seattle, Wn.



Luther Burbank's New Plum
"DUARTE"
"Best Blood Plum yet produced"
Extra heavy trees, 6 to 8 feet, $1.25 each; 5 for $5.00
Strong trees, 4 to 6 feet, $1.00 each; 5 for $4.00.
Send for circular.
PIONEER NURSERY CO., Monrovia, Cal.



Still some first-class
Imperial Prune on Myro.
French on Myro and Almond.
Blenheim on Myro and 'cot.
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Bartlett Pear.
Eucalyptus, and a full line o general nursery stock.
MAX J. CROW
Santa Clara Valley Nurseries
Phone 471. Gilroy, Cal.

BERRY PLANTS

LOUIS F. SCRIBNER
PASADENA, CAL. R. F. D.

WANTED—For the Republic of Mexico; competent, hard-working nurseryman to start and take complete charge of nursery on profit sharing basis; only persons with first-class references need apply Pacific Rural Press, Box 67.

growers was recently held. J. N. Nagle, manager, and George H. Cutter of the California Fruit Exchange, addressed the meeting.

The Colorado Agricultural Anti-Pest Association was recently formed at Greeley. Particular attention is to be paid to grasshoppers, as they have caused loss to farmers amounting to millions of dollars.

The prune growers in the Eastern foothills about Saratoga and Cupertino have determined to make a fight against the thrip. To this end a meeting was held on January 11 where addresses were made by Earl Morris, County Entomologist, and Paul R. Jones of the U. S. Experiment Station.

CITRUS NOTES.

The Highland Fruit Growers' Association broke all records in the month of December by shipping out 80 carloads of fruit. Top prices were received for this fruit in the Eastern market.

The Elephant Orchards, according to their report, made the following amounts in their Christmas pool: $2.11 per cwt. for all fruit received and $2.20 for all fruit packed.

H. S. Brink, of Biggs, Butte county, recently sold 352 boxes of oranges for $1.70 per box, f. o. b. He also has 150 boxes left for late disposal. All this came from an acre of land. He figures his returns per acre this season at about $800. From his olive trees he picked over $100 worth of choice olives, which he disposed of at 75c. per gallon. The olives were used as windbreaks for his orange grove.

Several Plano orchard growers are laying concrete pipes throughout their groves in order to irrigate more effectively and economically. The Ting, Allen, Prestage and Ross orchards are being prepared in this manner. L. E. Prestage put in a concrete system at a cost of $1000. Part of this was put underground. Irrigating from concrete pipes not only saves water but distributes it more evenly about the trees. A stream from the pipes runs past about 20 trees, while under the old system the water ran down a 40-tree row.

Smith & Gregory have leveled 180 acres of land near Strathmore, Tulare county and they intend planting about 120 acres of this to oranges the coming spring.

The citrus growers of East Whittier and La Habra districts recently met and organized an association which will represent 2000 acres. A committee was appointed to look into the matter of locating the packing-house and to draw up by-laws. The committee is composed of R. W. George, chairman; Wm. Espolt, Henry Johnson, John Scott, J. G. Launer, A. M. Barnkardt, and J. B. Chaffey. The total acreage of the La Habra citrus district is 3500 acres. It is in the frostless belt. The famous Leffingwell lemon orchard is located there. The committee is to meet the directors of the Whittier Citrus Association and ascertain whether the new organization will be allowed to pick and ship its fruit under the established brand of this well known organization.

G. Harold Powell, secretary and general manager of the California Citrus Protective League, is establishing the finest citrus library in the country at his office in Los Angeles. He will not only have all the books published on citrus matters, but he will keep in close touch with the U. S. Department of Agriculture and will secure the aid of its specialists to answer questions or to give the growers the benefit of their knowledge of the citrus industry.

Charles D. Shaw, of Germantown in Glenn county, has inaugurated an irrigat-

(*Continued on Page 47.*)

KIRKMAN NURSERIES



We are wholesale growers of deciduous and citrus fruit trees, grape vines and eucalyptus trees.

Our stock this season includes 650,000 DECIDUOUS FRUIT TREES alone. A large lot of these are on Eastern seedling root, which has proven to be almost proof against root knot.

Get the best stock available and at the most reasonable cost from a man who selects the buds and scions of the best strains.

Deliveries made from our sales yards at Fresno, Madera, Merced, Turlock, Banning and Chico.

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Best Nursery Stock

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EUCALYPTUS IN ANY QUANTITY, AS WELL AS A FIRST-CLASS LINE OF GENERAL NURSERY STOCK.

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EUCALYPTUS TREES GENERAL NURSERY STOCK
4,000,000 Eucalyptus Trees. Large Stock of Fruit Trees
ORANGE COUNTY NURSERY & LAND CO., FULLERTON, CAL.

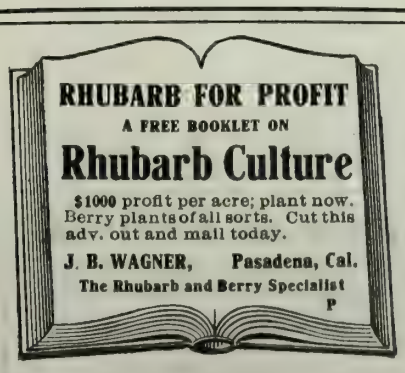
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Beans, Sanborn's Wax
Beet, Eclipse
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Spinach, Best "Swiss Chard"
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CALIFORNIA ALFALFA SEED

Choice quality, 16 cts. per pound. Send for sample.

Kutner-Goldstein Co.
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TREES

Eucalyptus, Pinus and Cypress in boxes

Ornamental Trees and Roses, Shrubbery

PRICES ON APPLICATION

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(Exclusively)

Buy now, and it pays to buy the best.

We offer a complete, clean, vigorous stock, which we think are as good as can be grown.

POLLARD BROS.,
Corner Mission St. and Los Robles Ave., South Pasadena, Cal.

Blake, Moffitt & Towne
Dealers in PAPER
1400 FOURTH ST., SAN FRANCISCO
Blake, Moffitt & Towne, Los Angeles
Blake, McFall & Co. Portland, Oregon

The Apiary.

HINTS ON PRACTICE.

Mr. J. W. Ferree of Newhall gives a southern California exchange some general hints on methods which some readers may find helpful.

There are three methods, the scientific, the let-alone haphazard, and the midway, that is, a little of the scientific and a good deal of the haphazard, I believe most commonly practiced in California. Location and kind of bees are very important features, which have not been given the attention they should have.

Building Up.—In the early spring the building up of each colony and having them free from disease is of the greatest importance. If in single hives when honey is coming in so as to stimulate them to brood rearing, then is time to attend to this. If early honey is scarce, stimulative feeding should be resorted to, which may be done in different ways. The best way is to have plenty of honey in the hive, breaking the cappings on one side of a comb every three or four days will stimulate them about right. If they have not plenty of stores, feeding honey or a mixture of honey and sugar is necessary. The best way is to feed every evening just a little more than they will use each day.

Expanding.—As soon as they have brood in three or four combs, spreading should be attended to, which must be done very carefully or more harm will be done than good. I repeat, it must be done very advisedly or it had better not be done at all. When the weather is warm enough for the bees to take care of more brood, move the comb of pollen on one side of the cluster one space, and insert an empty comb, or one with just a little new honey, or one with a little sealed honey, with the capping well broken. When this comb is used for brood and the bees are able to care for more, repeat the operation.

Starting In.—As soon as the colony is populous enough move the pollen comb on each side of the brood nest one space and insert empty combs. Repeat until the brood chamber is full of brood. If any combs are full of honey so they can't be used for brood they should be lifted out and taken care of, which can easily be done by putting them in a super and setting them on top of a colony that is ready for more room than the brood chamber affords.

When the brood nest is full and the weather is cold and unsettled, what to do next and be happy while doing it is what I have never been able to fully decide. To give them a super of empty combs is bad, and to give them foundation is worse. A few combs of honey to put in the super helps some, at least it seems so. To give them a half depth super of combs is good, but necessitates a great many shallow supers and combs and considerable work. When these are full the colony is in fine condition to give a full-depth super. The shallow frames of brood are good for building up weak colonies. The next best way is to put four or five combs in the super, put in a division board and let the quilt or gunnysack drop down and cover the remainder of the frames in the brood chamber. If the bees are wintered in two-story hives the manipulating of the combs will not be so necessary to give them room.

Comb Honey.—For comb honey production keep the shallow frames on until white honey is coming in freely, then take off the shallow frames and put on a super of sections. One super at a time is enough unless colony is very populous. The shallow combs which have brood in them may be used to build up weak colonies, the others to be extracted. When sections are half or two-thirds full lift super and put on an empty one. When the second super is well on the way put on another and thus tier up or rather tier down until the white honey flow is nearly over, taking off sections from top as fast as they are ready to come off, not waiting until every section in super is sealed. Unfinished sections may be put in the outer side of new supers, or supers may be entirely filled with unfinished sections and set on to be finished. Work to get sections finished before the white honey flow is over. Set on a super with shallow frames (which can be extracted) for the amber honey at close of harvest. Full depth combs may be used instead of shallow ones, but are not so good, for in extracting, work hard as you will, some will be ready before others. Take a few full combs from those and put in empty combs for a foundation. I generally have half or more of mine three stories high before commencing to extract.

CHANGED AREA OF CLEVELAND NATIONAL FOREST, CALIFORNIA.

The President has signed a proclamation eliminating 22,878 acres from the Cleveland National Forest, California, and adding 2710 acres. These changes are the result of a careful field examination made by the United States Department of Agriculture in pursuance of a general plan for the correction of all National Forest boundaries.

From the Trabuco Division of the forest are eliminated three small areas lying northwest of Elsinore lake, southeast of La Sierra grant, and northeast of the Trabuco grant. From the San Jacinto Division nine separate small tracts are eliminated along the southwestern, northwestern, northern and northeastern boundaries. The areas eliminated were found to be not chiefly valuable for National forest purposes, either because they are desert in character or are of value for agricultural purposes. The only addition made to the forest is at the southern end of the Trabuco Division, where a strip four miles long and one mile wide along Deluz creek is added.

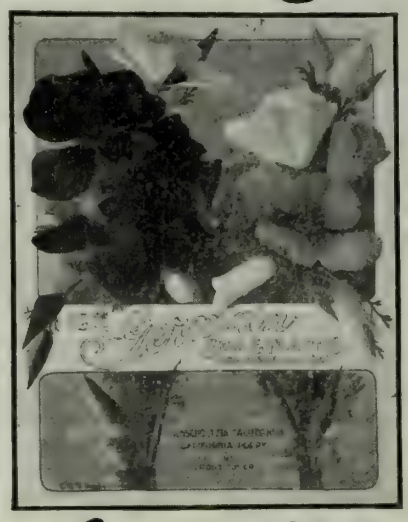
The unappropriated portions of the lands eliminated by this proclamation will be restored to settlement and entry after they shall have been advertised in the local papers by the Secretary of the Interior.

To Exterminate
GROUND SQUIRRELS, GOPHERS, also BORERS, ROOT APHIS, etc. on Fruit Trees.
Carbon Bisulphide
Is the only effective remedy.
For sale by dealers and manufacturers.
WHEELER, REYNOLDS & STAUFFER
OFFICE 624 California St., San Francisco.

FEIJOA SELLOWIANA
THAT WONDERFUL NEW HARDY FRUIT
Plants from 25 cts. to $2.50
1500 Quinces, good trees, $7 per hundred
500 Large Walnut—Pedigree stock
a very low price.
COOLIDGE'S RARE PLANT NURSERY
PASADENA, CAL.

EUCALYPTUS
Blue, Red, Gray, Manna, Desert, Swamp Gums and many others. Tough, hardy trees, selected rapid growers, thrifty and even in size, large or small as desired, for fall or winter planting. Guaranteed true to name and full count. Price right. Illustrated descriptive booklet and questions answered free on request. Write now.
LLOYD R. TAYLOR, Modesto, Cal.

EUCALYPTUS
Best varieties, large well rooted plants. Some balled for distant shipment at trifling extra cost. Large lots grown by contract Circular Free.
RIVERSIDE NURSERY
320 River street, Santa Cruz, Cal.
HENRY SHAW

GERMAIN'S SEEDS ERMINATE
Planting Time

Is near at hand. There is no greater help in making up the order for seeds than our splendid
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Vegetable Seeds
Flower Seeds
Field Seeds
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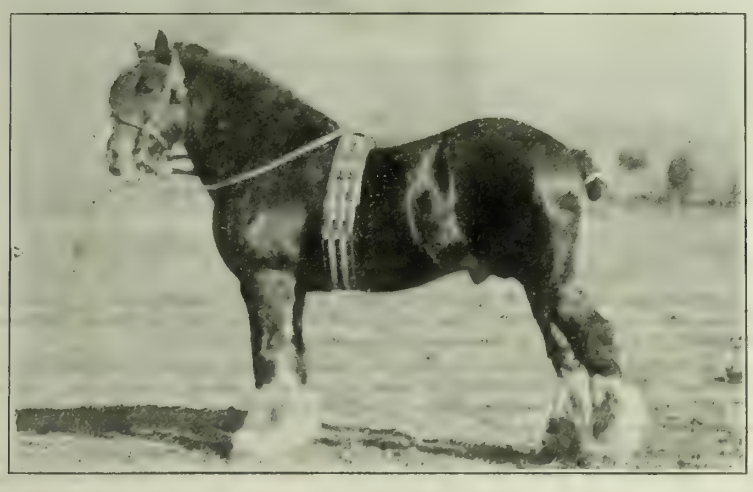
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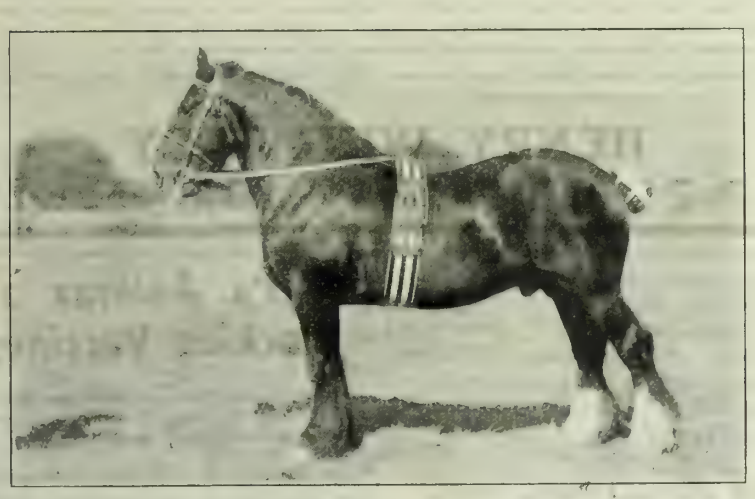
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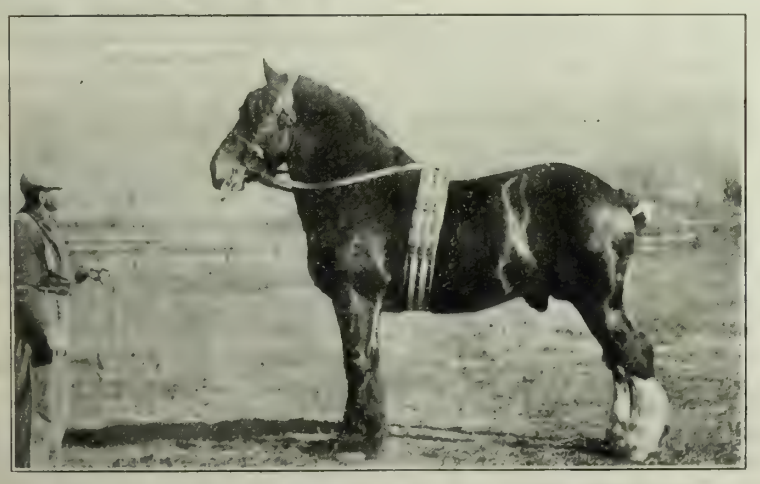
Prices for commercial horses have been very high for the last few years, and indications point to a continuation of this scarcity of equines. Several of the prominent draymen of San Francisco report that it is impossible to get heavy draft horses suitable for draying purposes. The farmers who have such stock need them so badly that they would not sell them for any consideration. The poor mongrel horse is not in demand, and this is seen time and time again when the get of high class draft sires bring the top prices at the public sales. Very often we hear of a big heavy drafter 1600 pounds and over with a dozen eager purchasers, while the nondescript horses are overlooked for lack of a buyer at less than half the prices paid for his better bred competitor. The San Francisco market is overloaded with hoards of mongrels that are neither drafters nor delivery horses. No one wants them.



Folville Conqueror, First Prize Aged Sire Stallion at Sacramento.



Shire Stallion, Birdsall Xerxes, Four Years Old.



Shire Stallion, Dunham Lockinger, Three Years Old.

An illustration of the scarcity of draft horses in San Francisco was demonstrated recently by a horse auction company that had been using the advertising columns of the PACIFIC RURAL PRESS. As they found it impossible to get available stock over the country they were forced to take out their ad from the paper. They could not get enough horses even for private sales, let alone for auctions. They said California was swept clean of available horse flesh and that it will be ten years before this demand can be filled. The cutting up of the large ranches into smaller tracts has created a market for thousands of horses where formerly a traction engine or big gang plows did the work. Under present conditions every farmer with his little 40-acre tract needs a horse or two to do the work about the place. As the newspapers show each day that more ranches are being broken up, the demand for horse flesh is bound to continue. Also California is doing a great deal of construction work, new dams, irrigation ditches, water and power plants and railroad work. They all need horses and will continue to do so for years to come. This construction work is very hard on the work stock and disables many. San Francisco is also a hard place for horses and kills some 5000 a year. It is evident that there is not liable to be an over-supply of horses for some time. That the motor truck will not drive out the horses is seen in a recent action of a large ice company in San Francisco. They had to discard the use of motors because they could not be relied upon, breaking down just when they were needed most.

There are no reasons which can be advanced to show that any other horses will outlast the heavy drafters as a money-making factor in our farm work or city traffic. He is today the surest and best means for profit making on the American farm. He may even fall off in value a $100 per head at a marketable age and yet produce a larger margin of profit than anything else the farmer can breed. It costs very little more to feed a $200 colt than it does to feed a $50 cow. California alone is not suffering under this scarcity of horses, but it is world-wide. The scarcity has become so great in Britain that the government is subsidizing the breeders.

Knowing that there was such a dearth of horses in California, Henry Wheatley of Napa commenced to import draft stallions. He looked over conditions and decided on the Shire as the best animal to suit California's requirements. He made several trips to England and has chosen the horses which he thought were best to suit our demands. Mr. Wheatley only recently returned from Great Britain with twelve stallions, mostly two and three-year-olds. In choosing these animals he made a specialty of bone and substance. He also did not overlook size, action and commanding presence, but he made bone his special object. Buyers are now demanding an abundance of bone in the horses. The light timbered sorts are discriminated against when it comes to paying the price. The demand for bone is more marked every year.

The wonderful foot of the Shire makes it especially suitable for work in San Francisco, where the hills are steep and the asphalt slippery. These huge Shire drafters by leaning against the collar are able to move enormous loads on account of their feet holding them down so well.

Mr. Wheatley's horses are kept on his farm near Napa, where they are under his personal care. He raises their feed and is under no great expense for their care. It is for this reason he claims he can sell his stallions at such a reasonable price. He keeps his animals in a fair round flesh. In order to keep them in this condition they are exercised each day and are only fed enough to keep them in strong muscular shape. Mr. Wheatley's aim is to keep the stallion no fatter than he should be to do the best possible day's work of which he is capable. That means he should be smoothly covered with a coat of muscle and no extra tallow. The high standard of the San Salvador stock was appreciated lately by Henry Struve of Salinas. Mr. Struve was desirous of buying a draft stallion, so he looked over the Shires in the East, but could not find any animal which suited him until his eye lit on one of Wheatley's two-year-olds. He bought the animal and is well pleased with his purchase.

According to James B. Lawrence, formerly manager of the Hartman stock farm at Columbus, Ohio, California is an ideal spot in which to raise draft horses. This is on account of the succulent grasses the year through. Also our even mild climate is an asset. A horse that is growing can not do well in extremes of temperature. To Mr. Lawrence's notion our climate resembles greatly the famous valley of La Perche, France, the home of the Percheron, where the secret of the wonderful growth of the colt is the native grasses, which are grown the year round. These animals are

HORSES AND CATTLE.

GEO. C. ROEDING, Fresno, Cal. Breeder Holstein-Friesian Cattle. Young heifers and bulls for sale.

JOHN LYNCH, breeder of Registered Short-horns; milk strain. High class stock. First-class dairy breeding. Smooth cattle. Best pedigree. P. O. Box 321, Petaluma, Cal.

BULLS AND COWS FOR SALE—Short-horned Durhams. Address E. S. Driver, Antelope, Cal.

N. H. LOCKE CO., Lockeford, Cal. Jerseys. Service Bulls and Bull Calves for sale.

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STUDARUS & CUNNINGHAM, Mills, Cal. Registered O. I. C. swine.

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CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroughbred Berkshires.

GEO. V. BECKMAN, Lodi, San Joaquin Co., Cal. Registered Poland-China Hogs, both sexes.

G. A. MURPHY, Perkins, Cal. Breeder of Champion Herd of Berkshires; also Short-horns.

H. B. WINTRINGHAM, Middletown, Lake Co., Cal. Breeder of Tamworths.

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TULARE LAKE STOCK FARM.

REGISTERED

Jacks and Jennets For Sale.

We breed the Best. Don't write—come and See. We can show you.

JAS. W. McCORD, Hanford, Cal.

always in this fine feed with no chances to stunt their development.

That California has the climate and the grass for horses is shown in our Palo Altos and Lou Dillons and many other famous horses, which have been raised here. California colts obtain a growth in one year's time, which takes from 18 months to two years to obtain in a cold Eastern climate where the youngster is locked up in a stable five months of the year and fed dry day and grain.

The hand writing on the wall points to a scarcity of draft horses for a long time so that the California farmer with his climate and grass should take advantage of it. He should raise draft horses, however, not animals that are neither delivery horses, chunks, fish, flesh, fowl nor good red herring.

SILAGE PITS.

It is during a dry year or a scare of a drouth that one hears on every hand, "I wish that I had more green feed." In order to help the farmers of New South Wales, the government of that State has been experimenting with silos in order to preserve green feed. It was found that shallow pits was the most satisfactory method of conserving silage. One farmer dug his silo as follows:

The surface excavated was 60x12 feet, the earth being removed to a depth of 7 feet 6 inches for 25 feet. The bottom measurement of the pit was 25x12 feet, with a batter at either end of, roughly, 2 in 1 to the surface. Two young men, with two scoops, a single-furrow plow, and horses removed the earth from the pit—approximately 140 cubic yards—in 4½ days. The walls were trimmed with spade and mattock within this time. The horses were yoked tandem to the plow, with long coupling chains from horse to plow. One man led the horses and the other controlled the plow. In this way they excavated the pit so as to leave an almost perpendicular wall.

In filling this pit the fodder was tipped in from one side until it was possible for a team to haul the fodder into the pit. On completion, portion of the earth removed was distributed over the fodder with scoops.

Another farmer suggests shallow excavations 4 feet deep, on the side of a hill or sloping portion of ground, so that the bottom of the pit will be opened out on a level with the lower portion of the slope. This method obviates accumulation of water in wet weather when portion of the silage has been removed, and also renders unnecessary the erection of a roof over the pit. Where sufficiently steep slopes occur, the method might be followed with advantage.

Location of Pit.—The site should not be liable to surface wash, floods, or soakage from the surrounding country. Where the subsoil excavated is uniform in formation and characteristics, there has not, to my knowledge, been any damage to the silage from soaking into the pit, whenever the precautions mentioned in the selection of the site were taken.

Two instances have come under my notice where white pipeclay underlay a stiff red-clay subsoil. The excavation was continued into underlying shale for some feet, but the soakage from the white clay bands needed constant attention. This trouble continued after the pits were bricked and cemented, but was overcome in one instance by placing joists in the bottom and covering them with flooring boards, and excavating a small well on one side to hold the accumulated drippings. A pump was permanently fixed for the purpose of pumping the pit out occasionally. In the instance where this was not done the silage was spoilt.

I would suggest to farmers who find, after sinking some distance, that the pit is leaking from any stratum of soil, to cease deepening, or get the desired depth in the silo by erecting above ground, or else to make some provision to remove the water when it accumulates. The risk of water soaking into shallow pits is not so great.

A dairy farmer should select a site for stack or pit handy to the milking and feeding yards. It would be better for this class of farmers to grow crops for silage as near as possible to the feeding place. Where it is a matter of feeding silage to stock other than milking cows, the area under forage crops may be anywhere on the run, and pits may be excavated convenient to the crop.

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Gombault's

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A Safe, Speedy and Positive Cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites. Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.

Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

WHEN ARE COWS MATURE?

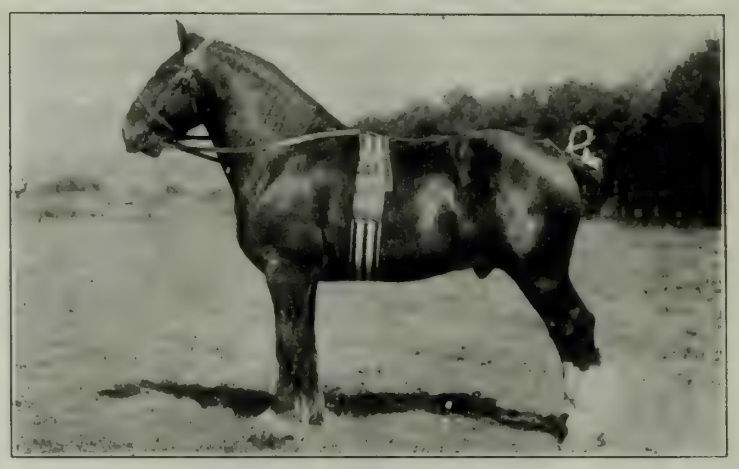
It is commonly supposed that the production of milk and butter-fat by dairy cows increases each year up to the sixth or seventh year, when the cow is at her best, but according to some recent figures obtained by the Highland Agricultural Society the largest production of milk was in the cow's eleventh year. These figures were based upon 1265 cows, which were under trial for six years. These figures show that the heifer gives more butter-fat and less milk, and as the cow gets older the percentage of butter-fat decreases, while the production of milk increases. This has been attributed to the fact that the younger animals use a portion of their food for the formation of body tissues, so that they use up more milk units. The table is as follows:

Age of cow, years.	Number in which av. is based.	Average yield of milk, gal.	Average per centage fat.
2	22	450.6	3.88
2½....	38	495.5	3.89
3	320	565.5	3.87
4	189	656.4	3.74
5	152	721.3	3.65
6	159	738.7	3.67
7	127	750.5	3.63
8	87	774.5	3.64
9	58	771.1	3.69
10	46	804.8	3.56
11	26	819.6	3.62
12	23	740.0	3.67

From this table it will be seen that there is a gradual increase in the yield up to the eleventh year, so, assuming a heifer calved say at two years and six months old, she would be practically dropping her eighth calf at or about 11 years old; this fact is well brought out, and the table will repay a little careful study. These figures bring out also another very interesting point, viz., that there is a steady decline in the percentage of fat until the tenth year is reached, after which, apparently, a slight rise takes place. Considering also the general yields throughout in connection with the percentage of fat, they may be considered very satisfactory.

Salvador Stock Farm

NAPA, CALIFORNIA



The cut above shows Severn Pilot, Champion Shire Stallion, shown at the Sacramento Fair in 1910; sold to McCormick Bros. of Rio Vista, Cal.

I now have for sale at my stock farm at Napa, Cal., ten Shire Stallions and two Percherons ranging from two to six years old. All of these Stallions were selected by myself in England and imported direct.

In selecting these Stallions particular attention was given to weight, BONE and action. No other breed of Stallions is so well suited to the demands of the California market as the Shire. His weight, BONE, and action making him particularly desirable.

My method of importing direct and of selling at my barn, enables me to make a much lower price than was possible under the old method of selling to companies, making at least a difference of 50% in the cost of the horse to the purchaser.

Space does not permit of detailed explanation, but in future issues of the Pacific Rural Press I will endeavor to show conclusively that the direct method of selling is the most rational and business like to pursue in buying a stallion.

Write me about your requirements and I will be pleased to give you full particulars concerning my stock.

HENRY WHEATLEY

NAPA, CAL.

WEST BUYING MORE HOGS.

The Pacific coast does not raise by half enough pork. Thousands of dollars worth of pork, either alive, salted or in hams and bacon were shipped during the year 1910. The shipments were so large that the Chicago Live Stock World said:

Evidence was accumulated in 1910 that the West is increasing its consumption of pork out of all proportion to hog production. Pacific coast markets have been the highest on the map and buyers for that account have raided feed lots almost under the shadow of the Missouri river packing houses.

Only one construction can be placed on this. The West is consuming more hog product annually, if not producing less. After ten years of cultivation the Texas hog industry is about as attenuated as ever. Growers have refused to respond to the appeal of Southwest packers for an increase supply and the statement that the crop now in process of maturing is considerably in excess of last season is encountering emphatic dispute. Western consumption will steadily increase, as the population of the Missouri valley and the Rocky mountain country is gaining by leaps and bounds, and the area of hog-growing territory naturally tributary to Chicago is shrinking annually, while Kansas City and Omaha are both awakening to the danger of a western movement almost from under the shadow of the packing plants located there.

The West must be reckoned with as a consumer of hog product hereafter. Not many years ago railroads running between Chicago and Missouri river points were quarreling over packing house business; not enough is left now to justify dispute.

Cutter's Anthrax and Blackleg Vaccines

are given the preference by 80 per cent of California stockmen because they give better results than others do.

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A fine alfalfa or dairy ranch, 60 acres or more. 45 in alfalfa. Large barns, dwelling, and good supply of water. Located close to railroad station, one hour run to San Francisco. Address Box 36, PACIFIC RURAL PRESS.

DRYING AND FRESHENING COWS.

The drying and freshening of cows is a very important one to the dairyman, as it affects the milk yield of the cow greatly. At a recent meeting of the Washington State Dairy Association one of the prominent dairymen discussed this question, and he gave the following answers to questions pertaining to these matters:

Question.—How old should a heifer be before freshening the first time?

Answer.—I should say that she should be about 30 months old—at least be old enough to have a good growth. I do not believe in having them freshen while they are small, as it will stunt their growth and they will never make large animals.

Q.—How long do you force your cows dry?

A.—I commence about eight weeks be-

fore they are due to freshen and want them to be fully dry at least six weeks.

Q.—Do you milk the cows dry immediately after freshening?

A.—No; I only take out a little each time for perhaps two days, as I find that lessens the danger from milk fever. I allow the calf to run with the cow and I take out just enough milk to even the udder up.

LIVE STOCK NOTES.

The fourteenth annual convention of the American National Live Stock Association was held at Fort Worth, Texas, January 10, 11, and 12. Many important matters were discussed, especially in regard to grazing in the National Forest, railroad legislation, and bovine tuberculosis.

The Sacramento rancho, near Paso Robles, recently received 800 stock cattle to be finished for the spring market. The Sacramento ranch has thousands of acres of bunch grass, which has not been touched in several years, and it is expected to put an exceptionally good finish on this stock.

Thomas Gordon, of Kings county, recently sold an 18-months-old draft stallion, which weighed 1350 lbs., for $300, and two draft mares for $400. These animals will be shipped to Canada.

A. B. McDonald recently brought 2000 sheep from Albuquerque, New Mexico, into the Imperial valley, where they will be fattened. This brings the total number of sheep shipped into the valley to more than 10,000 head.

The horns of the famous steer "High Spot," which was killed near Red Bluff some time ago, have been mounted. They measured 42 inches from tip to tip. High Spot was wild and weighed some 2400 lbs. It took several weeks to capture him, but he killed himself before he could be brought to civilization.

The three-year-old short-horn steer which was raised by Goodale & Cassidy at Gazelle and which brought the top price on the Portland market, was slaughtered and weighed dressed 1160 lbs. This animal live weight was 1730 lbs. and dressed more than 67%. This is a better showing than some of the champion beef records at the Chicago International Live Stock Exhibition. The hide of this animal weighed 128 lbs., or over 7% of the live weight. The animal sold at 14½c. per lb., or a total of $250.85.

The Supreme Court of New Mexico has recently handed down a decision which is of interest to stockmen who have been grazing their cattle in the National forest. The case above was with a stockman grazing 1000 head of goats in the National Forest without a permit. He was arrested for this illegal grazing and the court handed down the decision that every person using the National forest must first obtain a permit from the rangers and then pay a fee.

The Colorado Agricultural School is making some experiments as to the relative value of ground, cut and whole hay. They are taking three lots of steers and lambs, each one is fed on three different kinds of hay and the improvements and changes are closely noted. In order to be sure of the experiment, it is being repeated. This experiment will no doubt furnish some much needed knowledge concerning the value of ground hay.

LEGISLATIVE BILLS OF INTEREST TO STOCK RAISERS.

Harry Polsley, of Red Bluff, is preparing a bill providing for a State bounty on coyotes which will be equal to the bounty paid by the county in which the animal is killed. At present fifteen counties have bounties for coyotes, and it is only in those counties having a coyote bounty that the law will be effective. In Tehama county alone, Assemblyman Polsley declares, the loss by the sheepmen from coyotes last year amounted to from $15,000 to $20,000.

Assemblyman Slater will also introduce a bill providing for the registering of stallions. The main idea of the bill is to promote the better breeding of horses in California and do away with inferior breeds. For instance, the compulsory furnishing of a pedigree will make it plain whether a Wilkes or a Dillon or any other breed is of the first strain or second.

FETID BAIT FOR TRAPPING.

To the Editor: Would you give me the prescription for fetid bait to be using in trapping.—Reader, Durham.

Fetid scent is used only to cover the bait. It attracts animals that pass and repass the trap without going to it. Fetid scent should be applied with a feather over the bait. One of the most common scents is made by cutting up a fish which is rich in oils, such as trout or eel, into small pieces and putting these in a corked bottle. When this is placed out in the sun it gives off a rancid oil with a very odorous smell which wild animals like.

Another good scent is made by putting common angle worms in earth which is saturated with milk. In order to prevent the worms from escaping, a boxful of earth should be used. After the worms are bloated with the milk put them in a corked bottle in the sun until the mass has decomposed. There are several other scents used, but the above two are easiest to make in California.

WOOL GROWERS' MEETING.

The National Wool Growers' Association, which met this week in Portland, are making no fight on the tariff question. The delegates seem to be unanimously in favor of schedule "K" of the Payne-Aldrich tariff law, which they claim provides adequate protection. To disturb the tariff they think would invite calamity in the wool industry. President Gooding severely criticised the railroads in his opening address. He claimed that they obstructed the passage of humanitarian laws in regard to hauling sheep. He also said that the freight rates charged on wool were exorbitant. Omaha is said to be the first choice as the place for the next national convention.

THE LINCOLN ASSOCIATION.

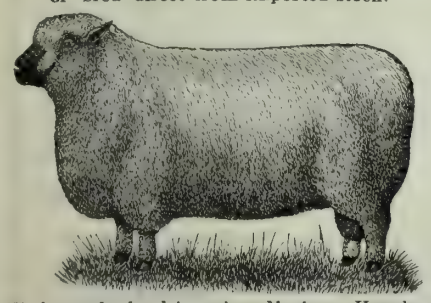
The annual meeting of the Lincoln Fruit Growers' Association was held in Lincoln, December 31, 1910, and the following officers and directors elected for the ensuing year: President, N. L. LaBrie; vice-president, M. Arruda; secretary, Fred Clark; treasurer, M. Godley, with H. D. McCarthy, J. E. Fowler and E. O. Bohme on the board.

The association is building a fruit house which will be a credit to its home town, from which it has had more loyal support when needed, and with its advantage of location, much expense will be saved in the handling of its business, which, in the hands of Mr. Ben Chamberlain, its efficient and trustworthy manager, is bound to grow and be productive of good results.

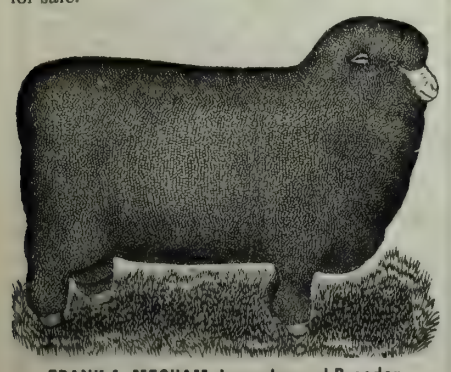
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We have also bred American Merinos—Hornless Sheep—for 30 years. They are a large sheep without wrinkles. Rams will produce 20 to 25 pounds of long, white wool yearly. Sheep of both sexes for sale.



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Let your rent money work for you, each year placing to your own account what has gone forever when paid the landlord. In a few years time the rent money of the past comes back to you in a nice farm home fully paid for, where peace, plenty and prosperity will always be yours.

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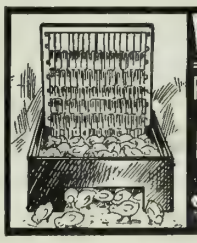
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SORE SHOULDERS IN HORSES.

At this season of the year, when the coat is long and the weather often wet and "muggy," says the Farm and Home, there is generally more trouble with sore shoulders and backs than at any other time. Although usually classed as minor injuries, they are a fruitful cause of pain to the unfortunate animals, and a great source of annoyance and loss to the owner. Such injuries vary from mere loss of hair from friction to deep, angry wounds, and it is generally the absence of a "stitch in time" and the continuance of the work that cause trouble all round, and often convert a minor injury into one that lays the animal up for a long time, or possibly renders it absolutely useless for work and necessitates its early destruction. This is not uncommonly the case where fistulous wither is caused by bruising from an ill-fitting or badly-constructed collar or saddle.

Badly-Fitting Harness.—Usually it is badly-fitting harness that causes sores, but some horses are more disposed to "wring" than others, and prove so troublesome that they are only to be kept going by unremitting care and attention. The first essential is to attend to the fit of the collar or saddle, and to see, in addition, that it is kept scrupulously clean and free from dirt and sweat, and thoroughly dry when put on. But something more is necessary in the shape of treatment of the abrasion, and, in cases where the animal is naturally thin-skinned and disposed to "wring," it is desirable to harden the skin of the shoulders or back by the use of astringent lotions. So far as the gall is concerned, unless very severe or aggravated by continued irritation and prolonged neglect, time will heal it on removal of the cause, but there is never much time allowed, and the owner wants his horse got quickly to work again, with its shoulders quite sound and hard. The carter has a hardening lotion of his own, which finds no place in modern veterinary materia medica, but in more refined circles simple astringents, like alum, sulphate of zinc, and sugar of lead, find most favor, and are both cheap and efficient. An example of a hardening lotion with which tender shoulders may be frequently sponged is: Powdered alum and sulphate of copper, of each ½ ounce; nitrate of potash and sulphuric acid, of each 2 drachms; rain-water, 1 quart. Apply with a sponge on removing the harness. It is a good plan to leave the collar or saddle on until the skin is quite cool, instead of taking them off at once, as is the usual practice. The harness should be removed from the collar, or the girths loosened, and the collar or saddle lifted, to let the air under, and then allowed to fall back in position and left on until the horse is quite cool. In this way, and by using an astringent lotion, tender-skinned horses can generally be kept going fairly well.

First Signs.—The first sign of injury is generally a wrinkling of the skin, or perhaps a puffy swelling, visible after the part has cooled. This is the time to commence treatment, by easing the friction or pressure and hardening the skin. If neglected, the part remains tender for a long time, or, if the irritation continues, there results a raw sore that heals with difficulty. In altering the pressure, it is common in agricultural stables to cut a piece roughly out of the lining, leaving a hole corresponding to the wound. This is a mistake—it spoils the harness and is not nearly so effective as padding around it. When a wound has resulted, the horse should at once be relieved of work, or employed for a different purpose, and the sore treated with a solution of one drachm of chloride of zinc in a pint of distilled water.

STANISLAUS COUNTY THE PREMIER DAIRY SECTION.

The recent report of the State Dairy Bureau shows that Stanislaus county produced 4,363,296 lbs. of butter. Humboldt county, which led the State in butter production for many years, was second with 4,273,649 lbs. Fresno was third with 3,290,825 pounds.

On account of the increased acreage of alfalfa and the importation of milch cows into Stanislaus county, many dairymen think that the total production of butter is even larger than the State Dairy Bureau's figures show. Within the last two weeks some 500 dairy cows have been imported into this county. B. F. Anderson recently purchased 131 head of Holsteins from A. W. Norris of Woodland. The price was $12,000 and includes some of the best Holsteins in the State.

Lee Jones, in the early part of this week, brought in 62 of the best Holsteins he could get in the Salinas valley. The largest importation was 360 dairy cows from Marin county made last week.

With all the new cows coming into this county and the increased acreage, Stanislaus county should soon be leading in butter production by several million pounds.

REGISTRATION OF STALLIONS.

The bill which has been drawn up for the California legislature regulating the registration of stallions has for its object: First, to encourage the use of pure-bred, sound and individually good stallions for public service. Second, to eliminate the rivals of such stallions, including the unsound horse and the horse of mongrel breeding.

The greatest good has come from the barring of unsound animals from public service in States where a similar law is in effect. That unsound conditions and predisposition are transmitted from parent to offspring is no longer a question. It has been a commonly accepted fact in France, England and Scotland. Our breeders have been slow to accept it, which is one of the reasons why we must look to those countries to replenish our studs.

About forty-five horses of pure breeding have since 1907 been barred from service in Minnesota, because of unsoundness. Perhaps three or four times as many grade stallions have shared a like fate at the hands of the State Board. This number, however, represents only a small part of the number actually forced to retire. Reports from the Dakotas and other near-by States, not then protected by similar laws, show that many undesirable horses were unloaded there, only to be driven out a little later by the enactment of similar laws by those States.

GLIDE SHORT-HORN SALE.

The dispersal sale of the Glide Shorthorns held at Chase's Pavilion, San Francisco, did not bring the prices the animals warranted. The lack of rain made the buyers cautious. The top price paid for a cow was $300. It was given by C. K. Halley for Lassie Valley with a red bull calf at foot. William Pierce paid the highest price for the red bull Lassie King. The price was $375 and the animal was first prize junior yearling at the State Fair. Another yearling bull, Bapton Broadhooks, was sold to F. H. Bixley for $350. The lowest price paid for a cow was $120 by F. M. Barnett for Green-Wood Lassie, five years old. The lowest price paid for bulls was $100. The average price paid for 35 bulls was $164, while 20 cows, some with calves at foot, averaged about $200. At the Glide sale last year 16 cows and heifers averaged $156 and 30 bulls averaged $147.

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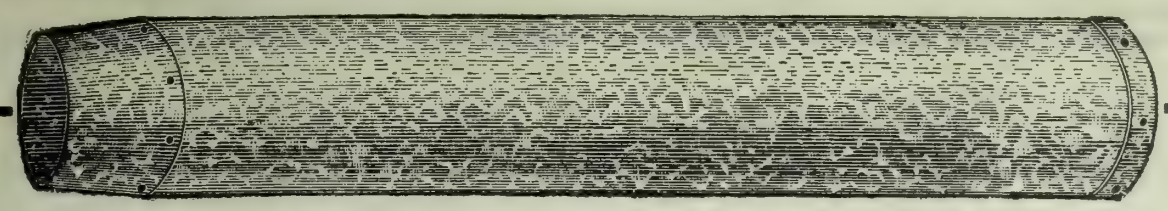
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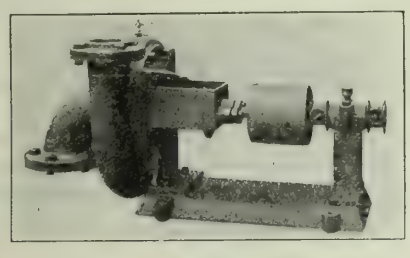


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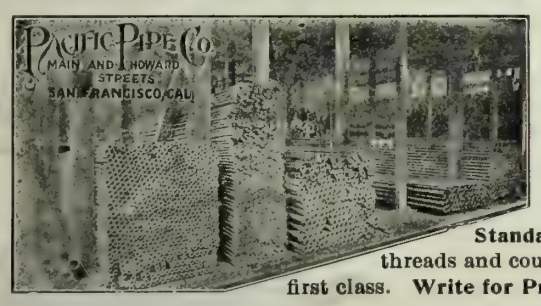
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Poultry Department.

Conducted by M. Russell James.

IN PLEASANT WAYS.

The Pacific Rural Press finds refreshment in the following letter with photo, sent in by an old subscriber, Mr. F. A. Poland of Mountain View, California. Though each one connected with this paper endeavors, in a more or less humble way, to be of help to its readers—to "keep them up with the procession" and to "put 'em next" the best things in agriculture—it is such frank talks from our farmer patrons that really put us in touch with them and their needs, and encourage us to "keep up with the procession" ourselves. The accompanying picture is an attractive scene under the orchard trees, and represents the pleasant ways of life where industry, health, and interest join to produce the happiness and content that can still the world's unrest:

To the Pacific Rural Press: About 25 years ago, when living on the corner of Walnut and Virginia streets, Berkeley, I began studying up on orcharding. "California Fruits" was closely followed. During the six years on that corner I also invested in a Pacific incubator. There was plenty of range in Berkeley for my hens at that time.

In 1888 I bought 20 acres in Mountain View, Santa Clara county. Planted 15 acres of prunes and 3 acres of Muir peaches. Very satisfactory results have followed—thanks to advice in "California Fruits." At the present time my prune orchard is sown to oats. In one spot I raise hay enough to keep two horses through. In another spot near the barn I am filling in with "Leghorns." The poultry department of the Rural conducted by M. Russell James is very interesting to me. I also know the climate and adobe he has to deal with. Last spring I bought a Cyphers incubator, 244-egg capacity. Made three hatches; read up on feeding and care; am now testing out my conclusions. Trust you will realize that the Poultry Department is of great value to your columns and not crowd it out with cowpeas, etc. Cover crops are all right, but portable coops containing 12 Leghorns—those are what pay. Inclosed photos of coops illustrate how to fill in outs and utilize available space for quick returns—intensive cultivation, seed to fruit (egg to egg) in six months; also show what may be done with old lumber and fruit trays. The first three are fireless brooders; next to last coop an 8 by 8-foot colony coop; next beyond a temporary portable coop, 8 by 16 feet, full of cockerels; another coop in front is a yard for chicks in brooder. These coops are now moved; temporary coops taken down, as the trays were only wired together, set aside for another campaign.

The ground is now covered with six permanent coops, each 8 by 60 feet, and in front, between coops and road, a patch of alfalfa 50 by 100 feet has been sown for summer feed. In the photo (see cut) the coop which is made out of old trays, is 6 by 7 feet; no floor. In that coop five hens and a cockerel have been keeping house; confined since last February. One hen 6 years old, one 5 years old; the other three pullets, mixed breeds. The following is their egg yield for 11 months in numbers of eggs and percentages of a possible yield if every hen laid every day:

	Eggs.	Per cent.
February, 1910	102	.7285
March	113	.7290
April	102	.6800
May	105	.679
June	96	.640
July	96	.619
August	68	.438
September	57	.380
October	25	.16
November	18	.12
December 1 to 29 inc.	19	
Total	801	

All have molted and have a fine crop of feathers. When necessary I move the coop ahead 3 feet. Poultry flats beat cowpeas, eh? This may sound too much like a back-lotter. The pullets in my 8 by 60-foot coops are filling egg cases now. These coops are very satisfactory. Will soon weed out non-producers, reduce numbers, and confine them in two coops and get the other four coops ready for my spring hatch, after the chicks leave the brooders. My dream, when a reality, should consist of 66 coops. You want facts and figures, not dreams, so will postpone data on the coops.

Several years ago Robert Ingersoll lectured in Augusta, Maine. One point he covered and clinched. He said, "What we want is a country of homes—who ever heard of a man fighting for a boarding-house?" This "back-to-the-soil" furore will create more suburban homes of a few acres. In those homes intensive cultivation will net good results. Horticulture, stock, gardening, and poultry will each have its allotted space. From those



Poultry and Fruits—Place of F. A. Poland, Mountain View.

few acres a large part of the family living will be produced and a surplus of products for market bring ready money for other expenses. Imaginary wants will be curtailed; contentment gives power over the unrest that is making so many unhappy.

The poultry interest in the north end of Santa Clara valley is growing. A large plant is being installed in the foothills back of Los Altos. Charles Weeks, near Palo Alto, has a growing plant and is marketing quite an amount of dressed poultry. He draws from Sunnyvale and this district. With best wishes to the RURAL. F. A. POLAND.

Mountain View.

POULTRY NOTES.

THE IRREPRESSIBLE LEGHORN.—Reports in exchanges are to the effect that the fifth laying competition at Lincoln College, New Zealand, has ended in another triumph for Leghorns, especially Whites. All the first 12 pens were of that breed, and 11 of them were of the Whites. The records of the first 6 pens, all White Leghorns, are as follows: 1, 1371 eggs, average 228; 2, 1341 eggs, average 223; 3, 1328 eggs, average 221; 4, 1291 eggs, average 215; 5, 1287 eggs, average 214; 6, 1276 eggs, average 212. The competition extended over 12 months, 6 hens to a pen, and the lowest number produced by the winning pen in any one month was 55 eggs, in March.—London Farm and Home.

MIGHTY IS THE HEN.—The late census shows that the American hen gives us 16 billion eggs a year these days. The census shows there are over 200,000,000 laying hens in the United States, and this is not to be taken as a high estimate, as the lowest number given is the rule where hens and eggs are concerned. The value of the hens is estimated at over $70,000,000. All other fowls bring poultry values up to $85,000,000. The weight of the eggs laid in a year tip the scales at 970,000 tons.—Technical World.

CHICKENS "DOPE FIENDS."—A new item from Pittsburg, Pa., says: Whether Harry Roseburg, a local policeman, is trying to square himself for his beat or is being really and truly doped by his hens is a question that is bothering his friends today. According to his statement his hens are "dope fiends" and are laying doped hen fruit. Poppies—the same kind that provide the underworld of China town with such wonderful dreams—are the cause of the fall of chantecler's harem. All class distinction was lost in the mad fight for the "hop," Roseburg declares, and the haughty Reds took their dope from the same stem as the plain chickens having no family tree. The hens lay about the yards in a seemingly unconscious state until an investigation disclosed them making for the poppy bed. Pleasant feelings followed by dreams came to the policeman when he had eaten eggs from the erring flock.

COLD WEATHER CARE.—With chickens in winter much depends upon starting them to work actively in the morning. The days are short at this season, and the hens, unless well supplied with food and kept active, will not keep in good flesh and furnish eggs. Feed and water early every morning. Salt in small quantities in mash feeds is necessary, and, in very cold weather add to the equivalent of one peck of same a spoonful of red pepper. An abundance of water easy of access and not easily polluted, should be before them at all times, also dry sand or gravel, old lime or motar and shells. A space should be set apart littered with leaves and chaff or straw, for them to scratch in. This should be kept clean and dry and into it should be thrown wheat and small grains and seeds. This will warm them up cold mornings scratching out the grain.—Michigan Farmer.

STARTING WITH DUCKS.—Experience and investigation have proved that two-thirds of the failures among beginners in duck culture are due to the fact that the breeding stock get out of condition either by being too fat or not having proper care. Chickens get their exercise by scratching, but ducks are not built that way. Swimming and paddling in the water give ducks a chance to exercise the muscles and also to keep themselves clean. This exercise will prevent the ducks from becoming overfat, will give better fertility to the eggs and stronger and more vigorous offspring. A common complaint from beginners is that their ducks are suffering from sore eyes, are going blind, and wasting in flesh. This trouble is never experienced where the stock have access to a stream of water. There they can duck their heads under the water, thus washing away the dust and dirt that may settle in the eyes and which causes soreness, resulting as above stated. Where ducks are kept on land, they should be provided with 3-gallon galvanized iron pails so that they can get their heads way down in the water. Never give them water from shallow vessels or troughs. Another source of loss with beginners, where bathing water is not provided, is pollution of the soil. In drinking, ducks slop considerable water and their excrements are deposited to a considerable extent in the vicinity of the drinking vessels. Now, as ducks have a habit when drinking of first running their bills into the earth and then into the drinking water, naturally they will poison their own system with this polluted soil. The remedy is to have double runs to each pen, so that when the ducks occupy one run a green crop may be sown in the other. This will have the double effect of disinfecting the soil and furnishing a supply of green feed.

Twenty ducks and five drakes make a good start for a beginner. For breeding, ducks and drakes in their second year are best. The duck's laying season usually begins in February and ends in August, although early-hatched ducklings occasionally lay in December and January. The eggs show the greatest fertility from February to May.—Poultry Advocate.

The laying of abnormally large eggs is an indication that the hens are too fat.

HISTORY OF THE SPARROW BOOM.

The sparrow pest is one which poultrymen cannot much longer ignore. These city hobos are constantly increasing in numbers and extending their raids still further into the suburbs and countryside. The amount of grain which a flock of them makes off with when it swoopes down upon the poultry feed would be surprising, even if each bird got but a single grain; but even this great loss in feed is not the worst feature connected with the sparrows about the poultry quarters. They spread filth and vermin everywhere, pollute the drinking water and destroy the green feed kept tender through much pains during the dry season. Some concerted plan of action should be entered into by poultrymen and fruit growers to exterminate these freebooters.

It is hard to realize, says the St. Louis Globe-Democrat, that less than forty years ago there was a "sparrow boom" in this country that sent the price of these birds sky-high in New York. The story of the sparrow in America is an unusual record of the misconception of a bird's value. The first sixteen birds were imported in 1850 by Nicholas Pike for the Brooklyn Institute. They did not thrive, and the following year $200 was raised by a committee of the institute and a larger lot was imported. These were let loose in the grounds of Greenwood cemetery, Brooklyn. Within a few years there was a "craze" for sparrows. In 1860 twelve birds were introduced in Madison Square Garden, New York. Three years later they were introduced into Central Park and into the Boston Commons. In 1869 the city government of Philadelphia imported 1000 of these birds from Europe, the largest single importation ever made. In 1867 a colony was taken to Galveston, Texas, and during the next five years they were taken to California, Salt Lake City and points in Illinois, Wisconsin and Ohio. All of these importations of the birds are matters of record in ornithological circles. It was the most remarkable bird craze any country has ever seen, and the entire country has been paying the bill ever since.

The sparrow was hailed for years as the bird that was to prove a great benefactor to the United States. In less than thirty years after the first eight pairs were introduced into Brooklyn in 1850 the bird had so completely spread over the United States and so belied its reputation as a benefactor that efforts were started to rid the cities of the great flocks. Every resident of American cities knows how completely such efforts have failed. In some of the country districts the birds have not yet become numerous, but they are so thick in most American cities that they actually make the city "crowded" from a bird point of view, and the new crop of sparrows are forced to go to the outskirts or to the country to get their dishonest living.

The sparrow is as shrewd as the rat and as clever as the street Arab. It not only successfully dodges the trolley car, automobile and the restaurant cat in its daily search for food, but it rivals the wolf in its ability to steer clear of poisoned food and dangerous traps. After long experiments, the biological survey officials declare that it is almost impossible to poison the sparrow successfully even in States where the law does not prohibit the spreading of poisons. In the first place the sparrow will not touch food in an unusual place. If the poisoned grain is thrown where it will not injure other birds and animals the sparrow knows there is something wrong with it. If the birds actually eat the poisoned food and two or three of their number die, the others leave in a hurry. The sparrow has literally driven all other city birds into exile. It has taken their nests and raised such a rumpus when the others tried to fight that the well-bred song birds have gone off in disgust. Like a noxious weed transplanted to a fertile soil it has taken root and dessiminated over half a continent before the significance of its presence has come to be understood.

Dr. Fisher and his associates in the government biological survey have a new plan for the extermination of this worst pest in the feathered kingdom. Every householder is to have a sparrow trap—a cheap but effective little device that has been secured from England, where the sparrow was secured sixty years ago. These traps are to help solve the cost-of-living problem. From the sparrow trap each day are to be taken plump little birds to be fried, pot-pied or prepared in some other culinary disguise. Those who have tried sparrow fare declare that the bird is a most delicious meat. For a long time it has masqueraded under the name of "reed bird" in various cafes. Details as to the manufacture and use of the new sparrow trap are to be published as soon as it has been thoroughly tested. Meanwhile the department is publishing guides to the destruction of the sparrows. If the public will join in the new crusade against the sparrow it is believed that its numbers in this country may be greatly reduced. The fight must be thoroughly organized, however, and no tender-hearted persons are to be allowed to interfere with the slaughter.

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The Home Circle.

At the Door.

I thought myself indeed secure,
So fast the door, so firm the lock;
But, lo! he toddling come to lure
My parent ear with timorous knock.

My heart were stone, could it withstand
The sweetness of my baby's plea,—
That timorous, baby knocking, and
"Please let me in; it's only me."

I threw aside the unfinished book,
Regardless of its tempting charms;
And, opening wide the door, I took
My laughing darling in my arms.

Who knows but in eternity
I, like a truant child, shall wait
The glories of a life to be,
Beyond the heavenly Father's gate?

And will that heavenly Father heed
The truant's supplicating cry,
As at the outer door I plead,
"'Tis I, O Father! only I"?

—Eugene Field.

An Amusing Story.

"Yes, Polly and me does look a good deal alike, it can't be denied," said Aunt Susie Hatch, settling her cap more closely over her gray curls, "though there is folks that think she looks older 'n' I do, if we be twins. But 'taint to be wondered at if she does, for she's buried two husbands, an' no woman can live sixty-eight years an' hev the care of two husbands an' not show it. I ain't had but one, an' he's an uncommon quiet man aand well behaved, though I dunno's I ought to say so right before him, it might make him vain."

"Likely enough 'twill," replied Uncle David, as he gave the fire a vigorous punch, and then they both laughed and looked more good natured than ever. They were an amiable, well-preserved old couple, with young hearts, and I took great delight in visiting them, and listening to their old-time reminiscences.

"Your sister does look as though she has seen trouble," I remarked, seeing that Aunt Susie expected me to speak.

"Wall, guess she has, an' if it hadn't been for me she'd ha' seen more. After her first husband, Seth Jones, died, she was possessed to marry Uriah Hayden, and he was a dretful mean man; used to cheat an' drink, an' had a terrible temper. But she wouldn't believe a word anybody said against him, an' I s'pose she'd ha' married him, if I hadn't broke the match off."

"How did you manage, Aunt Susie? Please tell me about it?" I said, as I sat back comfortably in my chair, to hear one of the old lady's amusing stories.

"Well, I don't mind if I do, bein' that you're an old neighbor, an' I s'pose Polly will stay down to Mis' Green's to tea, so I shall hev plenty of time."

"'Twouldn't be good for you, Susie, if Polly knew you told about it," said Uncle David, with a sly glance at me.

"I guess I ain't afeard of my own sister," said Aunt Susie, indignantly.

"'Sides, she won't know it. Miss Adams won't tell anybody. Wall, 'twas in the spring after Polly and I was twenty-seven the October afore. She was the widder Jones then; her husband had been dead nigh on to two years, an' she lived on a small farm down in the Haynes settlement and hired it carried on. Uriah Hayden was in the neighborhood, an' nothin' would do but Polly must hev him, an' she was blind to all his faults. Mother an' I was alivin' on the old farm then. I was to home 'cause I was about thirty. I don't approve o' folks bein' married young."

"Huh?" said Uncle David, with another look at me. "It's my opinion it's 'cause you didn't hev a chance."

"Didn't hev a chance, indeed!" cried the old lady. "I guess I might ha' been married any time I said so, David Hatch. I ain't forgot how you got down on your knees an' begged me to hev you, with tears in your eyes, and so at last I took pity on you. I was allers a terrible soft-hearted critter. Well, lemme see, where was I? Oh, yes, I know. Wall, as I was a-sayin', mother an' I was a livin' on the old place, an' we kep' hearin' how that Polly was a goin to be married to that worthless Uriah Hayden, an' at last mother says to me one day, says she, 'I can't stand it any longer, Susie. I can't bear to hev one o' my gals throw herself away like that. I want you to go right down there an' see if you can't prevent 'em from bein' married.'

"'Why, mother,' says I, 'what can I do?'

"'Oh, I dunno,' says she; 'but you was allers a cunnin' critter an' maybe you can manage it some way or other.'

"It was settled I should go an' Aunt Hanna Smith could come over to stay with mother. It didn't take me long to get ready, for we was well off an' I had good clothes. In them days Polly and I looked as near alike as two peas an' we was both consid'able good lookin', if I do say it. When I left home I remember that I wore an alapacky ground, all trimmed with fringe, an a hat with a green feather on it. 'Twas about twenty miles down to Polly's, an' I went on the stage an' arrived a Wednesday noon. Polly warn't expectin' me, but she was real tickled when I walked into her neat kitchen. She kep's askin' me questions about mother an' the folks at home, an' I answered 'em all an' never mentioned what we heard about Hayden. You see, I bided my time."

"Done jest so ever since I see you," interrupted Uncle David, hastily.

"David, I wish you'd keep still," said Aunt Susie, mildly. "You're allers a jokin' when I begin to tell anything. I should think you'd know by this time that it's dretful bad manners to interrupt anybody when they're pursuin' the thread of narration. Well, Polly said she hadn't been feelin' jest right for a few days. Says she, 'I ain't slept much for two night's, an' I feel dretful near beat out. I hev been tryin',' says she, 'to decide an important matter, and at last I've made up my mind. The individual,' says she, 'is comin' for his answer this evenin,' an' when he comes you'll hev to excuse me. I'll bring some magazines out into the kitchen for you to read while he's here.'

"'Oh, that'll be all right,' says I, carelessly.

"You see, I knew by that they warn't engaged yet, an' I was to my wits' end to know how to manage. I knew 'twouldn't be no use to argy with Polly, for she was allers terribly sot in her ways, an' I found out before long by her talk that she'd made up her mind to accept him. But as we sat there a talkin' an idee flashed across me. You see, when I was gettin' over the fever, good old Dr. Wheeler gave me some restin' powders 'cause I couldn't sleep. Says he, 'You needn't be afeared to take 'em, for there's nothin' in 'em to hurt anything.' Well, when I was packing up to go down to Polly's, I see them powders an' something seemed to tell me to put 'em in, so I did. An' now I said to myself that if I could get a chance I'd drop one into Polly's tea at supper, an' then if I could get her off to sleep afore Uriah come, I could easily send him off with a flea in his ear.

"Wall, it seemed that everything worked right in my favor. After Polly'd got the table sot and the tea poured she went into the buttery after something she'd forgot, an' I dropped the powder into her cup.

"We eat our supper, an' then I helped her wash the dishes. After we had sot down Polly began to nod, an' says she, 'I'm terrible kind o' drowsy, Susie. I b'lieve I'll lay down a few minutes an' I may drop asleep. If anybody should come in, be sure to call me.' She went into the bedroom and it warn't no time, hardly, afore she was sound asleep. I felt kind o' guilty an' scared like, though I knew that no harm was done. Dr. Wheeler had said that the powders wouldn't hurt anybody, an' he was a nice old man as ever lived.

"Wall, I went an' dressed myself in one of Polly's gowns, and fixed my hair like hers, an' then I sot down in the sitin' room. Pretty soon I heered a knock at the door, an' went an' opened it. There stood Uriah, in his Sunday suit. I had seen him, a few times, some years ago.

"'Good evenin', Mrs. Jones,' says he.

"'Good evenin', Mr. Hayden,' says I. 'Walk in an' set down.'

"I didn't feel just at my ease, but I tried to appear so. He made a few undifferent remarks about the weather an' the new meetin' house, an' I responded as best I could. I couldn't help thinkin' that I should be in an awful predickerment if Polly should wake up.

"'Wall, Mrs. Jones—Polly,' said he, I called tonight, according to agreement for my answer. You've had a week to reflect in, an' it seems to me that ought to be long enough. I won't say anything about the state of my affections. You know already how I feel towards you. Will you be my wife?'

"'No, Mr. Hayden, I will not,' says I.

"'What,' says he, 'do I understand that you refuse me?'

"'Yes,' says I, calmly;' and then thinkin' that it wouldn't do to be too short, I says, 'I thank you for the honor, Mr. Hayden, but I can't never be your wife, an' don't mention it to me ag'in.'

"'Wall, you needn't be so up about it,' says he, tartly. 'I guess I can find somebody that'll hev me, an' you can go on livin' alone, if you want to. It's my opinion you'll run through with your property, an' it's a good property, too.'

"I smiled. I see that he didn't care nothin' about Polly; 'twas her property he was after, jest as I had thought all along. He went off in high dungeon, an' I went an' took off Polly's gown. She slep like a log till nigh ten o'clock, when I woke her up.

"'Dear me!' said she, 'hev I slep all the evening'?

"'Yes, Pelly,' says I, 'an' I though as long as you warn't needed, I wouldn't wake you. I guess we'd better get to bed, now. 'Tain't likely there'll be any callers at this time of evenin'.'

"'No, I s'pose not,' says she; 'but I can't understand why there ain't been one.'

"I didn't say nothin', an' we went to bed an' Polly slept like a babe all night."

"And when did your sister discover the trick you had played upon her?" I asked, wiping the tears from my eyes.

"Oh, not till after she was married the second time. She was glad enough then that I had prevented her from hevin' such a worthless, drunken critter. But I wouldn't ha' done such a thing late years. I shouldn't ha' felt right to." And the dear old lady sighed.

"What became of Uriah?" I asked.

"He married the Widder Thompson, an' made her life wretched till he died. Oh, no doubt, 'twas a good thing that I done jest as I did; but, someway, Polly never liked to hear much about it, an', as I said afore, I wouldn't do it ag'in. Come, David, make a fire in the cook stove. I'm goin' to make some cream biscuits an' hev Miss Adams stay to supper."—Willard Jenkins.

Household Hints.

Three level teaspoons equal one level tablespoon.

If the temperature is too high at first, a crust forms, hindering the proper expansion of the loaf and penetration of heat.

Resolve to take your little one regularly to a dentist, at least three times a year, that if there are any cavities they may be filled, but especially so that any habits or lack of care dangerous to the teeth may be discovered.

A whisk-broom kept especially for the purpose is helpful in sprinkling clothes.

To heat dishes quickly, put them into hot water. This is a safer and better plan than heating them in the oven.

When washing hairbrushes put a little ammonia in the water. The brush must be well rubbed on a rough towel and then placed upright in the sun until dry.

To wash glass, cold water is better than warm. It imparts to it a clearer and brighter look. When the glass is washed in warm water it should be afterward rinsed out in cold.

Protrusion of the upper or the lower jaw may be caused by thumb sucking, this habit leading to a complete change in the facial outlines.

It is hard to sew such harsh goods as calico and heavy muslin, since the needles break easily. This difficulty may be overcome by rubbing the hem or seam with a dry piece of soap, when the needle will penetrate without difficulty. This plan is equally good for both machine and hand work.

Some Cooking Hints.

When making a sauce, as soon as you see it begin to boil away from the side of the pan you may know it is cooked.

When necessary to pour boiling water in a tumbler or glass, put a teaspoon in first and there will be no danger of cracking.

A pretty sure test of the freshness of eggs is a bath in cold water. If they float they are stale; if fresh, they will go to the bottom.

A little chloride of lime boiled in your granite saucepans will make them look like new. Rinse well after throwing out the lime water.

Cake will not stick to the pan if after buttering it you splinkle it with flour. This takes the place of a paper lining and is much easier.

Thin the eggs in making an omelet with a few tablespoonfuls of hot water instead of milk. You will find the omelet will be more tender.

Never allow a cake to brown until it rises to its full height, which ought to be about double its bulk. If it begins to brown too soon, put on top or cool the oven.

Put an orange or lemon in the jar or box with your newly made sweet cakes or cookies and you will find it will give them a delicate and delicious flavor. Dried orange or lemon peel will do the same.

Keep a supply of asbestos paper in your kitchen. If the oven is too hot and the cake likely to burn at the top, put a sheet of the paper on the grate over the tin. If there is danger of burning at the bottom, put a sheet under the tin.

Someone says: "Women have yet to learn that it is more immoral to nurse an ill than to oust it."

If you have not a low chair for sewing, and feel that it is a useless expense to buy one, at least have the legs of a chair of ordinary height made shorter. It will save you many a backache if you sit in a low chair when sewing.

Kitchen Suggestions.

Few homes can boast of a model kitchen. And yet, given a room with proper light and ventilation and ordinary dimensions, much can be done by the ingenious housewife who takes pride in that domain to make the home kitchen—if not all a kitchen should be—at least a very convenient and comfortable spot to work in. The tendency in modern dwellings is toward smaller kitchens that will not necessitate too many steps between the pantry, sink and range. If possible, the kitchen should have two windows on opposite sides or ends, so that a good circulation of air can be secured. A couple of coats of paint, in some suitable light shade, make a very desirable finish for the walls of the ordinary kitchen.

And as it is the laboratory of the home whence are to come the supplies that are to repair the waste of the bodies and maintain health and vigor, it needs to be, first of all, a clean room. No amount of kitchen utensils and labor-saving appliances will mean comfort unless there is system used in planning the entire work. No patent device will ever take the place of common-sense in the kitchen.

For the floor-covering, linoleum is easily cleaned, and so much more comfortable for constant walking or standing than a hardwood or tile floor, that it is certain to remain indefinitely in favor in kitchens of all grades of homes.

One of the first steps toward the saving of labor in one home was to cover the two work-tables in the kitchen with zinc tacked well over the edges. This can be readily cleansed by washing with soap and water, and does away with arduous labor of scouring.

A food-chopper or grinder is another kitchen utensil that saves time and energy. Bread crumbs, suet, meats—raw or cooked—or any vegetable that is to be minced can be prepared in less than half the time it takes to chop them in the old way. Horseradish may be prepared in this manner without the fits of weeping that usually follow that operation.

A couple of enamel cooking utensils, each divided into two or three compartments, will prove an excellent investment in the way of saving fuel. It enables the housewife to cook three vegetables with the use of one burner. A still greater convenience is a steam cooker, with four shelves, similar to the small gas ovens. These have a reservoir at the bottom for water, and a whole dinner can be cooked in one of these over one gas burner.

Never keep dry food supplies on the shelves in paper sacks. Each article should have its own receptacle, labeled so that it can easily be found. Glass fruit jars make excellent containers for articles of this kind, as it is next to impossible to keep neat pantry shelves if one is obliged to dip into paper sacks for supplies.

Dishes which have become brown and burnt from baking in the oven may be easily cleaned after they have stood a while in borax water.

The condition of the dish-cloths and dish-towels is an index to the habits of the housewife. A cook who is careful to wash out her dish-cloths can, as a rule, be trusted. For the daily washing of dish-cloths and dish-towels, a small washboard, such as is furnished children for toy laundry purposes, one that fits easily into the dishpan, has proven an incentive to many a cook to keep her dish-cloths clean.

Here is one of the wise sayings by Oliver Wendell Holmes, which is worth remembering: "I never saw a garment too fine for a man or a maid; there never was a chair too good for a cobbler or cooper or a king to sit in; never a house too fine to shelter the human head. Elegance fits man. But do we not value these tools a little more than they are worth, and sometimes mortgage a house for the mahogany we bring into it? I had rather eat my dinner off the head of a barrel, or dress after the fashion of John the Baptist in the wilderness, or sit on a block all my life, than consume all myself before I got to a home, and take so much pains with the outside that the inside was as hollow as an empty nut. Beauty is a great thing, but beauty of garment, house and furniture are tawdry ornaments compared with domestic love. All the elegance of the world will not make a home, and I would give more for a spoonful of real hearty love than for whole shiploads of furniture and all the gorgeousness the world can gather."

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Morning Prayer.

Oh, may I be brave today, today!
And may I be kind and true,
And greet all men in a gracious way,
And put good cheer in the things I say
And love in the deeds I do.
May the honest heart of a child be mine,
And the grace of a rose in bloom;
Let me fill the day with a hope divine,
And turn my face to the sky's glad shine,
With never a cloud of gloom.
With the golden levers of Love and Light
I would lift the world, and when,
Through a path with kindly deeds made bright,
I come to the hush of the star-lit night,
I would rest in peace. Amen.

—Nixon Waterman.

Too Prominent Ears.

Do the ears stand out from the head, as small sails driven by a strong wind? There is the device of the small, tight cap made of perforated cloth and strengthened by transverse stitched bands. These perfectly ventilated caps hold the ears well back against the head, but permit a perfect passage of air through the hair. These ear-training caps are admirable aids for the baby with batlike ears.

Those Foolish Questions.

Stiffkins (a neighbcr)—"Hello, Jones, what are you doing? Laying down a carpet?"

Jones (who has just whacked his thumb)—"No, you blasted idiot! the carpet was here when we moved in. I am just putting the floor under it."—Truth.

Logical.

"Mother," asked little Ethel, "now that you are in mourning for Cousin Adelaide will you wear black night-dresses, too?"

"What an absurd question, child!"

"Oh, I only thought you might be as sorry at night as you were during the day," ventured Ethel.—Harper's Bazar.

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AGRICULTURAL USES OF LIME.

We receive so many questions concerning the uses of lime that probably the following summary statements made by Dr. H. J. Wheeler, director of the Rhode Island Station, in a recent Farmer's Bulletin, will be read with interest. As California soils are predominantly rich in lime, some of the claims must be rated less in degree than are made for Eastern conditions:

The use of lime as a soil improver is very ancient, and its value for this purpose is generally recognized. Its action as a fertilizer is both direct and indirect

There are many soils in which lime is deficient, notably such as are derived from granite, mica-schist and certain sandstones, slates and shales. On such soils lime is often of direct value in supplying a necessary element of plant food

The indirect value of lime is perhaps more important than its direct action, because probably the majority of cultivated soils contain sufficient lime to meet the direct demands of plants for food. Lime is of indirect value in unlocking the unavailable potash, phosphoric acid and nitrogen in the soil.

Lime exerts a decided influence on the mechanical condition of soils, rendering heavy compact soils looser in texture and tending to bind particles of loose leachy soils.

Lime is also beneficial in furnishing conditions in the soil favorable to the activity of the micro-organisms which convert the nitrogen of organic matter into nitrates which are readily assimilated by plants, which decompose organic matter, and which assist certain leguminous plants to assimilate the free nitrogen of the air.

One form of lime, gypsum, has been shown to be corrective of black alkali, found in some of the soils of the arid portions of the United States.

The continued use of lime unaccompanied by other fertilizers may prove injurious, especially on poor soils, since it converts the insoluble nitrogen, potash and phosphoric acid compounds of the soil into such as can be rapidly taken up or washed out in the drainage, thus hastening the exhaustion of the supply of these substances in the soil. As the German adage states, "The use of lime without manure makes both farm and farmer poor." If the soil is not abundantly supplied with organic matter, its retentive power for water and fertilizers may be seriously reduced on account of the destruction of the organic matter by the action of too much lime. Soils may sometimes be injured by applications of impure forms of lime, which harden like cement in the soil, or of those which contain an excessive amount of magnesia.

It has been shown that even upon upland and naturally well-drained soils apparently in good condition otherwise, the sourness (acidity) is so great that most variety of plants will not thrive. Lime is the most economical and effective substance thus far used for correcting this condition. According to experiments made by the Rhode Island Agricultural Experiment Station on acid soils in that State, the plants tested may be classified with regard to their behavior toward lime as follows: Plants benefited by liming—Spinach, lettuce (all kinds), beets (all kinds), akra (gumbo), salsify (vegetable oyster), celery, onion, parsnip, cauliflower, cucumber, eggplant, cantaloupe, asparagus, kohl-rabi, cabbage, dandelion, Swedish turnip, pepper, peanut, English or flat turnip, upland cress (pepper grass), martynia, rhubarb, common pea, pumpkin, summer squash (scalloped), golden wax bean, red Valentine bean, horticultural pole bean, bush Lima bean, lentil, Hubbard squash, saltbush, hemp, tobacco, sorghum, alfalfa, clover (red, white, crimson and alsike), barley, emmer, wheat, oats, timothy, Kentucky bluegrass, Canada pea, Cuthbert raspberry, gooseberry, currant (White Dutch), orange, quince, cherry, Burbank Japan plum, American linden, American elm, sweet alyssum, mignonette, nasturtium, balsam, pansy, poppy and sweet pea. Plants but little benefited by liming—Indian corn, spurry, rye, carrot, chicory, Rhode Island bent, and redtop. Plants slightly injured by liming—Cotton, tomato, cowpea, zinnia, phlox (Drummondi), Concord grape, peach, apple and pear. Plants distinctly injured by liming—Lupine, common sorrel (Rumex acetosella), radish, velvet bean, castor bean, flax, blackberry, black-cap raspberry, cranberry, Norway spruce and American white birch. Other plants said to be injured are the chestnut, azalea and rhododendron.

Many kinds of lime are available for agricultural use, among which are caustic or burnt lime, or quicklime, which should contain at least 90 per cent of actual lime (CaO) and is the most concentrated form of this material; gypsum, or land plaster, in which the lime is in the form of the mild sulphate; ground limestone and chalk, in which the lime is in the form of the mild carbonate; different kinds of marl, containing varying proportions of sand and clay and from 5 to 95 per cent of carbonate of lime; wood ashes, which contain from 30 to 35 per cent of lime in the form of carbonate; limekiln ashes, containing about 40 per cent of lime; and waste lime from gas houses, sugar-beet factories, etc., the composition of which varies with the process of manufacture.

It is impossible to state definitely for all locations and conditions what kind of lime is cheapest to use. Caustic or quick lime is the most concentrated and consequently the most economical to handle. On account of its caustic properties it is more vigorous in its action than the milder sulphate (gypsum) or carbonates (limestone, chalk, wood ashes, marl, etc.). There may be special reasons, however, why some of the latter may be preferable. For instance, gypsum, on account of its peculiar composition, has been found to be a specially valuable corrective of black alkali.

The frequency with which liming should be practiced depends, among other things, upon the character of the soil and the rate of application, the number of years involved in the rotation practiced, the plants grown and their order of succession. As a general rule, it may be stated that from one-half to one and one-half tons of lime per acre every five or six years is sufficient. Applications of two or three tons may, however, be advisable in cases of very acid soils which are to be seeded down and are to remain in grass for several years. The practice of applying small amounts of lime at somewhat frequent intervals is being generally accepted as preferable to the use of large amounts at rare intervals.

Lime combined as carbonate, as in marl, wood ashes, etc., can usually be applied with safety in the spring or at any other season of the year, but autumn is always the safest time to apply caustic or slaked lime. It is generally considered best to apply the lime to the soil immediately after plowing and harrow it in thoroughly. Lime which is already slaked may be spread upon the soil directly from wagons or carts, or dumped into heaps and then spread with a shovel, although the most satisfactory plan in such cases is to use a lime spreader or ordinary grain drill with a fertilizer attachment. Where a lime spreader or similar implement is not available the burnt lime may be placed on the soil in piles of from 40 to 50 pounds each, covered with moist earth, and allowed to slake before being spread with a shovel. Marls frequently contain injurious compounds and should therefore be allowed to weather for some time in the field before being incorporated with the soil. The same is true of gas-house lime.

In conclusion it may be said, ascertain first whether lime is needed. If it is, apply it judiciously, and never depend upon lime alone to maintain the fertility of the soil, for all of the ingredients which plants need must be present in the soil to insure the profitable production of crops.

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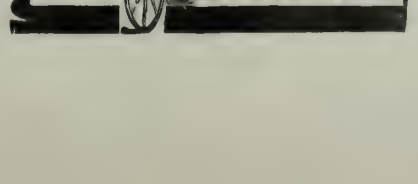
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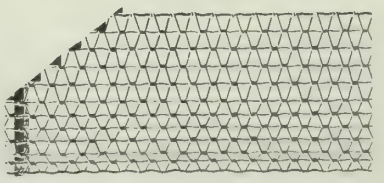
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THE MARKETS.

San Francisco, Jan. 11, 1911.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

This market is a little stronger than when quotations were last given. The effect of the rain is not yet shown in the cereals, but if it keeps up any length of time, it is predicted that there will be a drop all along the line.

California Club	$1.50	@1.55
Sonora	1.62½	@1.70
White Australian	1.55	@1.62½
Northern Club	1.50	@1.55
Northern Bluestem	1.55	@1.60
Russian Red	1.50	@1.52½

BARLEY.

Barley is much stronger than when last reported. In fact, the present price is higher than it has been for some time. As seed barley is being bought up at the present time, there is a good demand for it. In the Imperial valley a week ago, a cent per pound was being paid for seed barley to be shipped to Arizona.

Brewing and Shipping	1.15	@1.20
Choice Feed, per ctl	1.10	@1.15
Common Feed	1.00	@1.08

OATS.

The offerings in this department have fallen off greatly in the last two weeks. They have not been enough, however, to make this commodity scarce. The result has been that there is a little strengthening of the oat market, which has been weak for some time past.

Red Feed	$1.15	@1.32½
Red Seed	1.32½	@1.40
Gray		Nominal
White	1.45	@1.52½
Black	1.25	@1.30

CORN.

Corn shows no change over the quotations last given. The heavy crop in the East has caused the San Francisco market to fall a little, but not enough to make any difference at the present time.

Eastern Yellow	$1.30	@1.35
Eastern White	1.31	@1.36
Egyptian White	1.40	@1.50
Brown	1.35	@1.42½

RYE.

There is nothing doing in this market.

Rye, per ctl	$1.55	@1.60

BEANS.

Beans have commenced to pick up after the lull following the holidays. The principal advance has been in pinks, limas, and bayos.

Bayos, per ctl		$5.00
Blackeyes	$5.25	@5.50
Cranberry Beans	3.75	@4.00
Garvanzos	2.50	@2.65
Horse Beans		2.00
Small Whites		3.00
Large Whites	2.75	@3.00
Limas		5.00
Pea	3.25	@3.50
Pink		5.10
Red Kidneys		5.00

SEEDS.

The rainfall should have its effect in this department, as thousands of pounds of alfalfa seed was being held up in the San Joaquin valley awaiting rains. From now on seeds should be in good demand.

Alfalfa	18@	20c
Broomcorn Seed, per ton	$20.00@	25.00
Brown Mustard, per lb		4¾c
Canary	3½@	3¾c
Flaxseed	5 @	5½c
Hemp	3 @	3½c
Millett		3 c
Timothy		9 c
Yellow Mustard		5¼c
Dried Peas, per ctl	3.75@	4.00

FLOUR.

Flour is very quiet. The Oregon and Washington mills are now running two shifts, after a lay-off of several weeks. The California mills are buying most of their wheat at the present time in the Northern States.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.20	@4.60
Oregon and Washington	4.60	@4.80

Hay and Feedstuffs.

HAY.

The arrivals of hay in San Francisco have been very light this last week. The recent rains, which were quite general throughout the State, did not affect prices to any extent. This is due to the fact that the lack of grass has caused the stockmen and dairymen to use large quantities of hay, which otherwise they never would have bought had the rains come earlier and started the grass. The hay situation in the country points remains about the same. Prices are held stiffly and many holders of hay are refusing to sell at any price. The demand for alfalfa hay is especially keen, with the result that the quotations are a little higher. At the present time there is a greater demand for alfalfa hay than prior to the fall months when the dairymen of California and the Northern States were calling on this market for several thousand tons of this hay.

Choice Wheat	$12.00@	14.50
Good Wheat Hay	9.50@	11.00
Other Grade Wheat	7.50@	9.50
Wheat and Oats	7.50@	11.50
Tame Oats	7.00@	12.50
Wild Oats	7.00@	9.00
Alfalfa	7.00@	13.00
Stock Hay	5.00@	6.50
Straw, per bale	35@	55c

FEEDSTUFFS.

This department shows no change.

Alfalfa Meal, per ton	$18.00@	20.00
Bran, per ton	29.00@	30.00
Cocoanut Cake or Meal		25.00
Cracked Corn	35.00@	36.00
Middlings	34.00@	36.50
Mixed Feeds	28.00@	31.00
Rolled Barley	24.00@	25.00
Rolled Oats	29.00@	31.00
Manhattan Egg Food, per ctl		15c
Shorts	30.00@	31.00

Garden Truck.

VEGETABLES.

The demand for vegetables is very light. The rainy weather has caused a falling off in the demand. Choice green peas, peppers, and summer squash were scarce and are bringing top prices. Celery was easy. Southern lettuce dragged at $2 per crate. Eggplant also shows more strength than usual.

Onions: New Yellow, sack	$ 1.60@	1.70
Garlic, per lb	4@	6c
Green Peas, per lb	6@	12½
Turnips, per sack	65@	75c
Tomatoes, per crate	90@	1.20
Egg Plant, per lb	7@	12½c
Cucumbers, per doz	80@	1.00
Summer Squash, per box	1.50@	2.00
String Beans, per lb	15@	20c
Cabbage	60@	80c
Green Peppers, per lb	10@	12½
Carrots	65@	75c
Celery, per crate	1.50@	2.00
Rhubarb, per box	75@	1.00
Mushrooms, per box	25@	1.00
Cauliflower, per doz	40@	50c

POTATOES.

Salinas Burbanks are stronger and have gone up a few cents. The potato situation remains about the same. Most of the tubers are in the hands of a few speculators, who control the market. Some shippers tried to relieve matters by bringing in several carloads of Nevada spuds, but when they were examined at Sacramento they were found to be infected with the eel-worm. If most of Nevada's potatoes are affected by this worm, those who control the potato market will make more money than was at first anticipated, but if Nevada can supply clean potatoes the situation will be relieved somewhat.

Salinas Burbanks, per ctl	$ 1.85@	2.00
River Whites, per ctl	1.25@	1.50
Sweet Potatoes, per ctl	3.00@	3.25
Oregon Burbanks	1.60@	1.75

Dairy Produce.

POULTRY.

Heavy arrivals of Eastern poultry mark this market. The California product is not coming in in very large quantities. There is practically no call for turkeys, especially live.

Large Broilers	$ 4.50@	5.00
Small Broilers	3.00@	4.00
Fryers	5.00@	6.00
Hens, extra	8.00@	10.00
Hens, large	6.00@	7.00
Small Hens	5.00@	5.50
Old Roosters	4.50@	5.00
Young Roosters	5.50@	6.50
Young Roosters, full grown	7.50@	8.50
Pigeons	1.75@	2.00
Squabs	3.00@	3.50
Geese, per pair	2.50@	3.00
Ducks	6.00@	10.00
Turkeys, per lb., live	19@	21c

BUTTER.

Fresh creamery butter is very weak, due to the fact that several carloads of oleomargarine, a carload of Eastern butter, and a heavy shipment from New Zealand have all had the effect to reduce the market. This condition of affairs makes it especially bad for those holding cold-storage butter, as prices now being paid for fresh creamery butter are lower than the price paid by cold-storage speculators last summer when they bought it up expecting a high price at the present time.

California (extra), per lb	30 c
Firsts	30 c
Seconds	27 c

EGGS.

The egg market is in much the same condition as the butter market. The cold-storage eggs are being sold at a loss and, with a heavy supply coming in from the poultry centers, eggs are on a downward shoot.

California (extras), per doz	32 c
Firsts	31 c
Seconds	30 c
Storage (extras)	29 c

CHEESE.

Cheese is much sthonger than the other dairy products. This is due to a small arrival and heavy demand.

Fancy California Flats, per lb	18 c
Firsts	14 c
New Young Americas, fancy	17 c

Deciduous Fruits.

FRESH FRUITS.

The apple market is in very poor condition, due to the fact that the market at the present time is being supplied with high-grade Oregon apples, which are selling for $2.50 per box. California apples, $1 cheaper than the Oregon product, seem to be a drug on the market. Several chests of strawberries arrived and they sold from 25c. to 40c. per drawer, but they are not of very good quality. On account of the wet weather, there is little demand for fresh fruits of any kind. The retailer who did buy, only bought enough for present needs, as the shopping falls off greatly when the rain commences.

Apples, per box—		
Newtown	1.00@	1.25
Other varieties	35@	60c
Fancy Red, 4-tier	90@	1.25
Bellefleur	1.00@	1.25
Huckleberries, per lb	12@	15c
Winter Nelis Pears	2.50@	2.75
Pomegranates, per box	1.00@	1.50
Persimmons, per box	50@	75c

DRIED FRUITS.

The dried-fruit market is in very good condition with the exception of muscat grapes, which are still low. In a recent circular, the California Fruit Canners' Association says all unbleached seedless Sultanas and Thompson Seedless, owing to recent heavy sales and in consequence an over-curtailment of California stock, the market has advanced.

It is admitted that the trade has not yet covered its regular spring requirements; therefore it seems probable that prices will rise. The Fresno Republican says:

"Evidence was brought to light yesterday which seems to deny the report of a few days ago to the effect that packers were out offering options at 3c. for muscats, to hold until January 10. It was stated that a lot of 70 tons of muscats had just been bought from a Selma grower for 2½ cents."

A late mail report from New York says of prunes and raisins:

"Europe has been buying California prunes steadily, because the goods were needed over there on account of the great shortage in the European crops. The export demand has already made a big hole in the quantity of 1910 crop prunes, and the demand continues, notwithstanding the extreme views of Coast sellers. Advices received from California report the sale a day or two ago of 50s to 60s prunes to France on a 7c. f. o. b. Coast four-size bag basis. Eastern dealers seem reluctant to buy, though it is understood that few, if any, of them have enough stock to supply more than a few weeks' active demand, such as may be expected when the spring season opens.

"With California raisins, also, the Eastern trade has apparently failed to supply itself because the bearish reports so persistently circulated in the fall induced them to believe that the large crop in connection with the disorganization of the growers must eventually result in low prices. Here again Europe stepped in. It is reliably stated that there has been taken for export during the last three months fully 14,000,000 pounds of California raisins. Much of this was bought by France and other wine-producing countries to replace the stock that ordinarily supplies their requirements for the making of wine. A notable feature of the export business has been the demand, particularly from northern Europe, for seedless raisins to supply the great deficiency in the Smyrna sultana crop. Preference has been given to Thompson seedless."

Evaporated Apples, per lb	9¼@	10 c
Figs, black	4½@	5 c
Figs, white	5 @	7½c
Apricots	12 @	13 c
Moorpark, fancy	13½@	14 c
Peaches	6 @	6¾c
Prunes, 4-size basis	6 @	7 c
30s, premium of 1½c.		
40s, premium of ¾c.		
Pears	9 @	13 c
Raisins—		
Loose Muscatels, in sweatbox	2½@	3 c
Thompson Seedless		4½c
Seedless Sultanas		3½c

Citrus Fruits.

The citrus market is in only fairly good shape. In the Eastern auction sales held on Monday, January 9, the general rule was a lower market. In New York 19 carloads of navels were sold and one car of lemons. The highest price was $3.35 for navels and the lowest price $1.60. The average price was, however, over $2. Lemons ranged from $2.50 to $2.75 per box. In Philadelphia the market was much lower, and from now on the sales will be held tri-weekly. There were four carloads of California navels and one carload of lemons sold, and 29 carloads of Florida oranges. The Florida oranges ranged from $1 to $2.25, with an average of $1.50. Grapefruit from 85c. to $3.25, with an average of $1.75. Tangerines, 85c. to $3.25, with an average of $1.45. The California navels sold from $2.40 to $1.70, while the lemons brought from $3.20 to $1.35. The Cleveland market is also lower; six carloads of navels and one of lemons were sold. The market was firm on good fruit, but weak on small-size navels. Three carloads of Florida oranges averaged $1.55. California navels sold from $2.55 to $1.50, while lemons sold for $2.35. In Boston the market was easier and 19 carloads were sold. Prices ranged from $3.25 to $1.55. The Cincinnati market showed a small advance. One carload of navels ad ntwo carloads of California lemons were sold with prices ranging from $3 to $1.10. The six carloads of Florida oranges ranged from $1.15 to $1.90 on the brights and $1.35 to $1.70 on the russets. The California lemons averaged from $3 to $1.10. The St. Louis market was very strong on lemons and very low on navels, due to poor quality. The navels ran from $2.05 to $1.65, while the lemons ranged from $2.90 to $2.44. The total citrus fruit shipment from the southern part of the State to date has been 4873 cars. Of this number, 4120 carloads were oranges and 753 cars of lemons.

Navel oranges—		
Extra choice	$ 2.00@	2.50
Choice	1.50@	2.00
Valencias, choice to fancy		Nominal
Choice		Nominal
Standard		Nominal
Tangerines	1.00@	1.50
Choice Lemons	1.50@	2.00
Fancy Lemons	2.75@	3.00
Standard	1.25@	2.25
Limes	4.00@	4.50
Grape Fruit	2.50@	3.00

Nuts, Honey, Hops, Etc.

NUTS.

The almond trade has been very active since Christmas. The holders of almonds report that inquiries are coming in very fast. The California Almond Growers' Exchange reports that five carloads were sold during the last two weeks and they have on hand some 30 carloads. This organization now controls 90% of all the almonds in the State, and the following changes in the quotations are made:

Almonds—		
Nonpareils	15	@15½c
I X L	14	@14½c
Ne Plus Ultra	13	@13½c
Drakes	11	@11¼c
Languedoc	10½	@11 c
Hardshells	8	@ 8½c
Walnuts—Softshell, No. 1		15 c
Standard		14½c
Softshell, No. 2		11 c
Budded		17½c

HONEY.

The honey market is very weak and there is very little white-sage comb.

Comb—White Sage	14	@15 c
Extracted—Water White	8½	@ 9 c
Light Amber	7	@ 8 c
Amber	5	@ 6 c
Sacramento River Comb	12	@12½c

BEESWAX.

Light	27½	@30 c
Dark	23	@26 c

HOPS.

The hop market is very active and many of the growers are holding out for 25c. The amount of hops on hand is very small and buyers are going around in large numbers trying to persuade the hop growers to sell. The demand from England and Germany seems to be getting stronger so that a record price in hops is looked for shortly.

Crop of 1910	18	@20	c

Live Stock.

DRESSED MEAT.

Beef: Steers, per lb	8½@	9	c
Cows	7 @	8	c
Heifers		8	c
Mutton: Wethers	9 @	9½	c
Ewes	7½@	8½	c
Ewes	9 @	9½	c
Lambs	10½@	11½	c
Hogs, dressed	10 @	13	c

LIVE STOCK.

The beef market is very strong. The lack of rain has caused a good deal of poor stock to be shoved on the market, so that prime stuff is bringing extra good prices. Recently at Salinas, Sam Matthews sold a bunch of beet-pulp-fed steers to a San Francisco party for 11c per pound, the cattle to be weighed at the corrals. This is the highest price ever paid for beef cattle in Monterey county. These animals were three-year-olds and had been on beet-pulp for two months.

Hogs are getting stronger and a slight increase in price is looked for shortly.

On account of the scarcity of feed, good mutton is in strong demand, but poor-grade stuff is very easy to get and being cut in price.

Veal, as usual, is very difficult to get and is considered strong in the market.

The Portland market continues to pay the highest price along the line. Prime steers are selling for 7 to 7½c. Hogs sell from $8.75 to $9.10. Choice lambs are selling from $6.50 to $7. Yearling wethers are bringing around $5.

Gross weight:

Steers: No. 1	5½@	5¾	c
No. 2	5¼@	5½	c
Cows and Heifers: No. 1	4¼@	4½	c
No. 2	4 @	4¼	s
Bulls and Stags	2½@	3¾	c
Calves: Light	6 @	6¼	c
Medium	5½@	5¾	c
Heavy	4¾@	5	c
Hogs: Grain fed, heavy	7½@	8	c
150 to 250 lbs	8 @	8¼	c
100 to 150 lbs	7½@	7¾	c
Common Hogs, per lb	5 @	6½	c
Small prime wethers	4¾@	5	c
Large prime wethers	4¼@	4½	c
Ewes	4¼@	4½	c
Lambs	6 @	6¼	c

WOOL.

Wool continues dull, and there will be no change until the present tariff is altered.

Fall Clip—			
Mountain Free	10	@12	c
Valley Fall and Lamb	8	@11	c
Northern	8	@11	c
Southern	15	@17½	c
Middle Counties	18	@19	c
Northern	18½	@20	c

HIDES.

The hide and skin markets have been dull and weak for some time past and prices have dropped somewhat. Long hair, heavy condition, and grubs make the hides less valuable and we may reasonably expect the prices to go down still more in the near future.

A very dull wool market and consequent lower prices have pushed down the values of sheep pelts. Reports indicate a larger stock of wool in the United States than at any first of the year period for many years past.

Wet Salt—			
Heavy Steers, over 56 lbs.	10		c
Medium	9		c
Light Steers, under 48 lbs.	8½		c
Heavy Cows, over 50 lbs.	8½		c
Light Cows, 30 to 50 ibs.	8½		c
Kip	10		c
Veal	15		c
Calf	15		c
Dry—			
Dry Hides	18		c
Dry Bulls	15		c
Dry Kip, 10 to 15	17		c
Dry Veal, 5 to 10	17½		c
Dry Calf, 7 down	22		c
Fall Lambs	24	@40	c
Sheep Skins—			
Long Wools	$ 1.00	@ 1.25	
Medium Wool, 6 to 9 mos.	60	@ 90	c
Short Wool, 3 to 6 mos.	40	@ 60	c
Spring Lambs	25	@ 50	c

HORSES.

The horse market shows no change and the scarcity of heavy drafts still prevails. Buyers find it almost impossible to get available stock for the dray teams of San Francisco and Los Angeles. Saddle horses are also in good demand and a well-broken animal in San Francisco will bring from $300 to $400.

Desirable Drafters, 1700 lbs. up	$275@300
Light Drafters, 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	200@25
Wagon Horses, 1250 to 1350 lbs.	175@200
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	135@150
Young	200
Old Mares	100@150

MULES.

It is estimated that 200 or 300 mules will be sent over to the sugar plantations in the islands of the Pacific Ocean within the coming week. The buyers who have been hunting up these animals have had a hard job locating available stuff, even at the top prices which they are forced to pay.

1200 lbs	$250@300
1100 lbs	200@225
1000 lbs	150@175
900 lbs	125@150

AGRICULTURAL REVIEW.

(*Continued From Page 35.*)

ing canals for which there is to be a pumping plant and ditch system for each 40 acres of land. The pumping plants will be operated by electricity.

POULTRY NOTES.

Assemblyman P. W. Hamilton, of Petaluma, has a bill that he proposes to introduce in the coming Legislature which will check the killing of geese, brant, and ducks for the market. The bill says that when these game birds are placed on the market the price of chickens is forced down.

The Santa Clara Valley Poultry Association recently held its annual meeting and appointed E. R. Everett president, and F. E. Baldwin and D. A. Robertson vice-presidents.

LAND IMPROVEMENTS.

The Dixon Alfalfa Land Co. recently sold 960 acres of land lying west of Batavia. The purchasers, who were San Francisco capitalists, intend planting the entire tract to alfalfa.

According to Secretary Ballinger, 20,000 acres will soon be reclaimed in Oregon as the preliminary work of the Umatilla Reclamation project was authorized.

H. O. Smith and others recently purchased 500 acres of land near Tipton. A large percentage of this will be planted in alfalfa and sold to small farmers.

BEESWAX SHIPMENTS.

Several of the beekeepers of Imperial county shipped out their supply of beeswax last week, which is a valuable by-product of the honey industry. The shipment amounted to 2667 lbs., and the price received was 28c. per pound, which is the highest for some years. The Guggenheim company made the purchase, and the wax will be shipped to Medina, Ohio.

FARMERS' INSTITUTES.

J. B. Neff reports that the Farmers' Institutes which were postponed from last December will be held as follows Calexico, Jan. 30, 1911; Heber, Jan. 31; Holtville, Feb. 1; El Centro, Feb. 2; Imperial, Feb. 3; Brawley, Feb. 4.

There will also be a series of Farmers' Institutes along the Santa Fe kite-shaped track between Feb. 13 and 25.

EARLY ASPARAGUS.

The Japanese truck gardeners in the island districts near Antioch are shipping hundreds of pounds of grass to the Eastern and San Francisco markets. Already they have made four big shipments which have netted the Orientals considerable money. These are the earliest shipments that have been made in years.

The Famous Rayo



Does Not Strain the Eyes

Don't use a small, concentrated light over one shoulder. It puts an unequal strain on your eyes. Use a diffused, soft, mellow light that cannot flicker, that equalizes the work of the eyes, such as the Rayo Lamp gives, and avoid eye strain.

The Rayo is designed to give the best light, and it does.

It has a strong, durable shade-holder that is held firm and true. A new burner gives added strength. Made of solid brass and finished in nickel. Easy to keep polished. The Rayo is low priced, but no other lamp gives a better light at any price.

Once a Rayo User, Always One.

Dealers Everywhere. If not at yours, write for descriptive circular to the nearest agency of the

Standard Oil Company
(Incorporated)

RAISIN RETURNS.

A Kings county raisin grower recently received returns from 956 boxes of loose Muscat raisins which were sold in Chicago. The price paid for three-crowns was 4¾c., and 5¼c. for five-crowns.

MISCELLANEOUS.

Bernard G. Johnson, one of the original date growers of the Coachella valley, recently returned from Algiers, where he secured a shipment of date offshoots from the finest varieties of fruit trees.

J. A. Poole, of Santa Monica, has a cabbage which is 9 feet high and branches out like a tree.

A ten-acre strip of land is being planted to tobacco near Monterey.

The Fish and Game Commission has authorized its game wardens all over the State to kill and inspect robins, blackbirds, doves, and larks that are found in the fields to see what they have been eating. In this way it is hoped to find which birds are beneficial to the farmer in destroying pests and which birds devote all their energies toward devouring grains and fruits.

The Santa Ana Co-operative Sugar Co. was recently formed. The factory is to be built near Delhi and the directors are James Irvine, James McFadden, R. F. Harris, A. J. Crookshank, and Frank Monaghan. The mill will be running in 1912.

A movement is on foot to establish a fruit-canning establishment at Lakeport.

Hickory trees 15 years old, near Placerville, are bearing nuts at the present time. These are the soft-shell variety and were planted by Walter Carpenter.

PUBLISHER'S DEPARTMENT.

INCREASING VITALITY.

Sometimes the publisher of a paper is repaid for efforts made to give the best he can in other ways than in Uncle Sam's coin. An appreciative word from the California Fruit Grower of this city, in a recent number, is a case in point:

"The *Pacific Rural Press*, one of the leading horticultural papers of California, celebrated its fortieth anniversary of publication recently, and on December 10 issued a fine anniversary number. This special enlarged edition contained a brief history of the publication, from its beginning, and an 'Epitome of California Agriculture During Forty Years, 1871-1910.' The issue was well illustrated and presented a fine appearance typographically throughout. California Fruit Grower congratulates the Pacific Rural Press upon its evidences of increasing vitality with addition of years, and hopes to see it celebrate many more birthday anniversaries in the future."

Another evidence of the value of the *Pacific Rural Press* to its subscribers came to us this week in the shape of a check for $10 from a subscriber at San Jose. This check was to pay for the gentleman's subscription from January 1911 to January 1916. The party who sent us the money has been a subscriber to the *Rural Press* for many years, and that he sent payment for five years in advance is ample proof of his judgment as to the value of the journal to him.

This issue of the *Pacific Rural Press* is, to our mind, a mighty interesting one. From the first page to the last there is good, timely reading. Then, too, the advertisements are worthy of study. The recent rains will make the demand for nursery stock very heavy, and we would advise intending planters to get in their orders quickly.

A GROWING CONCERN.

The Bean Spray Pump Co., of San Jose, California, has recently made many improvements in its plant. The demand for Bean power sprayers and Bean hand pumps has become so great that it was found necessary to add to the equipment and enlarge the working force in various departments.

A complete iron foundry has just been installed, housed in a perfectly appointed, well lighted, fireproof building of its own. Besides the iron foundry, the Bean Spray Pump Co. has complete brass, bronze, and aluminum foundries, a big, well-arranged machine-shop, large warehouse, and everything essential to a well-equipped modern factory. The plant must occupy at least a half acre of ground.

This concern has been manufacturing spray pumps for more than a quarter of a century and has developed an enormous trade all over the fruit-growing world. The writer was surprised to learn that all sprayer parts are made through jigs and templates, which makes them perfectly interchangeable, a feature that the sprayer user must surely appreciate and value highly.

It is not generally known, perhaps, that an Eastern factory was established about a year ago. Bean spray pumps are now manufactured in Cleveland, Ohio, and the reputation established by the San Jose factory has made the development of trade for the Cleveland branch a comparatively easy matter. Both factories are at present running day and night in order to keep pace with the orders that are flooding in.

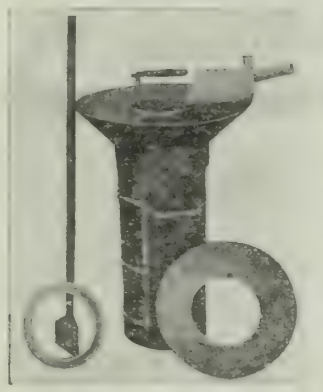
The Bean Spray Pump Co. manufactures a complete line of hand and power sprayers, pump accessories, and spray materials. It has just issued a most creditable catalogue which will be sent free to all who address the company at San Jose, California.

REX YOUR TREES WITH THE FAMOUS REX SPRAYS

Our Standard Rex Lime & Sulphur Solution is being used by the principal fruit growers in every State in the Union. See that Rex is on your barrel, and not some imitation that is untried.

Rex Arsenate of Lead is made under the latest scientific formulas; applicable to all climates and conditions in the United States. Remember, that which is good for one district is not necessarily good for another, and if you want something that is good for all places, please ask your dealer or correspond with the

CALIFORNIA REX SPRAY COMPANY, Benicia, California.



K-T Concrete Pipe or Tile Moulds

BEST OF STEEL USED IN THEIR CONSTRUCTION

Largest output of any tools on the market; 560 ft. 10-in pipe made in 9 hrs. by 4 men.

Complete book of instructions furnished free with every order for tools direct from factory to you. We manufacture a complete line of irrigation appliances, such as

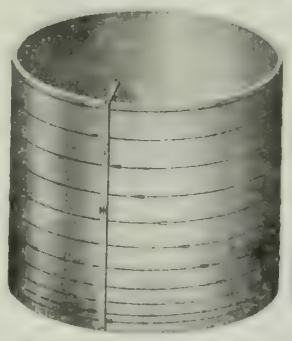
Head Gates, Pressure Gates, Valves, Etc.

used in concrete, vitrified or sheet steel pipe. Get our prices. Address Department E.

The Kellar-Thomason Mfg. Company

COVINA, Los Angeles County, CALIFORNIA.

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TANKS FOR WATER, OIL, WINE, MINING AND CYANIDING.

WOOD PIPE FOR IRRIGATION, CITY SYSTEMS, MINING, POWER PLANTS.

Machine Banded Pipe 2 in. to 24 in. made up ready to lay.
Continuous Stave Pipe 12 in. to 12 ft. shipped knocked down.
Send for Printed Matter. New Pipe Catalogue in Preparation.

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FRUIT AND VEGETABLE BOXES OUR SPECIALTY.
WRITE FOR PRICES.

MERCANTILE BOX CO.

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WESTERN PIPE AND STEEL CO.

SUCCESSORS TO

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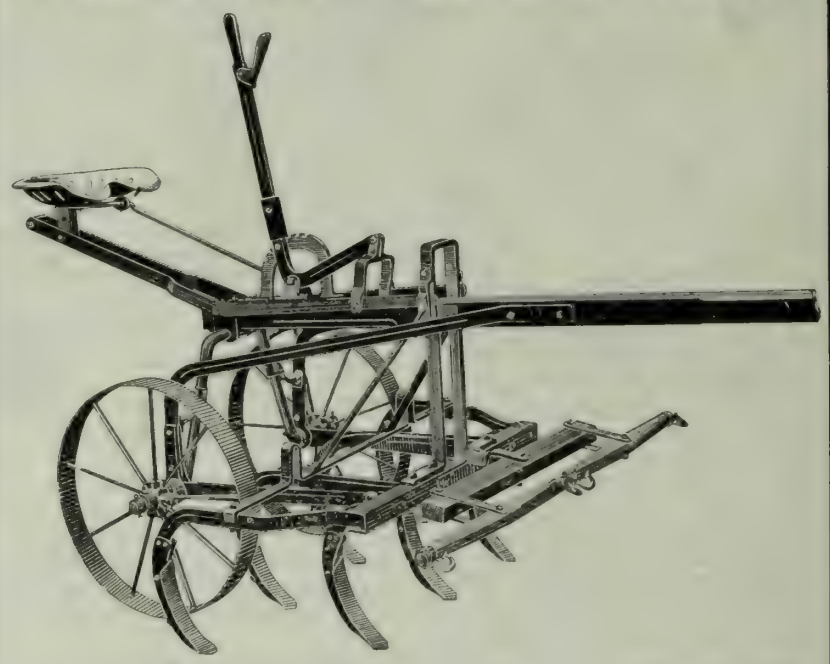
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FOR TOWN WATER WORKS

Hydraulic, Irrigation and Power Plants, Well Pipe, Etc. All Sizes.
Office, 9 Fremont Street. Works at 8th and Townsend, San Francisco, California
Water and Oil Tanks—all sizes. Coating all sizes of Pipes with Asphaltum

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The Benicia-Orr Cultivator



In the **Benicia-Orr Cultivator** we present an **implement with new and original features**, which has been **designed by a practical field man.** It has been thoroughly tested and proven superior in many important particulars to any other cultivator on the market.

Our space won't permit an extended description, but the **man who knows will note** that among some of **the desirable features are: THE FRAME IS LOW; EXTENDS OUT BEYOND AND IN FRONT OF WHEELS AND DRIVER; THE ADJUSTING LEVER IS CONVENIENTLY PLACED, AND THE DRAFT IS APPLIED DIRECT.**

These features, combined with the fact that the driver's weight equalizes weight of frame, insuring ease of handling and a perfect balance in every position; that there is no weight on horses' necks, and that the size can be easily changed from seven to nine teeth, make it **a very superior implement.**

If you ever used, are now using, or expect to use, a cultivator, you will be interested in this new, up-to-date implement.

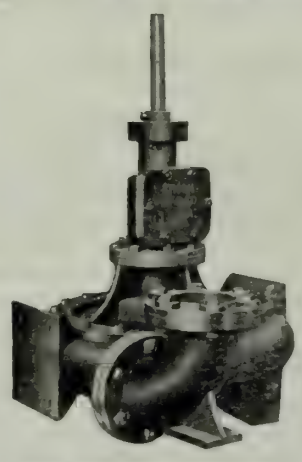
If there is no agency in your vicinity, write direct to

TO THE TRADE: We are receiving numerous inquiries for this implement. If you want an exclusive agency write us today.

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The Krogh New Water Balanced Vertical Pump contains many new and valuable improvements, same being fully explained in our Bulletin R-0, which will be mailed upon request.

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The pump can be seen in operation at our place of business.

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149 Beale St., San Francisco.

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GROWERS OF HIGH GRADE NURSERY STOCK

Prompt attention given to orders sent in by mail. Write us for prices on Apples, Peaches, Pears, Cherries, Plums, Prunes, Apricots, Almonds, Bing, Walnuts, Blk Walnuts, Figs, Grape Vines and Berries. Ornamental Trees, Flowering Shrubs and Roses. Catalog free.

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CALIFORNIA STATE

THE PACIFIC RURAL PRESS

Vol. LXXXI. No. 3. SAN FRANCISCO, SATURDAY, JANUARY 21, 1911. Forty-first Year.

RAISING ALFALFA.

The dry fall of 1910 caused a postponement in the planting of many hundreds of acres of alfalfa in California. As a result the seed will be planted in January, February and March of this year. The land that was planted will in most cases be re-seeded, as the dry spell was disastrous. Land that was prepared for fall sowing, however, will be in excellent condition for early planting this year. Just what months that the alfalfa should be planted depends entirely on the locality. In regions where there is no frost or cold weather, seed planted in January has an excellent start by summer, as it will get the benefit of all the rains, but in regions where "the frost is on the pumpkins" until February or March, planting should be delayed until this danger is past.

Alfalfa does best under irrigation. The yield is not only larger, but gophers and squirrels are kept down. Every year thousands of dollars' worth of alfalfa is eaten by these pests, and the most effective method of getting rid of them is by flooding. It is no uncommon occurrence to see several hundred gophers drowned out in an acre patch. It is practically impossible, however, to drown them all out, as some will get into the levees and will remain there until the water goes down. For this reason alfalfa growers are making their levees as small as possible in order to afford little space for the gophers to hide. The small border also makes it more easy for the mowers to go from one check to another. A ten-inch levee is considered high enough unless the ground is very sloping or uneven. In that case the lower borders should be high enough to force the water over the highest portion of the check. The levees shown in the picture are much too high and waste considerable land.

A disk plow is used considerably in cutting up or grading and preparing the seed bed. There are several methods used in making levees and the checks. The best system is to skim the surface of the field and cutting across the checks at right angles to the levees and dumping the accumulation load at the lines marked out for the borders, or where there is a high spot in the check this can be cut down and used to make the borders. This system makes the checks smoother than the furrow system where the borders are made by throwing up three or four furrows with a plow. This causes a depression along the border where the water collects and kills the grass. It also makes it very difficult for the mower to cut close to the borders.



Flooding the Checks.



Smoothing the Land With the Plank Drag.

The first essential in starting an alfalfa field is to get clean seed that is free from dodder and other pests. It also pays to get the best seed even if a higher price has to be paid, as the cheaper stuff is usually full of adulterations. The amount to use varies from 15 to 25 pounds an acre, but the average is about 20 pounds. New rough land requires more seed than low loamy soils.

The alfalfa plant after it starts is a hardy plant, but when germinating it is easily killed. For this reason the soil should be well prepared. Before plowing it is customary to flood the land to a depth of 12 to 18 inches in order to give enough moisture for the plants to get a good growth. The land should be plowed deeply, about 12 inches if possible. Fields should be harrowed and cross harrowed several times until the soil is pulverized. Where the ground has been prepared during the fall months, as is the case at the present time with hundreds of acres, all that it necessary is to surface harrow to a depth of about two inches. This will protect the moisture and afford a soft, airy seed bed. When a crust forms after the seed is planted the ground should be harrowed again, as the leaves are very tender and can not break through.

Seeds should not be planted too deep, as they will not come up, and if planted too shallow will not find enough soil in which to start the rootlets. The average depth is from one to two inches, depending largely on the condition of the soil. It is easily sown with a drill or by broadcast and then harrowed and a plank drag run over the surface as shown in the picture. Any kind of mechanical sower is better than broadcasting for scattering the seed more evenly. On the other hand, drills plant too deeply unless set properly. T. E. Cochrane of Corcoran has had wonderful results by using an ordinary grain drill in the tule land. This land was never plowed, but he drilled the seed into the soil during December and January. Mr. Cochrane only used nine pounds of seed to the acre.

After the seed is planted, it is best to use a roller, especially in light soil, but never leave the surface hard, as the leaflets can not go through it. Heavy adobe soil should never be rolled, in fact

(Continued on Page 62.)

Pacific Rural Press

667 HOWARD ST., SAN FRANCISCO.

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Entered at S. F. Postoffice as second-class mail matter.

PACIFIC RURAL PRESS CO. - - - PUBLISHERS

Advertising rates made known on application.

E. J. WICKSON - - - - - - - - Editor
FRANK HONEYWELL - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Jan. 17, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	1.13	13.41	20.91	58	34
Red Bluff	1.74	7.61	12.11	52	34
Sacramento	5.02	7.49	8.86	54	36
San Francisco	4.76	8.34	10.34	56	43
San Jose	7.68	9.38	6.59	60	34
Fresno	.28	2.53	4.48	64	34
Independence	.00	1.69	4.41	52	22
San Luis Obispo	1.76	5.75	8.47	62	34
Los Angeles	.84	2.70	6.57	66	42
San Diego	.32	5.11	4.33	62	42

The Week.

Washing the face of nature seems to have freed the air from the influenzial germs which kept the doctors busy during the month of waiting for the rains, and probably the higher tone of satisfaction and confidence over the improved outlook for effort, investment and business generally, has had as much to do with the banishment of grippy aches from the community vertebrae as did the doctors' febrifuges. However that may be, we are all fit to laugh at the report that according to a copy of the rain records of the Franciscan fathers kept at the Santa Barbara Mission, the winter of 1791—120 years ago—was a positively rainless winter. Such an unblessed memory has little weight with the figures of rainfall for this year, advancing as they do in the table at the head of this column. Remember how much rain may come from a rather late beginning rather than speculate about whether there was no rain in that distant year or whether the cat ate the parchment which may have held the figures. How much better it is in every way to remember, for instance, that San Diego had more rain in one day last week than has been recently recorded, than to remember that away back, during the life of the man who chopped the cherry tree, some one wrote it down that Santa Barbara had no rain at all in a year, and founded the Ananias Club of America.

Of course, we may be all wrong about this, but why do we care more than a fisherman when he achieves well-placed wetness. We are so joyful over the changed outlook for crops in the field and courage in the fielder that we feel like Jeshuron of old, who, the record says, "waxed fat and kicked": and when we feel strength to kick we like to slam that old bete noir of ours, to wit: the disposition to make agriculture the panacea for social evils. We are quite excited by the announcement that a San Francisco senator has introduced a bill at Sacramento that the State Board of Prison Directors, with two women, who are to be named by the Governor, shall constitute a commission to purchase a farm and erect accommodations for at least 250 persons, and that to this farm habitual female offenders over 25 years of age, whose offenses are mere misdemeanors, shall be committed. If a woman who is committed has a child she may take her offspring with her to the farm. Horticultural, agricultural and dairy work are to be done by the inmates. The bill carries an appropriation of $100,000. It directs that the land to be purchased shall be an improved tract, fertile and productive, in a healthful situation, and having a good water supply and drainage.

If this simply means a separate prison for women, we have nothing to say against that, for we do not know anything about penology. We apprehend, however, that the location of such an institution on a farm indicates in the mind of the proponents an obsession that agriculture is so easy that even fallen women need not err therein, or else that farmers are so easy that they of all producers are the only ones who will tolerate competition with penal products. We are quite sure that the unfortunate women could be better situated in a town and their time could be most satisfactorily used in indoor industries, but oh what an outrage it would be to sell their manufactures in competition with those of exemplary persons! Why should the farmer be chosen to sustain such competition rather than other people? Is he so low that he cannot protest, or is he so easy that he will not? And then what wisdom is there in expecting women who know naught of rural life to accept curative treatment in an utterly strange environment and to discharge duties which are the hardest bondage unless sustained by the spirit which ennobles such service? But we have no idea that such questions will have any weight with the reformers who have their minds concreted on the subject. The only claim we dare to make is that the supervision and actual operation of the institution shall be entrusted to California women who know by experience what agriculture is and how it should be pursued. Do not add the affair to the existing prison direction with a couple of women attached. Make the whole outfit of women wise in agriculture and wise in women and their ways. Let the women guide and instruct and let the women watch and restrain. Women alone know what women can do in farming and how they should do it. The only approach to success must be along the scratch of the hat pin.

And we make this suggestion in spite of the fact that the hat pin has just achieved its most distressing work in agriculture. The story goes that at the conclusion of the National Land Show, held in St. Louis last week, the prettiest baby exhibited during the show was awarded a farm. The mother of a baby which failed to win the first prize for beauty is charged with having deliberately gone up to the successful infant and stuck a hat pin into its pink flesh. The baby yelled and the crowd was startled. The woman accused of the deliberate act disappeared. This is a distressing instance of the cruelty and malevolence engendered by competition. Possibly farmers are wise and humane to ignore the resentment which some other classes manifest.

Something really very good seems to be on the way toward securing a better labor supply for the farther west. A very important meeting is being held this week in Omaha. It is the result of a demand from Western Governors, immigration officials and commercial associations for an association which shall devote its energies to turning the tide of immigration into the Western States. It is intended to organize a Western Development Association to become potential in stopping the tide of people going from the Missouri and Mississippi valleys into Canada. Nebraska, Colorado, Wyoming, Utah, Idaho, Montana, Washington, Oregon, Nevada, California and Arizona are the States which will take the lead in attempting to see that the newcomers are turned from the South and from the Canadian Northwest into the most fertile and promising part of the United States. It is, of course, a movement to direct investment, but an accompanying effect will be the direction of those also who are willing to work for others.

Another exceedingly interesting undertaking is heralded as an attempt to turn the tide of immigration from the cities to the country, but in a measure to control immigration to the United States by an organization of the Catholic clergy. The organization is the Catholic Colonization of the United States of America. The first move of the society will be to send abroad "chaplains of organization" to interest the Catholic clergy of Europe in the project. The local priest will be asked to keep these chaplains informed of families in their parishes who intend to come to the United States. If the immigrants are of the desirable class, the chaplains will endeavor to have them come to the new agricultural colonies to be established by the church in the United States and stay away from the cities. If they are classed as "undesirables," the local clergy will endeavor to dissuade them from immigrating. While there is in the proposition a sectarian propaganda which some may dislike, unquestionably much can be done for the rural labor supply in the far West by wider distribution of capable people. When they breathe a little American atmosphere they will be independent of too much special direction and control and will learn to seek and find opportunities for themselves.

Perhaps in current colony undertakings may be found the best demonstration of the old adage that time is money. We read a statement that the Colonia Cosme, on the Paraguay above Asuncion, is one of the most curious in the world. The members of the colony make or grow everything they want, and import nothing. The workmen have seven hours' time a day, and earn, not money, but time. Their wages are hours and half hours. These are sometimes saved up till they have a week in hand, and then go off on an excursion. If a man wants a chair or table, he pays for it in hours of work, which are deducted from the balance to his credit. We presume the economists will point out the fact that this is merely a clearing house of effort, or a modern modification of the exchange of actual products which was the commerce of primitive mankind probably. It will probably go the way of all other undertakings to practice pristine methods in an up-to-date world.

The heirs of the late Count Leo Tolstoi, the cosmopolitan and humanitarian Russian, convey a very forcible if indirect compliment to this country in their plans for a memorial to their distinguished relative. They have come to the United States to sell "about 750 acres of rich agricultural land in Russia for $1,500,000"—which would make the land worth $2000 per acre, which is a pretty high agricultural rating, but never mind that. It seems there are Americans willing to buy the land on condition that the 150 acres which the Tolstoi heirs desire to devote to a memorial settlement and school of agriculture should be paid for by an international subscription fund, to which admirers of the late Count might send donations. On the remaining 600 acres they purpose to erect a permanent exhibition of American agricultural machinery and cultivate the surrounding land by modern methods, to demonstrate to the Russian farmers how they

can produce twice the amount of crops on their fertile lands and save labor and expense. We do not undertake to judge the quality of the enterprise which expects to show profits on agricultural land costing $2000 per acre. Some one who knows more about it can do that. What we see significant in it is that the heirs must have one of two ideas: one that Americans are easy money; the other that they desire to emphasize the influence of American inventors and manufacturers in the elevation of agricultural prosperity. The latter was Tolstoi's agricultural faith, and therefore we accept it as the ruling motive with his heirs.

It would grieve us to think that the Tolstoi heirs were pursuing Americans for any such purpose as some Hoosier horses chased some Hoosier cows the other day. It seems that a farmer near Hammond, Ind., was astounded at the sight of his herd of cows being madly pursued by four of his horses. As a cow dropped from exhaustion the farmer ran to the rescue, expecting to see her trampled. Instead, the horses eagerly began licking her hide. Investigation disclosed that a chore boy from Chicago, recently employed, when told to "salt" the cows, had carefully rubbed the salt all over the animals, working it into the hair, and the horses were "salt hungry."

Queries and Replies.

Irrigated or Non-Irrigated Apples.

To the Editor: Please give me your opinion upon the merits of irrigated and non-irrigated land for apple production. Where soil and climatic conditions are favorable to the raising of apples, what effect has irrigation on them? In your opinion, which is the best keeping apple? Which is the better flavored, the irrigated or non-irrigated? Are the apples raised in your State the product of irrigation or not? What district in your State would you suggest to raise apples in?—Enquirer, New York.

The commercial product of California apples is chiefly made upon deep soils in districts of ample rainfall so that the fruit can be perfected and the trees maintained in thrift by thorough cultivation and without irrigation. In the foothill and mountain regions, however, apple trees are irrigated and first-class fruit produced by the process. There are so many localities well suited for apples in this State through a north and south distance of five or six hundred miles that we cannot designate particular regions. If you contemplate investment you should inform yourself by personal observation. There is no particular virtue in the absence of irrigation nor in the presence of it. All that the tree requires is that the moisture supply should be adequate and timely. There are undoubtedly many apple orchards grown without irrigation where a little water artificially applied during the latter part of the summer would be a great advantage for the perfection of winter varieties.

Budding Oranges.

To the Editor: My first attempt at budding, I cut twenty buds from Thompson Improved Navel (did not remove the branch); these I protected well from the air and immediately inserted in stock of Mexican sour orange "amataca." I left bands on for ten days at which time about half seemed to have "stuck," but after a few days the bark curled away from the trees and the buds dried up and died. I then tried again, but this time left the bands on for thirteen days and lightly tied strings around each tree below the bud to prevent the bark from curling, and also put grafting wax in the cut and over the bud. These, with the exception of one, appeared fresh and green at time of taking off the bands, but upon examining them three weeks later I found them rotted. The grafting wax used was made of beeswax, resin, olive oil and a small amount of lard to soften it. Do you think that the action of the lard on the buds would cause them to rot? Also is there anything in budding at a certain phase of the moon?—Subscriber, Vera Cruz, Mexico.

We ask you to consider first whether the buds which you used were sufficiently developed, that is, a sufficient amount of hardness and maturity attained by the twig from which you took these buds. Second, to suggest to you the use of the waxed band, drawing it quite tightly around the bark, above and below the bud, covering the bud itself without too much pressure for several days, then loosening the band somewhat, but carefully replacing over all but the bud point. It is necessary to exclude the air sufficiently, but not wholly. The reason why your buds decayed was probably due to the total exclusion of the air. The use of a soft fat like olive oil or lard is not desirable. If you use oil at all for the purpose of softening, linseed oil, as used by painters, is safer because of its disposition to dry without so much penetration. Having used olive oil and lard together, there certainly is a question as to whether you had not used too much soft fatty material.

There is no chance that the moon exerts any influence upon the buds. It is rather a question of getting the proper buds inserted when the stock is ready to accept them. If you experiment a little more you will hit upon the method which will succeed under your conditions.

Sunburn and Borers.

To the Editor: Will you please tell me how to kill the borer worm which is destroying my young and some of the old apple tree? They attack the trees near the ground and completely eat all the bark off the tree, and the trees are slowly dying.—Reader, Santa Cruz county.

We never saw all the bark removed by an insect of any kind. It is sometimes very clearly done by field mice and perhaps by other rodents. Aside from this, serious injury is done by sunburn, and after a time the bark may disappear on the south and west sides and the wood be exposed. Whenever the bark is injured by the sun the borers make their way into the wood and they cannot be successfully pursued. The way to prevent sunburn is to use a protector or whitewash the bark of the trunk and lower branches which are not fully shaded by the foliage and to keep the bark white by later applications of whitewash. If too great an area of the bark has not been destroyed, the tree will recover under this treatment and may be serviceable for some time. If, however, the burning has gone too far and the tree has lost its vigor and thrift, grubbing out and planting new trees is desirable.

Blackberries for Drying Only.

To the Editor: What variety of blackberries or raspberries are the best for drying purposes? Are berries successfully dried in evaporators? This is a natural berry country. Wild blackberries are a wonder here. Transportation facilities do not allow raising for the city market. In your opinion, would the planting of ten acres in berries be a success from a financial standpoint? Do currants pay better for drying in this country than berries? We have irrigation facilities, if needed, and intend to try ten acres if the information you give us is promising.—Beginner, Del Norte county.

The blackberries chiefly grown in California are the Lawton and the Mammoth. The raspberry chiefly grown is the Cuthbert. There are very few of these berries dried. It would be better to dry them in an evaporator than in the sun, but so little is done in this State that we cannot give you information of particular value. It would be very much of a question, however, whether it would be desirable to plant blackberries for drying only, because there is such a large product now in various places where the berries are either sold fresh or sold to the cannery, and drying is only done for the purpose of saving the crop if the prices for the other uses are not satisfactory. To grow especially for drying would give you only one chance of selling to advantage, and that the poorest. There are no currants dried in this State. In fact, what are called currants in the market are dried grapes and not bush fruit. We would advise you to try a small planting of blackberries at first, in order to test your facilities for producing a good dried berry and whether the market will pay enough for it.

A Dangerous Place for Trees.

To the Editor: Will you kindly give me information as to the best method of setting fruit trees in heavy alkaline soils? The land I have in mind contains a considerable quantity of both the black and white alkalies, the upper two feet being a rather heavy, sticky clay, the next three feet below being fine sand, containing more or less alkali, while immediately underneath this sand is a dense black muck in which, summer and winter, is found the ground-water. Do you think the following method of setting trees would be advantageous: Excavate for each tree a hole three feet in diameter and three feet deep. Fill in a layer of three or four inches of coarse hay, forming a lining for the excavation. Then fill the hole with sandy loam in which the tree is to be set. The sandy loam would give the young tree a good start, while the lining of hay would break up the capillary attraction between the filled-in sand and the ground-water in the surrounding alkali-charged soil,—Reader, Orange county.

Whether the trees would grow when planted as you describe would depend largely upon whether the water in the sand and muck below carries alkali, because, if it does, it would bring the alkali quickly to the roots, and the fresh soil which you put in would before long be impregnated through the surface evaporation of the rising moisture. We apprehend that trees would not be permanently satisfactory under such conditions as you describe, if, indeed, they should grow well at first. It would be interesting, of course, to make a small-scale experiment to demonstrate what would actually occur.

The Kieffer Pear.

To the Editor: I have to ask if you can kindly favor me with a little information. In the Horticulturist's Rule-Book, by L. H. Bailey, the Kieffer pear is classed among the "varieties generally self-fertile." We have had a nurseryman here, who has sold a large number of pears among our people—mostly Kieffer—and he has also sold them about 10% of the number of Garbers, stating to them that the Kieffer pear should have Garbers planted among them for pollenization purposes. The two statements appear entirely contradictory. I do not find the subject touched on in your book, "California Fruits". If you can give me any light on this subject, it will be much appreciated.—Enquirer, Pecos county, Tex.

The Kieffer pear is unimportant commercially in this State and our experience with it has been too little to warrant us in giving any advice whatever about it. Our guess would be that the Kieffer, like the Bartlett, would find such favorable growing conditions in California that it would become self-pollenizing, even if not that way elsewhere. The Bartlett certainly acts that way with us, but we have grown too few Kieffers to form any valuable conclusions. This is the reason why the Kieffer is not considered in our book on California fruits.

Horticulture.

WALNUTS AND ALMONDS IN SANTA CLARA VALLEY.

The rains have come in good measure just in time to start a good long planting season (for in coast situations, at least, there are over two months of good planting time left), and it will be the planter's fault if there is anything good left in the nurseries this year. Therefore orders should be sent in at once, if not already filed. The change in the weather adds interest to talk about things to plant, and some suggestions about nut planting, which Mr. Leonard Coates of Morganhill gives to the San Jose Mercury, are very pertinent:

Walnuts and Almonds.—The two principal commercial nuts, walnuts and almonds, are grown to perfection in the Santa Clara valley. Neither of these crops is grown to any great extent in this county.

There is no good reason why both walnuts and almonds should not be two of Santa Clara's staple products.

Walnuts.—It is pretty well known that the walnut crop is produced mainly in southern California. This arose entirely from a misconception, still existing, that the so-called "English walnut" was a tender plant, in both tree and fruit, and needed the mildest climate of California in which it might be successfully grown. The very name, English walnut, should point to an error in the first place, and a little deeper investigation would show that this crop has been produced chiefly in France for centuries. We all know that the climate of England and of France is not in the same class with that of northern California, this being a very simple statement, having no connection with "boost."

To modify this asserted misconception it may be said that the walnuts first introduced into California were of a very tender strain imported from South America. These commenced growth and blossomed very early in the spring, and in Napa county and elsewhere were found to be unprofitable because so often injured by spring frosts. In Santa Barbara, however, these same walnuts produced trees which yielded annually good crops, although, being seedlings, the quality and size of the nuts varied greatly. This county then, and Los Angeles, soon became the center of the walnut industry, but about twenty-five years ago a disease attacked the trees which has become an increasingly difficult problem, and which is known as "walnut blight," or "bacteriosis of the walnut." No remedy to successfully combat this disease has been found, the only recourse being to propagate, by grafting or budding, certain varieties which are not affected or which are "resistant" to the blight.

New Varieties.—The walnut trees most suspectible to this disease are those in which the sap starts to flow early in the spring, and this fact, when known, did much to stimulate the interest in tests made with certain French varieties which were known to be hardy, and which started growth late in the season. Those who were making a special study of the walnut explained that to compete successfully in the market, it was necessary to produce a nut which filled all the requirements of that market, and also that uniformity in size and quality was essential. To obtain these results it was necessary to find trees that would, in addition, adapt themselves to California conditions.

Without going unnecessarily into details, it may be said that the varieties planted commercially, which succeed well in Santa Clara county, and all similar portions of the State, as to climate, and which fill the above requirements to a very great degree, are the Franquette, San Jose Mayette (or Wiltz), and Concord. Several bearing orchards of Franquette may be found, also the Wiltz Mayette orchard, at 16 Lucretia avenue, East San Jose. The Concord is here bearing only as individual specimens, but, in Contra Costa county a large orchard has been producing magnificent crops for many years, at the home place of Eli I. Hutchinson of Concord. All interested can, and should, investigate for themselves these orchards.

Santa Clara Product.—Prof. E. R. Lake, of the Department of Agriculture, has just spent several days in the Santa Clara valley on a special and preliminary tour of investigation into the walnut industry. He found that the conditions here were ideal if the right varieties were planted, which statement applies equally to southern California, where the crop is mostly from seedling orchards, and which requires much more grading than would the crop from the Leib, Wiltz, or other orchards, near San Jose, where the trees are all grafted from a certain known commercial variety. A prominent Eastern buyer said that the Santa Clara grown walnuts were greatly superior in quality to those of the south. This, of course, referred to the commercial varieties from grafted trees.

California Product.—Looking over the table of crops and prices since 1898, we find the tonnage increased from 5600 tons to 9000 tons for the present season, the last being, of course, not exact, as the crop is not all harvested. Prices varied from 7 cents in 1898 to 15 cents a pound in 1910 for No. 1 soft shell, being an almost continuous rise in these twelve years. It may also be stated that European walnuts are still being imported to the United States in large quantities, and some as far west as Salt Lake City.

The Trees.—I do not advise the planting of seedlings instead of grafted trees, or grafting the seedling in the orchard, etc. Such statements, which are freely made, hardly need commenting on, as the fruit grower might with equal wisdom be advised to raise seedling almonds or prunes, or to plant the seedlings and graft them in the orchard.

The walnut should be grafted on the California black walnut root; the trees should be forty, fifty or sixty feet apart, and other crops may be grown between the rows for many years. A soil which has a lower stratum retentive of moisture is requisite, as with all late maturing crops. It is better not to plant large areas unbroken of one variety; the admixture of varieties always tends to productiveness through the agency of cross-pollination. The decreased productivity per acre in proportion to the extent of a given crop is axiomatic in horticulture, although the principle underlying this is not really understood. The existing fact, however, may explain why a single tree, or unit, or a small orchard is profitable in inverse proportion to a larger number of trees of the same variety.

The Almond.—Second in importance among the commercial nuts is the almond. The following statement is made by the California Almond Growers' Exchange:

"The almond production of California for the past twelve years has varied from 450 tons in 1898 to 3270 tons in 1902, while the average has been 1877 tons or one pound for each twenty-three of the population of the United States.

"The importations of almonds for the same time has varied from 2570 tons in 1901 to 8572 tons in 1908. The available supply of both California and imported almonds for consumption has varied from 3323 tons in 1898 to 11,572 tons in 1908 or an increase of 248 per cent in ten years' time. The average per capita consumption of almonds in the United States for the twelve years has been one pound per annum to each six people. We certainly have room for increasing consumption for almonds.

"The California crop for 1910 is estimated at 3500 tons and the foreign crop available for importation at not over 2750 tons, which would make the available supply for the year one pound for each seven people in the United States, or 800 tons less than the average for the past twelve years. This, of course, means higher prices for the almonds this year, because one-seventh of the people who ate almonds last year will have to do without this year and they will make the other six-sevenths pay for what are eaten."

The almond, as with the walnut, requires a soil retentive of moisture, but succeeds best where drainage is perfect, and soil not too heavy.

Other Varieties Than Paper-Shells.—One factor which has largely tended to keep prices lower and profits less than they need have been is the insistence with which growers plant paper-shell varieties, with no regard as to the quality of the nut. One of the agricultural explorers for the Department of Agriculture told the writer years ago that a certain candy manufacturer in the East said that he would not use California almonds for the reason given—lack of quality, and his firm alone uses hundreds of tons of these nuts. Through Dr. Fairchild, another government agricultural explorer, we have obtained a large collection of Spanish almonds, which we are testing with a view to California adaptation. So far, the Jordan almond, as raised in this State, does not compare in quality with the Spanish article, and the suggestion made by the government experts that a California cross may be raised which better meets the market requirements is now being acted on in our experimental grounds.

At present there are no more profitable varieties to plant than Lewelling and Texas. These are both strongly self-fertile, have medium hard shells and plump kernels. At 8 cents per pound they would pay much better than any of the paper-shells at 15 cents. These trees would make a good intermediate crop with the walnut on most soils.

Viticulture.

THE SHIPPING OF TABLE GRAPES.

[From a paper by Mr. George E. Lawrence, of Lodi, at the California Fruit Growers' Convention at Stockton.]

The Beginning.—For the purpose of standardizing the pack of table grapes shipped from this district, a mass-meeting of the fruit growers was called on February 10, 1910; at this meeting it was decided to try and organize the growers. A committee on permanent organization was appointed; this committee reported to the mass-meeting called to consider the report on April 8, 1910, and a permanent organization was effected. Petitions for membership were at once circulated and about 80 per cent of the growers at once signified their willingness to abide by the rules and regulations of the organization, and before the shipping season opened, fully 95 per cent of the growers had become members.

Rules for Standardization.—Grapes being our chief product, the committee appointed to establish a standardization pack deemed it advisable to consult with dealers, shipping companies, and other interested parties, and the following as a standard commercial crate for San Joaquin county was agreed upon:

1. The use of the ordinary four-basket crate conforming to the present required tariff measurement of 5 inches in depth and 16 inches in width, inside measurement, and 17½ inches in length, external measurement.

2. Grapes to be well trimmed and culled; packed uniform in condition and quality from bottom to top.

3. All grapes to be suitable for packing purposes must be free from "shot" grapes, mildew, injury from hauling or handling, and properly matured, sweetened and colored for Eastern shipment, 16 per cent sugar test.

4. Corners of the baskets to be properly filled.

5. Edges of the pack to be full, and free, so far as possible, from loose and straggling berries.

6. Grapes to be sound and in good merchantable and marketable condition on delivery to the car.

7. We recommend that covers bow but not more than ⅜ inch.

8. We recommend that quotations and prices, f. o. b., for private sale, shall be based on the foregoing specifications.

A tax per package on all fruit packed by those agreeing to this standardization, sufficient to meet the expense of same, was levied, and was fixed at ¼ cent per package.

How It Worked.—The committee selected "to appoint inspectors and manage them" appointed six inspectors to be known as shed inspectors. It was made the duty of these shed inspectors to inspect the crated grapes at the various shipping points as they came in on the growers' wagons to be loaded into the cars.

In addition to these inspectors they appointed an experienced fruit man as field inspector who was furnished an automobile and whose duty it was to visit the various vineyards and give information and advice to those found in need of

it, and to give assistance to any grower who might request it. The method of inspection followed by the shed inspectors in inspecting a load was to cut the bottoms out of the baskets of crates offered for shipment, taking at times from one to twenty from the load. Many growers were induced to number their individual packers, placing each packer's number on the crates that he packed. In this way the inspectors were often enabled to locate a careless packer and the grower was notified of the careless work.

If improper packing by a grower was not remedied by suggestion from the shed inspector, the field inspector was required to visit this party's packing-shed. During the season the inspectors condemned 26 full wagonloads of fruit that was offered for shipment as being unfit for table use. Crates were rejected from the pack of fifty different growers of this district for various defects. Sixteen of these were Japanese. A number of lots sent to Lodi from other localities for shipment were also condemned. During the season about 6000 crates were rejected by the inspectors as unfit for shipment for table purposes.

Results.—As to the effect or success of this attempt at standardization, we find many diversified opinions among the growers. While it is a fact that cannot be disputed that quantities of table grapes went East from this district that should have gone to the winery or the hog-pen, as it was impossible to inspect them all with the force of inspectors made possible by the toll collected, much good was no doubt accomplished along educational lines, as the inspectors appointed worked faithfully and conscientiously among the growers throughout the packing season. The growers, who were honest, of course, but only careless, packed their grapes with the knowledge that they might be inspected and turned down by the inspectors and refused shipment by the shippers who were co-operating with the association. The effect of this had a tendency toward a better pack, and the pack was better than in former years, as was evidenced by the limited number of cars rejected in the f. o. b. markets containing growers' pack. It was no doubt a benefit in another direction also, for it was noticeable that shippers who had been discouraging f. o. b. business owing to past painful experience with growers' pack, were encouraged to venture into this line of business, and their experience was the reverse of former years. We may, therefore, in the future, look for a much larger volume of business in this direction which will be of great benefit, as it insures a larger distribution and an increased demand.

Diverse Wants.—As to the standardization of the size of the pack of table grapes, we find that practically nothing was accomplished during the past year in our district. Various markets demand various packs, and our shippers found it to their interest and the interest of the industry to give them what they wanted. One market this year went so far as to send their own agents into this district to cull and pack table grapes into shallow lug-boxes for shipment. Their wants seem to be a unit in only one thing, and that is quality.

Need of Broader Distribution.—The whole matter seems to sum itself up into this: the future welfare of the business depends upon the development of a larger distribution and demand. The old method of rushing everything into the less than twenty auction markets has proven a failure absolutely, emphasized by the three last past unsatisfactory years.

One of the chief objections to this method is that it gives the grower an opportunity to gamble with poor and unsatisfactory goods. In fact, shipping any kind of goods into the auction market during the last few years has been like placing your money on the red or green with the commission man playing banker—he always wins regardless of the fate of the grower. In the past the grower has proven himself a very willing and eager gambler, but a very uncheerful loser. The hope of the business seems to lie in the development of the f. o. b. trade, and to develop this trade we must have perfect standardization of quality. This standardization must extend beyond the crate to the car, and this can only be done successfully by centralization of packing. Some markets will take an indifferent class of fruit; some will satisfactorily handle only a fancy quality. The shipper invites disaster who directs a car containing good, bad, and indifferent fruit into a market that can use only fancy. A few crates of bad grapes discovered in a car, especially if they happen to be near the door, might cause the rejection of the whole, although the car might contain many crates of carefully packed and good grapes. If it is accepted by the f. o. b. buyer, he finds himself loaded up with stock hard to dispose of which may cause him a loss on the transaction. If it does, he becomes a "knocker" of California grapes. We must manage at this end of the line to make his business profitable by giving him what his market wants; then he becomes, to use the common expression, a "booster," and boosters in the trade are what we want to develop.

A Significant Instance.—That this can be done by the centralization of packing and grading of grapes and cars was fully demonstrated by a shipping firm in the Lodi district this year.

This firm bought grapes in lug-boxes, graded and packed them, graded the cars, putting an even grade in each and successfully sold f. o. b., without a single rejection, 185 cars, at satisfactory and remunerative prices. The firm found no difficulty in placing orders at from 10 to 15 cents per crate in advance of the established f. o. b. prices for mixed growers' pack in ungraded cars.

The demand continued through the whole season even when grapes were being sold in the auction market at prices ruinous to the growers. Had the other eight shipping companies of our district done as well, 1480 cars would have been disposed of in this manner, the auction markets would have been relieved of a great quantity of fruit and the growers' experience there would have been entirely different.

The Future.—We do not believe that our State has anywhere near reached the border line of overproduction of good fruit. If we will only make a proper application of the lessons taught by our business experience in the past, a proper application of these lessons means that California will become the garden of the Union, happy and prosperous in the fulfillment of its mission to supply our 90,000,000 of people with luscious and health-giving fruits.

Citrus Fruits.

FINE POINTS ABOUT ORANGES.

To advise our newer orange growers of the very fine points which enter their undertaking and to show how fast growers in the older regions are advancing in pomological investigations, we take from the Riverside Press of last week an excellent outline of a meeting of the Citrus Experiment Club, at which Prof. J. H. Norton, of the University Citrus Experiment Station at Riverside, presided.

Points of Excellence in the Navel Orange.—W. P. Russell spoke on the market qualification of the orange from the standpoint of the packer. In his opinion the navel orange should have a small navel with no marked protuberance at either end. The longitudinal diameter should be slightly greater than the transverse diameter, but in no case should the fruit have a flat or pear-shaped tendency. It should have very little pulp and be full of juice.

E. L. Koethen said the Washington navel should be smooth, preferably oval, and of a dark orange color. There should be no hollow space in the center. The Washington navel, in his estimation, is just sweet enough, yet partakes sufficiently of the tart flavor. The fruit should not be shipped with green ends, and must be fully colored before plucked from the tree. Its handling, being one of the most important features, must be very careful, so that the fruit is not scratched nor marred. The fancy should have no blemishes; the preferable size is from 150 to 175. The trees should be given especial care, as unhealthy trees will produce fruit off color and off size. In suggesting the best way for the production of perfect fruit, Mr. Koethen advocated selection in bud propagation and pollenization.

Valencias, Lemons, and Grapefruit.—The Valencia orange should be yellow in color; the flesh should be smooth and not tough. Lemons should not have too prominent blossom or stem ends, and not be full of ridges. The summer bearers should not be allowed to retain their fruit until it reaches its full size, but all hollow space in the center should be absent. To be perfect, the pomelo or grapefruit should be of the seedless variety. It should be very large and full of juice. Packers agree that the best California pomelos are as good as the Florida fruit, but they should be fully ripe and not bitten by frost.

Weight of the Orange.—E. A. Zumbro gave a comprehensive demonstration of the determination of the physical properties of the orange in a scientific manner. He was assisted by Ralph Coon, a student in the high school. Mr. Zumbro told of a series of experiments for determining the specific gravity of the average orange, in which many results were in the neighborhood of 0.82. He explained that the specific gravity means how many times heavier an object is than an equal volume of water.

By means of a platform balance, counter poised for weighing in water, he determined the weight of a sample orange which when worked out mathematically, proved to be 0.904. In a number of experiments, the specific gravity ranged from 0.85 to 0.93, and in a number of cases where the rind was especially thick, it was as low as 0.806.

The rind has a specific gravity of from 0.60 to 0.68, and without any rind it was from 0.98 to 1.02. The juice alone was from 1.05 to 1.06. Where the fruit was injured by frost, the juice was lighter in weight and color by 0.01. The acidity is also affected, as the juice flows back into the tree. This is caused by a rupture of the protoplasmic lining of the cells, and as a consequence the juice is not retained.

In giving the results of a number of experiments with juice, the specific gravity was stated as 1.045, 1.059, and 1.055 for sound fruit, and 1.049 for frost-bitten fruit.

In a discussion that followed, it developed that the higher the specific gravity, the smaller the per cent of weight in the rind. It was suggested that an interior puffing, caused by the opening of the navel when the fruit is very ripe, in April or May, may be the reason for discarding fruit which fails to pass the gravity test, and yet is otherwise sound.

Chemistry of the Orange.—B. B. Wright, of the firm of Wright Brothers, orange growers of Riverside, spoke in part as follows:

"At first sight, chemical consideration would not seem to have much bearing on the standardization of fruits, this being primarily a commercial and horticultural matter. However, there are certain chemical factors that have a decided bearing on horticultural practice if the standardization be considered as an effort to secure uniformity and superior quality of the product.

"The chemical constituents of citrus fruits, ignoring the minor percentages that are not material to their commercial value, are essentially four, the proportions of which may be more or less modified, namely, sugars, acids, cellulose, and water. The factors dominating these proportions on which the quality and value of the fruit depend, are partially under control.

Sugars.—"The main controlling factors are the tree itself, the weather, water, and soil. The last two factors are partially controllable. To take these constituents in the order given: The sugars are mainly controlled by the weather factor, a given amount of heat being necessary for their development and being mainly determined for oranges by the time of picking the fruit. In a lesser degree the sugars seem to be increased in Florida soils and practice by the addition of potash fertilizer, although no data seems available which would confirm these experiments when applied to California practice. In some degree the withholding of water seems to increase the sugar, but this is due mainly, if not altogether, to a forced early ripening and is not desirable, affecting unfavorably the size of the fruit and injuring the tree.

Acids.—"The acids of the fruit, which in the orange turn largely to sugars in the process of ripening, are rather highly organized organic products and require a healthy and well-grown tree for their proper development. Any factor tending to the thrift of the trees, both oranges and lemons, increases their content, and all who are familiar with the inspidity of fruit grown on yel-

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WANTED—For the Republic of Mexico: competent, hard-working nurseryman to start and take complete charge of nursery on profit sharing basis; only persons with first-class references need apply Pacific Rural Press, Box 67.

lowed or stunted trees will recognize this as a main factor.

"As a general proposition, the sugars in the oranges and the acids in the lemons seem more or less parallel products in the mature fruits and factors that influence the development of sugars in oranges seem to increase the acids in lemons. There seems to be a decrease in the acids in the lemon if the fruit is held too long on the tree, but this is possibly only a dilution due to the increasing size of the fruit without a corresponding increase in acids.

WATER.—"As to the water constituents, it seems undesirable to attempt to modify the fruit in any way by withholding or increasing in any way the amount of water supplied to the tree. This should be determined by the needs of the tree itself, and any attempt to prevent excess in size of fruit by withholding water affects the quality of fruit harmfully as well as the condition of the tree.

CELLULOSE.—"The fourth important constituent of the fruit is the cellulose, forming the framework and protecting rind. This, while having little or no food value, is the most important constituent from a marketing standpoint, and the relative proportion of this determines the grade to a larger extent than any other. As a general proposition, it should be the effort to reduce the cellulose constituent to the lowest possible percentage of the total fruit, as the amount determines the thickness of the skin and the toughness of the partitions and cell walls. It seems also that any increase of the cellulose is always at the expense of the sugars and acids, although from a chemical standpoint cellulose, as formed in fruits, is a more complex substance than either the sugars or the acids, and is more highly organized.

"The effort of the grower should be to reduce the cellulose content, as it is largely controllable. It must be done by improving the condition of the plant, and any yellowing of the tree from chlorosis or deficient nitrogen must be corrected by the approved means. Pruning has been recognized as an essential factor in lemon growing and in producing a crop of fruit with a reduced cellulose content. No grower of lemons would now attempt the production of commercial fruit without adequate control of the trees in this way.

"In regard to oranges, it seems probable that pruning may also serve the same purpose in reducing the product from badly nurtured tops and outside limbs and increasing it in the most thrifty portions of the tree. The effect of special fertilizing on the cellulose proportion seems more obscure, except that an adequately fertilized tree will always show fruit with disproportionately large cellulose content. Also it seems that an excess of highly nitrogenous organic manure and of stable manure increases the cellulose content of the rind. This is especially true in Florida and holds here in the lighter soils.

"It does not seem possible in California practice to reduce the cellulose content low enough, as the lessening of it seems to carry with it a compacting of the thinner protecting rind. In conclusion, it may seem that in the discussion of a food product too much importance is given to a discussion of the part that has no food value. However, it is a matter entitled to decided consideration. If the inferior products are grown, they will be put on the market without profit to the grower and to the discredit of California fruits. It is also very much in line with modern food production, the food value of the production being the last consideration except in the advertising matter in which it is set before the unsuspecting public."

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O-R-T-H-O
LIME—SULPHUR SOLUTION

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CALIFORNIA REX SPRAY COMPANY, Benicia, California.

Entomological.

DISCUSSION OF THE THRIP PROBLEM.

The growers of western Santa Clara county are organizing for systematic pushing of anti-thrip warfare. At a meeting at Cupertino recently at which W. E. H. Hyde was chosen president and A. H. Wilson secretary, the president was empowered to name a committee which shall meet before the next general meeting to plan a permanent organization and map out a course of action. The date for the next meeting was not decided upon.

Almost the entire afternoon was given over to a discussion of the thrip extermination problem itself.

Earl Morris, county entomologist, stated that one season's application of an insecticide on so substle an insect as the thrip cannot establish a remedy.

"We cannot absolutely claim," said he, "that the success which followed our experiments came solely from our methods. We have only our observations to point to, and these have covered so short a period of time that we are certain of nothing.

"Next to a spray of tobacco solution, I believe that a lime spray has given the best results. We used first a home-cooked lime and sulphur spray in which the lime was in superstaturated solution. Where the lime dried on the branches and on the buds, we found that the thrip could do no damage. The sulphur's action was neutral, and unless it is used for some other purpose than the killing of the thrip, is, I believe, wasted. In the Bogan orchard, where we sprayed the pear trees, 89% of the crop was borne on the sprayed trees.

"Just how the lime affects the thrip we do not know, but we are certain that a thin spray is not nearly so good as a thick one. Seventy-five pounds of lime to 100 gallons of water would be a good proportion. Last year the thrips emerged from the ground almost simultaneously, and we sprayed while the buds were opening. It is not a good plan to spray during fertilization, but a second and weaker spray after that should be put on. This spray may be about one-third the strength of the first. The lime, once set, cannot be washed off by the rain, and if sprayed before the buds are opened, can do no damage to them. After the foliage has been put forth, it probably would do considerable damage. Spraying should be done during the last of February and the first of March. The condition of the orchards and the appearance of the thrip will have to govern the time for spraying."

Paul Jones, in charge of the U. S. Department of Agriculture experiments, advocated the use of a distillate emulsion and black-leaf tobacco. He gave illustrations of the use of this preparation in the Landon orchard in The Willows and on the Curry orchard near Berryessa. In both cases certain portions of the orchard had been worked in different ways, and a careful check was made of the output of each class. One section was plowed and cross-plowed, and another was simply plowed and treated in the usual manner. The plowing and cross-plowing cost $5 per acre, and the spraying $39 per acre. On the Landon place 85 to 90% of the thrips present were killed at each of the three sprayings. The returns from the crop showed: On the plowed and sprayed land, $320 per acre; on the cross-plowed land, $74 per acre, and on the untreated land, $6.65 per acre. On the Curry place, with three sprayings of 5 gallons to each tree, the returns showed: On the plowed and sprayed land, $190; on the cross-plowed land, $34, and on the untreated land, $2 per acre.

"We heard many complaints," said Mr. Jones, "that the distillate-blackleaf solution did not work. The spray was not used enough or in the right way. The spraying was not done early enough. It was not until nearly all of the adult insects had emerged from the ground that the spraying was begun and thrip had entered the bud before the trees were sprayed. Plowing in the fall would kill many of the pupae in the ground, but plowing in February or March would but liberate them.

"The thrip is here," said Mr. Jones, "and is here to stay unless a concerted effort is made to drive it out. The thrip has 30 or 40 different food plants, and has been recently found on live oaks. It is migratory, and while we may never be able to exterminate it entirely, it is a question of control. In eight California counties where the thrip has been found, the Department of Agriculture has estimated that damage to the extent of $3,500,000 has already been done by the insect."

Thomas Hannah, of Martinez, told the orchardists of the experiences of the Contra Costa county farmers with the thrip and of their experiences with the distillate-blackleaf solution. It is difficult to make the distillate emulsion in his county, he said, because the water was too hard. He advocated spraying before the thrip emerged from the ground.

Mr. Knowles, local agent for "Vaporite", a powder that when plowed into the ground generates a noxious gas which kills all insect life, spoke of his preparation as used against thrip, and G. B. Hemphill, of Los Gatos, believed that the adult thrip will be attracted into flying into the flame at night, and is going to try that method. Lawrence Russell, of Saratoga, also spoke, and Mr. Crummey of the Bean Spray Pump Co. showed the efficiency of the Bean spraying machinery.

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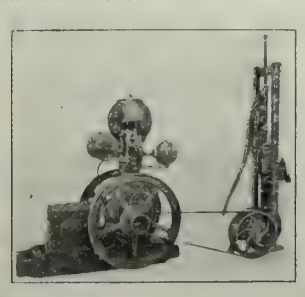
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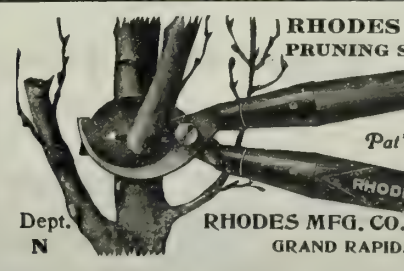
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The Garden.

IN THE GARDEN.

Written for the PACIFIC RURAL PRESS
By Mr. G. H. HOPKINS, Burbank,
Los Angeles County.

It is a good time to look over the tools and see that all are in good repair, and order any new ones that may be needed. It is poor economy to work with poor tools.

The dry season has kept everything back, so that there are many things usually planted earlier that may still be put in.

This is the time of year to form good resolutions. One of the best is to resolve on having a good garden. There will be a whole lot of satisfaction in it if the work is well done.

Try some of the Long Blood beets for main crop. They are not so early as the turnip-shaped beets, but they are surely fine eating when full grown.

Start eggplant in hotbeds, and when about three inches high, transplant into pots. It is considered quite a hard matter to successfully transplant them directly into the open ground, so it is better to put them into small pots. When they become stocky and safe to set out, transfer ball of earth with the roots. The young plants must be over heat and watch that they do not get chilled. One ounce of seed for about 2000 plants.

The New York and Wonderful are the best varieties of lettuce that we know of for winter planting. They both have curled leaves and hard, well-blanched heads. For market, set plants in double rows about 18 inches apart and 10 inches apart in the row. Lettuce is at its best on a rich sandy loam soil.

Some of the Chinese mustards are fine as greens, especially the white. The seed can be purchased from any of the Coast seed houses.

As the great bulk of seeds that are sold in the United States are grown in California, it seems a waste of time to buy seeds from Eastern dealers.

The Gradus is the earliest pea of its height (2½ feet). The pods are large and the peas delicious.

Plant dwarf peas in double rows, especially the American Wonder. Unless frequent rains come, peas should be irrigated occasionally, if one has the water, to keep them constantly growing.

All varieties of vegetables are more tender and better in every respect if growth is made quickly. Sufficient water followed by cultivation or hoeing will insure quick growth.

The writer has made no plantings yet in the vegetable line, as at this writing sharp frosts occur almost every morning; therefore we shall wait until growing weather prevails. This is a hint to others who are similarly situated.

STARTING THE HOTBED.

In choosing a location for a hotbed, it is important that the drainage should be good; at least, water should not be allowed to stand around the bed. If possible, choose a sunny location protected from cold winds. Where heat is wanted, the earth should be excavated two feet deep, about three feet wide, and as long as necessary or needed. For the frame, common redwood boards may be used,

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Peaches have paid growers more profits in the last 25 years than any other fruit.

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Get in your orders now for Gravenstein, Jonathan, Spitzenburg, Yellow Newton Pippin, White and Red Astrachan, Alexander. They always sell out first.

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Cherries are great money makers. The above varieties always sell out early.

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making it six or eight inches high in front or south side, and about twice that height at the rear, to give sufficient slope to let the water run off the sash. Stable manure should be put in to a depth of 18 inches, filling in balance of space with good garden soil. If fresh manure is used, it should be piled up and worked over two or three times during an interval of two or three days, or until the extreme heat has passed off. When placed in the pit, tramp firmly, which will aid in holding the heat. In the warmer portions of the State, shutters made from boards and hung on upper side by hinges may be used for some of the more hardy vegetables or plants, and raised during the warm part of the day and closed at night. Or a sash covered with a durable cloth may be used. If glass is used, great care is necessary to give plenty of air, or the combined heat of the sun and manure might kill all the plants in a very short time. It is better to risk a little cold than to have too much heat.

Where only a cold-frame is wanted, the pit may be dispensed with, or at least not made so deep, where seeds are to be sowed and no bottom heat is needed. The covering may be the same as for the hotbed.

Two important crops for market gardens at this time are lettuce and peas. They are both good sellers and usually bring good prices when put on the market early. Plant New York and Wonderful letteuce, and Yorkshire Hero peas. When planting peas, be sure and get in plenty of seed, so as to insure a good stand. Plant in furrows about three feet apart, covering the seed four or five inches deep. The soil should be moist and mellow.

STRAWBERRY CULTURE.

There are several methods by which strawberries may be planted, depending on soil, whether for home garden or market, and number of plants one may wish to plant on a given area. The usual method employed in the majority of gardens is to plant them in a bed and then allow them to run as they please. The result is that they soon run out. In looking around, we may easily see how nature plans. The big redwood trees grow in groups, but not so close as trees are in the ordinary forest where trees are much closer. Trees or plants must have room in order to make large specimens. With strawberry plants, the larger the plant the larger the berry. Size is what counts, whether berries or anything else, when exposed for sale. The distance between the rows should depend on condition of soil and also whether cultivation is to be by hand or horse. Where the soil is clay or adobe, the rows should be three feet apart, and when moisture is furnished by irrigation, it is usually furrowed out before planting and the plants set out in double rows on the ridges. In this way the water will soak in sufficiently to irrigate the one row on each side of the furrow. On a sandy loam soil the furrows for irrigating should not be run until after planting. Where it is desired to cultivate with a horse, plant in rows 2½ feet apart. In the row, plants may be one, two, or three feet apart, according to the number of plants per acre. If planted one foot apart in the row, it is necessary—if one wants lots of big berries—to keep all runners pulled off. When planted two feet apart, allow a few runners to start, training them along the row in such a manner that when the young plants become rooted they will form a row similar to the rows where planted one foot apart. If cultivation is to be by hand, plant in rows 18 inches apart. In the row they may be any distance desired, as above mentioned. Another way sometimes practiced on a heavy soil is to plant in wide double rows, 14 to 16 inches apart, then three feet from the next double row. The water is always run through the narrow space, and the cultivator kept going in the wide space. In this way the portion that is cultivated will never bake. Before planting, it is necessary that the soil be in a moist condition, either from rainfall or irrigation, and if it continues dry after planting, irrigation must be resorted to again in a few days. When the weather is hot, this should be done immediately after planting. Where the rows are 18 inches apart, as for hand cultivation, use the double moldboard hand-plow for furrowing.

When plants of any kind are received from the nurseryman, do not wet them until after opening up the package. Loosen them out and place them in a shady place, covering with couple inches of straw, and water them sufficiently to keep them from drying until planted.

SEEDS

Now is the time to order your seeds for Spring planting. A complete line of the best seeds ever offered to the people of Northern California. Send for catalog and prices.

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We specialize on **Grape Vines as** well as other stock for the planter. Let us figure with you. Send list of wants for quotations. Price list free. Address

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Parties contemplating the planting of citrus groves this coming spring will do well to send for our prices soon, as there will evidently a a shortage of strictly first class stock. Write today for particulars, or, better still, pay us a visit so that we may be able to show you just what we have.

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Chas. S. McMillan, **232 South Marengo Ave., Alhambra, Cal.**

AGRICULTURAL REVIEW.

ASSOCIATION MEETINGS.

The California Fruit Exchange held its annual meeting last week, and there were over 400 members present. The whole board of directors was re-elected, their names being as follows: George H. Cutter, F. B. Mills, H. B. Judy, Henry Brinck, A. T. Reynolds, George B. Green, C. F. Fell, D. H. Needham, A. Fereva, W. H. Tudsbury, and T. H. Buckingham. The election of these officers means that Mr. Cutter will be re-elected president and J. L. Nagle manager.

The report of Manager Nagle was most encouraging from the financial standpoint of the fruit growers. This showed that although there was a decrease of 1200 carloads of Eastern shipments of fruit from the State, the Exchange shipped 200 more cars last year than in 1909. The total business amounted to about $1,500,000. The net earnings of growers amounted to $85,000 and $15,000 in railroad claims was collected and paid. During the year five new associations were added, which gives a total of 20 in the State. Four or five more associations that are now forming will become members of the Exchange within the next 60 days, and with these it is estimated that the shipments next year will be between 2500 and 3000 cars.

The Capay Almond Growers' Association has elected the following officers for the ensuing year: S. G. Cadenasso, president; Charles C. Barr, vice-president; A. T. Binde, secretary and treasurer. The board of directors consists of S. G. Cadenasso, Harrison Barr, C. B. Lines, F. M. Parker, and A. T. Binde.

The Ashland Fruit and Produce Association recently met and declared a 10% dividend. This is one of the leading apple associations of Oregon. C. H. Gillette was elected president, and C. D. Schell, secretary. This association made shipments as far north as Vancouver, B. C., where they sold a carload of Salway peaches at 65c. per box f. o. b. Ashland.

The Lima Bean Growers' Association will furnish all members in this organization with their bean bags. The bags will be charged to the firm when they are secured. But when they are returned to the association, the firm will be credited with all the bags brought back.

The Davis Almond Growers' Association held a meeting last week and made a report for the past year. Secretary J. W. Anderson says that on account of conditions it became advisable to shell a portion of the almonds and it was a great money-making proposition, as they were able to sell many more almonds in this way. Another feature of Mr. Anderson's report is that the hardier varieties of almonds are more profitable to raisers than the paper shell varieties, as the former are surer and heavier bearers, and in this way offset the shade of advanced price accorded the soft-shell varieties.

CITRUS NOTES.

The Porterville Citrus Growers' Protective League is sending out a memorial recently adopted by it for the other leagues to ratify. When the various protective leagues over the State have sanctioned this memorial it will be forwarded to the State Legislature. It asks for $50,000 to be given the State Horticultural Commission for the necessary work of carrying out its investigations.

The shipments of oranges which were made by way of the Isthmus of Panama were very successful. One carload of oranges and lemons was sent by boat at a cost of 50c. per hundred as against $1.15 charged by the railroads. The time of transit was 23 days, and only 7% of the lemons and 5% of the oranges were damaged. Soon a larger shipment will be made over the same route.

The first national citrus show will be held in San Bernardino about March 1. Already committees have been appointed to make this one of the best exhibitions ever held in the South. The show embraces citrus fruits, orange-packing machinery, and all the other apparatus used in handling oranges.

The San Dimas Orange Growers' Association recently let the contract for the erection of a new packing-house. The cost of the structure, not including the machinery, will be $22,500.

During December 185 carloads of oranges were shipped out of Corona. During the same month in 1909, 140 carloads were sent out.

J. J. Vosburg, of Porterville, says that the orange trees are showing a better growth now than at any time in the last three years.

The Louisiana orange crop is estimated at about 340,000 boxes. The quality of the fruit is said to be excellent and of desirable size. Most of the Louisiana oranges are grown in the Plaquemines parish.

The citrus shipments out of Riverside have averaged about 50 carloads per day. Last week 514 carloads were shipped out, but the general average per week is 350. Last month the shipments totaled 1530 carloads, while in December 1909 there were about 682 cars.

The members of the Board of Supervisors of Tulare county are excited over the appropriation to be made for the citrus fruit inspection. The Supervisors from the alfalfa districts claim that too much money is being spent toward fumigating and inspecting citrus orchards. They voiced their objections over a $3.50 bill for inspecting a box of lemons filed by Horticultural Commissioner Schulz, but it was shown that the alfalfa lands are only assessed $5 per acre, while orange trees are assessed $400 per acre.

An order is to go into effect on March 1 which will require the placing on all packages of fruit a metal strap over the top of the crate and along the sides of the center-piece. This agreement was arrived at recently at a loss-and-damage meeting held in Los Angeles, and has been incorporated in the eastbound transcontinental tariffs.

FRUIT NOTES.

Frank Brown, of Antioch, will plant 35 acres this coming spring in the Deer valley to walnuts and almonds. It is estimated that several hundred acres will be set out to nuts in this vicinity this coming spring.

F. S. Rice has secured 120 acres of land near Berry Creek, Butte county, which he is cleaning and preparing to plant to apples.

A large acreage is being planted to fruit trees around Beaumont, Riverside county. Among those who are planting are H. J. Humphreys, Harry Modley, Israel Valway, A. H. Nutt, W. Mohr, W. H. Gibbs, L. E. Rogers, Fred Dysart, L. Seitz.

County Horticultural Commissioner Banks reports the following fruit trees received for Mendocino county growers the past week. They were all placed in the Sanel valley. The following received trees: Sam Duncan, 500 Bartlett pear trees; S. C. Brooks, 1000 peach; Peter Strussy, 1000 pear; George Fowler, 850 apple.

The apple raised by George Dillon, of Porterville, which took the special prize at the Land and Irrigation Congress at Chicago for being the most perfect specimen, is of the Lawler variety. Mr. Dillon lost the tag from this particular tree, so that he had no means of checking up from his orchard records. When

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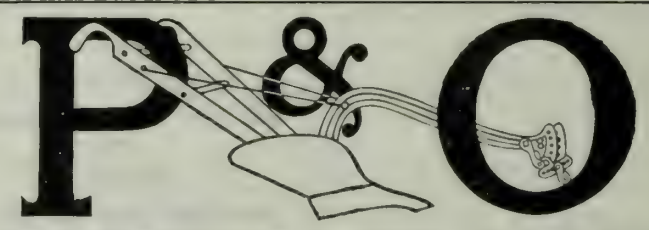
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the apple was given the award, it was considered so important that a name was insisted upon.

An American Consul in England reports that a retail dealer in apples in his district desires to see whether a more satisfactory business can be done by direct purchases and establish places to receive offers for first-grade apples of the following varieties: Russetts, Baldwins, Kings, Spies, Newtons, and Ribstones. The same to be delivered free at Manchester. Anyone desiring this dealer's address should send a letter to the Bureau of Manufactures and apply for file No. 6051.

VINE NOTES.

The Escondido grape growers intend shipping East this coming spring. It is proposed to ship the grapes by express in carload lots. That will permit of the cars being attached to the fastest trains run out of Los Angeles by the Santa Fe. The sixth morning after the cars leave Escondido they are expected to arrive in New York City. These refrigerator cars will be brought to Escondido pre-cooled with ice. When the desired temperature has been secured, the grapes will be picked and loaded. Instead of the grapes being picked in the daytime, they will be picked at night. That will be done for two reasons. The grapes will themselves have been pre-cooled by midnight, and when placed in the cars without delay will not experience a shock in the change of temperature. And the other reason advanced for night picking is that when a car is filled with warm fruit—that picked during the day—the heat is of sufficient temperature to cause a rapid melting of ice until the fruit has been chilled. The cars will be loaded after midnight, and early in the morning will be started on their transcontinental journey. Six days later the Escondido grapes will be on the New York market.

THE GIPSY MOTH IN CALIFORNIA.

The much-dreaded gipsy moth has at last been safely landed in California, and as a result the Domoto Brothers' nursery at Melrose is under quarantine. The nursery company, having experienced much difficulty in getting its stocks through the San Francisco horticultural quarantine division, decided to import its plants "in bond" by way of Seattle and thence to Melrose by rail. Four shipments were thus landed before the members of the San Francisco quarantine office were advised. Upon inspection these trees were found infested with scale insects, bagworms, leaf-miners, aphids, mites, and also several egg clusters of the gipsy moth. Many of these insects do not now exist in California. It became necessary, therefore, after the trees were discovered, to burn many hundreds of them and also to establish a quarantine around the nursery. The immediate losses thus incurred cannot be compared to what the fruit interests of the State would suffer if these serious pests should become established in California.

COTTON NEWS.

The gins of the Imperial Valley Oil & Cotton Co. have turned out 3671 bales, making a total for all gins of more than 4000 bales.

A cotton-picking machine was tried near Holtville last week, but failed to work satisfactorily. It did not pick all the cotton. The machine is drawn by horses, and machines of that type have not proved satisfactory. The Campbell machine, said to be in successful use in Texas, is operated by a gasoline engine and does not injure the plants.

The cotton market was strong up to the middle of last week, when prices fell off slightly because of gin reports from the South that showed a larger crop than had been expected. At El Centro $13.90 was paid for the best grade of cotton early in the week, but the price fell to $13.70 and later to $13.60. During the week eight carloads were shipped to Oakland, five from Brawley and one each from Imperial, El Centro, and Calexico.

RAISIN EXCHANGE INCORPORATED.

The California Raisin Exchange recently filed articles of incorporation at Fresno. The object of this exchange is to promote, maintain, establish, and give stability to the price of raisins and cured fruits; to disseminate information and give publicity to all matters pertaining to crop and market conditions of raisins and dried fruits and to publish information thereof; also, to provide storage facilities and store for hire raisins and cured fruit.

No indebtedness shall be incurred beyond the current income and available assets at any time, except it be authorized in writing by at least three-fourths of the membership. Directors are W. R. and Myrta L. Nutting of Fresno, and M. P. Hopkins, G. C. De Garmo, and E. P. Houghton of Los Angeles. Membership admission is $10, and the right of every member shall be equal.

MISCELLANEOUS.

The Tulare County Bee Keepers' Association held its annual meeting at Hanford and the following officers were elected: John E. Walker, president; Lewis Sinn, vice-president; A. L. Robt, secretary, and C. W. Tompkins, treasurer.

A Stockton dispatch says that since the price of beef has gone up, there has been a marked increase in the demand for jackrabbits, and the average rabbit sells for 25c. Cottontails sell for 35 cents.

Senator Sanford of Ukiah recently introduced a bill in the Senate for the benefit of the farmers who have their fields ruined by wild geese. The bill provides that the birds can be killed from live blinds. Now the farmers can only kill animals by shooting them in the open field, but if this law goes through they can use horses or cattle to shoot from.

The recent downpour around Oxnard has stopped the planting of sugar beets. At the present time there are about 2500 acres planted. Some of the beets have already come up.

The Estrella ranch near Paso Robles has seeded 7000 acres of summer-fallowed land.

Some of the leading citizens of Healdsburg are considering the proposition of holding a prune fair the coming spring.

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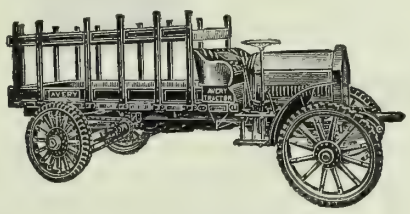
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SALTING AND CURING HAMS AND BACON.

On account of the high price of bacon and ham, many farmers are curing their own pork. We have had several queries along these lines, so that we give the following methods of making ham and bacon as laid down by Fulton in "Home Pork Making."

HAMS.—To 4 quarts of fine salt and 2 ounces of pulverized saltpetre, add sufficient molasses to make a pasty mixture. The hams having hung in a dry, cool place for three or four days after cutting up, are to be covered all over with the mixture, more thickly on the flesh side, and laid skin side down for three or four days. In the meantime, make a pickle of the following proportions, the quantities here named being for 100 lbs. of hams: Coarse salt, 7 pounds; brown sugar, 5 pounds; saltpetre, 2 ounces; pearlash or potash, ½ ounce; soft water, 4 gallons. Heat gradually and as the skim rises remove it. Continue to do this as long as any skim rises, and when it ceases, allow the pickle to cool. When the hams have remained the proper time immersed in this mixture, cover the bottom of a clean, sweet barrel with salt about half an inch deep. Pack the hams as closely as possible, cover them with the pickle, and place over them a follower with weights to keep them down. Small hams of 15 lbs. for 5 weeks; larger ones will require 6 to 8 weeks, according to size. Let them dry well before smoking.

DRY-SALTING BACON AND SIDES.—For hogs weighing not over 125 or 130 lbs. each, intended for dry-curing, 1 bushel fine salt, 2 pounds brown sugar, and 1 pound saltpetre will suffice for each 800 lbs. pork before the meat is cut out; but if the meat is large and thick, or weighs from 150 to 200 lbs. per carcass, from a gallon to a peck more of salt and a little more of both the other articles should be taken. Neither the sugar nor the saltpetre is absolutely necessary for the preservation of the meat, and they are omitted. But both are preservatives; the sugar improves the flavor of the bacon and the saltpetre gives it greater firmness and a finer color, if used sparingly. Bacon should not be so sweet as to suggest the "sugar cure" and saltpetre, used too freely, hardens the tissues of the meat, and renders it less palatable. The quantity mentioned is enough for the first salting. A little more new salt is added at the second salting and used together with the old salt that has not been absorbed. If sugar and saltpetre are used, first apply about a teaspoonful of pulverized saltpetre on the flesh side of the hams and shoulders, and then, taking a little sugar in the hand, apply it lightly to the flesh surface of all the pieces. A tablespoonful is enough for any one piece.

If the meat at the time of salting is moist and yielding to the touch, rubbing the skin side with the gloved hand, or the "sow's ear," as is sometimes insisted on, is unnecessary; the meat will take salt readily enough without this extra labor. But if the meat is rigid, and the weather very cold, or if the pieces are large and thick, rubbing the skin side to make it yielding and moist causes the salt to penetrate to the center of the meat and bone. On the flesh side it is only necessary to sprinkle the salt over all the surface. Care must be taken to get some salt into every depression and into the hock end of all the joints. An experienced meat salter goes over the pieces with great expedition. Taking a handful of salt, he applies it dextrously by a gliding motion of the hand to all the surface and does not forget the hock end of the bones where the feet have been cut off. Only dry salt is used in this method of curing. The meat is never put into brine or "pickle," nor is any water added to the salt to render it more moist.

BRINE METHOD.—Many people object to the dry method, as the pork has to be handled so many times. The brine method is as follows:

After all pieces of meat have been properly cooled and trimmed, take each piece separately and rub it all over with salt, and lay it aside for 24 hours. After the salt has been absorbed, pack it into a vessel—sprup barrel or any kind of a barrel that has been properly cleaned. Pack the meat in tightly, putting the hams and shoulders at the bottom. Weigh out, for each 100 lbs. of meat, 10 lbs. of salt, 4 lbs. of brown sugar, and 2 ozs. of saltpetre. Dissolve this in 4 gallons of boiling water. Stir it well, so that all the salt and sugar will be dissolved. Let it stand until cool, and then pour over the meat. This amount of water shoud be sufficient to well cover the meat in the vessel. Put a round wooden cover over the top, and weight it down with a stone, so as to keep all the meat under the brine, but if not sufficient brine, add enough to cover the meat. Put the vessel away in some cool place, and let it stand for from 6 to 8 weeks, when the meat will be ready to be taken out of the brine and smoked or used. It may be left in the brine for a longer time if desired. The use of sugar in brine keeps the lean meat from getting hard, and also adds a sweet flavor to the meat. The small amount of saltpetre is used to retain the natural color of the meat.

PASTURE FOR HOGS.

To the Editor: I have just bought a small place in the San Joaquin valley. I want to pasture hogs this spring and summer. Have water for irrigation, but will not have time to get alfalfa started sufficient to pasture. Please tell me what I can plant for spring and summer pasture. A BEGINNER.

Any of the sorghums or clovers which grow best in your locality can be used for pasturage. Sorghum can be planted with pumpkins or some root crop between the rows. The root crop or the pumpkins could be used in the later summer, while the sorghums could come between the natural grasses of the early spring and the root crops.

A strictly pasturage scheme is to plant wheat or barley and turn the hogs on this, so that they will eat within certain prescribed limits. In order to do this, the field needs a shifting fence, so that the hogs can be driven from one section to another—never letting the hogs eat too closely, as they will kill off the stand Bishop Bros. of San Ramon use barley exclusively for hog pasturage with good results.

USE OF OLEO INCREASING.

Oleomargarine is being used in California more and more each month. It is estimated that two carloads per week are being shipped into San Francisco. The supply is so great that it is driving down the butter market. This last spring and summer, when the dairymen were rejoicing over the high prices, they little realized that the pendulum would have a backward kick. The large meat concerns of Chicago are the ones who forced up the price. They wanted all the highly colored butter they could buy, and they did not care what they paid for it. They sent carload after carload of this highly colored butter to Chicago, where it was mixed with uncolored oleomargarine. In

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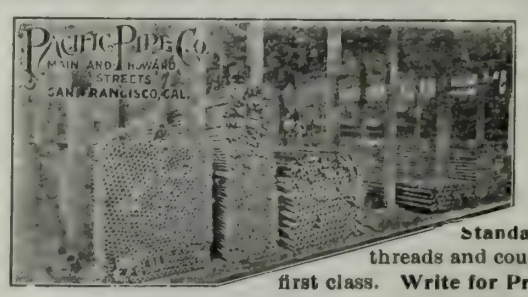
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this way they gave the oleo a good color and are sending it back to California in that shape, where it sells at 17 to 22½ cents. By coloring in this way with butter, they claim that the Federal laws are complied with. The California State Dairy Bureau should get busy and investigate this matter, as it is ruining the butter business.

The farmers of California should remember that the oleo interests are redoubling their efforts to have the present oleomargarine laws changed in Congress. Keep in touch, therefore, with the present members of Congress and be sure that your Congressman thoroughly understands the question. Many of them do not understand it thoroughly. Your congressman may be pledged to support the present law, but he may not know why he favors it except that he represents a dairy district. More than his vote is needed. Write him a letter and get his views. Ask him to not only support the cause, but to work for it, and suggest that you can furnish him with information if he wishes it.

LIVE STOCK NOTES.

Murdo McKenzie, of Trinidad, Colo., was elected president of the American Live Stock Association at Fort Worth recently. Dwight B. Heard, of Phoenix, Ariz., was elected first vice-president; S. F. Burnett, of Fort Worth, second vice-president, and Governor Carey of Wyoming, third vice-president. Denver was chosen as the next meeting place.

L. A. McRea, of Magdalena, N. M., recently brought a large band of sheep into the Imperial valley to fatten on alfalfa and barley.

At a recent meeting the Siskiyou county Board of Supervisors allowed the $2.50 bounty on 372 coyote scalps, amounting to $915, and the $10 bounty on 16 panther scalps, amounting to $160, making a total of $1075 in all.

The Four Oaks Stock Co. of Woodland recently received from W. J. Domes of McCoy, Ore., a Hampshire boar which had taken the blue ribbon at three State fairs.

S. H. Grigsby, of Woodland, shipped a lot of 101 fine mules to San Francisco Monday, and on Saturday they were taken on board a transport bound for Hilo, Sandwich Islands. They are fine animals, and were selected especially for plantation work. Charles M. Ehrlich recently bought 80 mules at Marysville for shipment to the same place.

Frank R. Gooding, former Governor of Idaho, a brother of Fred W. Gooding, the retiring president, has been elected president of the National Wool Growers' Association. Other officers were elected as follows: Western vice-president, George Wallace, Salt Lake City; Eastern vice-president, E. C. Knoellin. Omaha was selected as the next place for the grand convention. W. F. Rothrock, J. H. Dobyn, Fred Ellenwood, A. W. Perkins, H. C. Lee, Thomas Nelson, Frank J. Hagenbarth, Peter Clegg, Wm. Daley and J. D. Elliott were elected executive committeemen.

J. F. Kimball, of Klamath Falls, is negotiating with the Weyerhausen Timber Co. of Portland to lease 200,000 acres of timber land for a period of ten years. There is both summer and winter feed on this range.

The Chowchilla rancho, near Merced, containing over 108,000 acres, was recently sold to the United States Farm Lands Co. of St. Paul. This concern recently bought the Haggin grant near Sacramento.

The C. J. Gooch ranch of 9000 acres, located in Tehama and Modoc counties, was recently sold for $150,000. This is one of the finest stock ranches in northern California, as there are 4000 acres

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We have a Stock Ranch of 2335 Acres, three running streams, two barns, two houses, well fenced, rolling hills, good soil, about 1500 acres tillable, and has produced as high as eighteen sacks of wheat per acre. Four miles southwest of Dunnigan, Yolo County.

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10 and 20 acre tracts. $100 to $125 per acre.

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The Wild Fruits of California.
California Mission Fruits.
Introduction of Improved Fruit Varieties.
Clearing Land for Fruit.
The Nursery.
Budding and Grafting.
Preparation for Planting.
Planting Trees and Vines.
Pruning Orchard Trees and Thinning Fruit.
Cultivation.
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The Apple.
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Plums and Prunes.
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The Date.
The Fig.
The Olive.
The Orange.
The Lemon, Lime, etc., Persimmon, Pineapple, Avocado, etc.
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The Pacific Rural Press

PUBLISHERS

667 Howard St., San Francisco, Cal.

of lowlands subject to cultivation and 5000 acres of summer range lands in the mountains.

RAISING ALFALFA.

(Continued From Page 49.)

it is found necessary to run a harrow over adobe fields when the seeds are germinating in order to loosen up the soil.

It is not necessary to plant a nurse crop in California except in very light soils. After the young plant comes up it should not be irrigated until it gets a good growth. Many growers claim that water should be kept off the alfalfa until it commences to show the lack of moisture, because in this way the roots are sent down deeper into the soil searching for moisture. The first cutting should be for weeds, no attention being paid to the alfalfa, because the weeds will grow faster and should be checked, as otherwise they will kill off the tender alfalfa plants. It is best not to cut too closely at this first cutting, because the alfalfa roots at this time are very shallow and need protection from the sun.

Irrigate in the spring and fall and after each cutting if possible. The first application of water should be heavier than the subsequent floods. On heavy adobe lands the water is to be applied more frequently than on lighter soils, but in much smaller quantities, because if applied heavily the land will become water logged and drown out the alfalfa.

After the stand comes up in good shape the land should be disked. Disking splits the crowns of the alfalfa plant so as to cause more shoots, it loosens up the soil and permits air to get to the roots, and it also kills the larvae and eggs of the insects which prey on alfalfa. After disking, a spring-tooth harrow run over the field loosens up the soil and removes the weeds. Where an alfalfa field is not doing very well the method pursued by L. W. Miller of Orland is a very good one to follow. He increases his output fourfold by disking twice in the early spring and then following this two weeks later with a spring-tooth harrow. The bare spots were re-seeded and the whole field cross harrowed.

In regard to top dressing alfalfa, E. Wyndham of California, writing in Hoard's Dairyman, said: "My alfalfa was not doing well, so I determined to see what effect a dressing of manure would have on it. In the winter I started to run the spreader over a piece. The driver started in the middle of the piece and made as crooked a line as I ever saw, once through the field and about half way back. It started to rain that night and was too wet to get on the land again for some weeks, but one could very soon see every turn and twist the spreader took, by the thick, dark, green growth which followed its every turn. I knew then what was the matter with the alfalfa, and have been top-dressing direct from the barn (when possible) ever since.

"In this climate one can spread all through fall and winter excepting when it is too wet. I have spread as late as March on a few inches of growth and noticed increased growth that year, but one notices that the part of the field which is done earliest and gets all the rain is heaviest, and so on all through the field. I usually spread six loads to the acre; I prefer nine, but have to make it cover as much ground as possible."

Horse Owners! Use
GOMBAULT'S
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A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all liniaments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish* Every bottle sold is warranted to give satisfaction Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland, O.

DAIRY NOTES.

Jack Orr, of Gilroy, recently sold his herd of 25 graded Holstein dairy cows to Lee Jones of Modesto for $100 per head. Robert Kohler sold some cows from his herd to Mr. Jones for $80 per head.

The Valley Queen Creamery Co., operating the creamery at Brawley, has opened a cream station at El Centro. This company is disbursing about $20,000 monthly to valley ranchers. E. E. Cummings is manager of the new cream depot. Although the station has been opened only one week, it has 55 patrons.

At the recent meeting of the California Creamery Operators, the following officers were elected: President, S. A. W. Carver, manager of the Crescent Creamery Co., Los Angeles; vice-president, J. P. Murphy, manager of the Dairymen's Co-operative Creamery, Tulare; secretary, F. H. Daniels, proprietor the Island Creamery, Alameda. The executive committee is made up of J. R. Murphy, manager of the Danish Co-operative Creamery of Fresno, and W. H. Roussel, president of the San Francisco Wholesale Dairy Produce Exchange and creamery owner.

L. R. Filippine, of Marin county, who recently purchased 167 acres of river-bottom land at Oakdale, will soon commence improvements. He will have a large string of cows as soon as things are in running order, and will install machinery for a private creamery and cheese factory.

A. U. Morris and F. L. Morris, of Woodland, left last week for the East, where they will buy Holsteins. They recently sold most of their herd. B. F. Anderson, of Modesto, bought 120 Holstein cows. Hubbard & Carmichael Bros., of Newman, purchased 57 grade heifers and three pure-bred bulls.

Modesto creameries are paying 38 cents per pound for butter-fat.

The new Riverside Co-operative Creamery Co. commenced operations this week.

Jackrabbits are destroying alfalfa and grain in the foothills of Yuba county. The Supervisors have offered a bounty for their destruction.

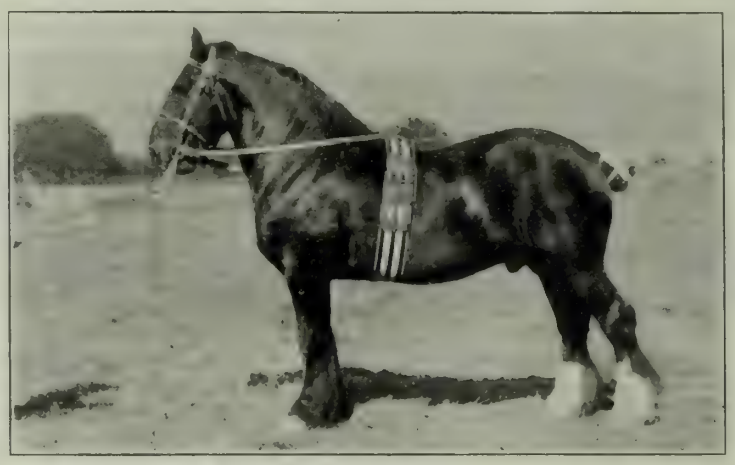
HOWARD CATTLE SALE.

The Howard Cattle Sale, which took place on Friday, January 13, at Fred Chase's yard in San Francisco, did not bring the prices that the animals deserved. The average price was only $135, while the year previous the same animals averaged $174. The heavy rain which fell all day no doubt had something to do with keeping back some of the buyers, but the animals sold at entirely too low a figure for such fine specimens.

The top price paid was given by W. T. Roberts for Joseph, a roan bull that was calved in July, 1908; the price was $225. The lowest price was paid by H. A. Jastor, who bought several bulls at $100.

The following is the list of buyers and prices: Wimple's Lad, calved March 1908, S. V. Morris, $105; Yukon Chief, calved May 1908, Bliss Bros., $130; Spartan, calved June 24, 1908, S. V. Morris, $140; Barnett, calved July 1909, E. S. Wangenheim, $105; Joseph, calved July 1908, W. T. Roberts, $225; Prince, calved August 1908, J. E. Ayer, $105; Butterfly Prince, calved September 1908, A. J. Caire, $130; Chief Sultan, calved September 1908, Newhall company, $185; Scotch Thistle, calved September 1908, Wangenheim, $185; Lord Irwin, calved October 1908, A. J. Caire, $130; Sharon Gold, calved November 1908, Bliss Bros., $135; Merry Lad, calved November 1908, J. W. Goodwin, $140; Arthur L., calved October 1908, J. W. Goodwin, $105; Captain Cumberland, calved December 1908, J. E. Dickenson, $130; Geneva Goods, calved December 1908, Bliss Bros., $200; Hilltop Duke, calved January 1908, E. S. Wanganheim, $150; Straight Archer 14th, February 1909, Bliss Bros., $105; Red Robin, calved March 1909, Newhall Co., $135; Robin Hood, calved April 1909, R. E. Easton, $105; Straight Archer 16th, April 1909, A. J. Caire, $115; Enhancor, calved May 1909, E. S. Wangenheim, $120; Quinto Duke, calved May 1909, Balfour-Guthrie Co., $120; Augmentor, calved May 1909, H. H. Jastor, $100; Elmo, calved May 1909, J. W. Goodwin, $105; Blazer, calved May 1909, H. A. Jastro, $100; Straight Archer 17th, May 1909, H. A. Jastro, $100; Applicator, calved May 1909, H. A. Jastro, $100; Pierrot, calved May 1909, H. A. Jastro, $100; Monitor, calved June 1909, Newhall Co., $150; Brampton Knight, calved May 1909, J. E. Ayer, $165; Durward, calved June 1909, J. W. Goodwin, $140; Straight Archer 18th, August 1909, J. W. Goodwin, $105; Thompson Duke, calved August 1909, J. E. Ayer, $155; Donald, calved August 1909, J. W. Goodwin, $135; Bon Kear, calved August 1909, Bliss Bros., $125; Rupee Knight, calved August 1909, J. E. Dickenson, $105; Lively Lad, calved August 23, 1909, A. J. Caire, $135; Champion Archer, calved September 1909, W. J. McGrath, $180; Arbitrator, calved September 10, 1909, Newhall Co., $140; Straight Archer 20th, Sept, 1909, Bliss Bros., $130; Straight Archer 22nd, Sept. 1909, J. W. Goodwin, $175; Sergius, calved Oct. 1909, J. E. Ayer, $180; Captain Knox, calved Oct. 1909, J. E. Dickenson, $145; Straight Archer 24th, Oct. 1909, H. A. Jastro, $105; Straight Archer 26th, calved Dec. 1909, W. J. McGrath, $145; Straight Archer 27th, Dec. 1909, J. W. Goodwin, $130; Orinda Lad, calved Jan. 1910, J. W. Goodwin, $130; Thompson Duke, calved Feb. 1910, C. E. Drew, $115.

Salvador Stock Farm
NAPA, CALIFORNIA



The cut above shows Shire Stallion Birdsall Xerxes—4 years old.

Owing to a practice in the selling of horses prevailing in the United States, and in the State of California particularly, farmers have become educated to paying from $3000 to $4000 for a pure-bred Stallion that should cost them no more than half this amount.

By my method of selling at barn, I cut out the salaries, traveling and incidental expenses of the salesmen, organizers, promoters and cure-takers, and the freight to and from some particular points on two or more horses in order to effect the sale of one.

After effecting a sale by the old method, the cost of selling has been so high that practically 50% has been added to the actual value of a horse, and if it is necessary for the purchaser to give notes for part of this amount, to the regular interest on this note must be added the discount—all of which must be taken into consideration by the seller and PAID FOR BY THE PURCHASER.

These are a few points in saving made by my method of selling Stallions as compared with the old way.

More will be told in future issues of the Pacific Rural Press. In the meantime, if you are contemplating the purchase of a Stallion, write me for full particulars.

HENRY WHEATLEY
NAPA, CAL.

CURE THAT SPAVIN



—or that Curb, Splint, Ringbone or other lameness with Kendall's Spavin Cure. Mr. Montgomery Sheppard of Richfield, N. J. writes this about

Kendall's Spavin Cure

"I have been using your Spavin Cure and have found it a sure cure for Spavins, Splints, Ringbone, Lameness, etc."

Let us send you other letters. Get a bottle of Kendall's at once. You may need it any day. At your druggists $1 a bottle. 6 for $5 Ask for "Treatise on the Horse"—Free, or write to

Dr. B. J. Kendall Co., Enosburg Falls, Vermont, U. S. A.

Cutter's Anthrax and Blackleg Vaccines

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Poultry Department.

Conducted by M. Russell James.

HATCHING THE CHICKS.

Again the peep of the chick is heard in the land. During the next three months, on the Pacific Coast alone, millions and millions of downy chick babies will break the shell. The season's aggregate of this bird life which contributes so largely to man's sustenance and prosperity, is unknowable, and would be unbelievable if known. Perhaps some idea of it may be formed from the extent of the day-old-chick industry which has sprung into existence during the past ten years. It is estimated that the out-



Good Morning! Have You——

put from the various Petaluma hatcheries was three million chicks the past season. When we add to this the output from thousands of incubators on individual plants and farms, and the supply from the hens that get busy by hundreds of thousands in April and May, the magnitude of the year's chick hatch begins to dawn upon us.

The hatching season represents a stupendous development of useful animal life; the pathetic part of the business is the immense proportion which comes to a short and miserable end. Though some mortality among chicks is unavoidable, especially in rearing them in large numbers and under artificial conditions, the great loss is caused by improper equipment, shameful ignorance, and downright wicked carelessness and neglect. When chicks turn up their toes and die by hundreds, the commercial loss alone is considered and not the individual responsibility for the little creatures which we have called into existence and wasted. There should be an awakening of conscience in the matter of stock raising, and it should be considered little short of criminal to take the lives of "our poor relations" into our hands and fail to give these creatures the necessary care and comforts.

THE RIGHT TO BE WELL BORN.

To come from healthy parents and to be brought into the world under wholesome and natural conditions is the inherent right of every creature. The little chick possesses this right along with the human child. It is up to the poultry raiser to secure this right for his chicks, and profitable poultry culture depends upon it. The chick may be hatched, but not well hatched. In the latter case, even if it should live to old age, it will never be a profit producer. Every experienced poultry raiser knows that the production of strong, profitable chicks, even from well-vitalized eggs, requires a correct degree of heat and a uniform temperature during the period of incubation. Jumps in temperature due to a poor incubator, an unsuitable location, or improper care, result in weaklings and cripples. That hatches sometimes seem to withstand these extremes with little detriment (we have even heard poultrymen boast of how high or how low the temperature has been allowed to run during the hatch) proves nothing but the wonderful reserve power which Nature supplies to preserve the life of her creatures. But she is inexorable in her laws, and every drain on the vitality is registered somewhere in the life of the creature.

THE "CHEAP" INCUBATOR.

The only truly cheap incubator is a first-class standard machine of a grade that has successfully stood the test of time. The bargain-hunting person pays five, ten, twenty dollars less for a machine of the same egg capacity, and congratulates himself upon getting a "cheap" incubator. In every hatch he loses five, ten, twenty dollars in unhatched or ill-hatched chicks. The cost is cumulative, and by the time his "cheap" machine ends in the junk heap, where it should have begun, it has proven an exceedingly dear incubator.

At a novice's intensive poultry plant we were recently shown an incubator of this type—a thin metal shell with a felt lining pasted on the inside. "How does it work?" we inquired.

"Pretty good; but we find it difficult to keep down the vermin that get behind the felt," was the naive reply.

When people will worse than throw away their money on such catch-penny devices while there are standard machines on the market at as low prices as it is possible to manufacture a first-class incubator—machines which such men as Lyman C. Byce and Charles A. Cyphers have spent half a lifetime in inventing and perfecting—it is very evident that common sense of a good working brand is sadly lacking.

LOCATION OF THE INCUBATOR.

In the making of a first-class machine, science and skilled workmanship and the best material are used in securing an insulated, evenly heated egg chamber that shall be as little affected as possible by changes in the outside temperature. Still, these variations cannot be entirely overcome, and the location of the incubator has considerable effect upon results. On large poultry plants, and where day-old chicks are a branch of the business, an incubator is a necessary part of the equipment. Such a room may be built at a moderate cost where the poultryman can do the work himself.

A very satisfactory type for such a building is made by excavating to the depth of two or three feet in well-drained soil for the foundation and finishing of this portion with two coats of strong cement on floor and sides. The walls should be thick boards and ceiled throughout so as to form an air chamber between the boards and ceiling, that an even temperature may be maintained in the room. The windows should be so arranged and screened as to let in the sunshine without its directly striking the machines and to air the room constantly without creating a draft.

When the incubator must be located in the dwelling, a chamber should be devoted to this purpose, and one preferably on the north side of the house and as far away as possible from the heat and jar of the living-rooms. Remember that a solid, level foundation, an even temperature in the room, freedom from smoke, fumes, dust, and all unwholesome things are essentials in the location of an incubator.

With every first-class incubator are printed instructions for operating the machine, and these should be studied thoroughly and referred to often. They are intended to be a complete guide for the running of that particular machine, and naturally cover the subject. Still, there are a few general points in artificial incubation that will bear much repetition.

HATCHING POINTS.

The best hatch requires the best best incubator, the best oil, the best eggs, and the best care.

Have the thermometers tested before using them by comparing them with a physician's guaranteed clinical Fahrenheit thermometer.

Run the machine for two or more days without eggs, so that it may be thoroughly heated and running steadily at the desired temperature.

Be attentive but not fussy. Have a certain hour each day to clean and fill the lamps and let nothing interfere with that hour, and soon your subconscious self will warn you of its approach.

Keep the lamp-wick trimmed perfectly even, with the corners slightly rounded. An uneven flame causes all kinds of mischief and even danger, as do a charred wick, choked burner and badly cared-for lamp.

Never heat up the machine suddenly by turning the flame too high. Even if the temperature has been allowed to run far too low, increase it gradually.

Do not keep tampering with the regulator, but learn to regulate the flame to meet the variations in the outside temperature. If the machine is properly adjusted at the start, the only readjustment of the regulator that should be required is what is necessary to meet the increased temperature through the radiation of animal heat from the eggs. About the tenth day, at the time of "quickening," there will be a sudden jump in the temperature from this cause.

Do not handle the eggs with dirty or sweaty hands, nor allow any soiled or ill-smelling thing to come in contact with them. It is better that the eggs should be unwashed, if they can be kept perfectly clean, for the mucilaginous coating is the natural protection against evaporation. But if at all soiled, the eggs should be washed. Wash them in plenty of pure water with a clean white cloth and clean hands, so that there will be no filling up of the pores or stickiness.

Use fresh clean eggs and place them with the larger end slightly uppermost. Do not stand them on end or pile them on top of each other; don't try to crowd the eggs. This point may not be essential, but the writer always darkens the incubator with a black cloth curtain arranged to slide across the glass door. Seeds germinate best in the dark, and the direct light does not strike the eggs under the hen.

The best of rules require good judgment in their application. The time which should be allowed for turning and cooling the eggs should be determined by the temperature of the room and the condition of the weather. In a warm room or in hot weather, the eggs, after the first few days, may be left out of the incubator for 20 minutes twice a day; while in cold, windy weather they should be quickly turned and replaced in the machine. Watch the old hen. How closely she hugs the nest for the first few days often not getting off even for a bite of food. Later in pleasant weather she may remain off an hour. If the weather is hot, she stands up on the nest. Nature, the Great Mother, knows her business. Learn of her.

Winter is coming! The days now are nigh
When we'll weep as we view the coal pile getting scant;
When we'll tremble each morning and fitfully sigh
As we open an egg from a cold-storage plant.—Detroit Free Press.

POULTRYMAN OF EXPERIENCE, successful in operating incubators and brooders, desires a position. Address Box 118, this office.

POULTRY.

PIONEER POULTRY YARDS—Standard bred Light and Dark Brahmas, Buff Cochins, R. I. Reds, Houdans, Black Minorcas, Cornish Fowls, Brown Leghorns, Bronze turkeys, peacocks, guineas and Rouen ducks. Address W. A. FRENCH, 545 W. Park St., Stockton, Cal.

SULLIVANS' BUFF ORPINGTONS—1000 birds to select from. Trios, $7.50 and up. Eggs for hatching, $2 and $3. Special selection. Prices on application. Mr. and Mrs. W. S. SULLIVAN, 25 Market St., Agnew, Santa Clara Co., Cal.

DAY OLD CHICKS—R. I. Reds, S. C. White Leghorns and Barred Rocks; also eggs for hatching; good laying strain. Fairmount Hatchery, Box 29B, R. F. D., Santa Cruz, Cal.

ORPINGTONS—White, Buff, stock, eggs. Ellen Jacque, 3117 School St., Fruitvale.

INDIAN RUNNER BABY DUCKS, 25c each. Ready for delivery Feb. 1st and later. no less than 15 shipped. T. M. ALEXANDER, 460 33d Ave., San Francisco.

PETALUMA INCUBATOR CO., Petaluma, Cal.—You will be pleased with our new Free CATALOGUE. Send for it.

CARRINGTON WHITE LEGHORNS—Send for circular. Address C. B. CARRINGTON, Hayward, Cal.

BRONZE Turkeys and Eggs. Ed Hart, Clements, Cal. Large size, good plumage, early maturity.

BANTAMS—Golden Seabright and Japanese. Free Circular. Englewood Orchard, Campbell.

TWIN OAKS FARM—W. H. Bissell, Proprietor, Livermore, Cal.—Buff, White Orpington.

BUFF LEGHORN EGGS, splendid layers, $1.50 for 15. Ed. Kerr, Santa Rosa, Cal.

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MANHATTAN Egg and Stock Food keeps Stock and Poultry healthy; try it.

THOROUGHBRED BUFF LEGHORNS

Proven winter layers; 600 hens selected by Hogan System, in breeding yards.

Chicks, $10 per 100.

Eggs for hatching, $5 per 100; $1 per setting.

R. M. HEMPEL,
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WARD'S ORIGINAL FIRELESS BROODERS
PRODUCES STRONGER, HEALTHIER CHICKS THAN ANY HEATED BROODER
FULLY GUARANTEED
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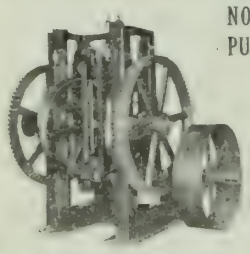
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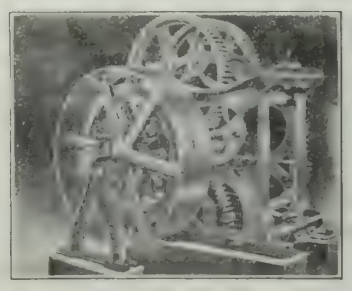
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The Home Circle.

Shall We Understand?

Why are doubts and why are sorrows,
Why this reaching arms in vain,
With our bleeding hands returning,
Holding only deeper pain?
Is there light beyond the border,
Breaking day on fairer land,
Where, the final answer given,
We shall know and understand?

Why must joy end in sadness,
Why is laughter quenched with tears?
Why this labor never ceasing,
Why this wasting of the years?
Shall we reach some mount of vision
Heights by Heavenly breezes fanned.
Looking backward, read the puzzle,
Know the why and understand?

Why our path so dim and rugged,
Filled with thorns so prone to pierce?
Can we win in life's hard battle,
Ever raging wild and fierce?
Yes! There's hope, there's help, there's winning
By the Master's guiding hand;
Where He leadeth there is knowledge—
There we'll rest and understand.

—Selected.

A Legend.

A rich man was on his deathbed. All through his life he had been a greedy, avaricious person and had gathered enormous wealth.

When anybody blamed him for his greedy and selfish manners, he always said: "In this life, money is the only thing that counts."

And now, with death approaching, he thought: "Of course, it must be just the same way in heaven. Money will be the only thing of value there, too, and if one wishes to be treated well there, one must be well provided with money."

So he called his children together at his deathbed and said:

"My last wish is that you shall fill my coffin with as many gold coins as it will hold. Do not be stingy with the gold," he groaned, "be sure and fill the coffin well."

During the same night he died.

And his children piously complied with his last wish and filled his coffin with thousands of gold coins.

He then came into the next world. Here he had to go through the usual formalities—with questions and entries in various books, opening of protocols, examinations, and cross-examinations, and settling of accounts which took up a whole day.

The poor man rushed from office to office and at last he was so hungry and thirsty that he felt quite faint.

"This will never do," he thought, "I must have something to eat and drink."

Suddenly he caught sight of a lunch-room with an immense counter piled high with all kinds of food and drinks. There was even a grill behind the counter where a delicious steak was just being broiled.

"That is fine," he thought; "now I can get something to eat. I am quite sure it must be the same here as down below. How fortunate I brought some money along. I will have a good square meal now."

The feeling of his purse heavy with gold was a great pleasure to him, and smilingly he walked up to the counter.

"How much is that?" he asked, pointing to a sardine.

"Five cents," said the man behind the counter.

"That is cheap enough," the rich man thought.

"And that one?" he asked again, pointing to a delicious game pie.

"That is five cents, too," the man replied with a smile. He seemed amused at the rich man's surprise.

"Then it is as cheap as that," the rich man said; "will you please give me ten sardines and six pies and some of these?"

He pointed out some more dishes on the counter.

The man behind the counter took his order, but did not move to fill it.

"You will have to pay in advance," he said dryly.

"Why, certainly, with pleasure."

The rich man handed him a five-dollar gold piece.

The man behind the counter shrugged his shoulders. "That is no nickel!"

And calling a couple of waiters, he added: "Throw that man out."

"The devil," he growled, "strange kind of business where they only take nickels. I must get my money changed."

He rushed back to earth and, appearing to his sons in a dream, said: "Take back your gold. I cannot use it, and give me instead a big bag of nickels; I am starving to death."

The terrified sons ran to the tomb and taking the gold from their father's coffin, filled it with nickels.

"Now I have change," cried the rich man, approaching the man behind the counter once more. "Give me something to eat, I am dying with hunger."

"You must pay in advance," the man replied.

"Here you are," yelled the rich man and threw a handful of nickels on the counter.

The man behind the counter looked at the money and said with a smile: "I see you have not learned much, while you were down below. Here we do not accept the money you own, but only what you have given away. Search your memory well. Perhaps you have some time given a begger a nickel or helped a poor man. For every cent you have spent that way on earth you may buy food up here."

The rich man lowered his eyes and thought long and hard.

But no—never in his life had he helped a poor man, never had he given alms to a beggar.

And the two waiters threw him out again.—Leo Tolstoi.

Adenoids.

A case of adenoids should receive early attention, as the results are very serious in time. Usually the child breathes through its mouth, the lips being unbecomingly parted. There is a strained look in the eyes and about the muscles of the mouth, showing that the child breaths with difficulty. Adenoids, every young mother should know, are polypi that grow at the back of the nasal passage. They can be reached through the mouth, and some physicians remove them with the fingernails, the fingernails having been sterilized, of course. Be sure, if your child has difficulty in breathing, to take him to a physician who will remove them, in this way or with instruments. Upon the success of the operation may depend your child's health for life, so make no mistake and permit no delay.

A Day Well Spent.

If we sit down at set of sun,
And count the things that we have done,
And, counting, find one self-denying act,
One word that eased the heart of him who heard,
One glance most kind, that fell like sunshine where it went,
Then we may count that day well spent.

—Ella Wheeler Wilcox.

How Children Spend Money.

By Miss CANDIS NELSON, A.M., Valley City, N. D.

There are few children who do not have some money to spend; sometimes they earn it for themselves; sometimes it is a gift from the parents. It is a wise thing, when at all possible, for children to have a regular allowance, even though very small, and then be taught how to spend it and how to lay by some for the proverbial rainy day. Where children can earn their own spending money, ordinarily they are wiser in its use. Under our present system of allowing children to do as they please with their money, they plan to spend it mostly for candy and gum.

It is not a difficult thing to arouse an interest in children in putting aside, for another day, money so often unnecessarily and foolishly spent. The ordinary toy bank is a good thing to encourage economy. Care must be taken that children do not develop selfish or miserly habits. Train them to recognize their responsibility to their neighbor. To set aside a certain per cent of their savings for a sunshine fund is commendable; with this they may send a postal card or a flower to the sick, they may buy a needed spoon or cooking utensil for their mother; they may put it in the church collection, or give it to some organized charity; in fact, they may spend it in many helpful ways, even though it should be only a penny or two. (Saving in order to purchase an article really useful and educational, ought to be encouraged. Such articles dear to boys are bicycles, tools, electrical toys, magic lanterns, cameras, and printing presses.—ED.)

Schools often undertake the work of training children to do systematic saving. The work is carried on by means of school savings banks. In Europe they have found much favor, where it is claimed they not only train to habits of thrift and self-dependence, but reduce crime, intemperance and pauperism. They were introduced into the United States about 1885 by a French educator. In 1893 the United States had 325 school savings banks, with $350,634.32 on deposit; in 1905 there were 4541 banks that had collected, since the system was introduced, $2,782,012.

The plan is to have the children bring, either daily or once a week, the amount they can save, and this is turned over to some safe bank and books are returned to the children to be examined by the parents. The teacher usually keeps a book with the name of the depositor and the amount of the deposit; sometimes the child is given a card with the amount deposited punched, and sometimes he keeps account by means of stamps. In some cities, particularly in Europe, the school banks are connected with the postal savings banks. Whatever the method for handling, the principle remains the same—that is, to educate our children to be producers, contributors, and thrifty citizens.

A World-Wide Tourist.

"The California prune is the greatest tourist in the world," remarked Brown, sitting at the family breakfast table and glancing enviously at his valise all covered with pasters of European hotels and steamship lines.

"California prunes were on the menu cards of the dining-cars from Oakland Pier to New York and on the cards of all the leading hotels of Chicago, Washington and New York. I had them every morning for breakfast on the big ocean liner all the way across the Atlantic, and when I breakfasted at the Cecil, in London, the first and most conspicuous thing on the bill of fare was 'California Prunes'."

"California prunes in London!" ejaculated Mrs. Brown, with surprise. "How on earth do you suppose they got there? Why that is almost one-third of the distance around the world."

"Yes, it's a long distance from here, and moreover you may get a dish of them in London as cheaply as in San Francisco."

"But, my dear, I have heard you say the railroads charged such high rates that the producers couldn't afford to ship their stuff farther than a woman with a hobble skirt could make in three jumps."

"Yes, from a mouse."

"You didn't say anything about a mouse."

"Well, I meant to. It makes some difference what a woman is jumping from, at, or about. Bill Jones' wife jumped from a mouse the other day and Bill says she circled the room three times every time she jumped."

"But there is a 7000-mile gap between London and San Francisco."

"Perhaps my comparison was rather ridiculous. When I was a boy and anything went wrong, I whipped my dog. Men are only boys grown tall, and when we grow up, instead of whipping the dog, we whip the railroads. But I will admit that when I can go 7000 miles away, across the Atlantic, and buy a dish of California prunes for breakfast in London, Berlin, and Paris as cheaply as in San Francisco or Los Angeles, freight rates haven't much to do with the price or cost of an article. I think, perhaps, if the curtain was pulled aside on the fellows who are howling about freight rates it would be found that they are doing it to cover up something else."

"But you howled as much as anybody."

"If I didn't, the fellow who paid me a profit of $7 on a suit of cltohes would butt in and howl, too, but against me. I beat him to it, and he is satisfied to hear me cuss the railroads. It's an easy and quick way out of it, you know, and it's a scheme that works fine."

"But is it honest?"

"Please do not discuss a dealer's profits and moral ethics at the same time. They don't blend well."

"But honesty is the best policy."

"See here, give me something from Bacon, or Shakespeare, or Bill Nye, but do not spring something that somebody said or concluded after he got caught. Besides, you are leading me away from the original subject. I was talking about California prunes, and what I wanted to remark was that as world-wide tourists and globe-trotters they take the blue ribbon."

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1105-6 Merchants Exchange Bldg., San Francisco. Established 1860.

THE MARKETS.

San Francisco, Jan. 18, 1911.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT

The wheat market has shown considerable strength during the past week, but at the present time it is sluggish, with a tendency downward. $1.41 per cental was paid at Gridley last week.

California Club	$1.50 @1.55
Sonora	1.62½ @1.70
White Australian	1.55 @1.65
Northern Club	1.50 @1.55
Northern Bluestem	1.55 @1.60
Russian Red	1.50 @1.52½

BARLEY

The trade in San Francisco is quiet, but very active at country points. In the early part of the week barley spurted to $1.25, due to the fact that the big brewers around Chicago and Milwaukee found themselves short of choice California brewing barley and they sent in such heavy orders that the market jumped. Since then it has fallen, and the present rainfall has had the effect of keeping it down. At the present time there are 5111 tons of grain chartered for shipment in the port of San Francisco as against 8923 tons last year. In 1909 there were 21,154 tons disengaged at this date, but now there are some 89,609 tons.

Brewing and Shipping	1.15 @1.20
Choice Feed, per ctl	1.10 @1.15
Common Feed	1.00 @1.08

OATS.

This market shows a general falling off in every line with the exception of white oats. Red oats are very weak, and blacks are pointing downward, but the white oat still maintains its supremacy and is very strong.

Red Feed	$1.22½ @1.27½
Red Seed	1.30 @1.35
Gray	Nominal
White	1.50 @1.60
Black	1.10 @1.20

CORN

This market shows strength and the Egyptians have gone up a few points. It is expected that the Western corn will also show a change upward within the near future.

Eastern Yellow	$1.30 @1.35
Eastern White	1.31 @1.36
Egyptian White	1.55 @1.60
Brown	1.40 @1.45

RYE

This market is practically dead, and there is very little trading.

Rye, per ctl	$1.55 @1.60

BEANS

Limas are still strong and seem to be going upward. Likewise, pinks are also aviating. The general run of the bean market is strong, as many of the big construction camps and mines are laying in their supplies with the result that a heavy call is being made on the surplus stock in the warehouses.

Bayos, per ctl	$4.00
Blackeyes	$4.25 @4.50
Cranberry Beans	3.75 @4.00
Garvanzos	2.50 @2.65
Horse Beans	2.00
Small Whites	3.00
Large Whites	2.75 @3.00
Limas	5.25
Pea	3.25 @3.50
Pink	3.15
Red Kidneys	5.00

SEEDS

Brown mustard is very strong and the demand can hardly be supplied. Alfalfa is also showing strength, and it is predicted that a very large acreage will be planted within the next two months.

Alfalfa	18@ 20c
Broomcorn Seed, per ton	$20.00@25.00
Brown Mustard, per lb	1½c
Canary	3½ @ 3¾c
Flaxseed	3 @ 3½c
Hemp	3 @ 3½c
Millett	3 c
Timothy	9 c
Yellow Mustard	3½c
Dried Peas, per ctl	3.00@ 4.00

FLOUR

Flour is much stronger than when last reported, and the Northern millers are running overtime in order to fill orders.

Cal. Family Extras	$3.40 @3.80
Bakers' Extras	3.40 @3.80
Superfine	4.20 @4.60
Oregon and Washington	4.60 @4.80

Hay and Feedstuffs.

HAY.

As usual, hay is very dull in San Francisco, but in the country points it is still strong, with the holders refusing to let go at the prices offered by the San Francisco commission men. The past week has been especially quiet due to the fact that the heavy rains in the country have made it impossible to haul hay. The downpour has had the tendency to make the buyers think that they can get hay in the near future at greatly reduced prices, and they are all holding off for it to drop. At the present time the fancy grades of wheat and tame oat hay are selling very readily; in fact, top prices are being paid all along for this choice stuff. Alfalfa hay is still strong, and the dairymen who found themselves short, due to the heavy feeding caused by the dry spell, are in the market buying.

Choice Wheat	$12.00@14.50
Good Wheat Hay	9.50@11.00
Other Grade Wheat	7.50@ 9.50
Wheat and Oats	7.50@11.50
Tame Oats	7.00@12.50
Wild Oats	7.00@ 9.00
Alfalfa	7.00@13.00
Stock Hay	5.00@ 6.50
Straw, per bale	35@ 55c

FEEDSTUFFS

Cracked corn is also high; alfalfa meal is going higher. The other feedstuffs are showing no change.

Alfalfa Meal, per ton	$18.00@20.00
Bran, per ton	29.00@30.00
Cocoanut Cake or Meal	35.00
Cracked Corn	33.00@34.00
Middlings	31.00@36.50
Mixed Feeds	28.00@31.00
Rolled Barley	24.00@25.00
Rolled Oats	29.00@31.00
Manhattan Egg Food, per ctl	15c
Shorts	30.00@31.00

Garden Truck.

VEGETABLES

The California onion crop is getting shorter each day, and for this reason the market is going higher. The Oregon crop was very large and the growers of that State are making preparations to ship large quantities into this market in order to take advantage of the good prices being paid. Celery is very bad, and the prices are tumbling. There has been a large carry-over of vegetables all along the line, with the result that the sellers have had no trouble in accommodating the retailer. New rhubarb coming in is being sold around $1.40. Eggplant has shown considerable strength, and heavy supplies coming in from Los Angeles are meeting a good market.

Onions: New Yellow, sack	$ 1.60 @ 1.70
Garlic, per lb	4@ 6c
Green Peas, per lb	6@ 8c
Turnips, per sack	65@ 75c
Tomatoes, per crate	90@ 1.20
Eggplant, per lb	10@ 15c
Cucumbers, per doz	80@ 1.00
Summer Squash, per box	1.50@ 2.00
String Beans, per lb	10@ 15c
Cabbage	60@ 80c
Green Peppers, per lb	9@ 10c
Carrots	65@ 75c
Celery, per crate	65@ 85c
Rhubarb, per box	1.20@ 1.50
Mushrooms, per lb	25@ 40c
Cauliflower, per doz	40@ 50c

POTATOES.

River whites are still going upward, while Salinas Burbanks are at a premium on account of the strong condition of the local market. A large number of Oregon potatoes is being shipped in, and fairly good prices are being received.

Salinas Burbanks, per ctl	$ 2.00@ 2.15
River Whites, per ctl	1.60@ 1.80
Sweet Potatoes, per ctl	3.00@ 3.25
Oregon Burbanks	1.70@ 1.85

Dairy Produce.

POULTRY

On account of the heavy snowstorm in the Sierras, but two carloads of poultry have been able to get through this last week. The result has been that prices all along the line have gone up from $1 to $1.50, also the muddy roads have prevented the local poultrymen from sending in much of their stock. The demand for young hens at the present time is especially good. Reports from the poultry centers state that broilers will soon be started for the market in large quantities.

Large Broilers	$ 4.50@ 5.00
Small Broilers	3.00@ 4.00
Fryers	6.00@ 6.50
Hens, extra	8.00@10.00
Hens, large	6.50@ 7.50
Small Hens	5.50@ 6.00
Old Roosters	5.00@ 5.50
Young Roosters	6.50@ 7.50
Young Roosters, full grown	8.00@10.00
Squabs	3.50@ 4.00
Geese, per pair	2.50@ 3.00
Ducks	7.00@ 9.00
Turkeys, per lb., live	19@ 21c

BUTTER.

Butter at the present time is bucking up and down and exhibiting characteristics which are uncommon to this market. As yet no one seems to be able to put his finger on the exact cause. The commission men denied that there has been any manipulation.

California (extra), per lb	36½c
Firsts	27 c
Seconds	25 c

EGGS.

Eggs are lower, with a heavy production and the demand increasing, so that the fresh supplies are rapidly used up. Cold-storage stock, however, still remains in the refrigerators, with no chance of getting it out.

California (extras), per doz	31 c
Firsts	30 c
Seconds	30 c
Storage (extras)	29 c

CHEESE.

Cheese has fallen a few points since last reported. The heavy production has had something to do with this.

Fancy California Flats, per lb	16½c
Firsts	14 c
New Young Americas, fancy	16 c

Deciduous Fruits.

FRESH FRUITS.

Apples are very dull; in fact, almost everything in fresh fruits is quiet. Heavy crates of Los Angeles strawberries came in, but brought only $3 to $4 per crate.

Apples, per box—	
Newtown	1.00@ 1.25
Other varieties	35@ 60c
Fancy Red, 4-tier	90@ 1.25
Bellefleur	1.00@ 1.25
Winter Nelis Pears	2.50@ 3.00

DRIED FRUITS

Considerable strength is being shown by raisins. Reports from the East in the New York Journal of Commerce are: "There is some inquiry for prunes for forward shipment from the Coast, though owing to the higher views of sellers, few orders are being placed. Private wires received from San Francisco Saturday quoted 6¾c. f. o. b. four-size bag basis for 30s and 40s, which sizes comprise the bulk of the stock remaining on the Coast. According to these advices, nothing is left in growers' hands and the total available supply controlled by packers is estimated at not much, if any, over 100 cars. Of this quantity about 40% is controlled by one firm, the next largest holders having 25 cars, while the remainder is distributed in lots of 10 to 15 cars among other packers. In spite of the higher prices, the inquiry from Europe continues, indicating that there is still an unsatisfied demand there. On the spot here stocks are limited, and a firm feeling prevails."

A report from Sanger says that muscats have not reached the 3-cent mark as yet, 2¾c. being the prevailing price. The packers are only buying as they receive orders from the Eastern jobbers. This report predicts an opening price of 6c. for peaches this spring.

According to the Fresno Republican, packers are offering 3½c. for 1911 muscats. The strong upward tendency of the market and the opening prices quoted for 1911 have led to the firm belief that the coming year will be one of the most successful in the history of the raisin industry. It is estimated that there are about 10,000 tons of hold-overs on hand, but it is expected that this will be cleaned up by the first of March. Lee Gray, of the Fresno Home Packing Co., it is said, has approached several growers with a view to contracting for 3½c. The California Fruit Canners' Association is offering 3c. for 1911 muscats, Thompsons, and Sultanas. The C. F. C. A. is also offering to make contracts for three years at 3c., and it is reported that several contracts at this figure have been closed. The packers are not openly offering for 1911 goods, but it was stated Wednesday that there seems to be a general effort to contract quietly. The market on 1910 goods has advanced rapidly in the last few days, and at least four different firms have been buying freely at 3c. Rosenberg Bros. have been paying 3c. and $1 per ton for hauling. The Inderrieden company bought the Abbott and Ben Swanson crops at Del Rey for 3c., and it is stated that they have bought a number of other crops in that vicinity.

Evaporated Apples, per lb	9¼@10 c
Figs, black	4½@ 5 c
Figs, white	5 @ 7½c
Apricots	12 @13 c
Moorpark, fancy	13½@14 c
Peaches	6 @ 6¾c
Prunes, 4-size basis	6 @ 7 c
30s, premium of 1½c.	
40s, premium of ¾c.	
Pears	9 @13 c
Raisins—	
Loose Muscatels, in sweatbox	2½@ 3 c
Thompson Seedless	4½c
Seedless Sultanas	3½@ 4 c

Citrus Fruits.

The citrus business around San Francisco is much better than it has been for several weeks past, but there is nothing much to brag of. The auction sales held at the Eastern cities last Monday were easier. The New York market was lower on oranges and higher on lemons. There were 31 carloads of navels sold and 3 carloads of lemons. The top price for navels was $3.10, while the lowest was $1.60. Lemons ranged from $2.95 to $2.05. In Pittsburg there were 7 carloads sold with the market steady on both oranges and lemons. Navels ranged from $2.50 to $1.85, while lemons went from $2.90 to $1.95. The Philadelphia market was in fairly good condition and only 28 carloads of Floridas and 4 carloads of navels.

Florida oranges ranged from 90c. to $3.70, with an average price of $1.60. Grapefruit ranged from $1.50 to $3.10, with an average of $2.25. Tangerines, 65c., to $1.90, with an average of $1.80. The Boston market was much easier and 18 carloads were sold at prices ranging from $2.75 to $1.75. Lemons sold from $3.05 to $3.30. The St. Louis market ranged from $2.45 to $1.80, and lemons sold from $2.70 to $3.10. The Cincinnati market is advancing on navels and easier on Floridas. Two carloads of navels were sold and 5 carloads of Floridas. Florida oranges ranged from 90c to $1.60. The Cleveland market was higher, with prices ranging from $1.75 to $2.70 on navels. The total shipments to date this season have been 5647 carloads. Of this number 827 were lemons and 4820 oranges.

Navel oranges—	
Extra choice	$ 2.00@ 2.50
Choice	1.50@ 2.00
Valencias, choice to fancy	Nominal
Choice	Nominal
Standard	Nominal
Tangerines	1.00@ 1.50
Choice Lemons	1.50@ 2.00
Fancy Lemons	2.75@ 3.00
Standard	1.25@ 2.25
Limes	4.00@ 4.50
Grape Fruit	2.50@ 3.00

Nuts, Honey, Hops, Etc.

NUTS

The almonds in the hands of the association are rapidly being sold out, and it will not be long before the entire 1910 crop will be cleaned up.

Almonds—	
Nonpareils	15 @15½c
I X L	14 @14½c
Ne Plus Ultra	13 @13½c
Drakes	11 @11½c
Languedoc	10½@11 c
Hardshells	8 @ 8½c
Walnuts—Softshell, No. 1	15 c
Standard	14½c
Softshell, No. 2	11 c
Budded	17½c

HONEY.

The honey market still remains weak, with very little first-class honey in the hands of the dealers.

Comb—White Sage	14 @15 c
Extracted—Water White	8½@ 9 c
Light Amber	7 @ 8 c
Amber	5 @ 6 c
Sacramento River Comb	12 @12½c

BEESWAX

Light	27½@30 c
Dark	23 @26 c

HOPS.

The hop market still continues very firm, with a very small amount of hops in the hands of the growers. It is stated that 15c. is being offered for the 1911 crop, but the growers only laugh at it.

Live Stock.

DRESSED MEAT.

Beef: Steers, per lb	8½@ 9 c

Cows	7	@ 8	c
Heifers		8	c
Mutton: Wethers	9	@ 9½	c
Ewes	7½	@ 8½	c
Ewes	9	@ 9½	c
Lambs	10½	@11½	c
Hogs, dressed	10	@13	c

LIVE STOCK.

Prime beef is very scarce, and it has reached the 6c. limit. Those who are well informed on the cattle situation predict a scarcity of beef for the next two or three years and that prices have only started. As we predicted in our last week's issue, hogs have gone up and the tendency seems to be still on the upward incline. Mutton is coming in large quantities, the result being that it is not very strong. There is very little veal coming in, so that the butchers are having difficulty in supplying present needs.

Gross weight:			
Steers: No. 1	5¾	@ 6	c
No. 2	5¼	@ 5½	c
Cows and Heifers: No. 1	4½	@ 5	c
No. 2	4	@ 4½	c
Bulls and Stags	2½	@ 3¾	c
Calves: Light	6	@ 6¼	c
Medium	5½	@ 5¾	c
Heavy	4¾	@ 5	c
Hogs: Grain-fed, heavy	7	@ 8	c
150 to 250 lbs	8¼	@ 8½	c
100 to 150 lbs	7¾	@ 8	c
Common Hogs, per lb	5	@ 6½	c
Small prime wethers	4¾	@ 5	c
Large prime wethers	4¼	@ 4½	c
Ewes	4¼	@ 4½	c
Lambs	6	@ 6¼	c

WOOL.

This market still continues dull, with no chance of any change for some time to come.

Fall Clip—			
Mountain Free	10	@12	c
Valley Fall and Lamb	8	@11	c
Northern	8	@11	c
Southern	15	@17½	c
Middle Counties	18	@19	c
Northern	18½	@20	c

HIDES.

The tendency is downward, and with the low condition of wool, sheep pelts are being sent into the market at greatly reduced figures.

Wet Salt—			
Heavy Steers, over 56 lbs.		10	c
Medium		9	c
Light Steers, under 48 lbs.		8½	c
Heavy Cows, over 50 lbs.		8½	c
Light Cows, 30 to 50 lbs.		8	c
Kip		10	c
Veal		15	c
Calf		15	c
Dry—			
Dry Hides		18	c
Dry Bulls		15	c
Dry Kip, 10 to 15		17	c
Dry Veal, 5 to 10		17½	c
Dry Calf, 7 down		22	c
Fall Lambs	24	@40	c
Sheep Skins—			
Long Wools	$ 1.00	@ 1.25	
Medium Wool, 6 to 9 mos.	60	@ 90	c
Short Wool, 3 to 6 mos.	40	@ 60	c
Spring Lambs	25	@ 50	c

HORSES.

At the recent auction sale in San Francisco, brood mares brought top prices all along the line. This shows the desirability of having brood stock on the farm.

Desirable Drafters, 1700 lbs. up	$275@300
Light Drafters, 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	200@250
Wagon Horses, 1250 to 1350 lbs.	175@200
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	125@150
Young	200
Old Mares	100@150

MULES.

The large manufacturers of the Islands in the Pacific are still clamoring for more mules and are taking up all the available stock to be had. The result has been that many poor mongrel hybrids are being sent into this State from outside points in order to get them into this healthy market.

1200 lbs	$250@300
1100 lbs	200@225
1000 lbs	150@175
900 lbs	125@150

The State Board of Prison Directors has set the price of San Quentin wool at $5.70 for the coming year. Farmers and consumers have until April 1, 1911, to file their application to Warden John E. Hoyle. Blank forms may be secured on which to make out applications for purchase.

PUBLISHER'S DEPARTMENT.

If you are in the market for fertilizer it will pay to write the Fancher Creek Nurseries of Fresno for prices on their "Merino Brand." The guaranteed analysis is: nitrogen, 3%; potash, 5%; phosphoric acid, 5.5%; of the latter 2% is available. The base of these fertilizers is sheep manure, and for orchards, vineyards, grain, lawns, or florists' use, they are just what is needed. Write them for booklet.

Are you reading the advertisement of Henry Wheatley of Napa? He has some fine imported Shire stallions which he is able to sell direct at very low prices. Read his reasons why.

By the number of parties coming into our office daily, we should judge that there is a large influx of apple growers from the Northwestern States into California looking for and buying lands.

A letter from a poultry advertiser in the Pacific Rural Press states that as many inquiries are being received, it is hard to supply stock, and yet he cannot afford to take the ad. out of our columns. Rather a peculiar predicament!

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The first progressive step in pit construction since the WELL OF CONTENTION.

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2100 Violet St.,
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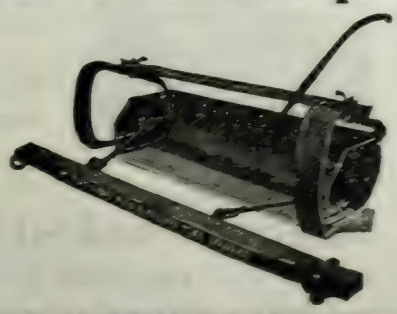
Permit you to burn the weeds.

Cheap as wood.

All sizes for every purpose.

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2100 Violet St.,
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The Fresno Scraper



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Dealers in PAPER
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THIS is a fair estimate of the average feeding ability of the soil. On a farm of 80 acres the highest limit of efficiency is 20-acre fields. Large fields diminish the earning power because two small fields alternated will furnish much more support for stock than the same average in one big field. The fence is the important factor; and with the liberal use of gates, unlimited extension and alternation is simple.

The steel in Ellwood fence is specially made from carefully selected stock. It is hard, elastic, tough and springy. The line wires, composed of two or more wires twisted into cables, give each individual wire the shape of an elongated, coiled spring. The fence is therefore sufficiently elastic to take care of expansion and contraction, and yet so rigid when properly stretched as to prevent sagging. The small and permanent mesh is made by weaving one continuous wire throughout the fabric. The mesh or stay wires are so interwoven that slipping is impossible. The triangular truss is the strongest form of construction known. For this reason, Ellwood fence will stand the hardest usage and still retain its shape.

Ellwood Fence is sold in your town. Look for the Ellwood dealer and let him show you his different styles of fence and quote you his low prices. Get his expert advice on your special needs. He is on the spot, buys in large quantities, gets the lowest carload freight rates, demonstrates quality before your eyes and is the man from whom you will get the most for your money.

FRANK BAACKES, Vice President and General Sales Agent
American Steel & Wire Co.
Chicago New York Denver San Francisco

Send for copy of "Ellwood Fence News" — profusely illustrated, devoted to the interests of farmers and stockmen, and how fence may be employed to enhance the earning power of the farm. Furnished free upon application.

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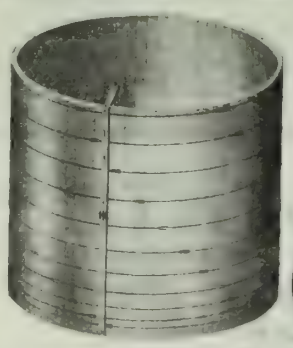
We also manufacture a full line of **IRRIGATION APPLIANCES**, such as slide gates, headgates, valves, hydrants and Concrete Pipe Moulds.

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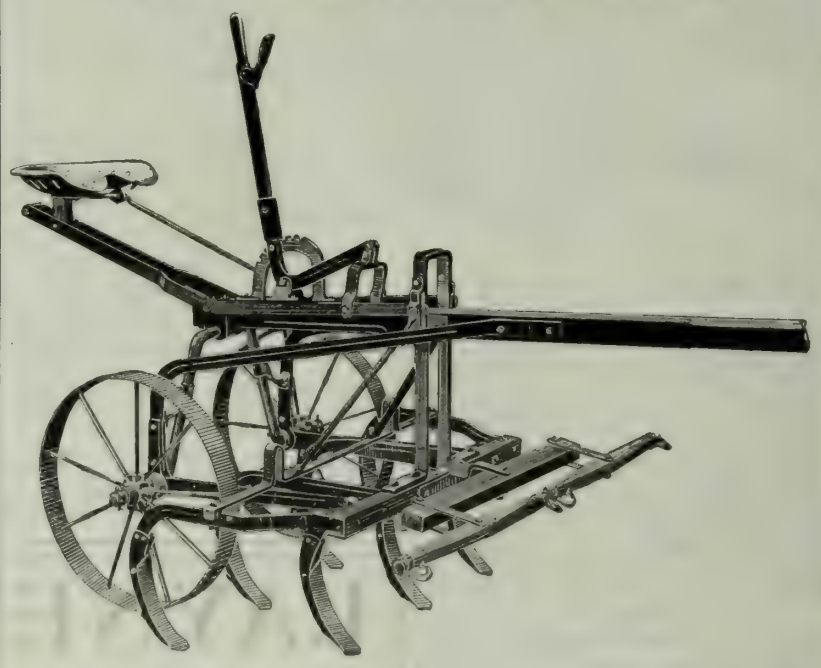
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THE BENICIA-ORR?



The **Benicia-Orr Cultivator** is an implement with new and original features, which has been designed by a practical field man. It has been thoroughly tested and proven superior in many important particulars to any other cultivator on the market.

Our space won't permit an extended description, but the man who knows will note that among some of the desirable features are: **THE FRAME IS LOW; EXTENDS OUT BEYOND AND IN FRONT OF WHEELS AND DRIVER; THE ADJUSTING LEVER IS CONVENIENTLY PLACED, AND THE DRAFT IS APPLIED DIRECT.**

These features, combined with the fact that the driver's weight equalizes weight of frame, insuring ease of handling and a perfect balance in every position; that there is no weight on horses' necks, and that the size can be easily changed from seven to nine teeth, make it **a very superior implement.**

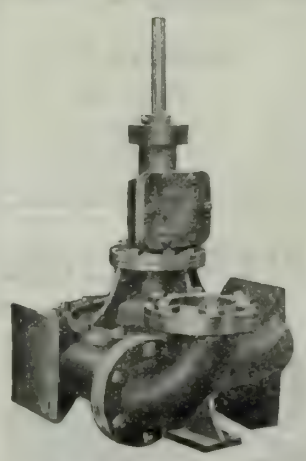
If you ever used, are now using, or expect to use, a cultivator, you will be interested in this new, up-to-date implement.

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TO THE TRADE: We are receiving numerous inquiries for this implement. If you want an exclusive agency write us today.

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The pump can be seen in operation at our place of business.

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149 Beale St., San Francisco.

FARM BOOKS.

The following list of books are kept in stock and are for sale at the Pacific Rural Press office:

	Price.
The Book of Alfalfa, by Coburn.....	2.00
Swine Husbandry, by Coburn.....	1.50
Trees of California, by Jepson.....	2.50
Shepherd's Manual, by Stewart.....	1.00
The Hop, by Myrick	1.50
New Onion Culture, by Greiner	.50
Home Pork Making, by Fulton.....	.50
Book of Corn, by Myrick.....	1.50
American Cattle Doctor, by Dodd....	2.00
Greenhouse Management, by Taft....	1.50
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PACIFIC RURAL PRESS,
607 Howard St., San Francisco.

CALIFORNIA STATE

THE PACIFIC RURAL PRESS

Vol. LXXXI. No. 4. SAN FRANCISCO, SATURDAY, JANUARY 28, 1911. Forty-first Year.

What a Woman Did in Stanislaus County.

Written for the PACIFIC RURAL PRESS by MRS. EMMA ABBOTT SIMON.



We have been taking the PACIFIC RURAL PRESS ever since we came to Turlock, nearly five years ago, and while the San Joaquin valley, Stanislaus county, and even the Turlock-Modesto Irrigation District, have been given a very fair share of notice in its columns, it may be that an article considering a few details of individual efforts and achievements may be of interest.

In the spring of 1905 I visited relatives at Ceres, a small town on the Southern Pacific, four miles from Modesto, and enjoyed a drive from there in a northeasterly direction toward Hughson and Denair—then called Elmwood—on the Santa Fe, more than any other drive taken during my visit. It was early April and the miles of grain fields were living pictures in green. The waving stems of wheat and oats could not have seemed more even had they been measured and planted in a garden. Nearer Ceres the land had been divided into small farms and was chiefly planted with trees and vines, which were still very young, usually one or two years old, so did not make much of a showing, especially at this season.

For about fifteen years Mr. Dimon had been a traveling man, adjusting losses for fire insurance companies, and our homes had been in Lincoln, Neb., and Bloomfield and Cedar Rapids, Iowa. In 1905 he left the road and with our son, Arlo, engaged in the hardware business in Manchester, Iowa. We had been there but a few months when I made the California visit, and by the time I returned home he was thoroughly tired of a slow business in a slow town, and was talking of trying farming. I had some recollection of Iowa farm life, dating back to my childhood, and had no desire to experience any more of it, with the awful mud of the spring time, the tornadoes and lightning of summer time, and the cold and blizzards of the winter time. It was enough to endure all these in well-built, furnace-heated city houses, with every comfort and convenience provided. To live in the country with fewer conveniences and be obliged to take care of stock was not a pleasant prospect. My health was not good and I knew I could not stand much of that kind of life. Therefore I suggested that we try California farming. Mr. Simon was averse to this, knew nothing of the State, very little about farming anywhere, and absolutely nothing of fruit farming, alfalfa raising, irrigation or any farming as it is done here, and had only about $5000 with which to enter upon the new project. I spent every moment I could spare during the summer of 1905 studying advertising matter from California, government reports upon the weather, crops, soils, etc., in the different places in which I became interested, irrigation systems and the laws governing them, and finally decided that I would like to locate in the Turlock-Modesto Irrigation District, and volunteered to come alone. Mr. Simon and Arlo were to remain there in business for two years, at which time I figured that we could make as much from our land here as we could from our business there.



Breaking Ground for Buildings on Hawkeye Ranch.



Buildings on Hawkeye Ranch—Two Years Later.

The next step was to interest some one else in the plan, because I felt we should be very much alone for a long time in such a new place. I did not mind being without neighbors and social privileges for five years, if there was something fairly sure to look forward to at the end of that time.

I counted on having to pay from $65 to $75 per acre, although I knew much cheaper land was to be had. Therefore I offered to buy 20 acres for every one who would pay me $500 cash to make the first payment. I would then survey, level, ditch and box and plant the land according to a written agreement, pay all taxes and subsequent payments on the land, and turn it over to them at the end of five years, fully improved with everything but buildings, for an additional $1000, if they were fully satisfied with the country, the land and what I had done. If not I would pay them back the $500 advanced, with interest for the five years. In other words, they were to get twenty acres of land, improved with all specified growing things, for $1500, if they wanted it. I came commissioned to buy eleven twenties for other people and three for ourselves, or two hundred and eighty acres. There were really about two hundred and ninety acres, as each of these lots, though called twenties, overran in acreage. This was an additional benefit to the buyers, for the twenties were $1500 regardless of the fraction.

In September I came back and commenced my search for land. The Hughson land, which had pleased me so much, and which has since proven itself to be as good as it looked, was not yet on the market. Modesto lands were a little too heavy, and I could not get near enough to town and get as large a tract as I wanted. At Ceres and Westport conditions were somewhat the same. Denair and Turlock were desolate looking places. It was autumn, the fields which had been in grain were now stubble, the grain lands which were in real estate men's hands for sale had not been in grain for a year or two, and were regular jungles of iron weed, which was from eight to fifteen feet tall. The water had been in the ditches for two seasons, some trees and vines had been planted, but were still small. There were only a few old wooden shacks in the town, no sidewalks or conveniences of any kind. South and west of Turlock were quite a number of settlers, especially in what is known as Hilmar Colony. These were all Swedish people and were doing well, but the soil seemed to me to be pure sand of unlimited depth. Sandy soil does not look first rate to an Easterner, and when I thought of what my friends would say, or at least think, if they should come from an Eastern city to wade around in that sand, I decided against it. After a month of investigation I bought between Turlock, on the Southern Pacific, and Denair, on the Santa Fe. The towns are only four miles apart, so that the corner of the ranch farthest from Turlock is equidistant—two miles from each town—and the corner nearest Turlock is one mile from the Southern Pacific depot.

The man from whom I bought the land was to clear it of weeds. Discs drawn by ten-mule teams were run over the land, and then the weeds were fired, and he called the work finished. The surveyor though differently and reported that he could not see across any twenty to do surveying on account of the weeds still standing. The next man who undertook the clearing hitched a team to each end of a long railroad iron and dragged the land, then piled and fired the weeds. It was

(*Continued on Page 74.*)

Pacific Rural Press

667 HOWARD ST., SAN FRANCISCO.

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FRANK HONEYWELL - - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Jan. 24, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	1.56	14.97	22.80	54	32
Red Bluff	1.48	9.09	13.17	52	36
Sacramento	2.96	10.45	9.87	54	38
San Francisco	3.45	11.79	11.55	56	42
San Jose	1.13	8.71	7.22	58	32
Fresno	1.20	3.73	4.84	64	36
Independence	.00	1.71	4.79	56	24
San Luis Obispo	1.34	7.09	9.49	62	38
Los Angeles	.19	2.89	12.23	68	46
San Diego	.00	5.11	4.74	62	46

The Week.

Another good, coast-long storm is on this week. Glance aloft in this column and you will see that the two racing stallions "Normal" and "Seasonal" are about neck-and-neck at the half-season post, and we can let them pound along for a time without further comment. "Seasonal" broke badly at the start, but it was evidently of less importance than many thought. If his staying power is all right, he may yet get the record for volume after a bad start, and thus prove a comfort to gloomy people for decades to come.

But the storm on the Pacific Coast is light as compared with the falling weather in the East. The reports are that twenty thousand telegrams fell on President Taft's table on Monday of this week, beseeching him in the name of all the gods at once, to give the Panama-Pacific exposition to the only rational claimant, the metropolis of the Pacific coast of the United States. We do not know how they found out the number of telegrams, for probably no one found time to count, much less to read them. They may have been estimated by board measure. But that does not matter: their moving force must be great somewhere. We are strong believers in the subjective influence of prayer: that a heart-felt petition in specific terms fits the petitioner to do or to suffer, and in this way, possibly, heaven helps those who help themselves. We hope no reader will take this for theology: we have no license to preach anything but psychology. It occurs to us, then, that though these cords of telegrams may not keep the Congress from the anomaly of planting a Pacific affair on the Gulf of Mexico, still they already have in the process of their framing produced a deep and lasting effect upon the minds and hearts of Pacific Coast people which will work for advancement in all words and works good for the upbuilding of the Pacific side of the country. Not only this, but the ringing of these petitions in the ears of the people of the United States will cause them to perceive a Pacific Coast spirit which they will first admire and then appropriate for their own greater thinking and doing. Fair, then, or no fair, every American will be the better for the demonstration which has been made.

But there is a national aspect of this affair which we must emphasize because we have not happened to see it set forth in the declarations of others. If we could have borrowed a dollar we would have sent the following night letter to President Taft a few days ago:

Dear Billy—Can't you see that the United States will make a declaration of its disregard for its standing as a Pacific Ocean nation and an indecent exposure of its Pacific Coast possessions unless you cover them with the national flag while the circo-Pacific nationals are celebrating the birth of the greater-world?—PACIFIC RURAL PRESS.

We hope we are saying for the last time, for the matter is still undecided as we write, that the country betrays an utter lack of appreciation of the import of a Pacific celebration by hesitating a moment in ordering the great event commemorating the opening of the Pacific Ocean to be held upon its own Pacific territory. Really, it is as silly to authorize such an event upon the Gulf of Mexico as it would be to commemorate the Battle of New Orleans in San Francisco. We may hear next of the celebration of the achievement of Balboa at Key West. But this little absurdity among ourselves would be negligible were it not for the degradation which must come for our Pacific States when all the nations around the Pacific realize that our own nation discounts ours as a part of the national domain, declares us unrepresentative of the nation in an affair which interests and affects us particularly and most deeply, and affects our nation simply and wholly because we stand here as its representative in Pacific Ocean affairs and development by right of our frontage on that ocean. This is our birthright, and the Congress of the United States is asked to take it from us in exchange for a mess of political pottage—and even that does not go to us. No wonder the overland wires to the national capital are being kept hot this week.

Our first page this week shows in an autobiographical way what a woman has done in Stanislaus county, and, by inference, what other women have done and can do in other counties of the State. California is a great State for farming women because of the great variety of its products, the favoring climate for out-of-door activities, and the opportunities for bright turns of effort and enterprise by those qualified to make them. Women have done very creditable things in all kinds of farming in California, and at the present time every county has farming women whose deeds are bringing not only credit to the sex, but credit to our advancement in farming matters. On the basis of their known results and the general popularity of farming resulting from the publicity which all kinds of journals and magazines are giving it, not wisely but too well, there has been recently much interest manifested in agricultural undertakings by women. Our chief concern is that the people be not misled thereby. It is probably true that what woman has done women can do—providing they possess the same power and put forth the same effort—but the maxim as to men leads to many disappointments and failures because it is generally coupled with another half-truth, that one man is as good as another, which is not true, the Declaration of Independence to the contrary, notwithstanding. The question, then, is, by transposition, is one woman as good as another man, to which we find the answer to be: yes, and perhaps a little better. But we are wondering why women as a class should desire to break into agriculture. One might think that the burnt-child-and-the-fire line of wisdom might restrain the sex. The human race has as one of the greatest achievements of civilization the elevation of women from agricultural work to provide for man, and the bringing down of man from hunting, war, and primeval politics to the winning of bread for women. Is there not a danger that man may resume his weapons and return to the forest or his pipe and return to the council and leave the field work to the women again?

We presume that woman has forgotten her ancestral experience and, charmed by the music of the current agricultural lullabies, is dreaming that farm work is easy and its profits almost incalculable. Of course, it is chiefly city women who are thus impressed; country women are too near to the facts to be misled. They know that farming is not easy in either the doing or the financiering; but they also appreciate the fact that farming pursued on good land, with adequate outfit and working capital, is a gloriously independent and satisfactory life and enterprise. The trouble as we see it in the present inclination of women to agriculture is found in the conception that it is a way to make a maximum of money with a minimum of tiresome work; that if one can get a footing anywhere on the earth's surface, one can hire all the labor and nearly all the knowledge of the business which may be required, and sit on the piazza while the hirelings throw the dollars into one's lap. We cannot blame women for holding such views: they are certainly encouraged to do so by much that is being currently printed in the name of scientific farming.

To make much money on little land requires personal work pursued long and hard, and wisdom, from experience and from study of up-to-date experience of others, to direct such work aright. These requirements are generally overlooked. To buy land on part payments or to borrow money to buy land, make the same requirements plus a complex problem in income beyond current expenditures and taxes. This may be successfully done, of course, and is being successfully done continually: we are only insisting that it should be appreciated and calculated adequately. Of course, in a State like California, which is developing so rapidly, and in which the current value of good land is advancing so rapidly, the "unearned increment" rises as a potent encouragement and reward. Improvement of such bouyant property pleases, satisfies, and enriches those who have mastery of such enterprise. The experience which the successful woman herself describes in this week's issue may be taken as a demonstration of the opportunity for those who can work well and wisely on all sides of a considerable agricultural undertaking. But readers of such experiences must allow for the personal equation involved, the ability to muster capital and use it effectively; the willingness to work and to wait, and to work while waiting, and the insight to select local conditions which produce something worth working and waiting for. In such undertakings we are quite willing to admit that a woman may be as good as a man, and perhaps better than many men. If women can enter agriculture thus endowed and supported, there is abundant testimony in California that they will succeed.

Still we are apprehensive for those women whom our mail and telephone almost daily tell us are thinking of agriculture with no knowledge of the requirements of success. They do not appreciate that they are handicapped by lack of physical strength, by the burden of unsuitable costume, and by various conventionalities from

doing farming from the ground up as a man would. They ignore the need of capital, they refuse to look into the cost and character of hired labor, they do not think that utter inexperience and personal ignorance of how the simplest things must be done make them helplessly dependent and invite all chances of failure. Of course, some of them will triumph over all these handicaps. There are geniuses in this line, as in all others, and we admire their talents and their industry, and yet we can not comfort our own conscience without a protest against the current conceptions of agriculture which encourage all to think that agriculture is so easy that all wayfaring people can not err therein.

In this connection we find one hopeful note in this week's announcements from Paris. It is said that the successor of the hobble skirt has arrived. A new form of divided skirt, to come into fashion in the spring, is to be launched into notoriety by a well-known dressmaking firm of the Faubourge St. Honore. The new costume comes from Turkey and is an almost exact reproduction of the dress worn by the harem ladies. It consists of a long, loose divided skirt, fitting tightly at each ankle. This charming fashion will open women's way to agriculture widely, so far as working as comfortably as a man works. If we read the account aright, it simply means pants—flowing at first, but gathered tight at the ankles. And if gathered tight below, around each ankle, it will only take a little time to reduce the flow to an accommodating width above, and if a few copper rivets are used in proper places the proper costume for farming women will be realized. Thus will disappear one of woman's handicaps, but while woman is donning her fitting costume, she must look sharp lest man crawl into the hammock on the shady piazza.

Queries and Replies.

Preparing for Fruit Planting.

To the Editor: What effect will a crop of wheat have on new cleared land, to be planted in fruit trees later on? What kind of seed is used for raising orange stock? From what locality and what kind of seedlings (a year old) should be bought for orange planting?—Beginner, Placer county.

One crop of wheat or barley will make no particular difference with the cleared land which you expect to plant to fruit later. Better than growing grain or hay would be the growing of a cultivated crop like corn, potatoes, beets, squashes, etc., because this crop would require summer cultivation which would kill out many weeds or sprouts and leave your land in better shape for planting.

Probably about half the orange trees grown in California are budded upon sweet orange seedlings, that is, seedlings grown from the seed taken from any orange in the market which has plenty of seed. This is, of course, not the case with the navel orange. The other half of the trees grown in this State are grown upon sour orange or bitter orange seedlings. This seed can be secured from California nurserymen who import it from Florida for propagating purposes. You can buy orange seedlings from those advertising them in our columns.

Fertilizing Alfalfa.

To the Editor: Can new cow manure be put on alfalfa? It not the best way to use the above as a fertilizer in form of liquid being run from barn via pipes to a settling-tank and from there via irrigation ditches to the land to be irrigated? What is the best way to get rid of cow manure so as to keep a barn sanitary and the place free from stench?—Farmer, Coalinga.

Cow manure can be used to advantage on alfalfa. Corrals can be cleaned up and the manure spread at the beginning of the rainy season. During the winter the manure can be spread as it is produced and very good results will be noticed in the growth during the following summer. It is perfectly rational for you to use the liquid fertilizer as you propose in connection with irrigation water, but this is not generally done because of the cost of the outfit and the labor of handling the material in that way. The best way to keep a barn sanitary is to keep it clean, removing all the waste matter to a considerable distance daily, allowing nothing to accumulate, and have the stable drainage arranged so that the stable can be frequently flushed out into good drainage outlets, carrying the water to grass or alfalfa land if possible.

Bordeaux Mixture Desirable.

To the Editor: Will you please let me know if the bluestone spray is injurious to the trees? Some of my neighbors claim it is and so have stopped using it.—Subscriber, Kingsburg.

There have been Bordeaux injuries reported, and you can get details of them by sending to the New York Experiment Station at Geneva, New York, for their publications on that subject. They are, however, small and negligible when you consider that with some fruits unless you do timely and effective work against fungi, you might just as well not have the trees—in fact, you may better not have them, because unless protected they will not pay. As for bluestone, it is only desirable when associated with lime in the Bordeaux mixture, and it need not be stronger than 5 pounds bluestone and 5 pounds lime to 50 gallons of water. The old practice of using heavy amounts of bluestone has been laid aside as unnecessary and undesirable. Perhaps it is this to which your neighbors object.

Walnuts in the Hills.

To the Editor: Will walnuts grow well in the foothill country near Los Altos; elevation about 600 feet, soil rich, does not crack in summer and seems to have small stones in it?—Reader, San Jose.

We have no doubt that walnuts will do well in the situation that you describe, providing the soil is retentive enough so that the trees will not suffer for lack of moisture during the latter part of the summer. If you have water available for irrigation in case the trees should need it, they would give satisfactory results, but if the soil is likely to dry out deeply and you have no water available an opposite result might be attained. It is a fact that on some of the uplands of the coast mountains there is a lack of moisture late in the season which interferes with the success of some fruit trees.

Citrus Sundries.

To the Editor: Can you tell me what causes spots on oranges like enclosed? Is it all right to prune orange trees at this time of year, or does it injure new growth, and, if it does, would that be detrimental at this season? Is there anything marketable that can be made from split oranges.—T. W. C., Folsom.

The "spot" shown in the specimen of orange rind which our correspondent sends is roundish, about as large as a nickel and is caused by a biting insect which some time ago cleanly ate away the cells of the outer skin. Such injury causes the premature ripening of the adjacent parts. To prevent such spots, the culprit which makes them must be discovered and then repressive measures can be intelligently planned. Fortunately the injury is at present so rare as to be negligible.

Pruning of the orange can be done now without danger of starting untimely growth. It is, however, better to prune later because the healing is more rapid when the tree is more active.

Theoretically there are oils, essences, marmalades, dried peel, etc., which can be made from split oranges, but the profit in such enterprises has not been practically demonstrated. The demand for such products is limited and the processes are expensive in outfit and labor.

Resistant Apple Roots.

To the Editor: I have a few apple trees in my back yard, and they are almost dead in consequence of the ravages of the woolly aphis. I am going to dig them out and plant in their places other apple trees on woolly aphis-proof root. Will it be necessary to use measures to exterminate the woolly aphis in the old roots or their places in the ground before planting new trees in the places of the removed trees? Will the woolly aphis attack the so-called woolly aphis-proof roots if these are planted in those holes without previously exterminating the aphis pest which might be in the ground or clinging to the roots still remaining there?—Amateur, San Francisco.

It is not necessary to undertake to kill aphis in the ground when you are planting apple trees on resistant roots. It will give your trees a better start to dig large holes, throw out the old soil, and fill in with some new soil from another part of the land to be planted. But it has been demonstrated that these roots are resistant, no matter if planted in the midst of infestation.

Cutting Eucalyptus.

To the Editor: Please tell me at what time of the year to cut eucalyptus trees in order to have best prospect for a good second growth. At what height from the ground? Trees are from six to twenty-four inches in diameter; varieties, blue gum, red gum and tereticornis.—Subscriber, Selma.

From what we have seen the trees can be cut whenever convenient during the fall and winter, as there is then least active growth. You can get as much wood as possible by cutting as close to the ground as convenient. Strong shoots start readily at any point from the ground surface or below up to any point that amputation is done. We doubt if there is any particularly desirable place so far as second growth goes; it seems to come all right anywhere. Will some reader continue the discussion?

Budding Roses.

To the Editor: Will you please give the time and method of budding roses?—W. B. H., Santa Clara.

Roses are very easy to bud, using the common shield bud, which is used for deciduous fruit trees. It can be successfully done all through the active growing season of the rose whenever you can find the bark lifting well and well-formed buds to put in. If there is any "best time" it is after the spring bloom, as soon as the buds below the bloom are plumped out well and before they break into lateral shoots. You can tie with rafia, but any soft cotton string or yarn works well. Of course no wax is necessary.

A Bone Foundation.

To the Editor: I am going to plant out some grape vines, and would like to know if it is a good plan to put old bones, broken up fine, into the holes when planting.—Subscriber, Arizona.

Yes, if you do not use too much and it is mixed with earth, a little beyond the touch of the roots at planting. You do not need to finely break the bones. The roots will take care of that. But do not put in too much coarse stuff, for fear of causing too rapid drainage.

Horticulture.

AVOCADO AND FEIJOA AS COMMERCIAL FRUITS.

Written for the PACIFIC RURAL PRESS by Mr. D. W. COOLIDGE, Pasadena.

Avocado—improperly called alligator pear—and Feijoa sellowiana are certain to become important parts of California's horticulture.

The avocado should be tried in all sections of the State where the temperature does not drop below 26°, and the feijoa in all sections where the mercury does not go below 18° above zero. It is surprising to me that the merits of these have not been more generally recognized.

As pasturage becomes more restricted and the output of meat becomes less, it is but natural that we should be casting about for something to take its place. In the avocado we have it, as it is a fruit possessing neither acid or sugar, but is, more correctly speaking, a vegetable fat in a form easily assimilated and so highly relished that those who know its qualities are paying exceedingly high prices for it. Good specimens rarely retail at less than from 40 to 75 cents each. The tree is a beautiful evergreen and the better varieties are very productive. A single tree in Los Angeles produced in one year 2400 fruits. A good average yield is from 300 to 800 fruits. From 50 to 80 trees can be planted to the acre, and at a price less than one-quarter the present retailing price, would be more profitable than any fruit we now have. I have yet to see the person who has had access to good local-grown fruit that is not ravenously fond of it.

Feijoa belongs remotely to the guava family, but is much more hardy than any of them, and is unlike all guavas in every way. In the matter of seeds, which are so pronounced in the guava, the feijoa has but few, of almost microscopic character. In flavor, no guava can approach it. The flavor has been described as a mingling of pineapple, banana, and raspberry: it is a flavor unique that cannot be compared to any other fruit. Maturing in November, the fruit will keep naturally until Christmas, and there is no reason why it should not be one of our great fruits for export. The shrub is a very pretty one—when in flower more attractive than a fuchsia, and in fact the feijoa is desirable from all points of view.

HOW THE SONOMA COMMISSIONERS WILL WORK.

Mr. A. R. Gallaway, Horticultural Commissioner of Sonoma county, in his last report to the Supervisors, outlined the following program:

"We are occasionally asked as to what we propose to do in regard to the growers who have infested orchards and refuse or neglect to do anything toward disinfecting them. In reply to such inquiries, I wish to say that we have about 1000 growers in the county committed in writing to the spraying and cleaning up of their orchards. An overwhelming majority of those canvassed have gone on record as being in favor of the strict enforcement of the horticultural laws.

"We are advising every fruit grower, in his own interest, to keep his orchard free from insect pests and fungoid diseases, and where a neighbor refuses or neglects to do so, but insists on breeding pests to menace the clean orchards, to report the same to the Horticultural Commissioner's office and the Commissioner will cause an inspection to be made, and if the orchards complained of are found to be infested, the necessary legal steps will be taken to have them disinfected, so that all may have the protection the law affords.

"In order to accomplish this work, the Commissioner will depend largely on voluntary information, otherwise a large corps of competent inspectors would be required to make an orchard-to-orchard inspection, which would be a constant and heavy expense to the county. The same policy will be followed in regard to the noxious weeds. We desire to keep in close touch with the growers, so as to render all possible assistance."

APHIS-PROOF APPLE ROOTS.

We answered briefly some questions on this subject recently. We are glad to find in the December report of Mr. W. H. Volck, County Horticultural Commissioner of Santa Cruz county, the following detailed discussion of the behavior of resistant trees and how they are prepared:

The local nurseries are few in number and contain comparatively little stock. They have all been inspected. The woolly aphis was about the only pest found. Some of the nurseries were free from this insect; but others showed the trouble on a percentage of stock. In some cases the nurserymen have been successful in reducing or preventing the spread of this pest by the use of the Northern Spy root. These roots are of two types, the entire root and the half stock. The entire root consists of the Northern Spy root and enough stock of the same variety to graft above the ground. The half stock is a section of Northern Spy stock to which a common root is grafted at the bottom end and the variety desired at the other.

Woolly aphis will not injure the Northern Spy root and seldom attacks it to any extent. The whole root is a complete protection against this pest below ground, and the half stock also appears to be successful when properly managed. The aphis will not work down the Northern Spy stock if the soil is well packed around it, but suckers from the common root below may lead the aphis down if not quickly removed. After planting, the half stocks usually throw out roots so that the tree eventually becomes established on a complete Northern Spy root system.

The half stocks are used by nurserymen because they are less expensive than the whole root. The extra expense attached to growing Northern Spy roots and half stocks must be added to the price of the trees, but the orchardist will usually find that it pays to make the extra investment.

Treatment of Common Stock.—Where nursery stock is to be grown on common root, special precautions must be taken to avoid woolly aphis infections. The nursery should be located, as far as possible from any apple trees, and the soil had best be of a sandy texture, not adobe, which will crack. As an additional precaution, the grafts should be dipped before planting to insure the absence of aphis.

A good dip that will not injure the stock is prepared as follows:

Black leaf tobacco extract, 1 gallon; water, 30 gallons; or, black leaf 40, 1 quart; water, 50 gallons.

The efficiency of these dips is increased by the addition of 1 to 1½ pounds of whale-oil soap. In treating the stock, the best procedure will be to dip the seedlings (before cutting) and the scions separately. The stock to be drained off and partly dried before grafting. This procedure is to avoid soaking in of the dip at the cut ends of root and scion. Of course, the scions will have a cut end, but a short piece may be removed and discarded after dipping.

The seedlings which have been received, so far, have been apparently free from aphis, but a very minute inspection would be required to say that they were absolutely free from the pest.

Young trees would also be benefited by dipping the roots and tops before planting, for the same reason as the grafts. The trees should be washed and then dipped just as they come from the nursery. The roots and tops to be pruned afterward. In this connection it may be well to state that some planters are not properly root and top pruning the trees they are setting. All cut or broken roots should be pruned back to live wood. The tops should be cut back to two or three feet of the ground line, and all side branches removed. These precautions are especially necessary with apricot and peach trees to prevent the drying out of the tops from killing the whole tree. The pruning should be done as the trees are being planted.

It is also advisable to plant the trees as soon after they arrive as possible. The practice of heeling in, and then setting in the orchard a month or more later, has been the cause of considerable trouble and even the death of some trees that would otherwise have lived.

Citrus Fruits.

ADVERTISING THE CALIFORNIA ORANGE.

We have frequently urged upon our readers the fact that organization for selling not only enables growers to sell better but to sell more fruit because an organization can push promotive work. This is being splendidly demonstrated by the citrus organization, the California Fruit Growers' Exchange, and the Los Angeles Express recently gave an interesting outline of its undertakings which every fruit grower in the State should know about.

Growers' Advertisements.—One hundred thousand dollars is being expended this season by the California Fruit Growers' Exchange in advertising California oranges. The campaign began December 1 and it is now at its height. All over the country half-page advertisements are confronting the millions of readers of the newspapers telling them of the choice qualities of California citrus fruit.

Beginning three years ago in an experimental way, the advertising department of the Exchange has grown to such proportions that it occupies an entire floor of a Chicago office-building, and last year it employed 50 persons through the height of the season. This year the number of employees will be far greater. The department receives two wagon-loads of mail each day during most of the orange season, and it sends out a like amount.

The first year that advertising was tried, only the State of Iowa was covered. A careful watch was kept of results, and it proved that the advertising increased the sale of the Exchange's fruit 50 per cent over the preceding year.

The next year the advertising campaign was spread to cover four or five States around Iowa, and it was continued in that State. In the new territory the increase was about 50 per cent, as it had been in Iowa, but in the latter State, while there was a good increase, it was not as great a percentage.

The third year the Northwest was added to the territory covered by advertising, and this year the campaign includes nearly all of the United States and all of Canada.

Bombarding the Yankees.—An experiment is being tried in New England this season, however, by using street-cars in that territory instead of newspapers. What the result will be, no one will know until the close of the season shows what regions have given the greatest increase in sales.

The Southeastern and Southwestern States are not included in the campaign, for the reason that Florida oranges cover the former territory, and it was not deemed worth while to advertise in the latter, where the fruit is grown.

"Naturally, our advertising must benefit the entire industry," said B. A. Woodford, manager of the Exchange. "We try to get the benefit for our own members as much as possible; but, of course, we cannot advertise the fruit without benefiting more or less the entire industry. But as the Exchange handles 60 per cent of the entire production, we figure that we get at least 60 per cent of the benefit of the advertising, and we think much more."

Silver Spoons.—In order to accomplish this result, only "Sunkist" oranges are advertised, and the best grade is packed under the brand in wrappers bearing the "Sunkist" design. Premiums are offered in the advertising for the return of each dozen of these wrappers, with enough cash to cover the cost of handling. These premiums are silver orange and dessert spoons and fruit-knives. In one week last year 75,000 spoons were ordered as premiums, and it is expected that the number will go far above that weekly in the height of the season this year, as four times the territory is covered.

Fruits for All Purposes.—An "orange week" is designated in each given territory about once a month. Before this is done, the retailers in the territory are sent letters informing them of the advertising to be done, and urging special displays of the fruit. The result is that the consumption of oranges is greatly stimulated during those weeks.

Another method of advertising is through a little booklet of recipes showing different ways

of using oranges and lemons—the latter fruit both for culinary and toilet purposes. Two millions of these booklets were sent out this season. They were all mailed, and the addresses were gathered from telephone books throughout the country.

It is believed that these various methods of publicity will render possible a great growth in the production of California citrus fruits without glutting the market.

ORANGES AND LEMONS VIA PANAMA.

The experiment of shipping oranges and lemons to New York by water via the Panama route has proved a success, the California-Atlantic Steamship Company having transported a carload of each in a very satisfactory manner. The fruit reached its destination in surprisingly good condition, the oranges showing only 7 per cent decay while but 5 per cent of the lemons spoiled. The shipment was delayed in crossing the isthmus because of congestion, and on the Atlantic side it had to be placed in the hold on account of cold.

The water rate is 50 cents per hundredweight, or $10 per ton, against a rail rate of $1.15 per hundredweight or $23 per ton.

Although no official announcement has yet been made of the permanency of the weekly sailing schedule, the steamship line agent says it is a matter of the Panama railroad being able to handle the cargoes at the isthmus, and that as soon as its ability to do this is established, his company would advertise and maintain the weekly sailings from San Francisco direct to the Isthmus, with the single stop at San Pedro.

In a recent interview of a California congressman with a Washington reporter, the former said: "The completion of the Panama Canal will have an important bearing upon barring out imports of Sicily lemons. In all likelihood it will give California fruit a wider outlet in Eastern markets, and of course this can have but one effect upon the importations of Italian lemons, providing the Pacific Coast product is sufficient for home consumption, and that the quality is as good as that of the Italian lemons." As a matter of fact, our best lemons are better than the Italian, as shown several times by careful tests and comparisons in New York.

Entomological.

A STRAIGHT TIP ON THE THRIP.

The pear thrip is strictly "it" in the way of a destructive fruit insect in several deciduous fruit districts where it has appeared. It is likely to prove the same in many other districts. We gave last week an outline of what the Santa Clara growers are trying to do and some things which were said to them by men who are working hard on the problem. We have just received an advance copy of Circular 131 of the Bureau of Entomology of the U. S. Department of Agriculture on "How to Control the Pear Thrips," by S. W. Foster and P. R. Jones, who have been doing the work in California. The following is a direct line of advice as to what to do for the reduction of the insect in the light of present knowledge.

Spraying is by far the most satisfactory means for controlling the pear thrips on all classes of deciduous fruit trees in California. However, to spray successfully involves an entirely different conception of the operation than as ordinarily practiced against other orchard insects. Only the most efficient spray materials should be used, namely, the combination of distillate-oil emulsion and tobacco extract, or distillate-oil emulsion and nicotine solutions. The spraying must be thoroughly done and put on the trees when the thrips appear in numbers, not waiting till many buds have been destroyed. It is strongly advised to use power machines, and growers are urged to use them for all the spraying, and to have a tower platform elevated over the tank so that one man can thoroughly drench the tops of the trees.

It is absolutely necessary to use high pressure—from 150 to 200 pounds—and only angle nozzles should be employed, and these must be held close to the bud clusters to force the spray directly into the ends of the buds. This is absolutely necessary to secure good penetration and get satisfactory results. Plenty of material—3 to 5 gallons per tree for pears, depending on the size of the tree—should be used; more liquid is required for large prune trees; large cherry trees may require 7 to 8 gallons per tree for satisfactory results. Only two rows should be sprayed at a time, using three men, one on the tower to spray the tops of the trees, thus reaching all buds pointing upward, and two men on the ground (one to each row) to spray the lower buds and those pointing downard or laterally.

Timing the Applications.—The spraying must be done on time, and for best results all the trees should be treated within a few days. During the season of 1910 more of the failure to get satisfactory results was due to lateness of application than to any other cause. Thrips were in the trees and in great numbers before many of the growers purchased their spraying supplies, and in many cases half the buds were entirely destroyed and the others badly injured before the trees had been given even the first application. The grower should have everything in readiness, all materials on hand, concentrated emulsion made up, and spray machinery in perfect working order by the first of March and have all other orchard work in such shape that when the thrips appear in numbers the spraying may be done at once and before the buds have been seriously injured by the feeding of the adults. The grower should have enough spray machines to cover the orchard quickly. At least one good power outfit is necessary for every 30 acres of orchard.

Schedule of Applications.—In badly infested orchards three applications are necessary the first year for controlling the pear thrips. Two of these sprayings should be directed against the adults and one against the larvae, and to obtain satisfactory results must be timed properly.

First Application.—The first spraying should come as soon as the thrips can be found on the trees in numbers. This will usually be the first two or three days of March, just as the earliest buds are separating slightly at the tips.

Second Application.—The second spraying, which is also for adults, should come from four to ten days after the first, depending somewhat on variety of fruit, stage of bud development, and rapidity of emergence of thrips from the ground. On pears this will usually be just as the earliest cluster buds are spreading, and on prunes and cherries when the tips of the petals first begin to show.

Both of these applications are important and necessary to insure the production of a good crop of uninjured blossoms. The nozzles should be held close to the bud clusters and the spray directed into the ends of the buds. This makes it necessary that the spraying be done mostly from above.

Third Application.—The third spraying is for larvae and properly comes just as most of the petals are falling from the trees depending somewhat upon the variety of the fruit. In any case, the small, white, active larvae can be easily seen, and when they first become abundant spraying should be done. In this larval spraying on cherries and prunes where there is a large amount of leaf surface exposed, the spray should be directed first against the underside of the leaves, beginning with the lowest branches and spraying upward. Most of the larvae are feeding on the under surface of the leaves, and spraying the upper surface first would serve to knock the larvae from the trees without their coming into contact with the spray. Angle nozzles giving a coarse, penetrating spray, should be used for all applications.

Materials to Use.—The combination of 3 per cent home-made distillate-oil emulsion, made from raw distillate, 32° to 34° Baumé, and the nicotine solutions, is given preference over all other sprays used so far. To dilute, measure out 5½ gallons of the stock emulsion for each 100-gallon spray tank, or 11 gallons for a 200-gallon tank; start the engine; pour the stock emulsion into the spray tank, and while the agitator is running, add the water to fill up the tank, putting in the strong nicotine solution last and after the stock emulsion has been diluted. For spraying in the interior counties add to this dilute oil-emulsion commercial tobacco extract No. 1, which is a dark, almost viscous liquid containing 2.75 per cent nicotine, at the rate of 1 to 75; or tobacco extract No. 2, which is a light-colored liquid containing 40 per cent of almost nonvolatile nicotine at the rate of 1 to 1500, or a fraction more than a pint to a 200-gallon tank. This form of the nicotine has been highly efficient and will in all probability be more satisfactory than the former. By reason of its greater concentration the handling and transportation charges will be much less; also, the nicotine contained in this preparation is much less volatile, thus allowing the use of a smaller amount of actual nicotine in the dilution, as it remains an active killing agent for a longer time on the trees.

In Santa Clara county greater dilutions than these have been found to be satisfactory, due most likely to different climatic conditions, evaporation there being much less at this time than in the interior counties where the atmosphere is drier. Growers in the Santa Clara valley are advised to use the 3 per cent distillate-oil emulsion, with tobacco extract No. 1 added at the rate of 1 to 100, or tobacco extract No. 2 at the rate of 1 to 2000. These recommendations hold for all thrips sprayings, for both adults and larvae, and on all varieties of deciduous fruits attacked by the pear thrips. No orchards should be sprayed, however, when the trees are in full bloom. All spraying for adults should be done before the blossoms appear and spraying for larvae after a large proportion of the petals have fallen.

In the prune orchards of Santa Clara valley deep fall plowing and cross-plowing has proved a valuable and profitable aid in controlling the thrips. Those who can do so are strongly advised to irrigate their orchards in September or October and when the soil is in proper condition plow with disk-plows to a depth of 7 or 8 inches and harrow, then cross-plow 8 to 9 inches deep and harrow again. All plowing should be done during the months of October and November. During this season the thrips are passing through the tender pupal stage and are more easily killed by mechanical means than at any other season of the year.

Plowing has not proved satisfactory as even a partial means of controlling the thrips in the pear orchards of the interior counties. This is due, perhaps, to several conditions, one of which is the different type of soil, and another, the fact that the area of soil infested with thrips around pear trees is very much less than around prune trees, the branches of which spread farther, covering a greater surface of the ground. The larvae in leaving the trees fall to the ground directly from the foliage and young fruit, rather than crawl down the trunks of the trees; hence in a prune orchard they are more widely distributed throughout the soil between the trees and can be reached by the plows, while in a pear orchard most of the larvae in the ground are close around the base of the trees.

Summary.—The pear thrips can be controlled by thorough spraying on any variety of the deciduous fruits grown in the infested areas of California.

The sprayings necessary to control the thrips are expensive, but the outlay of money and labor gives large returns. Many experiments in spraying have given net returns of from $100 to $600 per acre more than was secured from adjoining untreated areas.

The thrips work rapidly and may destroy all prospects of a crop in less than a week's time. Spraying, to be successful, must be done thoroughly and at the time to kill the thrips before the fruit buds have been destroyed.

Those who can do so successfully are advised to irrigate and plow in the fall. This is to be followed by thorough spraying the following spring.

When the thrips begin to appear on the trees in numbers, spraying should be done thoroughly, using high pressure, holding nozzles close to buds, and directing the spray directly into the ends of the buds, and not against the sides.

Growers should not attempt to spray too many trees with one machine. More profitable returns will be gained by spraying half of the orchard thoroughly and at the proper times than by spraying all the orchard poorly one time. Results of the work in 1909 and 1910 show conclusively that one application is not sufficient when the thrips are abundant.

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WHAT A WOMAN DID IN STANISLAUS COUNTY.

(Continued From Page 69.)

still too trashy to do ditching and scraping, so mowing, raking, pulling by hand and burning were continued all winter.

It was my intention to get all or nearly all the land under improvement at once. This was where I made my greatest mistake in calculation. In a couple of months after I bought the land, the persons for whom I had bought eighty acres of the land decided to come the following fall, 1906, and improve for themselves, so this was planted to watermelons, pumpkins, tomatoes, sweet potatoes and cantaloupes. These did well, but were not more than half marketed, as the great fire deprived us of a market place. I soon saw that even with this eighty out, I could not get two hundred acres under cultivation, as I had the house, well, barn, chicken lots, and barn lots all to build, horses, machinery, trees, vines, seeds to buy, chickens to raise, men to hire and cook for. I had help in the house for only nine weeks during the first year; altogether too much for one pair of hands and one inexperienced head to do, so another forty was planted to watermelons and another to oats. In this way some of the land could not have five-year-old improvements when turned over to the different ones interested, but that part had been left to me entirely, as it would, of course, be to my interest to get all planting done as soon as possible. Neither did my plans to run the place for two years without Mr. Simon's help hold out for the two years. His business was still less satisfactory without my help, and I had too much to do, so July 1, 1906, found Mr. Simon and Arlo with me; also my father. I had not bought any land for my father, but he immediately bought twenty acres adjoining, as did also a brother-in-law a few months later.

When Mr. Simon came he found all ditches built, about forty acres partially leveled for alfalfa, but only six acres planted, as it had gotten so late we did not care to risk planting alfalfa and had put the rest in Egyptian corn, sunflowers, potatoes, beans, etc. Thirty acres were in Calimyrna figs, twelve acres Tokay grapes, thirty acres of Zinfandel grapes, five acres of home orchard—one acre of about seventy-five trees on each of five twenties—and one acre of eucalyptus. Our forty acres of oats were in the stacks and melons were beginning to ripen. We shipped thirty-nine carloads, possibly one-third of the crop, and then quiet because we knew nothing about shipping anywhere except to San Francisco, and that year San Francisco did not indulge freely in luxuries. This was a severe blow for us and the outlook was pretty blue. Two for whom we bought were scared out and wanted their money back. Although we were under no obligation to pay back anything for five years, we paid it immediately and with interest. We were really better off than before, as lands had appreciated so much in value that the land was worth considerably more than we were to get for it, but that was not cash, and cash was our great need.

The winter of 1906-07 we planted just about the same acreage as the first winter. Thirty acres of peaches, six of apricots, six of Muscat grapes, a few more figs, fourteen acres of Zinfandels and twenty-five acres of alfalfa. This still left us forty acres for oats, and several small patches of land for truck and melons. The third winter we got nearly everything planted but one of our own twenties. This we planted with nursery stock, and we filled all our young orchards with nursery stock between the

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CALIFORNIA REX SPRAY COMPANY, Benicia, California.

rows of trees. We planted a million and a quarter of grape cuttings and eighteen tons of peach pits. The fourth winter this first planting of grape cuttings was dug and marketed, and about three-quarters of a million more planted in their places. We did not deem it wise to plant as many in the orchards as previously, because the trees were then much larger, and if they did not need the root room, were in more danger of being injured by the teams and machinery. Last winter all the nursery stock was disposed of and we are putting the twenty acres in alfalfa. We did fairly well with nursery stock, but not as well as we had expected, owing to the drop in prices of wine grapes and the increasing tendency toward dairying in this section. From this you see that even now at the end of five years the planting is barely done, instead of being done in one, as I tried to do. I have been looking forward with considerable eagerness to the end of the planting time, for although I enjoy planting, there is so much to do now that it is always very much in the way.

Mr. Simon found ranching very hard for him, had never tried to do much in the way of surveying and laying out orchards and vineyards, choosing varieties of trees and vines, or of planting or pruning, and had his nursery stock to dispose of, so after a year and a half on the ranch, he opened an office down town from which he wrote insurance, sold nursery stock and received and shipped grapes for about two years. We next decided to put in a dairy; he has charge of distributing the milk to our down town customers and I still look after the ranch.

Our land contracts have all expired. Four families besides ourselves are living on the land described. Two backed out and we later sold the land; one sold at the expiration of the contract for $250 per acre, no buildings, just as transferred by us, and we still have control of four twenties besides our own, or one hundred and forty acres.

This is but the merest outline of the work we have done or the struggle we have had, but perhaps it is enough to make you appreciate the results, and details would be uninteresting, possibly not understood.

We now have of our own, thirty-seven acres of alfalfa, twelve acres of grapes, six acres of peaches and figs in alternate rows, one acre variety orchard, one acre of eucalyptus, one-half acre in berries and variety vineyard, one and one-half acres in lawn, one acre in chicken park, one acre in barn lot, a good house, tank house, large cow barn, large horse and hay barn, calf barn, hog house, two chicken houses, seventeen head of horses and colts, thirty cows, several heifers, a few pigs, chickens, ducks and geese. Our eucalyptus trees are from thirty to forty feet high, we have the acre fenced, feed mangers, a water trough and a small barn in the grove, and it makes an ideal "maternity ward" for all our stock.

We value our place at $40,000. We think this a very reasonable estimate, as there is considerable raw land further out than we are held at $400 per acre, and our income for 1910 was more than 25 per cent of $40,000. From the sale of horses alone we realized $1315 in 1910. We still have the cow and three of the four mares that I bought before Mr. Simon came, the fourth died of blood-poisoning caused by stepping on a rusty nail, and we would not exchange ony one of them for anything we have had since, though we have had about fifty cows and thirty horses.

We have not had much time for ornamentals, but that will come soon, for we appreciate their value as well as their beauty.

The paved streets of Turlock are only one-half mile from us, the town has grown from about three hundred to a prosperous little city of over two thousand, with substantial and handsome business buildings, beautiful cozy homes, plenty of schools and churches, miles of paving, sewers and water mains, many contributary oiled roads, and all the things that it has been possible to get in that short length of time. Denair has also prospered steadily, and the land between is nearly all under improvements of a very high order.

The Turlock-Denair vicinity is a delightful place socially, morally and financially. The business men are generous and accommodating to a surprising extent. Land is rich and level, water plenty and pure, climate good. Altogether I think I made a pretty good choice for a woman.

The cuts show the weeds as they were when I bought and the same spot two years later. We have no recent pictures of our ranch, the Hawkeye, named for Iowa, my native State.

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The Garden.

PESTS THAT ATTACK BERRY PLANTS AND VINES.

Written for the Pacific Rural Press by Mr. G. H. Hopkins, Burbank, Los Angeles County.

Berry plants and vines are probably as free from pests and disease as any of the fruits, and though they do have their troubles, so far as our experience goes the results are not so costly or far-reaching as with orchard fruits. The writer believes that with either orchard or small fruits—unless plant or tree was infected when received from the nurseryman—that proper care will go a long ways in warding off disease or keeping down disastrous effects of insect depredations. Unless the plant has strength and vitality to ward off disease it will surely become infected sooner or later, the same as with members of the human family. To keep a plant healthy it must be kept growing during the growing season. The plant must be properly pruned of its old dead growth, as this old growth is the breeding place for many of the insect pests. Pruning also has the effect of inducing the plant or tree to make a new growth, the result of which is to start into action all the latent forces of the plant which have become dormant through disease. New growth means new roots and new branches, which will draw correspondingly more nutrition for making more sap, which puts the plant in condition to resist disease or insect pests.

However, disease does creep in occasionally and must be taken in hand early, for the longer it is put off the more disastrous is the result and more costly the remedy.

Strawberries as a rule are not bothered much with pests. The leaf spots and powderly mildew are the most common diseases of this plant. For the former use the Bordeaux mixture (5-3-50) just before blossoms open. For the mildew dust with sulphur when dew is on.

The blackberry has to contend with scale, rust and crown-gall. For the scale, use lime-sulphur solution. For rust or crown gall dig up all infected plants and burn.

The anthrocuse disease is the worst thing that raspberries have to contend with. It blights the stalk and the leaf and the berry is hard and seedy and not of full size. The writer got soaked on some raspberry plants of a new variety that were purchased to be planted for propagating purposes and which later showed the disease. It is very hard to detect the trouble on young plants, so that plants should be inspected before being dug from the old plantation. We dug up the plants and burned them, considering that the most effective way of solving the problem. We believe, however, that unless one is sure that plants are free from it when set out that the Bordeaux mixture should be used, and if the plants are sprayed before the disease shows up that it can be chicked, if not totally eradicated.

GARDEN OPERATIONS.

We can often learn something about our line of business by observing what others are doing in the same line. If you see that some one is more successful than you are, try and find out the secret of his success.

The soil holds more secrets than we can ever dream of. The command to "know thyself" is well enough, but in farming one should know his soil. How often a few days difference in giving plants cultivation will change the result. It is generaly conceded that cultivation should

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HENRY SHAW

follow irrigation. This will break up the crust which generally follows irrigation, thus letting air and warmth into the soil and aiding in making the plant food available.

THE GLADIOLUS.

There is nothing more gorgeous than a bed of the improved gladioli. As a rule people do not make a large enough planting of them. A dozen bulbs will not make a sufficient display. To show up a their best they should be planted by the hundreds. Begin now and plant till April for a succession of bloom. If in a small group plant with a space of about eight inches between the bulbs, covering them three inches. Where a quantity is planted plant in rows so they can be cultivated and irrigated. They should be irrigated about once a week, particularly when the spikes are in formation. They will grow on any good garden soil, but the size of spike and blossoms will depend upon the richness of the soil, other conditions being the same. Some of the colors now produced are pink, crimson, pure white, orange red, scarlet, canary and sulphur yellow, all tinted or blotched with intermediate shades. The gladiolus may also be propagated from the seed, but this mode is not practiced except for the purpose of producing new varieties. There is considerable pleasure, however, to the plant lover to thus propagate them. The seed may be sown in small boxes or pots and transplanted.

Do not forget the sweet peas. Plant any time during January or February. Late spring planting will not be satisfactory.

Start early tomatoes this month. Spark's Earliana is one of the best early varieties and one of the hardiest.

At this writing potatoes are going up in price almost daily. There are locations where they may be planted this month. The planter who has early potatoes next spring is sure to get good prices.

Every home that is supplied with water under pressure should have a lawn, even though it is small. During the long dry summer when the hills and valleys are brown it will afford pleasure and contentment to have a green spot for the eye to rest upon. Now is a good time to start it. Spade the ground good and deep, work it up nicely and roll it. If the ground is not sufficiently moist from rainfall, irrigate and when danger of hard freezing is over sow about one pound of good lawn grass mixture to 250 square feet of lawn. Water twice a day until grass is nicely up. If a fertilizer is used, put it on the surface after the grass is three or four months old. Keep the weeds out and use the mower often.

L. M. R., Placer county, writes: "I am reading your articles on berries in the PACIFIC RURAL PRESS with much interest. I contemplate planting some berries for home use and for market and would appreciate your opinion and advice as to best and most profitable varieties and those best suited to my locality (foothills of Placer county). When is the best time to plant the various berries?"

It would be impossible to say just what variety of the different small fruits would do best in your locality. In California a distance of three miles will often mean such a change in soil, and even climate, that one can judge only by actual experience. In a general way we may say that in strawberries the Brandywine, Excelsior, Pride of Cumberland, Dollar, and Nick Ohmer are all good shipping berries, and good table berries, with possibly the exception of the Excelsior, and no doubt some of them would do well with you. A strawberry that has the quality of standing up well after picking will do so under ordinary conditions wherever planted. But to be profitable a berry must have size and bear big crops, and this is where one is liable to fall down, because one variety may be ever so large in one locality and small in another, with the same care. So unless one knows, it were better to try two or three varieties until one can determine which is the better. Strawberries may be planted any time up to April, but as a rule unless planted in the fall we would prefer February, and this applies also to other berries.

A. W. C., Merced county, writes: "Will you kindly tell me about Burbank's Crimson Winter rhubarb. When and how to plant it? Will it do well on a heavy soil?"

Great claims are made for the Crimson Winter rhubarb, some claiming that as much as $1000 per acre can be made. Like everything else that is grown from the soil it depends on two things which are most important in determining the matter. They are care in growing, and prices obtained. The plants may be set out any time during the rainy season, the earlier the better. The soil may be heavy if well drained. If the soil is rich, so much the better. If it has not recently been fertilized, well rotted stable manure should be spread over the surface after planting. Plant in rows four to five feet apart and for above variety plant two and one-half feet apart in the row. Cultivate often during the growing season and allow a season of rest during July and August, then irrigate and cultivate to start a fall crop. Keep seed stalks cut off.

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AGRICULTURAL REVIEW.

CITRUS NOTES.

The dryness of the last fall is said to have affected the citrus groves in the Pomona valley. Much of the fruit is very small.

The citrus industry is increasing rapidly around Porterville and it is estimated that this coming year will see 2000 acres planted out to citrus fruit in that section. Among the large orchards to be set out will be one by C. Hampton Wade and another by A. Skinkle.

Choice Porterville oranges are being sold in London at 75 cents a dozen. The California seedless oranges are in much greater demand than the Spanish product.

The California Fruit Growers' Exchange estimates the citrus fruit crop for California this season at 48,000 carloads. Three thousand cars of this amount will be produced north of the Tehachapi. The warm wet weather may cause an increase in the size of shipments, but it is hardly probable that the total will be changed very much.

Porterville citrus growers at the present time are installing pumping plants. Several of the largest pumping engines in use in Tulare county are being installed in this district.

From the 20th to the 25th of February, Cloverdale will have her annual citrus fair. Every year this fair has been gaining growth and this year will eclipse all previous fairs in that locality.

Chen Muck, a wealthy Chinaman of San Francisco, will plant 77 acres to oranges near Porterville. He will engage a white man to superintend the grove.

IMPERIAL VALLEY NOTES.

Nearly 3000 tons of seed were produced by the Imperial valley cotton growers last season, and the present estimates place the output of cotton at nearly 6000 bales. The average yield was only half a bale to the acre. Some of the more experienced growers, however, harvested almost a bale and a half per acre. Up to last week 43,000 bales of cotton had been ginned in the Imperial valley.

Within the last two months two carloads of bees have been shipped into the Imperial valley from Riverside and San Diego counties. The bee pasturage in this valley is all taken up at present and there will be little opportunity for new apiaries until more water is brought into the valley.

The Imperial Valley Bee Keepers' Association is petitioning the Superior Court for a decree permitting voluntary dissolution of the corporation in order to form this concern into a non-profit sharing corporation.

TREE PLANTING.

Antioch is rapidly increasing her almond acreage. Last week about 1200 almond trees were sold to be planted this coming spring. They will consist principally of Nonpareils and Drake seedlings.

The Butte county orchardists will plant about 60,000 almond trees this coming spring. Most of them will be set out near Durham. About 20,000 pear trees will be planted in that county and about 400,000 apple trees. Most of the apples will be planted in the Paradise and Cohassett sections this coming February.

Large shipments of fruit trees are going into Mendocino county each week. Most of the trees have been Bartlett pears.

W. G. DeWitt of Sutter City is planting 40 acres to almonds.

VEGETABLES.

The onion yield in California this season was about the same as last year. Some 250,000 sacks from 2500 acres. The principal varieties were Yellow Danvers and Australian Browns. The red onion crop of 60,000 bags averaged about $1 a sack.

It is estimated that there are nearly 20,000 acres of asparagus in California. Most of this is in the Sacramento and San Joaquin river bottom lands. Last season's production was about 800,000 boxes or nearly 40,000,000 pounds. The crop this year will be about the same, but it will be handled much better than last year. The California Vegetable Union will handle asparagus for the first time and will reach all the markets.

ASSOCIATION MEETINGS.

The annual meeting of the Sebastopol Berry Growers' Association was held last week and the following officers were chosen: W. I. Newcomb, president; W. M. Hottle, vice-president; J. R. Rosie, secretary. This association expects to pay a dividend at the next meeting.

Several prominent berry growers near Sebastopol recently met for the purpose of organizing the Analy Township Apple Growers Association. The association will be formed on similar lines to the Watsonville and Hood River associations.

The El Dorado Fruit Growers Alliance will complete their organization on February 11.

A RECENT CORPORATION.

The raisin growers around Fresno recently met and recommended a plan for a million dollar corporation. The board of trustees, composed of R. C. Merriam, George Marshbank, Edward Poulson, D. S. Snodgrass, W. J. Wilson, John Hall, Wylie M. Griffen, W. F. Chandler, J. S. Jones, A. L. Hobbs, Dr. A. H. Shahbazian, were chosen to promote the company. According to the plan adopted the company agrees to maintain a minimum price of 3 cents for three years. It also differs from the other corporations which have been formed in the past, in that anyone can hold stock, but growers are to control.

LABOR SCARCITY.

A shortage of Japanese labor around Fresno is being felt at the present time. Many of the fruit growers are severely handicapped, as pruning can not be postponed. Some of the growers are thinking seriously of using Mexican peons in this work, but it is not thought that they can do the work. The shortage of Japanese has so handicapped the growers that the Federated Trades Council of Fresno has promised to import about 2500 Greeks into the country to take the place of the Japanese.

MOVEMENT OF NUTS.

The Whittier Walnut Growers' Association sold over $300,000 worth of walnuts. One hundred and one carloads were sent out, as against 67 cars last year.

A carload of almonds was recently shipped from Yuba City to New York by the Live Oak Almond Growers' Association. They were sent by water through the Isthmus of Panama.

The Southwestern Sugar Co. of Los Angeles was recently formed for the purpose of erecting a 500-ton mill near Perris, Riverside county. A site of 80 acres has been purchased for a factory and it is thought that fully 5000 acres can be accommodated.

WHO CAN TELL WHAT IS THE MATTER?

To the Editor: About six weeks ago I made a 20-gallon keg of sauerkraut, in the usual way, pounding down and salting. In three or four weeks, when it should have been ready to use, it was spoiled—soft and rotten. Can you kindly explain? SUBSCRIBER.

Petaluma.

Will some experienced reader answer?

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Agricultural Engineer.

PUMPING PLANT CONTRACTS.

Written for the PACIFIC RURAL PRESS
By Mr. C. R. SESSIONS, of San Francisco.

A company selling pumping plants draws up many contracts, and therefore makes a study of them. A farmer usually signs but one and is thus at a disadvantage. He sometimes misplaces his confidence in some unscrupulous "Gas Man" who, driven by keen competition, takes advantage of the farmer's natural friendliness and unfamiliarity with what is really a specialty. Legal advice only partially protects him, because there are many "tricks of the trade" with which a lawyer is not familiar. These tricks are concealed in those parts of the contract dealing with horse-power, fuel guarantee, water pumped, tests, partial installation made by the farmer, payments, and extras.

A gas-engine with a cylinder of large diameter and long stroke delivers its greatest power when it runs fast, when the piston and valves are tight, and when the cooling-water, air, and fuel adjustments are just right. An engine which runs too fast is short-lived. Wear and lack of adjustment prevent the continual delivery of the greatest power. Variation in the fuel and changes in the weather also decrease the power output. To start quickly and handle its load properly, an engine should have a reserve of power, and to be reliable it should not be driven to its utmost. Now, because competition is so great, the horse-power guaranteed is often the most that can possibly be gotten out of an engine during a short test under favorable conditions. A small engine is made to appear as good in this way as a larger engine which has been conservatively rated. This is one way that gas-engines are overrated, a practice which, aside from being fraudulent, is to be deplored, because the failure of the entire plant is generally the result. There is no standard rating for gas-engines. Indicated horse-power, instead of brake horse-power is sometimes guaranteed. To test such a guarantee, it is necessary to employ methods entailing considerable expense and giving results not above criticism. A guarantee which can not be practically proved is no guarantee at all.

A good engine, handling a full, steady load, should develop one brake horse-power for an hour with the consumption of one-ninth of a gallon of engine distillate. The conditions which make it possible to get the greatest horse-power out of an engine are conducive to the best fuel-economy, so that guarantees better than a ninth of a gallon are given, but are demonstrated by shop-tests and are not realized in the field. Very often a pump is run for so short a time during the year that the saving in fuel is small at best and of very little importance.

The amount of water pumped or the duty of the plant is a very important point in the contract. Unless the water delivered is actually measured, nothing definite can be said of the power of the engine or the fuel-economy. Overestimating the quantity of water leads to overestimating the power of the engine and underestimating the amount of fuel used. The quantity of running water is nearly always overestimated. The apparent life in the ripples and eddies probably influences one's judgment. To see water pumped onto thirsty land, to hear the sturdy puff of the engine, and to be exposed to the wiles of the agreeable gasman are conditions which are apt to make the farmer forget that so many guaranteed gallons per minute are not being pumped, that the engine is not delivering its full power, and that the fuel is being used up faster than guaranteed.

A revolution counter reading faster on one side of the engine than upon the other, an excess of cylinder oil, chemical reagents in the distillate, a generous measuring of the fuel, temporarily increased compression in the cylinder, a jiggling spring-balance from which only an imaginary reading can be gotten, a prony brake enclosed in a sack, affability, noise, cigars, and the condescending indulgence of some mysterious shop expert, all go to make the shop test a farce.

The test in the field is seldom more than the starting up of the plant and instruction of the farmer as to its running. It is ordinarily no more than a demonstration that the plant will run. Without a measurement of the water pumped, a field test is worthless. A slight reduction in the speed of a centrifugal pump decreases the water delivered considerably, so that the load on the engine and the fuel consumed may be materially reduced by slowing down the engine slightly. A dry measuring-stick held in the fuel-tank long enough to give the distillate time to crawl up on the second reading helps fuel-economy. Exaggerated fuel-economies as high as one-twentieth of a gallon per brake horse-power per hour have been gotten in this way.

The farmer often puts in the foundation for the plant, pays freight, does hauling, or supplies part of the equipment, believing that a saving is effected in this way. A saving is effected, but a risk is taken if he is dealing with any but a reputable firm, because in the event of the failure of the machinery, he is forced to compromise to protect the money he has spent. The gasman gets him into the water when it is warm, and too late he finds his feet are wet.

Full payment for the plant after it has been accepted by the farmer is a good arrangement. Part payment with the order is customary in most machinery transactions, but competition seems to have caused an exception to be made to this rule in the sale of gas-engines. If the farmer can not pay in full for his plant, he can ordinarily do better by borrowing the money at the local bank or allowing the gasman to sell his note to the bank. The gasman is not a banker and the farmer generally pays for a higher rate of interest in the price of an outfit purchased in this way.

Sometimes contracts are drawn up allowing a large amount of extra work, there being little profit on the main contract and a considerable profit on the extra work. To get the full benefit of competition, a contract should permit of no extras, and the specification of the engine, pump, and equipment should be complete.

An insufficient supply of water due to disappointing well development, overestimated springs, supply ditches too small, etc, often hides the discovery of an overrated plant.

Looking at the contract from the farmer's point of view, in conclusion it may be said that the specifications should definitely state a complete outfit, that there should be no jokers hidden in the statement of duty and guarantees, and that all special arrangements likely to involve the farmer in the event of the failure of the gasman to live up to his part of the agreement should be avoided.



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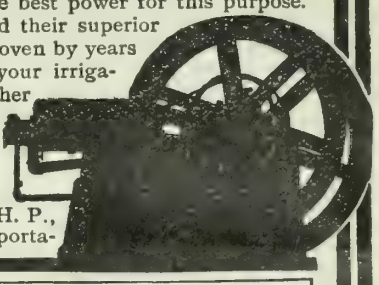
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CACTUS FEEDING FACTS AND FANCIES.

Mr. Wm. Sinclair of Texas is a cactus enthusiast and he gives the Rural New Yorker an account of his experience and of his plans which is interesting. When he says "pear" he means prickly-pear or cactus.

How It Works.—We have a lot of pear in cultivation as well as growing wild in the pasture. However, there is not enough of it for our herd, so we have to buy it from our neighbors. Some of them are glad to haul it five or six miles and deliver it in our feed-lot at $1.25 per ton. We used to buy all we needed at $1 per ton, but have fed most of the pear that was close to us. The pear is thrown from the wagons in windrows. We then take a gasoline pear-burner, which is a modification of the plumber's torch, and singe off the thorns. The cattle eat the terminal joints readily, but the thick stumps are too hard for them. If we had hogs they could attend to the stumps in fine style. It is an interesting sight to see a husky hog put one foot on a thick pear stump and get a good grip on it with his teeth. Something has to give way, and it is usually the stump. We have tried running the stumps through the silage cutter. That makes good feed, but as compared with the terminal joints it is rather expensive, on account of the labor required to gather them up, cut them, and shovel into troughs. So at present we have a Mexican go out in the lot with a wagon and pick up all the joints that are too thick for the cows to eat. He then hauls them out to the field and plants them in furrows, end to end. We plow the furrows six to eight feet apart. We do not cover the joints after planting, as we expect that to be done by rains and cultivation. If it does not rain for a few weeks after planting, it does not matter much, as the pear will wait till the moisture comes. We place the stumps end to end in the rows, as we want the plants to be crowded close together, to save gasoline and time when singeing.

Arrangements for Cactus Feeding.—The more we work with the pear, the more I become convinced that we have not found the most economical way of handling it. Assuming that we have abundance of pear in cultivation, it is not certain that it would pay to feed the cattle where it grows. That is an ideal plan in mild weather. But when it is muddy, or when we have a wet, cold "norther", I would expect the stock to be set back sufficiently to make it desirable for us to adopt a plan of feeding that the changes of climate would not affect. We are now building a lean-to on our barn. When complete we will have two feeding-floors, with four rows of stanchions. On one floor we propose to feed the grain while the cows are being milked. Then, when they are turned out, they can step around to the other side and get a good supply of chopped pear. We propose cutting all of the pear and running it down the floor on a carrier. We will keep it piled up day and night so no cow will have any excuse to go hungry. By this method we shall be independent of the weather, as we can pile up enough pear by the cutter to run several weeks. The feed will be clean; there will be no waste. We can tell at a glance if there is sufficient feed on hand. There will be more labor than under our present system, but I would expect the cows to eat so much more that it would pay. Aside from the feeding problem, the building of the lean-to is necessary to provide shelter for the stock on the few really cold nights we have here.

Now some one is going to say: "Why do you not feed the chopped pear as we feed silage; give a cow 40 or 50 pounds twice a day and let her clean it up?"

Well, it seems to be a different proposition, somehow. We find it very poor policy, in the first place, to put the slightest limit on the amount of pear our cows get. The more they can eat, the better they thrive, and the more milk they give. There is nothing that sets them back more than shortage of pear. If we happen to be short of milk, the cause is almost invariably traced to the pear. With the grain feed it is different. We have to put a limit on that, or we have a sick cow. By using two floors we can save much labor, as it is easier to shift the cows than to clean up the floor. Of course, it will be necessary to remove all old pear before it ferments. Chopped pear will not keep very long, although it keeps so well before being cut up. I attribute that to the fact that the skin of the pear is air-tight. It will not give out moisture, neither will it absorb moisture through the skin, even though shriveled from the drought. And so we go on from day to day, learning more about prickly pear.

ALFALFA WEEVIL.

The alfalfa weevil threatens to be as great a menace to alfalfa as the boll weevil is to cotton. At the present time it is devastating the alfalfa fields of Utah. These pests are easily scattered, as they fly about and light on moving objects and are thus carried into new territory. The history of the weevil in Utah shows that it first starts along a railroad track or a wagon-road, and then spreads over the adjoining land. This pest is costing the farmers of Utah thousands of dollars and has forced up the price of hay to a prohibitive figure. Much fear has been expressed lest it get into Nevada and California.

The Utah Agricultural College came to the farmers' rescue and has studied the situation very thoroughly. The college recently issued a bulletin covering its observations, and this document shows that:

"The alfalfa-leaf weevil is a small, oval, brown-snout beetle, about three-sixteenths of an inch long, that is attacking alfalfa in Utah. It is not a native species, but has come to Utah from Europe.

"It feeds on plants belonging to the alfalfa family, injuring all parts of the plant above ground.

"The eggs are laid in the spring and early summer in the stems or on the buds and leaves, and hatch in about 10 days. The young or larvae are small, alfalfa-green worms, with a black head. They never become much more than one-quarter of an inch in length when full grown. They feed on and in the leaf buds, in the stalks, and on the leaves.

"The larvae have no true legs and have the habit of feeding or resting in a curled position.

"When full grown, about 50 to 60 days after hatching, they go to the ground and spin around them a lace cocoon, to which, in about 14 days, they have turned into the full-grown, hard-shelled adult.

"This adult feeds on the stems, leaves, and buds for several weeks, and in August goes into hibernation for the winter, seeking any well-sheltered place.

"The insect now occurs in Salt Lake, Davis, Weber, Morgan, Summit, Wasatch, Utah, and Tooele counties, and threatens to eventually reach all our alfalfa-growing regions. It spreads rapidly in the adult or bettle stage by flying in spring

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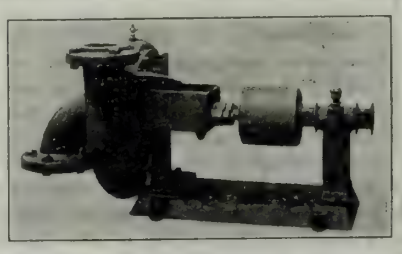
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and summer, and by being carried with articles shipped from an infested region, and on railroads, in wagons and automobiles, traveling through the places where it occurs.

"It is recommended that alfalfa be disced in early spring to stimulate it to better growth. That the first growth be cut when the most of the eggs have been laid (middle of May) and then brush-drag the field thoroughly.

"Sheep may be pastured on the fields at this time for two weeks, and alfalfa then watered and a good crop will usually be assured.

"Gathering machines to capture the larvae and beetles have given good results when used on the fields at the time the insects are most numerous.

"Field should be brush-dragged again after the first crop has been cut.

"All weeds and rubbish should be cleaned from fields, yards, ditches, and fence-rows, so that there will be less opportunity for the weevils to find winter shelter.

"Alfalfa should not be allowed to grow more than seven or eight years in infested districts."

STOCK NOTES.

Charles Goodman of Williams, Cal., recently sold six registered Berkshire gilts to the J. S. Gibson Company. These pigs are of blue ribbon strains and are some of the finest animals in that section of the country.

The seventh annual meeting of the American Breeders' Association will be held in conjunction with the National corn exhibition at Columbus, Ohio, on February 1, 2 and 3.

The exports of wool from Australia to Japan in 1909 amounted to $970,000, while for the first seven months of 1910 the value reached $1,464,000.

The Tuolumne County Live Stock Association recently met at Sonora and elected for president, Frank McCormick; secretary, Leo Rosasco; treasurer, Oscar Crabtree. F. B. Burnham and J. P. Whyte, in connection with three above officers are the advisory board.

T. J. Henderson, manager of the California Hog & Land Company, has commenced operations on his farm near Calistoga. At the present time he has 250 porkers, but hopes finally to increased this number to 3000. The breeds he has at present are Poland-China, Berkshire and Mule-foot hogs. He intends to make a specialty of the latter breed.

There is a bill now before Congress which is seeking to establish a minimum speed limit law of 15 miles an hour in transporting stock. At present freight trains drag along at a much lower rate of speed, so that stock arrive at their destination three or four days late. This causes a great loss to stockmen all over the country, and they are taking this means to stop it.

The supervisors of Colusa county recently met members of the same body of Glenn county in order to take action in regard to having a uniform bounty on coyotes in Colusa, Glenn and Yolo counties. Colusa county pays $10 a scalp, while the other counties pay only $5, and the result is that many Glenn and Yolo county coyotes are taken to Colusa.

The Secretary of Agriculture has authorized the grazing of 15,000 head of cattle and horses, 1000 head of hogs, 50,000 head of sheep, and 5000 head of goats on the Lassen national forest during the grazing season of 1911. The maximum list of 550 head of cattle and horses and 500 head of sheep and goats established last year will continue in effect this year, and no person, firm or corporation will be allowed to increase its number of stock above these limits by the purchase of stock.

2335-ACRE RANCH FOR SALE

We have a Stock Ranch of 2335 Acres, three running streams, two barns, two houses, well fenced, rolling hills, good soil, about 1500 acres tillable, and has produced as high as eighteen sacks of wheat per acre. Four miles southwest of Dunnigan, Yolo County.

PRICE, $18 PER ACRE

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10 and 20 acre tracts. $100 to $125 per acre.

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(Please send me literature on your Merced Colony)

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How to Make Money Growing Fruit

Is a question that confronts every orchardist in one form or another every season. A sure way is to follow the practical advice and suggestions, based on thirty-five years close observation and investigation as to climates and soils, methods and work, given in the new

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A MANUAL OF METHODS WHICH HAVE YIELDED GREATEST SUCCESS; WITH LISTS OF VARIETIES BEST ADAPTED TO THE DIFFERENT SECTIONS OF THE STATE.

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Clearing Land for Fruit.
The Nursery.
Budding and Grafting.
Preparation for Planting.
Planting Trees and Vines.
Pruning Orchard Trees and Thinning Fruit.
Cultivation.
Fertilizers for Fruit Trees and Vines.
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Commercial Fruit Varieties.
The Apple.
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The Cherry.
The Peach.
The Nectarine.
The Pear.
Plums and Prunes.
The Quince.
Vine Propagating and Planting.
Pruning and Care of the Vine.
Grape Varieties in California.
The Date.
The Fig.
The Olive.
The Orange.
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Wears longer and you use less

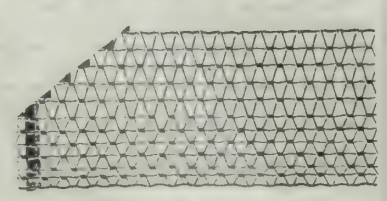
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FENCE

The kind that "Fences." Square or diamond mesh fences for all farm purposes. Our net prices on fencing, gates, barbed wire, poultry netting, etc., are money savers. Catalog free. Mail orders a specialty. Write us.

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DAIRY NOTES.

Arthur W. Fisher has almost completed his creamery building on his ranch in the Coachella valley. The plant has a capacity of 200 lbs. of butter-fat per day, and Mr. Fisher will churn outside cream that is brought in. At the present time there are 70 cows on the place and 50 brood sows.

The Rio Bonita company has completed its dairy barn on the ranch near Biggs. This is one of the finest barns in that section.

The first butter was recently made at the Delta creamery in the Imperial valley. The cream is collected in wagons by the creamery.

I. B. Hunsaker, of Tulare, recently bought a registered Holstein cow from W. F. Ingwerson of Visalia.

The Corcoran creamery is rapidly installing a milk-condensing plant. It is putting in the best machinery obtainable for this line of work. During December this creamery shipped 350 gallons of cream to Los Angeles.

W. H. Crowley recently sold 480 acres of alfalfa land near Tipton to several Porterville dairymen. This land will be planted to alfalfa and a dairy started.

Byron is rapidly becoming a dairy section and many new fields of alfalfa are being planted. Recently S. Fleisher of Santa Maria, Peter King, and S. N. Nash bought land in that section which they will plant to alfalfa preparatory to starting a dairy.

The Government of Canada is encouraging dairying in every way possible. The policy of the Government is to centralize creameries at the most promising points and not encourage them where success is doubtful. The farmer who is not close to a creamery has the express charges paid on his cream. He thus derives the full benefit accruing from the large output of butter from one point and has every advantage of a creamery at his nearest railway station. The action of the Government has also caused the price of butter to go up, due to its quality. In 1908 butter-fat was selling for 12½c. in trade. From July 1 to the end of October, 1910, the lowest price the Government paid for butter-fat was 21½c., and the highest price 31½c.

NEW DAIRY LAWS.

Improvements in the sanitation of dairies, and strict observance of laws of standard weights and measures in the sale of dairy products is provided for in a bill backed by the State Dairy Bureau which was recently introduced in the Senate of the California Legislature by Senator E. B. Martinelli.

The provisions of the bill are for the repealing of all the scattered laws relating to dairying and dairy products and their embodiment with several new measures into one comprehensive and effective act. Most of the old laws are retained in the bill.

The new provisions are for sanitary regulations and control of the manufacture of dairy products.

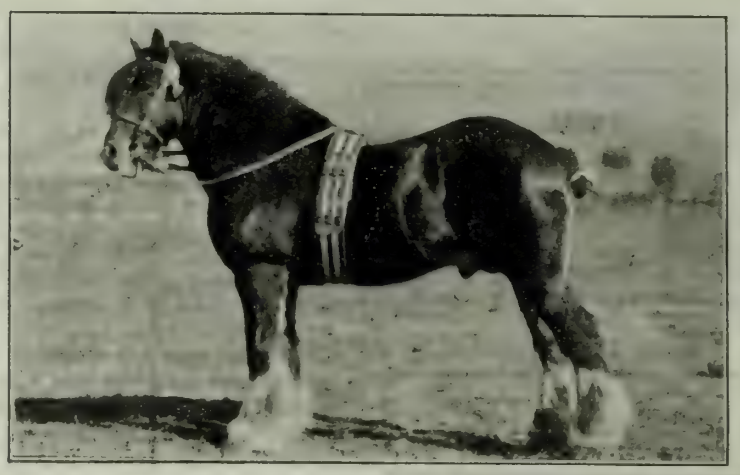
There is one provision which affects particularly the manufacture and sale of cheese. All cheese imported or manufactured must be labeled if not containing 50 per cent of milk-fat in water-free substance.

JERSEY BREEDERS' MEETING.

The Board of Managers of the California Jersey Breeders' Association recently met in Modesto and decided to make an effort to secure representatives on the Board of Directors of the State Agricultural Society who will be identified with the California Jersey Breeders' Association. It was also decided to make an exhibit of Jersey cattle at the next State Fair a distinctive exhibit. The officers of the California Jersey Breeders' Association are as follows: Guy H. Miller, Modesto, president; Geo. B. Reeves, Mountain View, vice-president; J. G. Stahl, Bakersfield, secretary; N. B. Locke, Lockeford, treasurer. These gentlemen and the following named directors were present at the meeting: J. E. Thorpe, Stockton; W. J. Hackett, Ceres; T. B. Purvine, Petaluma.

Mrs. Mary Stewart, of Bealls Ferry, recently sold 380 acres of land to C. W. Grover, of Idaho. Mr. Grover intends raising blooded sheep.

Salvador Stock Farm
NAPA, CALIFORNIA



Folville Conqueror, First Prize at Sacramento for aged Shire Stallion.

If you were going to buy an implement for use on the farm worth from $1500 to $2000 would you send for a promoter to organize a stock company to enable you to own part of it, and add this expense to your cost?

Or would you go to an implement dealer direct and arrange for the purchase and payment of this implement in a businesslike manner.

If you had not sufficient cash on hand to make the payment, would you give a note to the dealer to be discounted at his bank, or would you go to your own banker and arrange for the necessary capital at a reasonable rate of interest?

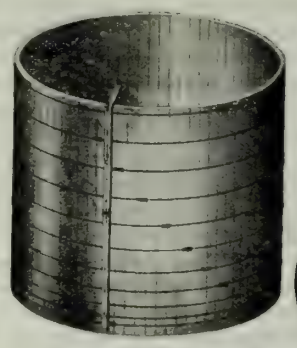
I think you are a business man, and that you would pursue a business method of getting in touch with the dealer direct and arrange with your banker for the financial part of it.

My method of selling Stallions is based upon the modern business idea.

If you desire to purchase a Stallion come to my stock farm at Napa, Cal., make your selection from the stock in my barn and save all the unnecessary expense of salesmen, promoters, organizers, freight and other incidental expenses attached to the old method of selling Stallions to companies.

In buying Stallions it is to your interest to adopt business methods and save at least 50% on the purchase price.

HENRY WHEATLEY
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BOXES and BOX SHOOKS
FRUIT AND VEGETABLE BOXES OUR SPECIALTY.
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Proteina SOY BEAN OIL MEAL

CONTAINING 46% PROTEIN
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Almost four times again as much Protein and Fat as Corn, Wheat, Barley, Bran and Shorts and almost half again as much as Linseed Oil Meal.

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Poultry Department.

Conducted by M. Russell James.

BUYING DAY-OLD CHICKS.

Before taking up the subject of brooding chicks, it is well to consider the buying of day-old chicks. That the day-old-chick trade is a legitimate branch of the poultry industry and fills an urgent want in poultry raising is evidenced by the amazing growth of the business in a few years. To be able to secure strong, well-hatched chicks of the breed desired and at a time and in numbers to suit, helps the beginning neatly over the first difficulty in poultry culture and at the minimum cost.

The expense for first-class equipment in hatching and for eggs from pure-bred, properly bred and dependable stock is a heavy initial demand upon the beginner's pocketbook, not to mention his lack of experience in the work. We have heard much of the phenomenal hatches of the novice—mostly in incubator literature, but which, by the way, is being eliminated from first-class incubator circulars. Yet the fact remains that expertness in artificial incubation requires experience just the same as in any other work where carefulness and nicety are essentials. The person must know his business and have the best of equipment to turn out with certainty the well-hatched, vigorous chick.

However, it is not the beginner alone who is taking advantage of the fine equipment and expert management of up-to-date hatcheries. Many of the old and experienced poultrymen contiguous to such hatcheries are furnishing the eggs and having the hatching done.

For the person with no experience and no stock who is beginning from the ground up in the poultry business this spring, we can safely advise the buying of day-old chicks. Vigorous chicks from a utility strain of pure-bred fowls may be bought from $10 to $15 per hundred. If obtained during the rush months of February, March, and April the order must be sent in with the necessary deposit a good while before the time of shipment. Assured of the delivery of the desired number of chicks at the proper time, the beginner must see to it that his brooder equipment is ready to receive them. While his chicks are occupying the brooders, he will have time to build colony houses, cultivate and enlarge his garden so that his fowls may be well supplied with green feed and vegetables during the dry season, and start the numberless other improvements needful. If he has brooded and cared for his chicks properly, so that there has been no setback in their growth, the cockerels may be sold from eight to twelve weeks old, and contribute a nice sum toward lifting the expenses. The pullets of that age may be placed in colony houses, when they will require more care than old fowls, that is, if they have been taught to roost. A bunch of several hundred fine pullets at this age is a delight to the eyes of the poultry raiser and a cheerful augury of profit in the near future. In fact, in another three months, if of a laying breed, they will be depositing the poultryman's coin, the golden egg.

The assurance of such quick and profitable returns from the purchase of day-old chicks in the spring hinges upon certain points.

THE RIGHT KIND OF CHICK AND THE RIGHT KIND OF CARE.

Neither the chick without inherited stamina, the poorly hatched chick, nor the ill-cared-for chick will ever be a profit producer. The right kind of chick and the right kind of care are essential to quick and certain returns in the poultry business. If from any cause whatever the chick receives a setback, a stop in its growth, it will not come to laying in the golden time of egg production, but will mope along through the fall and winter until springtime. Chicks that have been chilled at any time, that have been overheated, that have been underfed or ill-fed, even if they live through it and seem to show up all right in the end, will never put a balance on the right side of the poultry account.

BUY THE CHICKS AS NEAR HOME AS POSSIBLE

That chicks may be sent three and four days' trips and come through alive is as surprising as true; but that it is well for the little creatures, is not true. The shorter the journey the better for the chick. Therefore, buy the chicks from the nearest hatchery that turns out chicks of the right quality and kind. Buy from a well-established breeder or hatchery that has gained a reputation for turning out chicks of stamina and of a good strain of the desired breed. We repeat that shipping baby chicks long distances is a test of endurance which only chicks of vigor can withstand. Those who successfully carry on the day-old chick business in their own interest must have the best of equipment, thorough knowledge and experience in the handling, and eggs from the most vigorous stock. They are the ones from whom to buy the day-old chicks.

Question Department.

Indian Runner Ducks.—Mrs. M. A. L., of Varain, consulted this department about this breed of ducks last spring and we requested her to report results, which she does in the following letter:

"You asked me to let you know what success I had with Indian Runner ducks. Very good. Raised 11 males and 10 females. Disposed of all the drakes but two. Never raised any ducks before; now I should not like to be without the Indian Runners on my ranch. I lost several when nearly grown; they never seemed to have any sickness, but all at once seemed lame in the back and would either soon recover or die. Should like to know the cause. We have an ideal place for them. They have the run of a large back yard in which are several large shade trees and which slopes down to a small mountain stream of pure, fresh water. Of course, I don't let them go in the water until they are old enough. There is alfalfa growing over most of the yard, and they never lack green feed. They are very fond of tomatoes."

Mrs. L.'s ducks have truly an ideal place, and it is evident that the care is all right, too. An old breeder of these ducks says that about the only sickness she has ever seen with them has been caused by gluttony, and that young birds have a tendency to this fault. Ducks do best without whole hard grain. Oats and barley should be soaked or sprouted. A dry mash twice a day containing a large proportion of cooked vegetables and about 12 per cent animal food, or else mixed with skim-milk, sweet or clabbered, is best for laying and breeding stock. The ducks should not be allowed to swim in the water until feathered. We can see just one possible cause of the ducks going lame in the back, and that is the large number of drakes, which should have been separated from the females sooner. The Indian Runner is called the Leghorn among ducks, and is precocious like the latter. If eleven Leghorn cockerels were allowed to run with ten pullets much longer after the age of six weeks, the pullets would be seriously injured.

Cloth vs. Glass.—R. W. P., of Sebastopol, asks: "Would some good grade of white cloth on a frame do as well, or would it be better than glass, for a brooder house, or would it keep out too much sun-heat?"

Cheesecloth, not heavy cloth, would be better than glass, so far as the sun is concerned. There would be none of the overheating during the middle of the day followed by the chilling at night which are caused by a large expanse of glass. On the other hand, there should not be openings on opposite sides of the house to create a draft. Also, the rat and vermin question must be considered. It might be necessary to have wire screens made to fit firmly over the cloth at night.

White Holland Turkey Stock Wanted. O. W. S., of Selma, writes: "I have been trying to locate some poultry breeder who handles the White Holland turkey. I desire to keep up a strong strain in the birds I have, and wish to introduce some new blood of thoroughly reliable stock. I would purchase several sittings of eggs or a few male birds."

Pigeon Breeding Stock Wanted.—L. R. L., of Palo Alto, writes: "Would you kindly inform me as to bulletins on raising pigeons, also give address of the most reliable pigeon breeder in California who makes a business of raising breeding pigeons?"

Farmers' Bulletin No. 177, "Squab Raising," which may be procured from the Department of Agriculture at Washington, D. C., covers the subject in a very practical manner.

Poultry Notes.

"Progressive Poultry Culture."—Price $1.50; Torch Press, Cedar Rapids, Iowa. This book is by Professor A. A. Brigham of the South Dakota Agricultural College. It is a cloth-bound book of nearly 300 pages, and while there are no startling new departures in poultry culture, every page is full of proved and practical information, and the systematic arrangement and completeness of the whole work bespeak the trained mind no less than the practical poultryman. In one point only has the professor ascended out of reach, namely, the requirements demanded by his "Qualifications of the Poultryman" would let us all out of the poultry business if we had to grade up to them. However, ideals, like the moon for the small child, are to be reached for, not reached. As a book of instruction for the beginner and a book of reference for the experienced, "Progressive Poultry Culture" will prove invaluable.

Missouri Hen Gold Mine.—Poultry raising is only a side-line on most Missouri farms, yet during 1909 the farmers' wives of Missouri produced surplus poultry products to the amount of $45,000,000, and this does not include several million dollars' worth consumed at home and marketed locally. This is of greater value than all the mineral products of the great mining State of Colorado.—Secretary Missouri State Board of Agriculture.

Eggs Not to Be Sold by Weight.—With the advent of the new commissioner for New York City, the ordinance compelling eggs to be sold by weight will not be acted upon.

POULTRY.

WAYSIDE POULTRY YARDS, Petaluma, Calif.—HATCHING EGGS from S. C. White Leghorns, Buff Orpingtons, Rhode Island Reds, Light Brahmas and Houdans, $6 per 100. EXHIBITION MATINGS of White Leghorns and Black Bantams, $5 per 15; $7.50 per 30. Address Carl Gregory, Manager.

PIONEER POULTRY YARDS—Standard bred Light and Dark Brahmas, Buff Cochins, R. I. Reds, Houdans, Black Minorcas, Cornish Fowls, Brown Leghorns, Bronze turkeys, peacocks, guineas and Rouen ducks. Address W. A. FRENCH, 545 W. Park St., Stockton, Cal.

DAY OLD CHICKS—R. I. Reds, S. C. White Leghorns and Barred Rocks; also eggs for hatching; good laying strain. Fairmount Hatchery, Box 29B, R. F. D., Santa Cruz, Cal.

ORPINGTONS—White, Buff, stock, eggs. Ellen Jacque, 3117 School St., Fruitvale.

INDIAN RUNNER BABY DUCKS, 25c each. Ready for delivery Feb. 1st and later. no less than 15 shipped. T. M. ALEXANDER, 460 33d Ave., San Francisco.

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WATER TANK.

The Home Circle.

If.

If you can keep your head when all about you
Are losing theirs and blaming it on you;
If you can trust yourself when all men doubt you,
But make allowance for their doubting, too;
If you can wait and not be tired by waiting,
Or being lied about don't deal in lies,
Or being hated don't give way to hating,
And yet don't look too good, nor talk too wise;
If you can dream—and not make dreams your caster;

If you can think—and not make thoughts your aim.
If you can meet with Triumph and Disaster
And treat those two impostors just the same,
If you can bear to hear the truth you've spoken
Twisted by knaves to make a trap for fools,
Or watch the things you gave your life to, broken,
And stoop and build 'em up with worn-out tools;

If you can make one heap of all your winnings
And risk it on one turn of pitch-and-toss,
And lose, and start again at your beginnings
And never breathe a word about your loss;
If you can force your heart and nerve and sinew
To serve your turn long after they are gone,
And so hold on when there is nothing in you
Except the Will which says to them: "Hold on!"

If you can talk with crowds and keep your virtue,
Or walk with kings—nor lose the common touch,
If neither foes nor loving friends can hurt you,
If all men count with you, but none too much;
If you can fill the unforgiving minute
With sixty seconds' worth of distance run,
Yours is the earth and everything that's in it,
And—which is more—you'll be a man, my son!

—Rudyard Kipling.

Value of Clubs and Organizations.

The public playground, the local gymnasium, the club, are all things that make for community of interests, that bind one to the home locality. To encourage sports is to develop team work; to do that is absolutely essential if one is to successfully carry out co-operation. The carefully carried-out sports as followed in city schools develop the spirit of fair play, of loyalty to the home team, of pride in local environment, the lack of which is one of the greatest weaknesses of rural society. To get away from this isolation and become a part of something is the country boy's ambition. Man is a truly gregarious animal, and if country boys once obtain a glimpse of all the myriad clubs—fraternal organizations and the like—that will be within their reach in town, the country can never hope to hold them.

Let clubs, literary, social and athletic societies permeate the country school, take in the alumni and the parents, and though boys may go away they will generally come back, and the girls, given some outlet for development of usefulness in women's clubs and improvement associations, will not so gladly relinquish positions of prestige in their home locality to go to the city to work early and late in offices, stores, or factories, or take work in domestic service where they are a part of the household but not of the family. Let the girls stay at home and there will be less incentive for the boys to go away. Organization socially is the first step toward country-life improvement.

This cannot be brought about except in rare cases among adults. Children must be trained to combine in their plastic years. The boy who learns in sport to subserviate himself if necessary to the success of the whole team, to never give the other fellow a dirty deal, to win by fair means or not at all, to fight hard and loyally for his own side, but generously, to be a good loser, is likely to make a very desirable citizen later on. He loses no individuality, but gains strength by conformity. The opportunity to do these things, to belong to something, is, more than any other one legitimate attraction, what takes the best youth of the country away from the farm.

The Outlook.

There is so much in life that is beautiful that we can have just by keeping ourselves open to it. We sometimes grieve if we are placed where we cannot see beautiful pictures, but if we will but lift our eyes and our soul from our work we will often see right from our very window a sight that even the best artist would know he was powerless to reproduce. The sky, the clouds, a sunset, the trees—why, just stop a minute; that is the point, if we will just stop, if only for a minute, it would seem that the beauty of it must come into our soul and lift us into a feeling of peace and joy if only for that brief moment. Then we have the memory of that; we can see it over and over again with the mind's eye, as we go about our everyday duties.

Then there is the wonderful world of books open to everyone who will enter. There was a time when they were for the rich only. That time is past. At the present time the best that the greatest minds have said can be had at so low a price that it is within the reach of all. Think of it! And no human being is so busy that he cannot take every day a little drink from this wonderful fountain if he will. As with the sunset, one though will serve us over and over again. The good and the beautiful is all about us. Whether we get it or not depends most of all upon the attitude of our own mind.

"Colds."

A common cause of petty ailments, much ill feeling, and annoying "colds" is the use of gas-heaters and oil-stoves for heating purposes in close rooms. These devices consume the oxygen of the air, and the occupants breathe the bad air over and over, with the result mentioned. There is no objection to gas-heaters or oil-stoves if used with judgment, but such rooms should be freely and amply ventilated. Indeed, this is true of whatever form of house heating is employed. We keep our houses too hot, but more than that, they are poorly ventilated in winter. Only the innate strength of constitution and good food of the average family enables it to pull through cold winters in our hot, close houses. We survive in spite of, rather than by the aid of, artificial heat.

System in Packing Away.

When putting away old 1910 magazines in the attic, clip out the page which contains the table of contents and write the name of the magazine it belongs to and the month from which it was taken on the margin. Then any article can be referred to and the magazine and page found without loss of time.

This idea may be applied in many cases of "putting away." Some housekeepers put away things so carefully they never find them again, or it is so much trouble to get at them they don't do so unless it is absolutely necessary, even though they might use them to advantage.

If there was some system used by which note could be made of where articles were stored it would vastly increase their usefulness as well as save time in hunting. The card system, such as is used in libraries, could easily be adapted to such use. Many women keep their recipes in that form. New items can be added and old ones discarded at will without any disarranging, which is a great advantage. Alphabetical arrangement can be followed absolutely, or there can be some classification that, also, alphabetical as well as the items under the different classes.

In addition to this, large boxes should have on the outside a list indicating their contents. Of course, not every article can be listed, but enough can be done to serve as a reminder. Of course, articles should be classified as much as possible in packing them away. When a family must move, a system of marking boxes and barrels and listing their contents is simply invaluable.

Vegetable Helps.

Tomatoes stimulate the action of the liver.

Lettuce for tired nerves. Carrots form blood and purify the skin.

Spinach, one of the most valuable of vegetables, contains salts of potassium and iron.

Potatoes, salts of potash.

Asparagus benefits the kidneys. Celery for rheumatism, neuralgia, and nervous disorders.

Turnips, onions, cabbage, cauliflower, water-cress, and horseradish contain sulphur, purifying the blood.

Beets and turnips improve the appetite. Parsley, mustard, cowslip, horseradish, dock, dandelion, and beet tops clear the blood, regulate the system, and improve that tired feeling.

Very Likely.

The case concerned a will, and an Irishman was a witness. "Was the deceased," asked the lawyer, "in the habit of talking to himself when alone?"

"I don't know," was the reply.

"Come, come, you don't know, and yet you pretend that you were intimately acquainted with him?"

"The fact is," said Pat dryly, "I never happened to be with him when he was alone."

The Financier.

"So your debts are bothering you?"

"Yes."

"Walking the floor because you can't pay em?"

"No; because I can't make 'em any larger."—Washington Star.

Matters Spiritual.

Mr. Wright—What did the preacher say when you sent him the brandied peaches?

Mr. Morgan—He said he didn't care particularly for the peaches, but he did care for the spirit in which they were sent.

Stronger Men.

Do not pray for easy lives. Pray to be stronger men. Do not pray for tasks equal to your powers. Pray for powers equal to your tasks. Then the doing of your work shall be no miracle. But you shall be a miracle. Every day you shall wonder at yourself, at the richness of light which has come to you by the grace of God.—Phillips Brooks.

Anne Monroe on speaking of little habits that wreck happiness, says:

"We need public institutes for the correction of faults of adults; a place where right thinking, but busy and unobserving men and women can live for a few months and have their habits and manners toned down into keeping with the modern standards of good tastes. But, lacking such institutions, the responsibility devolves on the partners in the domestic enterprises."

"We are decent people, so far as the big, obvious things go; our average men support their families, and leave their wives unbeaten; our average women see that three meals are provided daily, and that the house is quite clean; but a large majority go no further. They fail to meet the small, peculiar needs, to eradicate the deharmonizing habits. They cling tenaciously to their undisciplined ways, hugging them like pensions; and to this trait in humankind can be traced nine-tenths of the domestic infelicity in the world."

Ignorance.

Josh Billings has said some wise things, as well as some amusing ones. Among them the following:

A man may learn infidelity from books, and from hiz assoshiates, but he kant learn it from hiz mother nor the works ov God that surround him.

If an infidel could only komprehend that he kan prove more bi hiz faith than he kan bi hiz reazon, his impudence would be much less offensive.

Unbeleavers are alwass so reddy and anxious to prove their unbelief, that I hav thought they mite be just a leetle doubtful about it themselfs.

The infidel, in hiz impudence, will ask yu to prove that the flood did occur, when the poor idiot himself kant even prove, to save hiz life, what makes one apple sweet and one sour, or tell whi a hen egg is white and a duk's egg blue.

Breaded Sausages.

Put the sausages into a saucepan or a frying-pan with two-thirds cup of boiling water and cook until the water is evaporated. Brown delicately on all sides, take up, drop into cold water, take out at once, and drain. Beat one egg with a tablespoon of cold water. Butter a flat baking-dish, roll the sausages in the egg, then in crumbs, and lay in the pan. Set in the oven for 10 to 12 minutes.

In for It, Anyway.

Mother—"I am not whipping you bacause you went in swimming, but because you told me a story about it."

Boy (blubbering)—"Well, if you didn't want to whip me, anyhow, what did you ask me about it for?"—Harrisburg Telegram.

No Assistance Needed.

As the train neared the city, the colored porter approached the jovial-faced gentleman, saying, with a smile:

"Shall Ah brush yo' off, sah?"

"No," he replied, "I prefer to get off in the usual manner."

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THE MARKETS.

San Francisco, Jan. 25, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

This market remains very quiet, with no changes from last week's quotations.

California Club	$1.50	@1.55
Sonora	1.62½	@1.70
White Australian	1.55	@1.65
Northern Club	1.50	@1.55
Northern Bluestem	1.55	@1.60
Russian Red	1.50	@1.52½

BARLEY.

Barley is dull, with no trading to speak of. The San Francisco harbor commission has recently authorized the building of a large grain elevator, which will facilitate the handling of all grains. This will no doubt increase the number of boats loading, as they can now be filled very quickly and cheaply. Reports from the interior show that a very large acreage will be planted to barley just as soon as the rains let up and the plows can be put into the ground.

Brewing and Shipping	1.18	@1.23
Choice Feed, per ctl	1.12	@1.17
Common Feed	1.00	@1.08

OATS.

This department shows no change. Red feed is fairly strong, but the other grades are dragging along.

Red Feed	$1.22½	@1.27½
Red Seed	1.30	@1.35
Gray	Nominal	
White	1.50	@1.60
Black	1.10	@1.20

CORN.

The Egyptians are the strongest thing in this department, and the demand over the country seems to be fairly good. The Eastern corns are coming in fairly large quantities, but the market is not affected.

Eastern Yellow	$1.30	@1.35
Eastern White	1.31	@1.36
Egyptian White	1.55	@1.60
Brown	1.40	@1.45

RYE.

This market presents its usual dull appearance.

Rye, per ctl	$1.55	@1.60

BEANS.

There is a strong demand at present for red kidneys and garvanzos. A shipment of 18,000 sacks of small whites was made early this week from Port Harford to New York. There have been several boatloads of speckled kidneys from Manchuria, and they are selling around 4c. per pound.

Bayos, per ctl		$5.00
Blackeyes	$5.25	@5.50
Cranberry Beans	3.75	@4.00
Garvanzos	2.75	@2.85
Horse Beans		2.00
Small Whites		3.00
Large Whites	2.75	@3.00
Limas		5.25
Pea	3.25	@3.50
Pink		5.15
Red Kidneys		5.00

SEEDS.

The Lompoc mustard growers have formed an association similar to the lima bean association farther south, and in this way the crop will be pooled and a much better price will be received from now on for brown mustard. In fact, it has already jumped up 1c. There have been several other changes in seeds since last reported.

Alfalfa	18@	20c
Broomcorn Seed, per ton	$20.00@	25.00
Brown Mustard, per lb		5½c
Canary	3½@	3¾c
Flaxseed	5 @	5½c
Hemp	3 @	3½c
Millet	2¾@	3¼c
Timothy	8 @	9 c
Yellow Mustard		5¾c
Dried Peas, per ctl	3.75@	4.00

FLOUR.

The demand for flour is very quiet at present and reports from Minneapolis show that buyers are indifferent and the sales are scattered and very small.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.20	@4.60
Oregon and Washington	4.60	@4.80

Hay and Feedstuffs.

HAY.

This week has been very quiet in the hay market, due to the bad weather over the State, as it has been impossible to move the hay in the rain. The rain has helped out the hay districts to a wonderful extent, as they are now able to plow. The hay situation in San Francisco is very quiet, and there is nothing to indicate any improvement; but in the interior cities the conditions are much better, and better prices are being paid than around San Francisco. The fancy grades of wheat and tame oat are bringing top prices over the State. The movement of alfalfa continues fairly well, and although prices are not higher, in some districts they are paying more than the San Francisco men indicated on their price-list. This is true especially of the finer grades, which show a scarcity. The demand in the southern part of the State and for Northern shipments is very good.

Choice Wheat	$12.00@14.50
Good Wheat Hay	9.50@11.00
Other Grade Wheat	7.50@ 9.50
Wheat and Oats	7.50@11.50
Tame Oats	7.00@12.50
Wild Oats	7.00@ 9.00
Alfalfa	7.00@13.00
Stock Hay	5.00@ 6.50
Straw, per bale	35@ 55c

FEEDSTUFFS.

The feedstuffs show no change. The demand for cocoanut meal still continues good.

Alfalfa Meal, per ton	$18.00@20.00
Bran, per ton	29.00@30.00
Cocoanut Cake or Meal	25.00
Cracked Corn	33.00@34.00
Middlings	34.00@36.50
Mixed Feeds	28.00@31.00
Rolled Barley	24.00@25.00
Rolled Oats	29.00@31.00
Manhattan Egg Food, per ctl	15c
Shorts	30.00@31.00

Garden Truck.

VEGETABLES.

As predicted in our last issue, onions have gone up considerably, and they will go even higher within the next two weeks. The shortage has become so marked that the speculators who control the market are refusing to let go in very large quantities. The demand on the Oregon market has been very strong, and they are now shipping down large quantities, which are bringing 25c. to 30c. more per hundred than local stuff. Several loads of Mexican tomatoes have arrived and they are maintaining good prices. Mushrooms are in increased supply and are lower. String beans are very scarce and are bringing a premium. Peas are in oversupply and weak. Celery and bell peppers also show weakness. The natural growth of asparagus is selling at 50c per pound, and forced-grown lots are going at 25c.

Onions: New Yellow, pasck	$ 1.65@	1.85
Garlic, per lb	4@	6c
Green Peas, per lb	3@	6c
Turnips, per sack	65@	75c
Tomatoes, per crate	90@	1.20
Eggplant, per lb	10@	17c
Cucumbers, per doz	80@	1.00
Summer Squash, per box	1.50@	2.00
String Beans, per lb	10@	15c
Cabbage	60@	80c
Green Peppers, per lb	9@	10c
Carrots	65@	75c
Celery, per crate, large	1.40@	1.65
Rhubarb, per lb	5@	6c
Mushrooms, per lb	15@	30c
Cauliflower, per doz	40@	50c
Lettuce, per crate	1.50@	2.25

POTATOES.

This market is easy, with the high prices having a tendency to check sales. The speculators who control the market are forcing potatoes up at every possible chance, so that consumers are now considering potatoes a luxury and are turning to other vegetables.

Salinas Burbanks, per ctl	$ 2.00@	2.20
River Whites, per ctl	1.65@	1.85
Sweet Potatoes, per ctl	3.00@	3.25
Oregon Burbanks	1.85@	2.00
Early Rose	1.50@	1.65

Dairy Produce.

POULTRY.

On account of the blockade in the Sierras, 12 carloads of poultry have arrived in San Francisco within the last four days. These shipments are composed mostly of large hens and young roosters. This has had the effect of driving down the market. The market, due to this oversupply, is in bad shape, and shipments should be curtailed until they are used up.

Large Broilers	$ 4.50@	5.00
Small Broilers	3.00@	4.00
Fryers	6.00@	6.50
Hens, extra	8.00@	10.00
Hens, large	6.00@	7.00
Small Hens	5.50@	6.00
Old Roosters	5.00@	5.50
Young Roosters	6.00@	7.00
Young Roosters, full grown	8.00@	10.00
Squabs	3.50@	4.00
Geese, per pair	2.50@	3.00
Ducks	7.00@	9.00
Turkeys, per lb., live	18@	20c

BUTTER.

Butter has gone down 7c. since last reported. The fluctuations have caused a great deal of comment, especially from the local press. But prominent commission men claim that there has been no manipulation, but that the irregular market is due to cold-storage conditions and not to the effect of any one buyer trying to bull the market.

California (extra), per lb	29	c
Firsts	27	c
Seconds	25	c

EGGS.

Eggs are fairly strong and the production is greatly increased. The continued wet weather has caused a class of washed eggs to be put on the market, which bring a somewhat lower price. Green feed has received a setback on account of the cold weather, while grain feed still remains high.

California (extras), per doz	29	c
Firsts	26	c
Seconds	25	c
Storage (extras)	20	c

CHEESE.

There is no change in this department, and the demand is rather dull, and the quality of cheese coming in has been severely criticized by some of the handlers on account of the poor quality. Many green and immature cheeses are being forced on the public, with the result that they are dubious about buying.

Fancy California Flats, per lb	16½	c
Firsts	14	c
New Young Americas, fancy	16	c

Deciduous Fruits.

FRESH FRUITS.

On account of the rainy weather, the fresh fruit market is very weak, as the peddlers and huskers can not supply the trade. Several crates of Los Angeles strawberries arrived, but could not be sold even at 15c. per basket. Apples are very dull.

Apples, per box—		
Newtown	1.00@	1.25
Other varieties	35@	60c
Fancy Red, 4-tier	90@	1.25
Bellefleur	1.00@	1.25
Winter Nelis Pears	2.50@	3.00

DRIED FRUITS.

The dried fruit situation remains about the same. A report from New York says:

"California prunes in the small sizes are wanted for immediate delivery, but the available supply is light. Some sales of 120s and smaller were reported by the East Side distributers Saturday at 5½c., spot, but it is said that those sizes are not now procurable at less than 5¾c., f. o. b. Coast. Some jobbing sales of 100s to 120s are said to have been made on the spot at 6¼ and 6½c. These are unusually high prices. The East Side consumers seem to be paying them cheerfully. Large prunes are firm, but are going slowly into consumption at present prices, which are based on 7c. Coast for the four sizes. There is quite an active demand for the medium sizes, but not much business is accomplished. Buyers are unwilling to pay what is asked, except under the compulsion of actual necessities, while holders will make no concessions, being confident that the conditions of supply and demand warrant them in holding out for the prices they ask.

"Apricots and peaches are sparingly offered by first hands on the Coast, but buyers are going slow and no important business in spot or forward shipments is being done."

The Fresno Republican has the following to say on the raisin situation:

"Raisin quotations on the San Francisco market are 5¼c. for choice and 6c. for fancy seeded, with the sweat-box price quoted at 3c., Fresno. This indicates that the market has made a good advance in the past few days. Evidence was given to show, however, that there are some who are not yet willing to advance to this figure, but are still holding for 5¾c. It is asserted, however, that this condition will not exist for long. Local prices are remaining at 3c., but packers are finding it much harder to buy than formerly, as growers are now holding for 3½c. and 4c."

The California Fruit Canners' Association has been offering freely to contract for raisins for three years at 3c., and several growers have made public the fact that they have been offered these terms by this association. There does not seem to be much of a disposition on the part of the growers to accept these contracts, however, or even accept contracts at 3½c. for 1911, for they are of the opinion that these prices will prevail anyway, basing their belief on the present condition of the market."

Evaporated Apples, per lb	9¼@10	c
Figs, black	4½@ 5	c
Figs, white	5 @ 7½	c
Apricots	12 @13	c
Moorpark, fancy	13½@14	c
Peaches	6 @ 6¾	c
Prunes, 4-size basis	6 @ 7	c
30s, premium of 1½c.		
40s, premium of ¾c.		
Pears	9 @13	c
Raisins—		
Loose Muscatels, in sweatbox	2½@ 3	c
Thompson Seedless	4½	c
Seedless Sultanas	3½@ 4	c

Citrus Fruits.

The citrus situation in San Francisco has been very dull, owing to the inclement weather, but from now on it will pick up, due to the Chinese New Year, as the orientals buy large quantities of oranges during this celebration.

In the Eastern States the orange market is rather weak, due to the long period of bad weather, which has forced the fruit markets and stalls to close up. At the sales held on Tuesday in New York the first carload of valencias was put on the market. A half carload of extra fancy ranged from $2.45 to $3.55, while extra choice ran from $2.20 to $3. At the auction sales Monday, 29 carloads of navels and one carload of lemons were sold. The market was higher on medium and smaller sizes, while lemons remained about the same. The top price paid for navels was $2.75, while the lowest price was $1.65. Lemons ranged from $3.80 to $3.30.

The Cincinnati market was steady. Three carloads of Floridas were sold, and they ranged from $1.40 to $1.85. Navels sold from $1.45 to $1.75. Lemons, from $3.45 to $3.55.

The Cleveland market was higher, due to the favorable weather, and ranged from $1.95 to $2.75.

In Pittsburg, 13 carloads were sold at prices ranging from $1.50 to $3.10 for navels.

The St. Louis market was easier, with prices ranging from $1 to $2.40 on six carloads. Lemons sold from $2.45 to $3.

In Philadelphia 29 carloads of Floridas and 6 carloads of navels were sold. Floridas averaged $1.50, grapefruit $2.50, and tangerines $1.20, while California navels sold from $1.95 to $2.20. Lemons ranged from $2.40 to $3.30.

In Boston a heavy snowstorm was in progress, and 19 carloads were sold at prices ranging from $1.60 to $2.65.

For the week ending January 22, 240 carloads of oranges were sold in the East and 23 carloads of lemons.

San Francisco prices are as follows:

Navel oranges—		
Extra choice	$ 2.00@	2.25
Choice	1.50@	2.00
Valencias, choice to fancy	Nominal	
Choice	Nominal	
Standard	Nominal	
Tangerines	1.25@	1.75
Choice Lemons	1.75@	2.25
Fancy Lemons	2.75@	3.00
Standard	1.25@	1.50
Limes	4.00@	4.50
Grape Fruit	2.50@	3.00

Nuts, Honey, Hops, Etc.

NUTS.

According to the last bulletin of the California Almond Growers Exchange, its stock on hand has been reduced to 20 cars, and inquiries still continue good. Non plus are nearly cleaned up, as also are Largnedocs and Hardshells. Drakes are moving rapidly, and IXL's are satisfactory. This association has sold the balance of its shelled stuff.

Almonds—		
Nonpareils	15	@15½c
I X L	14	@14½c
Ne Plus Ultra	13	@13½c
Drakes	11	@11¼c
Languedoc	10½	@11 c
Hardshells	8	@ 8½c
Walnuts—Softshell, No. 1	15	c
Standard	14½	c
Softshell, No. 2	11	c
Budded	17½	c

HONEY.

The honey market remains rather quiet. There is very little trading in any department.

Com—White Sage	14	@15	c
Extracted—Water White	8½	@ 9	c
Light Amber	7	@ 8	c
Amber	5	@ 6	c
Sacramento River Comb	12	@12½	c

BEESWAX.

Light	27½	@30	c
Dark	23	@26	c

HOPS.

Hops still continue to be in great demand, and around Sonoma county 17c. is still being offered for almost anything, while at Sacramento 15c. to 16c. is the price. One grower near Santa Rosa sold his 1909 crop at 10c. The hop buyers are offering the Mendocino growers three-year contracts at 12½c., and 14c. has been offered for one-year Sonoma contracts. Late advices from Oregon say: "Oregon hop growers ask 13c. to 15c. per pound for 1909 hops. A sale is reported at these figures, according to grade. The strength of the market is well illustrated by the sale of Isaac Pincus & Sons at Independence, Ore. They were of the 1909 crop and were kept in the warehouse at Independence for a long time, and the overflowed river covered them for a long period. Many brewers expressed the opinion that they were not worth anything because it would be impossible to get all the grit and dirt from the bales, even after redrying them. Some of the bales are said to have weighed 600 pounds. The sales included 72 bales to S. & E. Uhlmann of New York at 5⅞c. and 127 bales to the same firm at 5⅞c., besides 128 bales to A. J. Ray & Son at 6c. per pound. Brewers are making every effort to secure contracts on the coming hop crop and are offering 15c. for one year and 14c. for three years. Offers of 15c. are said to be freely made in the Yakima country, and while, so far as known, nothing over 14½c. has been offered here, the fact that ½c. above this is allowed in Washington would indicate that our market is even stronger."

Hops, 1910 crop	18	@22	c

Live Stock.

DRESSED MEAT.

Beef: Steers, per lb	8½	@ 9	c
Cows	7	@ 8	c
Heifers		8	c
Mutton: Wethers	9	@ 9½	c
Ewes	7½	@ 8½	c
Ewes	9	@ 9½	c
Lambs	10½	@11½	c
Hogs, dressed	10	@13	c

LIVE STOCK.

Good prime beef is still in strong demand. A recent letter from Nevada shows that Tacoma, and Portland buyers are in that section offering 11c. at the corrals for beef. Recently 400 pulp-fed cattle were sold at Salinas to a large meat concern at 10½c. These animals were not in very good condition. The supply and the demand in hogs are about equal, so that there is no change either way. Mutton, however, is coming in quite freely and does not show as much strength as it will in the next three weeks. Veal still continues hard to get, and the butchers are scouring the country looking for available stock, but the stockmen are wise and are not letting go of any of their calves, as the shortage for the next two or three years seems to be very great.

Gross weight:

Steers: No. 1	5¾	@ 6	c
No. 2	5¼	@ 5¾	c
Cows and Heifers: No. 1	4½	@ 5	c
No. 2	4	@ 4½	c
Bulls and Stags	2½	@ 3¾	c
Calves: Light	6	@ 6¼	c
Medium	5½	@ 5¾	c
Heavy	4¾	@ 5	c
Hogs: Grain-fed, heavy	7	@ 8	c
150 to 250 lbs	8¼	@ 8¾	c
100 to 150 lbs	7¾	@ 8	c
Common Hogs, per lb	5	@ 6½	c
Small prime wethers	4¾	@ 5	c
Large prime wethers	4¼	@ 4½	c
Ewes	4¼	@ 4½	c
Lambs	6	@ 6¼	c

WOOL.

The wool market is very dull, and only stuff on consignment is being moved.

Fall Clip—			
Mountain Free	9	@11	c
Valley Fall and Lamb	7	@10	c
Northern	7	@10	c
Southern Spring	10	@11	c
Middle Counties	12	@13	c
Northern	18	@19	c

HIDES.

The condition of the hide and sheepskin market is not very encouraging. All of these are weak and unsteady, both here and in the East. Long-haired and grubby stock is now coming in, and no improvement is looked for immediately. It is expected that within the next few weeks there will be a further decline in price. Even at this time, grubby hides are being listed at 1c. less than the price quoted below

Many tanners are curtailing production because hides have cost more than leather prices warrant. Long-haired winter hides are not fit for any of the better sort of leather and so are neglected. Wool values continue to drop, and we are compelled to pay less for sheep pelts. Necessary reduction in pelt prices amounts to from 5c. to 10c. each, as compared with last month's prices for the same skins.

Wet Salt—			
Heavy Steers, over 56 lbs.		10	c
Medium		9	c
Light Steers, under 48 lbs.		8½	c
Heavy Cows, over 50 lbs.		8½	c
Light Cows, 30 to 50 lbs.		8½	c
Kip		10	c
Veal		15	c
Calf		15	c
Dry—			
Dry Hides		18	c
Dry Bulls		15	c
Dry Kip, 10 to 15		17	c
Dry Veal, 5 to 10		17½	c
Dry Calf, 7 down		22	c
Fall Lambs	24	@40	c
Sheep Skins—			
Long Wools	$ 1.00	@ 1.25	
Medium Wool, 6 to 9 mos.	60	@ 90	c
Short Wool, 3 to 6 mos.	40	@ 60	c
Spring Lambs	25	@ 50	c

HORSES.

Farmers over the country are in the San Francisco market at present looking for available stock, so that holders of horseflesh should receive top prices all along the line for good stock; but scrubby, mongrel stock is a glut on the market and prices being paid hardly warrant shipping.

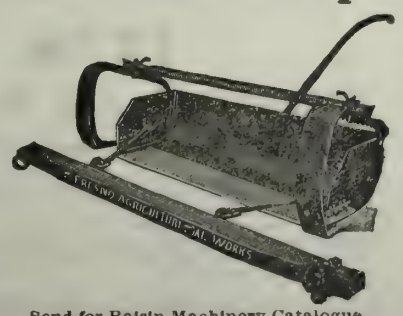
Desirable Drafters, 1700 lbs. up	$275@300
Light Drafters, 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	200@250
Wagon Horses, 1250 to 1350 lbs.	175@200
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	135@150
Young	200
Old Mares	100@150

MULES.

The sugar planters in the islands of the Pacific are still clamoring for more mules, so that the available stock on hand in California is being rapidly reduced. With the farmers using all their stock at present, top prices are being paid at every point for available stock, as many people are rushing their plowing at the present time, while the ground is in good condition.

1200 lbs	$250@300
1100 lbs	200@225
1000 lbs	150@175
900 lbs	125@150

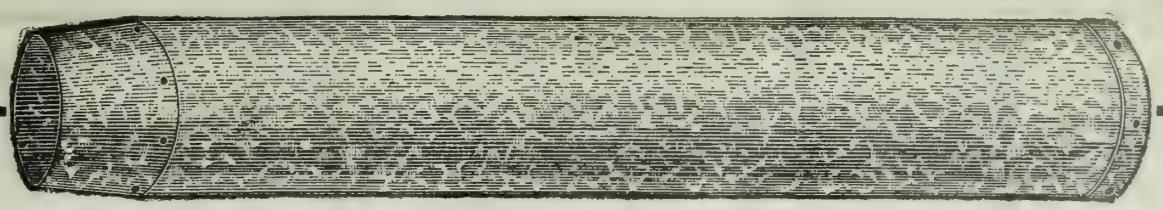
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PUBLISHER'S DEPARTMENT.

A new book has just been received from the publishers that will have a large sale among agriculturalists. It is called "Farm Development," by Willet M. Hays, Assistant Secretary of Agriculture. The book discusses farming as a vocation, gives the geological history of the earth, tells how to select a farm, how to subdue the soil, how to drain and irrigate, build roads, bridges, and fences. The book is a valuable one and contains 392 pages; fully illustrated; price $1.50, postage 25c. extra. Orange Judd Co., publishers, 439 Lafayette St., New York.

The advertisement of Gombault's Caustic Balsam in the RURAL PRESS is a reminder that you should have this preparation on hand in case of need for your stock.

Several new advertisements in this issue that are worthy of careful perusal. Among them are: Armstrong's Nursery at Ontario; Pomona Pump Mfg. Co.; West Coast Seed Co. of Los Angeles; farm for sale at Livermore; Germain Seed Co. of Los Angeles, and a new engine announcement by the International Harvester Co. Look them up.

Very welcome news to our readers is the announcement just received by us that the Chas. H. Lilly company's new seed catalogue is just off the press and is now being mailed to customers on the Pacific Coast. The editorial office received a copy today and the 1911 edition not only comes up to all expectations, but surpasses itself in accurate descriptive matter and advice. It is a safe guide in every respect and a volume which should be consulted by every one who plants seeds for business, profit, or pleasure.

Recently two carloads of oranges were shipped to the Hawaiian islands from San Bernardino county.

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14 in. long, 7 in. wide,	11.50
16 in. long, 7 in. wide,	13.00
18 in. long, 7 in. wide,	14.50
24 in. long, 7 in. wide,	17.00
30 in. long, 7 in. wide,	20.00

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	Price.
The Book of Alfalfa, by Coburn	2.00
Swine Husbandry, by Coburn	1.50
Trees of California, by Jepson	2.50
Shepherd's Manual, by Stewart	1.00
The Hop, by Myrick	1.50
New Onion Culture, by Greiner	.50
Home Pork Making, by Fulton	.50
Book of Corn, by Myrick	1.50
American Cattle Doctor, by Dodd	2.00
Greenhouse Management, by Taft	1.50
Greenhouse Construction, by Taft	1.50

The price at which each book is quoted includes postage. Send money order or bank draft for the book wanted and address

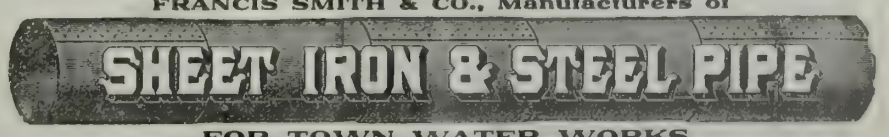
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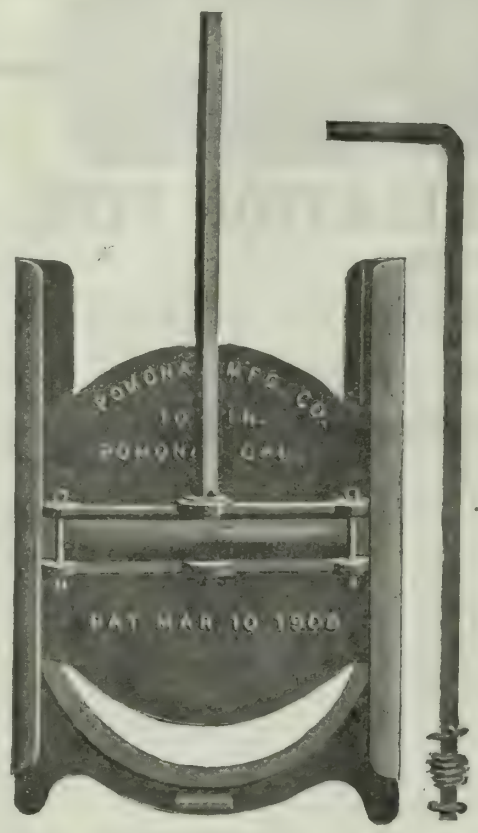


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CALIFORNIA STATE

THE PACIFIC RURAL PRESS

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Protecting California Citrus Fruits

By Mr. G. HAROLD POWELL, Secretary and Manager of the Citrus Protective League of California.

The Citrus Protective League of California is a voluntary organization formed in March, 1906, by representatives of growers, shippers and shipping organizations in nearly all of the citrus growing localities in the State to handle the public policy questions that affect the industry as a whole. Its purpose is to represent the grower and shipper in handling such questions as railroad rates and transportation problems; customs tariffs and other governmental relations, State and Federal legislation that applies directly to the business, and all other questions of a general nature that affect the upbuilding of the industry, except the marketing of the fruit.

The league is directed by an executive committee of nine and by a secretary and manager, the executive committee having been appointed by an administrative committee of thirty of the principal growers and shippers, who act as a governing committee, and who were selected from the representative delegates who organized the league in 1906.

The citrus industry represents from $150,000,000 to $200,000,000 capital invested; 10,000 growers are interested in the cultivation of the fruit; 100,000 people depend on it for a livelihood, and nearly 50,000 carloads are expected to be shipped from the State during the present season. No other agricultural industry in America is so highly specialized. None is more closely tied together by common interests. None is brought more closely in contact with organized business interests from the grower to the consumer, and as a result none has larger and more far reaching general questions confronting it.

The league is supported by funds raised by general assessment based on the number of cars of fruit shipped by each member during the preceding year. Fourteen assessments were levied to December 31, 1910, and $68,654.88 has been paid in by the members in the five years since the league was organized, of which approximately $65,000 was expended in the management of its business to December 31, 1910.

The Things the League has Accomplished.—The league has played an important part in the progress of the citrus industry in the past five years.

In 1907 it induced the railroads to reduce the freight rate on oranges 10 cents per hundred pounds, from $1.25 to $1.15. This rate became effective February 26, 1907, since when it has saved the shippers from $28 to $30 per car. The gain to the industry from February 26, 1907, to December 31, 1910, from this reduction has been about $3,175,000, or about 45 times the entire cost of the league, from the date of organization to the present time.

Following the reduction in the freight rate and as a result of the succeeding agitation accompanying the refrigeration rate question, the railroads changed the refrigeration tariffs, allowing 32,000 pounds of fruit to be shipped in a 40-foot car at the same rate per car for refrigeration as applied before on 27,650 pounds. This change became effective July 5, 1909. It is estimated that the value of this change to the shipper is approximately $35,000 to date, or more than half of the entire cost of the league since its organization.

The Citrus Fruit Tariff.—In 1908 the league began a movement to prevent the duty of one cent per pound on oranges being reduced by Congress and to secure an increase of one-half cent per pound on lemons for the purpose of covering the extra cost in labor expended on the lemon above the labor cost expended on the orange. Through the aid of the Senators and Representatives from California the league was successful in both of these efforts, the duty in the Payne-Aldrich bill standing at one cent per ponnd on the orange and one and one-half cents per pound on the lemon. The new tariff law became effective August 5, 1909.



The Orange: King of California Fruits.

The Citrus-Fruit Customs Regulations.—The league made an investigation of the methods used by the government in determining the amount of decay in imports of lemons and in refunding the duty to the importers on the same. The league determined that the Federal system gave an advantage to the importer that was detrimental to the California citrus interests. It presented the matter to the Honorable Secretary of the Treasury, before whom it laid the data accumulated. A great deal of consideration has been given the question, and it is expected that the Honorable Secretary of the Treasury will promulgate new regulations in the near future which will safeguard the interests of the government and protect the California industry from further unfair competition.

The Advance in the Rate on Lemons.—Two months after Congress advanced the duty on imports of lemons from one cent to one and one-half cents a pound, the railroads, through the Transcontinental Freight Bureau, attempted to absorb part of the duty granted by Congress by advancing the rate fifteen cents per hundred pounds.

The league secured a temporary injunction through the Circuit Court of the United States for the Southern District in California restraining the railroad from collecting the proposed increase in rates until a hearing was had before the Interstate Commerce Commission. An action was then brought before the commission challenging the reasonableness of the increased rate on lemons, and at the same time the reasonableness of the rate of $1.15 per hundred pounds on oranges; the reasonableness of the charges for refrigeration, and the lawfulness of the precooling charge of $30 per car were challenged.

The commission found that the rate of $1.15 per hundred pounds on lemons was unreasonable and that the rate ought not to exceed $1 per hundred pounds. The railroads then secured a temporary restraining order in the Circuit Court of the United States with and for the District of Kansas preventing the Interstate Commerce Commission from making its findings effective, and the Circuit Court referred the case to the new Interstate Court, which is now being organized, for a hearing on the various points involved. In the meantime, the original injunction restraining the railroads from enforcing the $1.15 rate is in effect. Since the granting of the original injunction, the shippers who are parties to the action, have given bond, the 15 cents in dispute has been collected through the league on all shipments and is held by a surety company. The difference between the $1 and the $1.15 rate will be returned to the growers and shippers if the finding of the Interstate Commerce Commission is sustained by the higher tribunal.

The commission failed to find that the present rate on oranges is unreasonable.

The commission has made a special investigation of the refrigeration and pre-cooling charges, the arguments on the cases have been concluded and a decision on these points is expected at any time. These cases were forced upon the growers by the action of the transportation companies in

(*Continued on Page 93.*)

Pacific Rural Press

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Jan. 31, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	2.67	17.64	24.52	54	42
Red Bluff	5.22	14.31	14.02	54	38
Sacramento	4.48	14.93	10.81	56	42
San Francisco	4.86	16.70	12.63	58	44
San Jose	3.79	12.50	7.85	60	40
Fresno	2.06	5.79	5.15	64	42
Independence	2.24	3.98	5.07	60	28
San Luis Obispo	9.29	16.38	10.50	62	40
Los Angeles	4.80	7.69	8.05	72	48
San Diego	.70	5.95	5.17	76	52

The Week.

Zip—Boom—Ah! The State of California is in a tumult of glad noise as we write, on Tuesday afternoon. The Bay District is so loud that we cannot at the moment hear the jubilation of other parts of the State, but we know they are on their way. No issue has stirred the State since its admission like the question of whether the Pacific ocean belongs to us or to New Orleans. As Congress has voted that the heart of California is in the right place and that it belongs to us to pour it out in gladness as the United States opens its front door upon the greater ocean—of course it is impossible to voice all the joy we feel at one moment. The feeling will grow as the great undertaking of a world exposition takes concrete form and properly symbolizes the final spread of light around the world. It is interesting to note that the risk of losing our heritage was not so great as feared, for the first vote in the House of Representatives, in opening the question, was 188 to 159 for San Francisco—a clear victory of 29 votes, in the face of New Orleans' claim that she would win by nearly as many. The final vote on the question was 259 to 43, showing a sweeping triumph of sentiment in favor of San Francisco as soon as preliminary obligations were dissolved. The event is a joyous consummation of a most strenuous, patriotic effort on the part of Californians. They probably will never again come so near losing faith in the eternal fitness of things.

And the sun banished the clouds from the sky after they had held possession of it for at least two weeks, and there has been nearly as much joy in the clouds as in the sunshine of today's victory. After an opening of the wet season as unpropitious as we have ever known, January has poured down more water than any other January has done since the great flood-year of 1862. And the whole State has shared in the dispensation of valley rains and mountain snows which assure the season's water supply. It will be a good foundation of confidence upon which to proceed with the work which will justify the national favor in giving what we most desired. There will be plenty of things required to fulfill the pledges which Californians have given as to the grandeur of the exposition which is to be the first really world's affair which has been undertaken on the Pacific slope. It will be necessary first to proceed rapidly and vigorously with the development in city and country which is now under way. In this line the ample rains are a prime requisite—there will be plenty of other things later.

An appreciative reader praises our introduction of copper rivets into the passementerie of a new French costume, thereby befitting it for the field-wear of agricultural ladies—but he then proceeds to write as though he doubted our sincerity and to charge us with not desiring women to undertake field work at all. We cannot undertake to print anything which impugns our motives. Correspondents can slam our alleged facts as much as they please, but to question our convictions as they are so clearly set forth in these paragraphs is an offense which we cannot condone. Of course we are in favor of the dear ladies working in the fields, if they wish. We are even in favor of their voting if they desire, and we hope there will be a chance for them to vote on whether they shall vote or not—but that is, of course, another question. But how can anyone doubt that we wish women to work in the fields? Can you think that we can be unmoved by this entrancing vision of the ladies of the Dunfermline district of Scotland, as described in a recent consular report? "These hardy girls and women farmers work in groups, and judging from their singing and happy air while at work are a contented lot. It is no uncommon sight to see half a dozen or more hoeing or planting in regular lines, so as to work across the field at one time. An older woman or man usually acts as overseer. The wages of each full-grown woman is 36 cents per day ordinarily, while in the harvest time they earn from 60 to 72 cents."

And yet even our copper rivets, shine as they may, have no attractions for a certain class of reformers. Here is a lady who has a grouch against agriculture for women. A dispatch from New York says: "Mme. Slavko Grouitch, who was formerly Miss Mabel Gordon Dunlap of Virginia, and who is now the wife of the Servian charge d'affaires in London, is in New York to study the schools of domestic science for women here. She is interested in the work of unlifting the Servian women and plans to establish a school for them in Belgrade. The women in Servia do all the agricultural work," she says in an appeal to American women for help. When asked about the men, she retorted: 'The men? Oh, they talk politics.' From New York Mme. Grouitch will go to Chicago and other cities." And now we are afraid she will come to San Francisco and charge us with favoring field work for women. We shall have to preserve our doubting correspondent's letter to use in our own defense. And to think of it, she really wishes women to do housework!

And, continuing along the line of work for women, we do not wonder that California fruit handlers are protesting against a bill which has been introduced in Sacramento to provide an eight-hour law for women's work. The family is the foundation of our civilization, and how many homes would be broken up if domestic labor should begin at eight and end at four. But that is the deep end of the question. It is easier to see that fruit handling, which is a very acceptable and profitable work for women, would be seriously inconvenienced by such a law. The claim is right that: "It would work untold injury to the dried-fruit industry, and would be a great hardship to thousands of women working in the dried-fruit packing plants. The bulk of the fruit crops must be moved in a few months, and the work necessitates long hours for women." Also that: "It will be a great hardship for those who depend upon the short fruit season for their yearly income. To curtail their labor will be to diminish their earning power." As we understand it, fruit handling is mostly "piece work," and it is therefore within the will of the laborer to determine how long the day shall be. Our observation is that all these laws limiting the hours of service by mature people are urged by those who do not like work and opposed by those who do. If we were to limit hours, it would be for field work by women. A woman ought to decide for herself how long she desires to cut or pack fruit in the shade.

If we are to legislate about working women we would rather provide a song for them to sing than to have them work for a song, as those women in the fields at Dunfermline are doing. It is noted that Mr. Clyde Bishop, Assemblyman from Santa Ana, wants California to have a State song, officially designated as such by the Legislature. In a bill he introduced it is provided that a song entitled, "California, the Land of the Setting Sun," by Harriet Burlingame, be so designated. A copy of the song accompanies and is made a part of the bill. And will it not be fine to have that old question of what is poetry and what isn't, settled by law. We have no sympathy with the legislator who moved to refer the bill to the Sacramento poundmaster on the ground that it might be doggerel.

We are glad of a complete demonstration that an accomplished horticulturist "can come back." Diversions have proved the contrary in the cases of rusty pugilists, politicians and the like, but the able horticulturist, like the plants he deals with, can come back if he can keep his top out of killing frosts and his roots out of alkali. The demonstration comes to us in the form of recent trade catalogues by Luther Burbank of Santa Rosa, which are more beautiful in style and more attractive in contents than any he published before he lost his heart and endangered his head by seductive flirtations with science and sociology, which well-meaning but unwise admirers forced upon him. We have always held him to be a master in horticulture and that he would regain his head if not his heart as soon as the sirens stopped singing. It gives us great joy to see him pulling strongly for the deep, safe waters of horticultural art and public service and away from the shallows and submerged rocks of a too popular science. He has been chastened somewhat, probably, by his encounters with foolish and perverting adulators, but that is a matter of personal experience into which we have no right to enquire. The note of satisfaction is that he is sending out trade announcements of fruit, flowering plant and forage novelties which are of unique interest, and in addition to the many attractive things which he has sold outright to nurserymen, and which they are properly advertising, he has his quiver full of well-plumed arrows which can go straight to the heart of enthusiastic experimenters from his own bow. Mr. Burbank therefore invites direct trade—the way in which many of his most successful varieties came into public possession in earlier years.

Those who are disposed to criticise Mr. Burbank on the basis of current printing about him should always remember that no man ought to be judged by the words which others may put into his mouth or under his pen. His own publications alone represent what he should be held for. We make this remark, not because we think Mr. Burbank needs defense, but less incautious readers might be misled in his name. In a recent issue of Out West, for instance, there is an article in which a careless writer mentions a "Professor" Alfred Burbank as "formerly one of the members of the faculty of

the University of California and one of the famous Burbank brothers of plant-breeding fame," etc. Now Mr. Alfred Burbank is a brother of Luther, but he has never given attention to plant breeding, having been occupied in other pursuits, and yet this writer credits him as the originator of the Burbank potato, etc. He has never, so far as we know, been connected with the University of California in any capacity whatever. On the basis of the Out West publication, however, anyone might be misled, if plants were offered in the Burbank name on the ground of Alfred's brotherhood to Luther and an alleged connection with a line of work which he never followed except in the brain of the careless magazine writer.

We are certainly in favor of protecting producers against irresponsible commission merchants who receive produce for sale and make returns therefor along the lines of Ananias and Saphira, or those other receivers who disappear with the goods sent to them. It is the usual exhortation to deal only with responsible commission merchants, but who can tell which they are, except as the fact is reasonably established by years of operation which constructs a business reputation. Farmers cannot apply the inside machinery of the business world to determine who is faking. If it is possible to do it by law, let it be done quickly. Assemblyman L. H. Wilson of Yolo county, acting for the produce growers of this county, has introduced a bill which makes it compulsory for commission merchants to be under a bond of $2000 to insure their performance of all agreements entered into between them and farmers and to protect the farmer against a failure on the part of the commission agent to pay for goods consigned to him. Suits against the bond are authorized in the bill, one judgment not invalidating the bond, but providing that the bond shall stand until exhausted if other suits are begun against it. We are not keen enough to know whether that arrangement will do the work or not, but it is certainly a thing which ought to be done.

Although California can grow pineapples, and has done so in a few spots, the fruit is too strictly tropical for our conditions which befit other tender fruits. The next best thing is to center the pineapple trade of our island neighbor, Hawaii, with our other fruit business. This seems to have been done by Mr. R. L. Bentley, general manager of the California Fruit Canners' Association, which has just taken over the Consolidated Pineapple Company, which practically controls the pineapple industry of the islands, and reorganized it under the name of the Hawaiian Preserving Company. Though the California company has been indirectly interested in the island industries for some years, the new organization implies that the enormous and fast growng business of producing and preserving pine apples will now be handled from this city direct.

Queries and Replies.

Alfalfa Growing.

To the Editor: In your estimation, what part of California do you consider best for raising alfalfa and dairying? Also, where and what part of your State alfalfa grows best without irrigation.—Intending Settler, Iowa.

Practically all the interior valleys of California are well suited to the growth of alfalfa and to dairying on an alfalfa basis, providing a water-supply is assured for irrigation and the soil is free from alkali, hardpan and other defects which prevent the deep rooting of the plants and in some cases may prevent its growth at all. Alfalfa grows best without irrigation on land where the ground-water is sufficiently deep to allow a deep rooting of the plant in free soil and yet not too far down to be readily reached by the deep-running roots. Good results can be obtained with anywhere from four to ten or twelve feet of soil above water. On shallower soils the plant is apt to be short-lived through root troubles. Unirrigated alfalfa is also reduced by the incursions of gophers which flooding at least once a year will destroy. There is no best place for alfalfa growing, but there are good places and good lands all through the interior valleys and foothills and good chances for dairying with other forage plants in the coast valleys. Come and see what you can find that suits you.

Growing Apple Trees.

To the Editor: I want to plant an orchard for home use of which 25 trees will be apple. I have an idea to plant apple seeds instead of trees. I would take 3 or 4 seeds for each hill, plant it right in the place where I would plant the trees, and select the best one to graft on. I will take seed of Bellefleurs, which are vigorous growers. What do you think? Will the seed germinate readily and is it now the right time to plant? Next spring I would graft to them the different kinds of apples I want. Will they grow better and bear just as well as trees from the nurseries?—Amateur, San Francisco.

You can grow apple trees in the way you propose, and it is the time of the year to begin if the soil is in good condition, but it will cost you vastly more in time, in labor, and waste of land than it would to buy well-grown nursery trees budded with the variety which you desire. Such trees would give you practically a uniform lot of trees in your orchard while planting seedlings and grafting afterward would give you very irregular and for the most part unsatisfactory results. You can get such trees as you desire from the nurseries and we would not hesitate a moment to pursue that course if we were planting.

Sweet Corn in California.

To the Editor: Being a newcomer in California, I thought you might be able to inform me whether sweet corn can be raised successfully. I have been informed that it cannot be raised in this part of the country, on account of worms eating the kernels before the ear has matured. If there is any method of overcoming this difficulty, I would be very glad to receive such information.—Newcomer, Stanislaus county.

You have been correctly informed concerning the difficulty in growing sweet corn. Although many experiments have been made, no method of overcoming this pest has yet been demonstrated. For this reason canning of corn is not undertaken in this State, and for the same reason most of the green corn ears sold in our markets have the tops of the ears amputated. It is sometimes possible to escape the worm by planting rather late, so that the ears shall develop after the moth, which is parent of the worm, has deposited its eggs for the season.

Apple Planting.

To the Editor: Will you please tell us what should be done in placing young Gravenstein trees where old apple trees have died? People here say they will not live, and, as we wish to keep the rows of trees as they are, cannot we disinfect the soil or fill with soil from another place? Will spraying the soil with coal-oil do? One part of the orchard is low and wet, much scale and old trees loose. Will much spraying be a cure and can I use posts to hold the old trees firm, or would you take out and put in Bartlett pears?—Beginner, Sebastopol.

With reference to replanting in places where trees have died, we know of no soil treatment which could be effective. You will have to go to the extra expense of digging large holes, cutting out old roots as far as possible, filling with fresh soil from between the rows or elsewhere, and in that way establishing the tree in fresh soil. No spraying which will make a tree satisfactory in inhospitable soil is known. As pears will endure wet places better than apples, it would seem to be wise to make the substitution, providing the situation is not too bad for any fruit tree. In that case you can use it for a summer vegetable patch.

Planting Fruit Trees.

To the Editor: I have been advised to plant the bud above ground in a wet country. A third party, arguing against this opinion, said that it would promote suckering. He showed me an orchard of Bartlett pears on pear root where some trees had evidently been thus planted (bud above). Near the ground surface a large ball or swelling had formed from which suckers had freely sprouted. What is the cause of this swelling?—F. J. R., San Jose.

On ordinary good loam, plant the ree so that it will stand about the same as it did in the nursery: a little lower, perhaps, but not much. The bud point should be a little above the surface. It is somewhat less likely to give trouble by decay in the upset tissue. If the soil is heavy and wet, plant higher, perhaps, than the nursery soil-mark, but not much. In light, sandy soil, plant lower—even from four to six inches lower—than in the nursery sometimes. In this case the bud-point is below the surface, but that does not matter in a light, dry soil which does not retain moisture near the surface. We cannot even guess what caused the swellings you speak of without seeing them. Such enlargements are frequent on pear stock, probably due to natural cussedness. We do not believe the depth of planting has anything to do with them, though high planting may be more apt to bring them into view.

Growing Cowpeas.

To the Editor: What is the best variety of cowpeas for a forage crop? I want a variety which with irrigation will come up after it has been cut, so as to keep, and not be like some which I tried last year. They grew up like ordinary garden peas and were just a waste of ground.—Subscriber, Tehama.

Possibly you did not get cowpeas: they do not look like garden peas at all: they look more like running beans, which they are. We do not know as much about them as we ought, for the crop is very little grown in California, and is not counted satisfactory except on low, moist land, for on uplands, even with irrigation, it does not seem to behave right. We do not know that a second growth can be expected, for in the Southern States it is grown as a single crop, and resowing is done if a succession is desired, the point being made at the South that the plant is adapted to this method of culture because it grows so rapidly that it can be twice sown and harvested during the frost-free period.

An Abuse of Grape Pomace.

To the Editor: While reading your news I got in an argument with a neighbor of mine who stated that grape pomance is not a fertilizer. Is it so? My neighbor says that two years ago he had two apricot trees in his yard, and they were fine bearing and healthy trees. After making his wine he put the pomace on the ground and they died. Could that be the cause?—Subscriber, Martinez.

Yes, probably. He used too much fresh pomace and the resulting fermentation or its products may have killed the trees. But grape pomance, after going through fermentation and in the process of decay, makes humus in addition to giving potash and other desirable substances to the soil. This matter was explained in detail in the PACIFIC RURAL PRESS of September 24, 1910.

Horticulture.

THE CHINESE DATE IN CALIFORNIA.

It should be understood at the outset that a "Chinese date" is not a date at all, nor is it the fruit of a palm. The term "Chinese date plum" is sometimes used and then we have to add that the fruit is neither a date nor a plum. In fact, the fruit is a jujube, and, having settled that, we can proceed with some interesting accounts about its success in California as prepared by Dr. W. Van Fleet of the Plant Introduction Garden at Chico for the Rural New Yorker. He writes:

One of the most ancient of cultivated fruits, highly esteemed in the Orient, but litle known in America, is the jujube or Chinese date plum produced by several species of small trees of the genus Zizyphus, natives of eastern Asia and Palestine, south to India and even Ceylon. Of these Zizyphus sativa or vulgaris stands first in importance, as it is by far the hardiest, being naturalized in southern Europe and growing well, though not fruiting freely, in this country as far north as Philadelphia. On the Pacific Coast it is hardy at ordinary elevations up to the Oregon line, and probably can be fruited in any locality not subject to sharp winter rosts. It is sparingly planted in the Gulf States and California, but deserves consideration as a commercial crop where conditions favor its full development. The drupe-like fruits are borne in the greatest profusion on short deciduous, leafy branches over the whole tree, and range in size according to variety from small cherries up to that of good-sized plums. The whitish flowers are not conspicuous, but are freely produced on the new growth throughout the early summer months, the fruits ripening near the close of the year and turning various shades of brown as maturity advances. Trees are generally of graceful, upright growth, the aspect in late fall strangely simulating that of a young eastern locust covered with chocolate plums in place of seed pods—a resemblance further enhanced by the numerous sharp spines found on most jujubes and the apparently pinnate character of the foliage. The fruits are scarcely edible until they shrivel, which usually occurs in dry climates before dropping. The flavor is then to be compared with rather sweet and tender dried apples, or rarely with that of certain edible hawthorn fruits, but there is great difference among varieties as regards sweetness, acidity and mucilaginous character of the flesh. Each fruit contains a single relatively large pit or stone-like seed, but in some of the prized Chinese sorts this is reduced to small proportions, and is even said to be lacking in certain choice varieties, not yet introduced to cultivation in this country.

The jujube fruit is scarcely known in commerce save in Oriental countries, where it is extensively used in the preparation of sweetmeats and confections in great diversity of forms, but what is termed jujube paste in Europe and America is said to be principally compounded of sugar, gelatine, and gum arabic, with fruity flavorings. By suitable preparation the fruits can be made to yield a large proportion of well-flavored fruit pulp, suitable for high-class confections, conforming to the most stringent requirements of pure-food legislation, and would doubtless be in large demand were the home supply assured. Though of little utility for domestic use, jujubes have great possibilities as manufactured products. The Chinese "dates", largely imported by the Celestial residents of our cities, are crystallized jujubes and are often little inferior either in size or quality to the best products of the true date palm, while in hardiness, general ease of culture, and early productiveness, the jujube tree is greatly superior. It is not unusual for little plants to show blooms while still in the seed leaf. Trees commonly bear when four or five years old, and produce abundantly after the sixth year.

Jujubes are freely propagated by means of buds, grafts, and cuttings of green or even hard wood. Like other long cultivated fruits, seedlings do not with certainty perpetuate the variety, and propagation for orchard use should be made by some of the above methods from known worthy sorts. The agricultural explorers of the U. S. Department of Agriculture are searching for the best jujubes grown in Northern China, and in due time really desirable varieties are likely to become available for extended trial.

Zizyphus jujuba is less known in this country than Z. sativa, though a great favorite in the warmer portions of the Orient. The fruits are well-flavored, though often somewhat acid, and the tree is quite ornamental, with generally drooping branches. The young growth is covered with a brownish down. It probably can only be successfully grown in frost-free climates. There is also a native jujube, Z. parryi, found in southern California, but the fruits are so dry and mealy that they are regarded as of little account. There are several other species of limited horticultural value.

PISTACHIO GROWING.

To the Editor: Referring to the inquiry of W. F., of Colusa, regarding pistachio nuts and your answer thereto, in your issue of December 3, it may be of interest to your readers to know that two or three years ago Mr. Walter T. Swingle, of the U. S. Department of Agriculture, distributed in this State about 3000 seedling trees of the following species: Atlantica, Verestina, Mutica, and Terebinthus. The seeds from which these trees were grown came from Smyrna, Syria, Algeria, the Euphrates Valley, Sicily, and the Sahara. These seedlings are being worked over to the best varieties as fast as the Department can supply the wood. This supply has been curtailed on account of a considerable quantity that when received from the foreign sources had to be destroyed, as it was infested with injurious insects. A limited quantity of bud wood and grafts can, however, now be furnished by the undersigned. Both budding and grafting are employed in the propagation of select sorts. The Chico and Indio stations have had good success with buds, while others have been equally successful with grafts. Either method will do, if skilfully done. The pistachio tree is full of turpentine, which exudes when the bark is cut, and therefore more care in grafting is necessary than with ordinary fruit trees.

The tree seems to be perfectly adapted to California conditions of soil and climate where the fig succeeds, and is found to thrive in almost every locality where tried. The writer recently saw at Fresno a tree not more than ten feet high which the past season produced 25 pounds of good nuts. As these nuts are retailing at 40 cents per pound, it is easy to figure out a big profit in growing them if other trees bear that way.

G. P. Rixford.

1813 Pierce St., San Francisco.

CONCERNING TREE CAVITIES.

An Ohio fruit grower writes to the Fruit Grower of Missouri of the way he treats cavities in his old trees which had been carelessly pruned for years previously and most of the limbs had been sawed off any way to get them off, leaving in most cases stubs from four to ten inches long. Many limbs that had been broken or sawed off some time previously in the same manner had decayed, so that the decay reached down in the heart of the tree; many of the tree bodies, having been injured, had decayed badly, leaving in many cases only a mere shell of a tree, with a vigorous top, however.

"The stubs we cut off close and painted what were sound; those that were not, we dug out to sound wood which was allowed to dry out thoroughly and then were filled with cement.

"Some of the stubs which seemed to be fairly solid when sawed off were found to be rotten at the base, often leading to a cavity in the trunk. All such were dug out and cemented.

"The tree trunks which were decaying were likewise dug out and cemented, and in some cases where the cavity was of such size as to make cementing difficult, flat stones would be laid in the cement to support it in place, which gave some of the trees the appearance of growing around a stone wall. While is is not an ideal way to repair them, it was found to be effective, and many trees that some experts would declare not worth repairing gave us more first-class apples last season than the repairs cost, several times over, and demonstrated that notwithstanding statements to the contrary, a badly decayed tree may be made to produce profitable crops of fruit.

"We found many cavities from stubs, that extended down into the trunk of the tree, ending in solid wood, and these we tapped from the bottom by boring a three-quarter-inch hole from the outside, intersecting the extreme bottom of the cavity, and in many holes we would find as much as a quart of water. This bored hole was not stopped up, but left for nature to fill in, having been bored slanting upward, thus insuring that the bottom of the cavity would be thoroughly dried out.

"In cementing the large cavities we did not make the cement flush with the outside of the bark, but with the inside, and already we find the new wood beginning to extend out over the cement in a surprising manner.

"We have now allowed some water sprouts to grow low down on these limbs, and we are gradually topping back the trees, and, while some people advocate a severe cutting back or dehorning, we prefer to do it gradually, the severity depending on whether we are going to get a crop of apples on that particular tree or not. If we are, we can handle it as it is, and if not, off comes the top somewhat, and in this way we believe we will gradually get our orchard in a good condition without losing a crop of apples.

"Some of the trees were split or cracked at the forks, and these were wired with strong wire loops placed up about six feet from the fork, with pieces of board between the wire and the bark. This is very effective, but whenever possible this work should be done with bolts instead."

CHAR-PIT METHOD OF REMOVING STUMPS.

The "char-pit" method of removing stumps from fruit orchards is being experimented with by some of the farmers near Reedley, and is described by a correspondent of the Fresno Republican as follows: This method applies economically to stumps which are about one foot in diameter, as the smaller stumps are easily removed with a horse and capstan. In the char-pit method all the bark is removed from the stump for a height of about two feet above the ground. Enough dry kindling is placed around the stump to form a ring six to eight inches in thickness. The kindling is then covered with clods or clay, leaving only a small place for igniting and kindling. After the kindling is thoroughly burned, the space which was left uncovered is also covered with clods or clay in order to drive the fire around the entire ring of kindling which had previously been covered. When the smoke shows that all the kindling is thoroughly ignited, more dirt and clay is placed over the fuel, in order to keep all the heat inside and near the stump. In this way the heat becomes intense and the stump burns away close to the ground. Tall stumps burn away just above the earth, and the butts can be used for fuel or else burned in piles. The bed of coals which remains when the stump burns is covered with earth to a depth of five or six inches and the fire will follow the stump and the roots clear below the ordinary plowing depth. It is estimated that the cost of removing stumps in this way is less than 50 cents each, and it is the best method that has been tried for quick and efficient service in the orchards of this section.

A RE-DISCOVERY.

We read in exchanges an item from Chico as follows:

"Pupils at the Normal School observed that the ivy and some of the olive trees in the Normal School grounds were affected with a scale usually fatal. They set themselves to find a remedy, and after experiments which were of several months' duration, they found the following formula to be most satisfactory in results, completely ridding the affected olive and ivy of the scale: One-half cup of sulphur, one-fourth pound whale-oil soap, three-fourths of a gallon of water. The sulphur and the whale-oil soap are dissolved in boiling water. The pupils are highly elated at their discovery."

We do not enjoy a dampening of the ardor of our young friends, but lest the public may be

misled by the above announcement, we have to remark that the formula they are using was commended as an insecticide by the late Matthew Cooke of Sacramento about 1880 and largely used by him. Much more effective and cheaper preparations are now in common use among our fruit growers.

POINTS ON PRUNING PRUNES.

To the Editor: Just a few words along the same lines of my other articles written long ago.

Pruning prune trees, except during the dormant period, is not at all considered by a great many. However, I prune so I may adjust the tree during the growing period.

Don't prune for looks; prune only to produce the proper results. In other words, with the conditions we have here, remove enough of the tree, and at proper points, so as to give the root system the advantage over the top.

Learn to designate ages and conditions of plant, so you may cut out only choked-out limbs and old exhausted twigs. Such work stimulates your tree, and grows new wood, if cuts are made close to the shoulder-lines.

Don't cut out new wood from limbs or body of the tree, simply because you want to get rid of them—in many cases leaving an old twig or spur just because it looked better to the eye. Why should I cut out any new growth from a tree, except to produce more new growth the following year, or perhaps sun-burn my tree?

If there is any strong growth on your tree, that you want to get rid of, stump it back two or three times during the early part of the summer or growing period. This operation will stop the growth of these stumps at the body. The body will outgrow them, so they can be taken off later on. Be sure and leave plenty of foliage on these stumps or shoots. New twigs, spurs, etc., are the life of the tree.

A long growing period on young prune trees is very necessary, with the conditions we have here, in order to prevent the tree from leaning southward. The sun drawing upon frail growth during the long dry summer is most responsible for the leaning tree, and not the prevailing winds.

Gilroy, Cal. E. P. Rose.

PUTTING DOWN PEACH TREES IN COLORADO.

It will amuse California growers to think of putting peach trees underground to keep them from freezing, as the Colorado growers seem to find it profitable to do. Mr. E. N. Berry, of Otero county, writes: "I buried 438 bearing trees and 150 yearling trees at a cost of $90, that is, $50 to cover the trees in the fall and $40 to uncover and raise them in the spring, or 15c per tree. In the summer and fall of 1910, I sold $1000 worth of peaches from these 458 trees. One row of trees which I did not cover yielded just one peach."

In late fall a trench is dug on one side of each tree where there are few roots to cut, and the trees is then pulled over on its hinge to the ground, covered with straw and then with about three inches of dirt. Five men do the work easily and quickly. When planting peach trees the tap roots are shortened and all roots are extended laterally in opposite directions, in order that there be no large roots to cut when the trees are bent."

BLACK WALNUTS NOT ALL ALIKE.

To the Editor: In the Santa Monica mountains, three or four miles back from the coast, but with a range of mountains between about 2000 ft. high, cut by the canyon of the Malibu creek, black walnut trees, or common wild walnuts, which abound in this part of California, grow abundantly. Would this demonstrate that the property is suitable for planting to the English walnut, grafted or budded on the wild walnut root? Are such trees (as claimed) immune from walnut blight? Reader.

Los Angeles.

Black walnut trees are demonstrated to be a good stock for the English walnut. Where, however, the black walnut tree and nut are much reduced in size by unfavorable growing conditions, it is not to be expected that the new top of English walnut will attain the size and bearing which planters desire. Your expectations, then, must be measured by the thrift and size of the black walnut which is growing in the position which you have in mind. Whether blight would be resistent or not depends not upon the black walnut root, but upon the resistant character of the English walnut variety which you choose to make the top growth. The root does not make the top resistant. The common wild nut of southern California is probably not free-growing enough to carry the English walnut satisfactorily.

Citrus Fruits.

PROTECTING CALIFORNIA CITRUS FRUITS.

(*Continued From Page 89.*)

attempting to absorb a part of the customs duty which Congress plainly intended should benefit the producer. An enormous amount of testimony has been taken by the Interstate Commerce Commission, and it now has before it the most comprehensive and accurate data on the problems involved in the production and distribution of the fruit, both from the standpoint of the producers and the railroads, that has ever been brought together. The railroads have been represented by the ablest legal talent in the country and the growers have been forced to protect their own interests at every step in the litigation. The final decision in these cases will have a far-reaching influence financially and in other respects on the future of the citrus industry.

The Eradication of the White Fly.—The league has had an important part to play in many other questions that vitally affect the citrus industry. It made it possible for the State Commissioner of Horticulture to eradicate the white fly from the State in 1909 by paying the bills as they were incurred, the State Treasury at that time having no funds with which to bear the expense. The legislature later reimbursed the league for the money so expended.

Problems Before the League.—The problems before the league at the present time are far-reaching in scope. The rate cases will require attention until they are finally settled. A determined effort is being made by the importers to have Congress reduce the duties on citrus fruits. A large fund is being raised by the importers, through a tax of five cents per box on imported fruit to influence public opinion. The importer is seeking, through newspaper and magazine articles, by the employment of special counsel and agents and in other ways common to the use of funds of this character to bring about the desired result. The league is preparing to meet the efforts of the importers. It will endeavor to safeguard the common interests of the orange and the lemon grower by every honorable means whenever the question of citrus duties is raised either by the Tariff Board or by Congress.

The league will use every effort to bring to the help of the grower special investigators from the State and Federal governments to study the diseases, the insects, the soil problems, and other cultural, fruit handling and fruit transportation problems that affect the industry. It will maintain an agricultural reference library without expense to the grower and will develop a bureau of information showing the international movement of citrus fruit and other fruits that have a relation to the industry.

The league is the only organization that has been formed by an agricultural industry in America, and probably in the world, to look after the general public policy questions that affect it. It represents 90 per cent of the growers and shippers of the State. The organization is a vital part of the industry, formed to protect and advance its interests. The problems that confront 90 per cent of the industry confront the remaining 10 per cent with equal force, and it is the earnest desire of those who have organized the league, and of its members, that every shipper and grower in the State should stand shoulder to shoulder in meeting and solving their common problems.

Sylviculture.

THE TAMARISK, A SERVICEABLE TREE FOR DESERT AND SEASHORE.

Written for the Pacific Rural Press
By Dr. Harvey M. Hall, Economic Botanist of the University Experiment Station.

The list of shade and ornamental trees which can be grown under the strenuous conditions prevailing throughout our desert areas, as well as in considerable portions of the great central valley of California are so short that any additions are always interesting. And when such an addition to the list will also tolerate a considerable quantity of alkali in the soil, it is doubly welcome. A tree meeting these requirements, although but little known in our State, is the tamarisk. This is one of the most beautiful and graceful of all trees, having the fine, close leaves of the cypress, but with long, slender, re-curving branches, and a profusion of light pinkish blossoms. Where summer heat is abundant and where a little irrigation can be practiced, it makes a fair-sized tree with erect trunk and rounded crown, suitable as a shade tree for streets, parks, and private grounds.

Some splendid specimens may be seen along the streets of Keeler, a town on the shores of Owens lake, Inyo county. Mr. F. A. Lewis writes concerning them as follows:

"The tree locally known as the African cypress will not grow here without irrigation for the first three or four years; after this time they take care of themselves, as the water is very close to the surface in Keeler. Our wells average about 16 feet in depth. The tree is of very rapid growth, the oldest in Keeler having been set out about 15 years ago; the three largest trees measure about 30 inches in girth and are about 20 feet high. These have a tendency to spread, covering a much larger area than most trees of the same age. I think it would be safe to try them at any place on the desert where a little irrigation can be obtained. The winters do not affect the tree here, the temperature often going 10 degrees below freezing. They may be grown from a slip planted just after the sap starts; they require some pruning at first, having a tendency to stool, and would need to be staked when young if exposed to heavy winds. Am unable to compare them with other trees, as we have failed, so far, to find anything else that will stand the alkalies in this soil."

The Keeler tree is probably the species known botanically as Tamarix odessana (usually carried by nurserymen as T. africanus), although not having seen it in bloom I cannot be certain of the determination. At any rate, this is the best species to use where a good-sized tree is desired, especially under arid conditions. Mr. Lewis very kindly offers to supply cuttings in limited quantity.

The tamarisk flourishes in the vicinity of Chico and Sacramento, where a few good trees may be seen on the Capitol grounds. The brilliantly-flowered, pendant twigs are here often two feet or more long, forming great streamers of rosy pink bloom.

In the coast district it does not grow so rapidly, several of the species remaining of low stature, especially in clay soil, which is not suited to these plants. But it is very serviceable for planting near the beach, since it not only tolerates salt in the soil, but the tops seem to revel in salt spray strong enough to "scald" most other vegetation. At Coronado it luxuriates in spray which kills acacias and similar trees.

In Santa Barbara county we find the tamarisk very successfully used for hedges, by the Hon. Elwood Cooper. Cuttings an inch or so in diameter and two or three feet long are driven into the ground after rains, these cuttings striking root very easily. When set closely together they soon form an impenetrable hedge which, if kept pruned, forms a solid green wall similar to a cypress hedge, but the effect is more pleasing, owing to the delicacy of the slender twigs. When such hedges are allowed to grow, they become efficient stock fences, thus adding the element of usefulness to that of beauty.

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The Field.

REPORT OF FISH AND GAME COMMISSION.

The California Fish and Game Commission in its biennial report which has just been published makes some recommendations for changes in the game laws which our readers may be interested to know, although many of our farmers consider these laws as something of a left-handed advantage to them. We take certain items which are apparently of widest import:

The revenue from hunters' licenses for the third year was $128,452, a gain of $14,000 over the preceding year. Should any change be deemed necessary in the present law, the suggestion of the commission is that a higher license fee should be paid by the alien, "who comes to our State to improve his condition and in the majority of cases gives nothing in return for the benefits he receives." This is apparently intended as a protective measure against ignorant and unscrupulous foreigners who dynamite the streams, net song birds and poach and destroy incessantly—persistent and systematic game law violators.

Wild turkeys, liberated in San Bernardino mountains, Sequoia Park, eastern Tulare county and in the Yosemite National Park are showing an encouraging increase.

The commission advocates the encouragement of pheasant and game bird raising by allowing the birds raised in captivity to be sold in the markets under proper restrictions. Pheasant raising is no longer an experiment in this State, it is a successful venture and needs but the approval of the law to become a profitable and fixed industry, as is the case in different Eastern States.

The commission does not suggest any changes in limits on quail, snipe, curlew, ibis, plover, rail or shore birds, nor on wild ducks. Mountain quail and sage hens need a bag limit and season provision when the present restrictions expire September 1, 1911.

With respect to changes in the existing laws are recommended the following modifications:

Section 626g, tree squirrels; opening the season on August 1 instead of September 1, and eliminating the bag limit.

Amend section 626a, doves; change opening date from July 15 to August 1, and extending from October 15 to November 1.

Amend section 626k to permit pheasants raised in captivity to be sold in the markets under proper restrictions.

Amend section 626f, relating to deer, by reducing the open season one month, beginning on the first day of August and closing October 15.

Establish a closed season of seven months on wild pigeons from January 1 to August 1 of each year, bag limit of 20.

Amend section 632, relating to trout, so that trout raised in captivity and measuring not less than seven inches in length may be sold in the markets between the 1st of April and the 1st of February of the year following, under restrictions to be recommended by the Board of Fish and Game Commissioners; also authorizing the said Board of Fish and Game Commissioners to furnish at cost a reasonable number of trout eggs, or ova, to private individuals or companies who desire to engage in and carry on such an industry, when in the judgment of said commissioners a sufficient number of eggs has first been taken to meet the needs of the public waters of the State.

The chapter devoted to the State game farm, located near Hayward, contains a

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great deal of valuable and pertinent information relative to game birds—wild turkeys, Hungarian partridges, pheasants, quail, etc.

The bounty on mountain lions and its beneficial workings for the protection of deer, notwithstanding the many thousands paid out, is shown by statistics and documentary evidence to have been a move for the best.

Total arrests for two years ending August 31, 1910, were 1771, as against 1192 for the two preceding years. Total amount of fines was $34,768.50—$18,276 for violation of fish law and $16,492.50 for violation of game law. Total number of days' imprisonment served, 3024—over nine years altogether.

CALIFORNIA APPLES IN ENGLAND.

Consul Howe of Manchester gives the following report of some recent apple sales:

A large shipment of American apples from Boston was lately received, and I attended the sale to obtain first-hand information as to prices, packing, grading, and the general condition of the fruit. There was a satisfactory attendance of the trade, some 500 of the largest wholesale fruit dealers, from Lancashire, Yorkshire, and the Midland towns, being present.

The following apples were put up for auction: American Maine, 5520 barrels; Virginian, 1440 barrels; fancy Albemarle Pippins, 320 barrels; western New York Greenings, 320 barrels; western New York Baldwins, 366 barrels; Oregon Newtown Pippins, 3179 boxes; Californian Newtown Pippins, 640 boxes. There being keen competition for these apples, on account of the large and profitable Christmas demand, they were all sold and brought remunerative prices.

The Albemarle Pippins, which sold for $7.05 per barrel, tight packed, and $6.68 per barrel, for 11 barrels, slack packed, were, I was informed, the finest fruit seen in Manchester this season

At this sale I noticed that many brands of apples were packed in old flour barrels; this practice is chiefly carried on in the Boston packed apples. The apples are sold from sample barrels exhibited in the auction room, and many of such showed quite a covering of flour on the top layer of the apples. This is decidedly detrimental to the sale. The price obtainable for apples packed in new standard-sized barrels will more than compensate packers and growers for the extra cost of new barrels against the old flour barrels.

I give the prices (reduced to American currency) at which some of the various brands were sold and their condition.

Californian Newtown Pippins, first quality, $1.64 per box; Albemarle Pippins, $7.05 per barrel, tight, and $6.68 per barrel, slack.

Virginian: Fancy York Imperial, $6.56 and $6.68 per barrel, tight, and $6.08 per barrel, slack; Virginia Beauty, $6.56 per barrel, tight; York Imperial, $5.71 and $6.20 per barrel, tight.

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The Garden.

GARDEN CALENDAR.

Written for the PACIFIC RURAL PRESS
By M. G. H. HOPKINS, Burbank,
Los Angeles County.

FLOWER GARDEN.—Continue to sow seeds of the hardy annuals, and in many places some of the half-hardy may be sowed. In places where the nights are still cold, sow in cold-frames. Cuttings of carnations, geraniums, and the tea roses may be started this month.

VEGETABLE GARDEN.—Sow seeds of all the hardy vegetables. Continue to plant asparagus, cabbage, cauliflower, horseradish, and rhubarb.

SMALL FRUITS.—Plant all kinds of berries.

GARDEN OPERATIONS.

In preparing the cuttings from carnations, geraniums, or roses, cut off leaves along the lower part of the stalk, using a sharp knife. Set out in flats filled with sharp sand, and keep damp. The flats should be kept in a shady place until cuttings are rooted, which will be only a short time if the cutting was in prime condition when taken from the plant.

When a plant is in proper condition for cuttings, the branches will snap when bent. In this condition it will root freely. This applies to such soft-wooded plants as carnations, verbenas, geraniums, fuchsias, etc. The cuttings of above varieties should be placed in pots (2-inch or 2½-inch) just as soon as roots are started.

Lettuce is being shipped out of Los Angeles these days in carload lots. The Japs are growing most of it. One can grow about 30,000 plants in one acre. At the average price and a good stand, the returns should be close to $300. Where the plants receive good care from start to finish, it will require about fourteen weeks for the plants to mature from the seed. It is rather late now for starting the winter varieties. For spring sowing try Tennis Ball and Hanson. Lettuce wants a loose, rich soil.

A piece of ground that has recently raised a root crop would be mighty fine for a strawberry patch.

The glorious rains have come, and the man who said it would never rain until sometime in March, according to the Almanac, will now have to go to work. What a wondrous change in the atmosphere since the rains fell. The odors from the earth and the trees fill the air. All nature is awakening, so let us be up and doing, and get that garden planted. When this article is printed it will be February, which in our favored land is considered a spring month. In nearly all of California, February is the best month to plant deciduous fruit and forest trees, berries of all kinds, roses, etc.; in fact, almost everything excepting palms and citrus fruits. There is no time during the year when seeds and plants start so easily and make such rapid growth as in the good old spring time. This is as true here as in portions of our country where plants are dormant six or eight months of the year.

STRAWBERRY CULTURE.

Now if that plot of ground that was to be planted to strawberries is ready, and the plants on hand, let us get them in. Mark off the rows with a wire the desired distance apart. If one is to depend upon irrigation and the planting is on a commercial scale, the rows should not be much over 200 feet long without starting another block. For ordinary

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Black Tartarian, Bing, Black Oregon, Black Republican, Royal Ann, Lambert.

Cherries are great money makers. The above varieties always sell out early.

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HENRY SHAW

planting, a garden trowel may be used, driving it into the ground deep enough to take in the roots without doubling them up. Work the trowel back and forth, making a V-shaped hole for the plant. Put them in deep enough so that the crown is even with the surface, and firm the soil about the roots. Planted this month, the soil will be moist, so that no irrigation ditches will need to be made. Cultivate in a day or two after every rain and they will make a nice growth. If you are in a locality where extra early berries are usually grown, rake off dead leaves from the old beds and start the cultivator, and it will only be a few days before the first blossoms will appear. With warm growing weather it will only be about six weeks from blossom to berry.

Mammoth blackberries, loganberries, dewberries, and all vines of a trailing nature should be pruned this month, and the sooner the better. Cut out all vines that bore fruit last year that are one a trellis, and at once place new growth up. If this is not done before the sap gets busy, one cannot handle them without breaking the vines.

The ever-bearing or winter varieties of rhubarb are already starting new growth at this writing, which indicates that new plantings should be made now.

Whether roses should be budded on Manetti stock or grown on their own roots is a question that nurserymen do not seem to agree on. If one has never handled roses it might be better to plant own root plants, as, if suckers start from the budded plant below the bud, they might not be recognized. But the budded or grafted plant will make a more vigorous growth and will also grow more upright. Many varieties when on own roots are weak in growth and sprawling in form. If budded roses are planted deep enough so that the bud is four or five inches below the surface, there is not much danger from suckers.

Roses should be pruned now while dormant. The tea roses do not require much pruning except to cut out old dead wood and some of the smaller branches that appear to interfere one with the other. The hybrid perpetuals require the most vigorous cutting back, leaving only a few of the strongest canes.

ROSES THAT WE KNOW.

Among the roses that do well for outdoor planting in southern California and appear to do well generally, we mention Papa Gontier as one of the most popular of the red roses. The bush is of a vigorous growth and a quite constant bloomer. In bud it is magnificent and one of the best for cutting; color, cherry red.

The white and pink Maman Cochets are among the best. It would be hard to find a pink rose that is better in color or of more substance than the Maman Cochet. It will also make a good growth even on its own roots. The White Cochet is one of the best whites for bedding; the bloom is large and fine in color. Both Cochets are superior for long stems.

The Gruss au Teplitz is one of the reddest of the roses. It is a clean, strong grower and a constant bloomer.

Duchess de Brabant is one of the most common of the pinks. It will bloom almost the year around, and is healthy and vigorous in growth. The flower has a spicy odor that is delightful.

Paul Neyron is one of the most popular of the hybrid perpetuals, and one of the largest in the size of its bloom. It is a strong, upright grower. One of the best for general planting; color, rose.

General MacArthur is of recent introduction, but appears to be winning its way into the front ranks among crimson roses. It is a strong grower, blooms profusely, and the flower holds its color well and is of good size.

Among the white roses, Kaiserin Auguste Victoria is one of the best for planting out, and one of the very best for cut flowers. The buds and flowers are large, pure ivory white in color. Should be in every collection.

What the Duchess de Brabant is in the pink class, the Safrano is among the yellow varieties. Blooms freely on stems suitable for cut flowers. Color, saffron and apricot yellow.

Frau Carl Druschki is a new hardy white; it has strong, handsome foliage, with perfect pure white bloom.

Among the climbers there are the white and pink Cherokees. The Cherokee has no equal for hedges, and is really fine anywhere as a climber. The foliage is so smooth and glossy one could imagine it were varnished. The blossoms are snowy white and single. When in full bloom they make a beautiful display.

Another strong and rampant climber is the Gold of Ophir. Color, yellow, suffused with coppery red. In the springtime there is a mass of bloom completely hiding the foliage.

The Lamarque is a white rose that is very sweet. It is a profuse bloomer and makes a growth that is remarkable.

Also, there are the ramblers that we all love so well, that grow so strong. They are perfectly hardy and grow their flowers in bouquets.

There are many other varieties that one could choose, but those above mentioned can be relied upon almost anywhere on the Coast.

Sweet potatoes do well in many parts of California. They generally prefer a loose, sandy loam soil, and will, under favorable conditions yield enormous crops. Like almost everything else, the first early crop brings the biggest returns. Plants may be started now in beds over heat.

When preparing to plant potatoes, see that your seed was grown last spring or early summer. It is probably better to buy northern-grown seed where only one crop is grown in a season. Locals grown the past fall will not start this spring, nor will tubers grown in the spring do well for a second crop.

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PEACH TREES

Complete Stock of **Muirs, Lovells, Tuscan Cling, Phillips Cling** as well as other sorts.

We specialize on **Grape Vines as** well as other stock for the planter. Let us figure with you. Send list of wants for quotations. Price list free. Address

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Parties contemplating the planting of citrus groves this coming spring will do well to send for our prices soon, as there will evidently a a shortage of strictly first class stock. Write today for particulars, or, better still, pay us a visit so that we may be able to show you just what we have.

Our finely illustrated booklet, "Citrus Fruits," covering the industry from the seed to the market, mailed to any address on receipt of 25c in stamps.

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360 acres devoted entirely to Deciduous Trees.

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EUCALYPTUS TREES

BY THE MILLIONS

for November and Spring planting. Trees planted in November will stand the summer heat and produce a larger per cent of live trees. Our 21 years of experience places us in the front ranks of successful growers, which should mean something toward your success. Write us for information.

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300,000 Florida Sour Stock

Planted in rows by hand, evenly spaced—Uniformly large, stocky plants

200,000 2-year-old California Sweet Stock Not dugover culls, but full-grown stock, deliberately held over for those who want the best in sweet stock for 1911. Splendidly rooted and my best bargain stock for the season's trade. **One-year-old sweet stock. Citrus trees exclusively.**

Chas. S. McMillan, **232 South Marengo Ave., Alhambra, Cal.**

AGRICULTURAL REVIEW.

CITRUS NOTES.

The Limoneria company of Santa Paula, which has one of the most famous lemon groves in southern California, has abandoned its own marketing organization and has united with the California Fruit Growers' Exchange.

The Porterville Citrus Growers League recently met, and fertilization was considered. This organization has taken up the study of this problem and many valuable experiments will be carried on this next season.

C. C. Chapman of Fullerton has been elected president of the Citrus Protective League to succeed F. Q. Story. The following composed the directorate: A. F. Call of Corona, F. Q. Story of Alhambra, W. G. Fraser of Riverside, A. Gregory of Redlands, E. S. Moulton of Riverside, W. F. Sprott of Porterville, and C. C. Teague of Santa Paula.

Dr. C. E. McFall has traded his 9.64-acre orange grove near Corona for a 90-acre alfalfa ranch belonging to J. T. Peyton.

Graham Bros., of the Vista Bonita ranch, near Hemet, recently sold their oranges in New York for $3.35 per box.

The Covina Valley Farmers' Club recently met and Prof. J. H. Norton of the Experiment Station at Riverside station at Riverside told this body of the necessity and economy of flooding the ground with water during the winter months.

Dr. Cason of Colusa has a seedless lime tree which bears about 350 limes per year. One lime measured 8⅜ inches long and weighed 4½ ounces. This tree has averaged him $5.25.

Orange trees are arriving in carload lots at Porterville, and it is one of the most active planting seasons in the history of this district. In the Terra Bella section over 500 acres, or some 50,000 citrus trees. In the Strathmore section the prospects are bright for 1000 acres to be set out.

VEGETABLES.

The celery growers around Antioch deny that they are making from $150 to $175 per acre from their plantations. It is estimated that there are 1375 acres tributary to Antioch, and about 800 carloads will be shipped out from this point.

The Interstate Commerce Commission has decided against the Chili pepper shippers who have been shipping from San Francisco and Los Angeles to El Paso. The rate charged was $2 per hundred pounds while the chili pepper men wanted a rate of $1.25 per hundred for peppers in less than carload lots, but the Interstate Commerce Commission found the Eastern classification specifically applies second rates on peppers in any form.

Charles E. Barker, of Live Oak, is making weekly shipments of rhubarb to San Francisco. This locality is getting to be a favorite spot for the culture of the pie plant.

Los Angeles county has established a quarantine against all vegetables shipped in from outside points, as the result of the discovery of the gall or eel worm in a carload of Nevada potatoes.

E. C. Loomis recently shipped 12,000 sacks of beans out of Port San Luis. Part of the beans go to Oregon and the balance to New York.

Charles Promenschenkel is trying out Bermuda onions in the foothills near Yorba, Orange county.

It is estimated that the celery crop exported from San Joaquin county will be worth $125,000. An average of 5 carloads per day is being shipped East from Holt station. The prices received this year are between 20c. and 25c. per dozen, and the average field will run 1000 dozen to the acre. The receipts will net the growers from $125 to $150 per acre.

MORE TREES PLANTED.

Thousands of fruit trees are being shipped into Mendocino county every week. At the present time Ukiah valley and Potter valley are receiving large shipments of pears, apples, and prune trees. Inspector Banks recently found 500 trees infested with pests and he had them destroyed.

It is estimated that at least 50,000 young trees are being set out around Placerville at the present time. The varieties are principally Elberta peaches, Bartlett pears, Gross prunes, and winter apples.

Horticultural Commissioner Butler, of Sutter county, reports that in the uplands of this county a large acreage is being set out to prunes, almonds, and grapes, and in the lowlands a large number of cling peaches are being planted.

Around Hanford there are more apricot trees being planted at the present time than any other kind of fruit. The principal varieties are the Tilton and Royal. There will also be considerable acreage to peaches and pears.

Mr. DeFoy is planting out some 3000 fruit trees near Tulare. The trees are principally plums and prunes, and a few apricots and peaches. The California Irrigated Farms Co., in the same section, is planting out 200 Muir peach trees and 2500 muscat grape vines. Owing to the lateness of the rains, not as many trees will be planted out as was first anticipated.

P. J. Cook, of Willows, is planting out a large number of English walnut trees.

WINE AND VINE.

M. E. Angier, a grape grower of Lodi, has been investigating conditions in the Eastern States and reports that he was advised by buyers to raise the Almeria grapes as those raised near Fresno are equal if not superior to those imported from Spain.

Some of the Napa county wine-makers are being offered 15c. for their last year's wine, but it is being refused, as the winemen expect to get prices later on. Some of the 1909 vintage is being sold at 17c.

The wine yield in Germany this year has been very disappointing to the growers. In one district where they raised 90 hogsheads last year, only six were produced this season. Owing to the scarcity of ordinary wines, prices have gone up considerably. Nearly all retailers have advanced their prices 10%, and another advance is probable. Exports of still wines from Germany to the United States increased from 47,292 bottles in 1908 to 63,226 bottles in 1909, and the German champagne from 103,000 to 206,000 bottles, or nearly 100%. The better German champagnes are made from real French champagne wines imported from France and cellared and bottled in Germany.

APPLE NOTES.

A. A. Quarenburg, a fruit inspector, claims that he has found the oldest apple tree on the Pacific Coast located at Vancouver Barracks, Washington. This tree was planted by the Hudson Bay Co., and it is believed to be about 85 years old.

One hundred apple growers of Oregon, Washington, and Idaho recently met at Portland, Ore., and a committee of fifteen was appointed to prepare an agency to handle the apples of the Pacific Northwest. The gathering of apple growers represented some 10,000 cars per year, or an aggregate capital of $50,000,000. The committee appointed consists of H. W. Otis, of Wenatchee, Wash.; H. C.

BEAN'S "BUG-GO"

WILL CLEAN YOUR TREES

One spraying will thoroughly eradicate all brown apricot scale (Lecanium), European or Italian pear scale, moss, and all fungus growths. It has been extensively used in Colusa, Vacaville, Sebastopol, the Santa Clara Valley, etc., and has given perfect results.

Bean's Bug-go is a thick, creamy distillate emulsion that can be readily diluted with cold water. For winter use, may be applied alone in a 6% solution, or, better still, used in a 4½% solution with caustic soda. This latter combination has given the best results.

A barrel of Bug-go and a 45-lb. pail of caustic soda will be shipped anywhere in California for $11.75—FREIGHT PREPAID. This will make 650 gallons of spray. In addition to this, there is a charge of $1.75 per barrel, which is refunded when the barrel is returned in good condition. We pay the return freight.

Clean your trees now—don't wait. You'll get bigger crops—better fruit—healthier trees—and double your profits.

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Sproat, of Hood River, Ore.; H. C. Lamb, Milton, Ore.; John Forbis, Portland; C. F. Whisler, Medford, Ore.; A. P. Bateman, Mosier, Ore.; Miles Cannor, Weiser, Idaho; C. L. Smith, Lewiston, Ida.; Will F. Ritz, Walla Walla, Wash.; W. M. Nelson, North Yakima, Wash.; George C. Eaton, Granger, Wash.; C. H. Clark, Wenatchee, Wash.; G. H. Sprague, Cashmere, Wash.

FOREIGN NOTES.

The Bohemian hop crop has been very satisfactory this year. The brewers of Bohemia have been purchasing large quantities and they export to the United States over $400,000 worth. Thus far the prices for 1910 crop Bohemia have averaged as follows: Asaz, 23c.; Auzcha, 21c., and Dauba, 16c. per pound. It is estimated that the total crop of Austria-Hungary this season will be about 43,239,000 pounds.

The first attempt to ship Tuna cheese into the United States was recently made from Mexico. The Tuna is a variety of the prickly-pear and it is ground up into a pulp, which is highly prized by confectioners.

An international horticultural exhibition will be held in London on May 22 to 30, 1912. Exhibits from all over the world will be made, and many interesting displays will be installed. Many new fruit trees and shrubs are now being collected in the wilds of China and Tibet to be exhibited. Copies of the schedule can be obtained free from the secretary, Edward White, 7 Victoria street, Westminster, London, S. W., England.

During November the prices of Manchurian soya beans declined still further, the last Chamber of Commerce bulletin (for December 2) reporting sellers as offering spot cargo at $15.96 to $16.28, United States gold, per long ton, while buyers were offering $15.65 to $15.96 per ton, as compared with the quotation of $17.56 per ton on November 5. To get the cost f. o. b. Vladivostok it is necessary to add about $9.34 United States gold per ton.

The Spanish green olive crop of 1910 was very poor in both quality and quantity. Owing to the cold spring and the long dry summer, together with the olive fly, the crop was almost a failure, and the small quantity gathered was of inferior quality, much of it being wormy. Conservative estimates place the amount of 1910 Queen olives preserved at 1500 casks of 160 gallons each, and of Manzanillas about 2000 casks, but they can not be compared in quality with the 1909 crop. Packers believe there will be considerable difficulty in placing the 1910 crop of olives on the American market because of their quality, and also because there are on hand about 9000 casks of Queen olives, and the stock in the United States is estimated at 5000 casks.

SHOWS AND FAIRS.

The nineteenth annual citrus fair to be held at Cloverdale from Feb. 21 to 26, inclusive, bids fair to be the best ever held in that locality. Already the neighboring counties have signified their intention of exhibiting and having their representatives there. There will be round-trip rates on the railroads, so that large attendance is expected.

Yuba and Sutter counties are considering the matter of holding a joint county fair and poultry show.

California Orpington Club will hold its next annual meeting at Stockton. At a recent meeting the San Joaquin Poultry Association elected the following officers: President, John D. Gall; First Vice-President, G. Cunningham; Second Vice-President, J. B. Smyth; Recording Secretary, William H. Mackay; Financial Secretary-Treasurer, C. P. McAlmond; Executive Committee, J. J. Hayes, Ben M. Woodhull, A. B. Clay, R. L. Wooster, and Wm. A. French.

INSECT PESTS.

Horticultural Inspector Hodges of the Covina district is forcing the owners of pepper trees to cut out the infected parts or to spray them, in order to protect the orchards from the black scale which breeds in these trees.

Recently 15,000 peach and plum trees were destroyed at Ducor and Strathmore on account of being infected with borers. These trees came from a Nebraska nursery. Commissioner Schulz also condemned a large order of citrus stock which was affected with red and black scale.

Horticultural Commissioner Tate of Watsonville recently found a large consignment of apple trees infected with the borer.

S. W. Forester, of the U. S. Department of Agriculture, who has been studying pear thrips for two years, has returned from Washington and will carry on his investigations at Walnut Creek, Contra Costa county.

NEVADA NOTES.

Two carloads of beet seed have arrived in Fallon, Nev., to be planted in that section the coming season.

Mr. Vannoy, of Fallon, sold $800 worth of celery from one-fifth of an acre of land.

The many thousand cattle and sheep that have been feeding in the vicinity of Fallon the past winter are now being shipped to market

Ed. Harriman, of Fallon, has a three-year-old filly, raised on his ranch, that weighs 2500 pounds.

A. R. Merritt, who lives ten miles south of Fallon, harvested 83 tons of onions from four acres.

The Truckee-Carson Project has an appropriation of $1,193,000 for the construction of a dam on the Carson river. Work will begin in a few weeks.

Dan Sheckler, who lives four miles west of Fallon, cut at three cuttings 200 tons of alfalfa hay from 28 acres.



THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

MONEY IN FRUITS.

A fig grower of Merced reports that a five-year-old orchard near there brought the owner $100 per acre this year and when full bearing will bring several times this amount. He says that a grove of ordinary Adriatic figs is worth $1000 per acre, and that Calmyrna groves are worth twice that much.

M. C. Jessie, who has a six-acre almond orchard near Chico, made $450 per acre this last season. In 1909 his six acres netted him $1920.

PAJARO VALLEY APPLES.

Last year 4023 carloads of apples were shipped from the Pajaro valley between Jan. 1, 1910, and Jan. 14, 1911. The shipments this year exceed those of 1909 by 573 cars; 1677 cars were shipped outside the State, while 1796 cars were sent to California points. Of the apple shipments, 3473 cars were from Watsonville and the balance came from Aromas, Pajaro, Vega, Aptos, and Castroville. The largest single day shipment was 95 cars.

MISCELLANEOUS.

The exports of honey from Tampico, Mexico, to the United States during 1910 amounted to 43,575 gallons, valued at $21,000, or an increase of 66% over the previous year.

The U. S. Government has agreed to construct the Horsefly reservoir on the upper Klamath project, but there is a condition imposed—that the farmers in this district build their own canals.

Prof. Ralph E. Smith, of the State Experimental Farm at Whittier, has been investigating the Neff walnut trees near Anaheim in order to get scions that are resistent to blight.

In the last few months over 275 carloads of beans were shipped from Lompoc, and some 75 carloads of mustard seed.

Fay Singleton, of Ducor, reports that 1600 acres of wheat and barley have been planted in that district in the last few weeks.

The government has started an experimental farm near Brawley. The first thing to be planted will be grapes. Several varieties will be set out and watched to see which will do best in that section.

J. C. Berry, of Yuba City, recently sold some truck land to J. F. Peters for $300 per acre.

Hundreds of jackrabbits are being driven out of the lowlands of Sutter county and are being killed by hunters and shipped in sacks to San Francisco.

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The leading Seed Catalog of the West—Lilly's Catalog. Your 1911 crop depends on GOOD seed—send for this Catalog and get the best. Write now to the CHAS. H. LILLY CO., Seattle, Wn.

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Luther Burbank's New Plum
"DUARTE"
"Best Blood Plum yet produced"

Extra heavy trees, 6 to 8 feet, $1.25 each; 5 for $5.00
Strong trees, 4 to 6 feet, $1.00 each; 5 for $4.00.
Send for circular.
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Ask for SNOW'S GRAFTING WAX
IN USE ALL OVER THE STATE
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ZANJARO WANTED

Address as below, stating experience, age, family, nationality, wages or salary in previous position; references required as to reliability, honesty, faithfulness, all around ability and affability in dealing with water consumers. Lewiston-Clarkston Improvement Co., Clarkston, Wash.

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RAISING CALVES WITHOUT MILK.

To the Editor: What is a good substitute for milk to raise stock calves with? I expect to raise a number of extras this spring and would be glad for any assistance you can give me. We have plenty of grain hay for them when it is raining and grass when the weather is so they can run out. H. O.

St. Helena.

In using a substitute for milk be careful and not disarrange the stomach of the calf by too sudden changes of food. The Louisiana Experiment Station recently made several feeding trials, and the best results were obtained when the calves are taken from their dams a day or two after birth and taught to drink from a pail. They are then given 5 to 8 pounds of their mother's milk twice a day until the milk is fit for human use, which, of course, will vary with the different cows, but on the average * * * the milk (may be saved) on the fifth day after calving. The milk is then reduced until at the end of ten days the calf is receiving one pint of milk twice a day, and this amount of milk is fed until the calf is six weeks of age, when the milk is discontinued entirely. At the same time that the milk is being reduced, bean soup, shorts, blood meal, and sometimes cotton-seed meal are added to the calf's ration until at the end of ten days it is receiving twice daily, in addition to its pint of milk, bean soup from four ounces of navy beans, three ounces shorts, one ounce blood meal, and probably about half the time three ounces of cotton-seed meal. The calf receives this ration until it is six weeks old, when the milk is discontinued and the same amount of the substitute fed as before until the calf is four months old, when it is weaned; that is, put on dry feed entirely. The calf is encouraged to eat hay as soon as it will.

Alfalfa hay is preferred, with peavine hay as second choice, and calves have access to grass whenever there is any.

It is thought that failures in the use of this plan are due to faulty preparation of the bean soup, and the following method is recommended as likely to give success:

Parboil the beans in soda, then drain off the water and boil again until soft. Squeeze through a colander and add salt until the soup has a decidedly brackish taste. Stir in the shorts, blood meal, and cotton-seed meal and add lukewarm water until each calf receives about three quarts of the mixture. Of course the amounts to be given will vary with different calves. The above figures are the average for strong grade Holstein calves.

Another substitute for milk which has been successful was worked out by the North Carolina Station. It consist of oats and grain mixture. This latter feed consists of equal parts of cornmeal, linseed meal and buckwheat bran.

The rolled oats were prepared by adding boiling water to them at the rate of one gallon of water to twelve ounces of rolled oats, and the mixture was then allowed to stand until cool enough to feed. * * *

The daily allowance per calf during the thirteen weeks of the experiment was as follows: First week, 10 pounds whole milk; second week, 8 pounds whole milk, 4 ounces rolled oats; third week, six pounds whole milk, 8 ounces rolled oats; fourth week, 4 pounds whole milk, 12 ounces rolled oats; fifth week, 2 pounds whole milk, 12 ounces rolled oats, 0.2 pound grain mixture; sixth week, 2 pounds whole milk, 12 ounces rolled oats, 0.04 pound grain mixture; seventh week, 2 pounds whole milk, 12 ounces rolled

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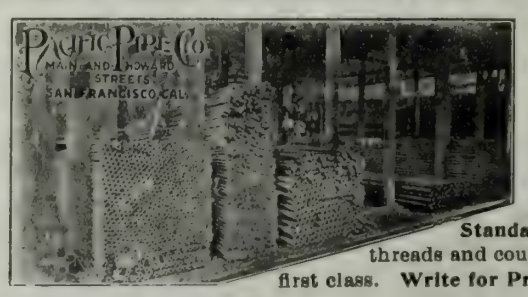
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oats, 0.6 pound grain mixture; eighth week, 2 pounds whole milk, 12 ounces rolled oats, 0.8 lb. grain mixture; ninth week, 2 pounds whole milk, 12 ounces rolled oats, 1 pound grain mixture; tenth week, 12 ounces rolled oats, 1 pound grain mixture; eleventh week, 12 ounces rolled oats, 1 pound grain mixture; twelfth week, 12 ounces rolled oats, 1.2 pounds grain mixture; thirteenth week, 12 ounces rolled oats, 1.2 pounds grain mixture.

The milk was always added to the oat preparation just previous to feeding.

In addition to the above feeds, the calves always received all the hay they would eat during the winter, while in spring they received one feed of hay with pasturage additional.

On the basis that one pound of rolled oats is equal to one gallon of whole milk, and that whole milk is worth 8 cents per quart to milkmen, the cost of the milk for a 13-weeks-old calf receiving no rolled oats is $26.96. When rolled oats (which cost 4.4 cents per pound delivered in barrel lots) are substituted for milk as shown above, the cost of the calf feed for the same period is only $12.46, a saving of $14.50 in favor of the rolled oats. * * *

One thing that especially commended itself in the rolled oats feeding was the evident relish with which the calves devoured them. The extra labor entailed in the feeding of the rolled oats was insignificant as compared with the saving effected.

One precaution to observe in feeding rolled oats to calves is not to use it in too large quantities, owing to the laxative character of this feed. Indeed, our experience indicates that it is best not to feed more than 12 ounces daily to each calf. It is important also that the rolled oats and milk be supplied as near the temperature of blood heat as possible.

DAIRY NOTES.

The N. H. Locke Company of Lockeford recently sold to W. T. McBride, Los Molinos, Tehama county, the blue ribbon Jersey bull, Lockeford Marigold, to head his herd. This same company also sold the Jersey bull, Santa Marigold, to James P. Lay of Texas.

The annual meeting of the stockholders and election of officers of the Delano Creamery Company was recently held. The following were elected for the ensuing year: President, Ben Thomas; vice-president, John J. Schlitz; treasurer, H. Hawley; secretary, J. R. Macomber; manoger, A. F. Halsapple. During the nine months of its active operation it has supplied over six hundred head of milk cows to farmers and has paid out for butterfat more than $2,000.

The Princeton Dairymen's Association held a meeting last week and discussed pooling their cream and selling to a creamery that would pay the best price.

The Gridley Produce and Canning Company will soon erect a new creamery at Gridley.

A year ago 200 would have comprised the sum total of dairy cows in the Brawley district. By the close of this month the number will have been increased to at least 2000 head.

George E. Hansen of Humboldt county is inspecting land in Sutter and Yuba with the view of buying 600 acres for dairy purposes. Mr. Hansen represents a company of men from the northern county.

The Calexico Creamery Association will soon commence the construction of its creamery building at Calexico. The building is to be of hollow tile.

The Riverdale Co-operative Creamery commenced operations last Friday. It has a capacity of five tons of butter per day. The manager is C. A. Starkweather and the other officers are as follows:



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A farm of 160 acres fenced into five fields, as shown in the diagram, takes 1,040 rods of fence. At fairly reasonable prices the year's yield from this farm is:

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H. M. Hancock, president; J. B. Lewis, vice-president; Charles H. Dewey, secretary; A. J. Vancleff, H. L. Owens, Fred Coleman and Peter Gobby, directors.

At a recent sale of dairy stock on the Stout Bros.' ranch near Modesto two-year-old Holstein heifers sold as high as $75 each, while nine and ten-months-old heifers brought as high as $40. One Jersey heifer brought $87.50. Charles Minniear was the purchaser of all the Holstein stock, with the exception of one registered bull, which went to J. P. Corson of the Woodland Colony.

LIVE STOCK NOTES.

J. D. Collins recently received 1500 head of Mexican stock for his ranch near Herndon, Fresno county. The cattle came from Sonora and were taxed $4.90 per head of the border.

John Russell and J. D. Biddle of Hanford recently shipped two carloads of hogs to San Francisco. They paid the raisers $7.35 per cwt.

J. S. Jones bought 378 head of beef cattle at Gonzales. He paid 10½ cents and the stock went to the Los Angeles Packing Company.

At the Australian agricultural exhibition which opened last week a feature of the greatest interest was a sheep having wool two feet in length. The animal is of the Merino breed and was found in a lonely mountain district a few weeks ago. It is supposed that the animal strayed from the flock years ago and so had escaped shearing. It is asserted that this is the longest growth of wool of which there is any record.

Ney Wolfskill of Corcoran recently purchased a Percheron stallion from the La Fayette Stock Farm of Sacramento. The price was $3000.

During 1910 only four carloads of hogs were shipped from Arbuckle, while in 1909 over 49 carloads were handled.

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for emergencies. You never can tell when you'll need it, and when the time does come, you'll be mighty glad you had the foresight to prepare. Here are samples of the thousands of letters we receive from grateful horse owners every year. Mr. J. J. Sandlin, New Hope, Ala., writes:—"I am a great believer in Kendall's Spavin Cure. A few applications have just taken an unnatural growth off my horse's back, thereby increasing his value $25.00 at least." Mr. J. B. McCullors, Haleysville, Ala., writes:—"Last July I bought a mule for $65 00. He had a bad Spavin and was unable to work but after using three bottles of your Spavin Cure, I cured it and he was sold in March for $180.00. I advise all horse owners to use Kendall's Spavin Cure." And Mr. Wm. Booth, of Grovette, Ark., writes:—"I have cured both Blood and Bone Spavins, taking the bunch all off and leaving the horse as sound as he ever was. The horse does not need entire rest while using Kendall's Spavin Cure. Light work and careful handling are better than standing in the barn. If the horse was in the pasture not many people would take proper care of him. I use the Spavin Cure a week at least, sometimes three, according to the severity of the trouble. There is enough in one bottle to cure three large Spavins if used according to directions. It is excellent for bruises, both for man and beast. Your Spavin Cure will cure Thoropin in a hurry. With over twenty years' experience with this remedy I know what I say to be true. If one doubts my my word he may bring me a horse with a Blood Spavin on one leg, Bone Spavin on the other and Thoropin on both and I can make him a sound horse in six months. What I have done I can do again and what I have done others can do."

Why take chances on any other remedy—when you know positively that Kendall's is *right*. You can get Kendall's Spavin Cure at any druggist's, $1.00 per bottle, 6 for $5.00. Ask for free book, "Treatise on the Horse," or write direct to

Dr. B. J. Kendall Company, Enosburg Falls, Vt., U. S. A.

LEAKING TEATS.

To the Editor: Is there some way to prevent milk leaking from a cow's teat.

A. J.

Tulare.

Many schemes are tried to prevent milk from leaking, but none of them are very satisfactory. Some put collodion on the end of the teat and remove it before each milking. Others use rubber bands around the teat, but care must be exercised, otherwise the tight band will make the teat sore.

COW SUCKING ITSELF.

To the Editor: I have a fresh cow which succeeds, at night only, in helping herself to the milk from one teat; the same one teat always, and thus gets about one-quarter of the milk. Now could you suggest a cure, or state what is generally done in such cases? I. F. Q.

Glen Ellen.

It is almost impossible to cure a cow of sucking itself. The best that can be done is to use some device which will prevent the cow from accomplishing the act. This vice is quite prevalent and a dozen different methods are used. A very good method is to buckle a surcingle around the cow behind the fore legs. A halter with a ring is made for the head. A stout rod is passed between the fore legs and connected with the ring in the halter and on the surcingle.

Another scheme which perfects a cure is to slit the tongue of the cow for about two inches. This should be done by a qualified veterinarian, as bad results are liable to happen if it is not done properly. This may seem inhuman, but castrating bulls or spaying heifers will cause just as much pain. This should be done when the cow is dry, so as not to interfere with the milk flow. The wound will heal very rapidly if soft feed is fed.

Another vice that bothers the dairyman is one cow sucking another. Some have had good results by putting a ring in the cow's nose and inserting a large piece of leather which will cover the entire muzzle of the cow, so as to drop below the mouth.

COW CHEWING BONES.

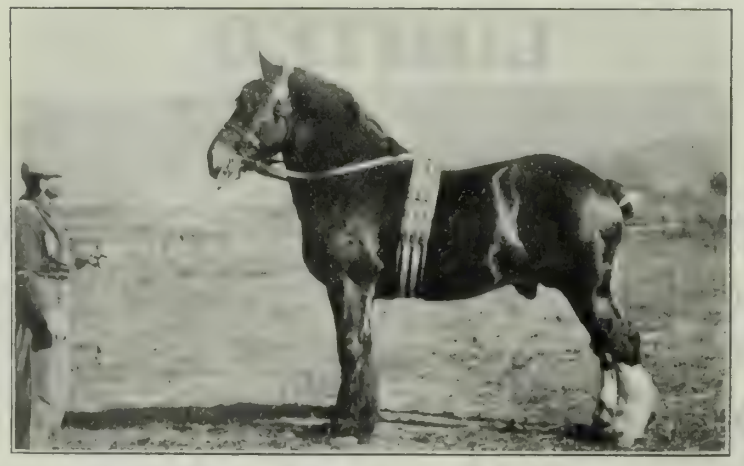
To the Editor: One of my cows is continually chewing bones. What can I do to prevent it? H. D.

Hollister.

Give the cow good clean hay, some root crop, cocoanut meal, bran or soy bean meal. If the cow does not stop mix in the drinking water twice daily a little dilute hydrochloric acid. Also have boxes arranged near feeding stalls which contain wood ashes, slaked lime and salt.

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HENRY WHEATLEY

NAPA, CAL.



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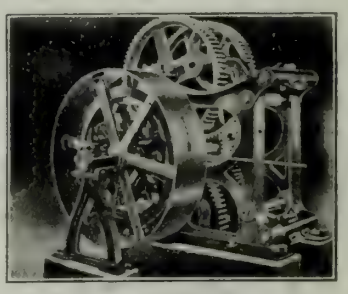
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THE DANGER OF DAMPNESS.

Many of the serious diseases and epidemics among fowls arise from the effects of dampness. Dampness and filth, which are usually close companions, are culture beds for chicken pox, canker, and diphtheritic roup or ulcerated throat. Aspergillosis, the scientific term of a disease even more formidable than its name, is caused by mold poisoning due to eating moldy grains, hay, leaves or vegetables and other foods that have become mildewed or moldy. The bird affected mopes about and seems sleepy and lifeless, often with a rattling in the throat and other symptoms of catarrh. There is no cure for this disease. The preventive is to see that the fowls get no food with even a taint of mold or staleness, and that they do not eat or scratch their food out of moldy straw or litter. In fact, to allow no damp or dirty litter in the poultry quarters. The changes are rung upon litter for closely confined fowls, and litter is good to supply exercise—that is, if it is good, namely, fresh, sweet and clean. It is very evident that litter soon will become damp and fouled with the birds' droppings if nothing else, yet it is asserted by an old poultry instructor and writer that straw for this purpose need not be replenished oftener than once a month. Sprouted grain is another thing which poultry "systems" and writers never tire of lauding, and it, too, is good if properly handled, but in the hands of unskilled or careless persons it may become little short of poisonous, for it quickly becomes heated, soured or mildewed. There is no doubt but that both litter and sprouted grain have been the cause of untold mischief in the poultry menage.

Another pet measure of "advanced" poultry culture, especially in the East, is hopper feeding. Airily they tell us that they have the feeding down to a fine point. They gauge their hoppers for a week's supply, then all that needs to be done is to fill them once a week—and there you are.

Now, every one who is experienced in handling feeds knows that millstuffs and cracked grain quickly becomes damp, mildewed and more or less fouled in hoppers; that to safely use this method the hoppers must be kept perfectly dry, and frequently cleaned and aired, with fresh feed supplied daily. We opine that the great prevalence of "white diarrhea" among the fowls at the East is largely due to this method of feeding, and especially to the excessive use of beef scrap, which is a questionable poultry food at best.

The idea that fowls are scavengers that thrive on any old decaying thing in the way of food must be done away with. The health of poultry and the wholesomeness of poultry products depend upon sound, sweet, clean food and an abundance of pure water, with dry, fresh-air-with-out-drafts roosting quarters.

This does not mean that fowls should not be allowed out in the wet and rain. The hen, if she has range, will duck her tail and tuck her skirts close about her and wade and hunt all day in the gentle rains of our coast, only seeking shelter in the heavy showers or to rest and preen herself. She is as happy as a duck in the shower, and as much benefited; she gives the worm, that comes up to enjoy the grateful rain, a warm reception, and finds many tidbits conducive to her health and to egg production. In such weather, when the range hen is seeing hen life at its best, intensive poultry-keeping is at its worst. Oh, the pity of it! to see birds, creatures of freedom and children of the air, confined in little coops and huddled in damp, slimy corners these rainy days. Even with care, there is a sad mess where fowls are crowded together in damp weather. Dampness and chill strikes through the flimsy coops; there can be no exercise deserving the name—it is an outrage upon the hen and an ungrateful return for the benefits which the hen affords us. The little dinky coops with six hens and a rooster therein, and a sunflower or a lily in front of them, make a very taking picture; but we quite agree with the editor of Farm Poultry that the time will come when such things shall be prohibited by law.

Poultry Notes.

Rainy Weather Hints.—The more fair weather we have the less are we prepared for foul weather. We poultry people are prone to follow the working principles of the Arkansas Traveler man: When it was raining he couldn't repair his leaky roof, and when it wasn't raining he didn't need to repair it. The blustering, soaking rainstorm which came to California the second week of the new year, after many months of dry weather and sunshine, found much unpreparedness. Leaky barns and poultry houses, uncleaned and undrained stable and poultry yards, no dry bedding and litter or barrels of clean mellow soil to dry the floors of the poultry quarters—dampness, filth, cesspools, everywhere. We have no right to complain if poultry and dairy profits are shy, and colds, canker, and roup are plenty. Dry, clean quarters are necessary to the wellbeing and profitableness of all kinds of domestic stock. They may range about in the mild, warm rains to advantage, but they require a dry, sheltered, clean place to rest and sleep in.

A new poultry house, built in our yards during the dry weather, which we thought rainproof, developed sievelike propensities in the first shower of the fall. We endeavored with but little success to repair the roof, for the pitch was not sufficient to perfectly carry off the water and the boards became soaked, with consequent dampness even where there was no direct leakage. As an emergency measure, we bought common table oilcloth at 25 cents per yard and covered the roof as soon as it was thoroughly dry, securely tacking the oilcloth over the edges. This, while not being expensive, has proved a great success.

For the puddles and cesspools out of which the stock and fowls persist in drinking, use coaloil or lime dust; also sprinkle air-slaked lime over the damp floors and the slimy ground.

Owing to the high price of building material and of carpenter work in California, poultrymen are a rule are not adequately supplied with housing for their fowls. A good-sized scratching-shed should be connected with each poultry-house. This should be kept clean and dry and well supplied with clean litter. In rainy weather the fowls could be gayly working in this for the scratching feed concealed in the litter, instead of being huddled up in a dark poultry-house. This would increase the output of the nickle egg, even in dry weather. The restless Leghorns are off the perch an hour before daylight, and may be seen huddled together outside in the dimness of our foggy and frosty mornings. This is bound to be a check upon that shy production, the winter egg. If they were confined in a comfortable scratching-shed during the early morning with plenty of feed in the litter, it would be much more productive of hen fruit.

No-Yard Poultry Keeping.—The veteran poultryman and editor of Farm Poultry gives it as his opinion that this method of keeping poultry ought to be prohibited by law, and adds: "We have been telling poultry keepers for ten years or more that in their own interest they should take the initiative in securing legislation for bettering the condition of poultry. It will soon be found that the efforts of no-yard poultry keepers are having a pronounced effect to stir up opposition to poultry keeping among near neighbors of those poultry keepers. In the early days of 'cold-house' experiments, those engaged in them were occasionally threatened with the attentions of the societies for the prevention of cruelty to animals. No case could be made out there, but a good many could be worked up among 'no-yard' plants. It is possible to keep hens in close confinement. Whether it is advisable that very close confinement be allowed is another question. It depends on the usual conditions found when the matter is taken up and investigated, as it is sure to be before long.

There was an old woman, as I've heard tell;
She walked to market her eggs for to sell.
She walked to market and sold them so high
She bought her an airship, and now she can fly.—Judge.

POULTRY.

WAYSIDE POULTRY YARDS, Petaluma, Calif.—HATCHING EGGS from S. C. White Leghorns, Buff Orpingtons, Rhode Island Reds, Light Brahmas and Houdans, $6 per 100. EXHIBITION MATINGS of White Leghorns and Black Bantams, $5 per 15; $7.50 per 30. Address Carl Gregory, Manager.

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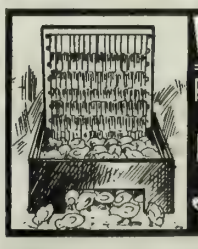
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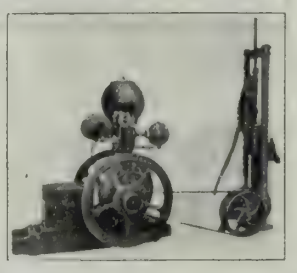
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The Home Circle.

The Man Behind the Smile.

I don't know how he is on creeds,
  I never heard him say;
But he's a smile that fits his face,
  And he wears it every day.

If things go wrong, he don't complain—
  Just tries to see the joke.
He's always finding little ways
  Of helping other folk.

He sees the good in every one,
  Their faults he never mentions;
He has a lot of confidence
  In people's good intentions.

No matter if the sky is gray,
  You get his point of view;
The clouds begin to scatter
  And the sun comes breaking through.

You'll know him if you meet him,
  And you ll find it worth your while
To cultivate the friendship of
  The man behind the smile.

—W. S. Guilford.

Mrs. Graham's Duplicity.

Since they had lived five miles from the nearest town and a mile from neighbors, Mr. Graham had taxed his ingenuity to keep in touch with the outside world, while still enjoying all the comforts of the life of a country gentleman.

He had installed telephone lines from both the local companies, as well as a telegraph instrument; and lastly he had just completed, a few weeks before, an elaborate wireless telegraph outfit, whose antennae reared itself proudly like an overgrown lightning rod above the roof of the Graham home-chateau, as Mrs. Graham was pleased to call it.

Just now, the "wireless' was Mr. Graham's particular hobby—telegraphy, for a long time, had been as much of a hobby for him as the collection of rubies and emeralds had been for Mrs. Graham. He had even prevailed upon her to learn the code, and had derived much satisfaction in seeing how interested she had become over the C. Q. D. calls.

On the day that Mrs. Graham's jewels were brought to her from the safety deposit vault for her to wear to the great annual ball of the Huntsmen's club, the following night, Mr. Graham received a message over his prosaic wire telegraph instrument that his presence in the city was imperative. And he went.

"I don't like to leave you with those trinkets in the house," he told his wife. "But I don't think there's any danger. No one outside of the bank people could possibly know they're here, and besides you have the servants.

"But this is the night of Mary Halloran's wedding, John," protested Mrs. Graham, "and I have promised all of them they could go."

"Well, they can't—you'll have to keep them here. And I'll stop and send Miss Brereton over to keep you company." And he rushed away to his car.

As the day passed in the pleasant company of her bosom friend, Mrs. Graham's fears passed.

"Would you be afraid if the servants went to the wedding?" she asked Miss Breteton, who knew nothing of the presence of the jewels.

"Nonsense!" replied that matter-of-fact young person. "Let them go."

So it happened, as the long twilight grew, the two women, who sat on the balcony overlooking the wide park, were alone.

"Wouldn't it be nice if we could have an impromptu party of our own?" she asked, suddenly. "I tnink I'll telegraph to the Burtons—they have an instrument, too, you know—to come over and bring all the people who are stopping with them."

She went inside the room and placed her hand on the keys of the instrument. On the instant she knew that the wires had been cut, but her presence of mind did not desert her. She turned one switch, then another, tapping gently at the keys.

"Oh," she said, as much to whoever might be listening as to Miss Brereton, "I believe I've forgotten how to work the thing."

"Shall I try the telephone?" asked her friend.

Mrs. Graham yawned.

"No," she said. "On second thoughts, I think it would be much better to have a quiet evening alone. You're my best friend, and I can trust you. Come inside—it's getting chilly—I'll tell you something."

When they had drawn up their chairs before the little low fire, Mrs. Graham began:

"I am in love—but not with John. No," and she began to weep bitterly, "my heart is another's."

"Are you crazy, Emily?" demanded the astonished Miss Brereton, but the other continued.

"He is all in the world to me—this other—and I have sent him away. I thought it was for the best, but now I know I was mistaken—that I would give up everything in the world for him. He wanted me to elope with him to Europe, but I would not, and he has gone on alone. Even now the ship on which he sailed is barely out of the harbor. I have fully made up my mind and will tell him so—"

"Well, crazy or not," remonstrated Miss Brereton, "that is impossible now, for you have just said he is on his way to Europe."

"Ah, but you have forgotten the wireless," said Mrs. Graham in triumph. "I can call him with that, and he will wait for me to come to the end of the world. Come, I'm going to do it now."

She rushed from the room, followed by her friend, futilely remonstrating.

It was the work of only a few moments to get an answer to her frenzied "C. Q. D." call at the nearest station in the town five miles distant, and then to give the few words that told of her predicament and the cut wires.

"Well, that is done," sighed Mrs. Graham, as they re-entered the library. "I can now rest in peace, knowing that the man I love knows that I will come to him."

"You have made the greatest fool of yourself any woman ever did," fumed the indignant Miss Brereton, "and if there was any possible way for me to get home I wouldn't stay here another minute. No longer can you call yourself a friend of mine."

A short time after, there was a crunch of wheels coming to a stop a short distance from the house. Mrs. Graham rose and went to the window.

"It's getting stifling in here from that fire," said she. "I'll have to open a window."

As she did so five big men carrying rifles and revolvers, cocked, stepped through the casement.

"Well, where's your burglar£" asked one, whom she recognized as the chief of police. Mrs. Graham motioned to the room connecting with the library, and promptly fainted.

Horror-stricken, Miss Brereton saw the men enter the darkened room, heard a scuffle, a moan or two, the click of hand cuffs, and then the men dragged into the light the burliest, blackest ruffian she had ever seen.

Then she turned to her friend, who was regaining consciousness.

"And you knew this all the time?" she asked.

"Yes, he gave himself away when I went to the telegraph instrument," was the answer. "So I made up all that story as an excuse to get to the wireless where, of course, there were no wires to cut."

"And all that story——"

"Was just made up on the spur of the moment," answered Mrs. Graham. "Dear John," she added, "can any one doubt how I love him—and from now on I'll love his hobbie, too."—Virginia T. Hudson.

Cleaning Sewing Machine.

Use kerosene everywhere that oil is ordinarily put, then fasten the plate and put the strap in place and run the machine hard for a few minutes. Let it stand over night, and in the morning wipe every particle of kerosene off and oil thoroughly. By this is not meant deluging the parts, but using perhaps a couple of drops in each place and being sure that none are forgotten. Run the machine a little and let stand over night, and in the morning run it some more and wipe carefully. Most people use oil too generously, when they use it at all, with the result that it keeps coming out and getting on materials.

The Cold-Storage Wail.

"Say, Boss, I worked off some of that cold-storage butter today," said the new clerk, with an air of one who expected a compliment.

"Indeed! Well, that's good! Who drew the prize?" said the pleased grocer; for it was getting to be a difficult thing to do.

"Why I sent it to Mrs. Hash around on Board street."

"Oh, thundering guns!" exclaimed the grocer, his tone changed and his face drawn in a pucker. "Why you blamed idiot, I board at that woman's house!"—Lippincott's.

Stained Table Linen.

If coffee is not properly washed it will sometimes make ugly yellow stains. To remove this, make a strong solution of cream of tartar and boiling water—a boilerful of it. When the powder has fully dissolved, put in the cloth and boil steadily for half an hour. Take it out, rinse in hot water, and spread out in the sun. Leave it there all day, wetting hourly with the cream of tartar solution. If any signs of the stains are left, soak all night in loppered milk. Rinse and sun again.

Percy—Miss Jane, did Moses have the same after-dinner complaint my papa's got?

Miss Jane—Gracious me, Percy! Whatever do you mean?

Percy—Well, it says here the Lord gave Moses two tablets.—Lippincott's.

OUR YOUNG FOLKS' DEPARTMENT.

Conducted by M. Russell James.

The Pacific Rural Press feels that the younger members of its family should have a department in its pages. In the beginning of its career, forty years ago, this journal had strenuous work to do in helping to hew out a new agriculture in new fields and under new conditions. It was a pioneer along with the Pacific coast farmer of those early days, and some of the pleasanter branches of journalism had to be neglected. Now, that the field is blossoming to the harvest and California has become world-famed for fruit production, there is time to tell our young folks how good a thing the life of the farm really is, and to encourage and help them to take up a little farming on their own account and to put the profits therefrom in their own pockets.

In this department we shall spare no effort to make it both useful and entertaining to young folks, and if they will help us by showing an interest in it, we shall enlarge and improve it right along. We want them to feel that this department is their very own, where they are free to ask questions and to tell us just what would interest them and what they would like best for us to write about. They can show their interest by writing us and telling us about their farm life on the farm, their work, their play, the things they like best to do and not to do, and what they should like to be when they become men and women.

Let us hear from you, young folks, and by "young folks" we mean any boy or girl within the school age. Who will write the first letter? From time to time we shall give prizes to those showing the most interest and writing the best letters. By best letters must be understood the most interesting letters and those telling most about the home life of the writer—the farm, the crops raised, the animals kept, the school, the picnics and outings, the wild flowers and the singing birds. How the letter is written, or even spelled, will not count, but what it says. The one or ones (as several might write on the same date) sending in the first letter will each receive a merit that will count in awarding the prizes.

Success.

Success is not in gaining wealth,
  Nor being famous. No, young man!
Success is not a roll of bills,
  Nor yet a touring moving van.
Success is not a house of stone,
  A castle grand where you may dwell,
Success, what is it, then, you ask?
  Ah, it is doing one thing well.

Success is not in holding power
  To lord it o'er your fellow man;
Success—the modest little flower—
  Achieve it on the Maker's plan.
The toiler in the field achieves
  Success, if he but goes his way
And does his duty faithfully,
  And gives the best he has each day.

Success is not a synonym
  For greatness in the public eye;
Unheard of and unheralded
  The greatest of successes lie.
Whate'er your modest task may be,
  Disdain it not nor try to shun.
Perform it well. The secret learn—
  Success is duty nobly done.

—Detroit Free Press.

A Young Folks' Poultry Contest.

Up in Oregon they have a Junior Poultry Association. The State Agricultural College in its Extension Course furnishes bulletins for the instruction of the youthful poultry raiser, and the Y. M. C. A. considered the encouragement of poultry keeping among the youth of the State of so much benefit, directly and indirectly, that the association joined with the college in raising the funds for prizes and starting a contest in poultry keeping. The prizes were not for the boys or girls who made the most money from their hens or got the largest egg yield. That would have been too great a temptation to count double in keeping the egg record for some of the contestants to withstand. The prizes were for the best work done by the boy or girl and not for that done by the hen. Good and faithful care of the fowls and promptness and accuracy in keeping the records and sending in the reports were what counted. There were 100 points to be gained, and a certain number was allowed for each of the following branches of the work: Good record-keeping; good condition of the flock; good housing; good arrangement of yards; cleanliness of yards and houses; completion of the Reading Course.

Demerits were deducted from the score for failure to send in reports; reports coming in late; feeding rations that are not practicable; methods that entail too much labor; records missing at inspection.

The boy or girl scoring the highest to receive $100, next $50, and the next ten $5 each. The contest limited to boys and girls of the State between the ages of 12 and 18. The contest began November 1, 1909, and ended October 31, 1910. The flocks and yards of the contestants were inspected every two or three months, and an oral examination had to be passed to give proof of a thorough study of the Reading Course.

A goodly number of boys and girls singned for the contest but "got cold feet." Twenty-eight sent in the first month's report; of these sixteen fell by the way, and only twelve were faithful to the end. A boy gained the first prize and a girl the second.

Improving Opportunities.

The boys and girls who got the best prizes, says Prof. Dryden, who had the matter directly in charge, were those who made the most of their opportunities. Hogan (winner of the first prize) had a more unfavorable location and poorer house than many of the contestants, judged by most standards, but he made the best of it and overcame the handicap. Frank Mitchell didn't wait to earn money to hire a carpenter to build him a chicken house, but went to work and built it himself with a little help on the framework from his elder brother. Herbert Adams used an old shed, but soon and without waiting for an appropriation, built a new one from scraps of lumber and of good design all by himself. In the same way he got material for fencing, and the whole outlay for house and fence was 80 cents. He got the best egg yield in the contest. Bob Knight discovered that a good deal of popcorn fails to pop, and he made a deal with the street corner popcorn sellers whereby he got tnis poultry food without cost. Stories might be told of all the contestants, showing now they improved their opportunities. They were all school boys and girls keeping up their studies, and at the same time doing a work on the side that has been talked about across the continent. What can a boy or girl do? What can they not do?

Free Garden Seeds for Our Young Folks.—If they will send a postal to the Pacific Rural Press office, giving their addresses plainly, the manager will take pleasure in sending to any boy or girl who will try to grow the plants and send a report of results secured, a package of improved varieties of garden seeds from the U. S. Department of Agriculture.

FOR SALE
Livermore Valley Ranch

210 acres, beautifully situated in the Valley of Mocho Creek, four miles from Livermore, Alameda county; 30 acres now in almonds, producing last year nine tons, and capable of much greater production. Crop has never been lost on account of frost.

Improvements: Good house of five rooms, stone milk house, windmill with steel tower, two water tanks, large barn, cow barn, granary, tool shed containing almond huller, gasoline engine, lug boxes, trays, etc., and a number of farming implements.

House is beautifully situated in grove of oak trees, on an elevation commanding a fine view of valley and mountains.

IDEAL FARM FOR POULTRY RAISING.

School in one corner of tract.

Bargain. Price $8,000.00. Terms.

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Lessons in Drawing and Painting, Elocution, Vocal and Instrumental Music.

A course of lessons on Harmony is given each week by Prof. Wm. J. McCoy of the University of California, and is open to students outside the school.

Courses of lessons in Household Economics, with all the appliances for cooking, etc., are given each week by Miss Alice McLear, a graduate of the Drexel Institute, Philadalphia, and are open to students outside the school.

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MISS SARAH D. HAMLIN,
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School reopens January 9, 1911. Pupils admitted at any time.

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For catalogue and brochure of views, address President's Secretary, Mills College P. O., California.

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10 and 20 acre tracts. $100 to $125 per acre.

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Blake, McFall & Co. Portland, Oregon

THE MARKETS.

San Francisco, Feb. 1, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The wheat market is very dull and quiet, but with the increased acreage being set out over the State on account of the bountiful rain, it is expected that trading in wheat will pick up shortly. In Sutter county, wheat is bringing from $1.32½ to $1.35, with the volume of business increasing considerably.

California Club	$1.50	@1.55
Sonora	1.62½	@1.70
White Australian	1.55	@1.65
Northern Club	1.50	@1.55
Northern Bluestem	1.55	@1.60
Russian Red	1.50	@1.52½

BARLEY.

Although the barley market is dull at present, it has been very bright, and prices have been fairly good—so much so that within the last few weeks over 20,000 sacks have been shipped out of Colusa to be put on boats at Port Costa for foreign shipment. The call for barley in several of the grain counties has increased greatly within the last week, and $1 per cental is being paid around Yolo, Sutter, and Sacramento counties.

Brewing and Shipping	1.17½	@1.25
Choice Feed, per ctl	1.12	@1.17
Common Feed	1.00	@1.08

OATS.

There has been considerable trading in oats and the market is improving. The construction companies are now fitting out with feed oats, and this has helped the market considerably.

Red Feed	$1.22½	@1.27½
Red Seed	1.30	@1.35
Gray		Nominal
White	1.50	@1.60
Black	1.10	@1.20

CORN.

There is very little doing in corn at the present time. The Egyptians maintain strength.

Eastern Yellow	$1.30	@1.35
Eastern White	1.31	@1.36
Egyptian White	1.55	@1.60
Brown	1.40	@1.45

RYE.

This market is dull.

Rye, per ctl	$1.55	@1.60

BEANS.

Red kidneys, pinks, and limas are in strong demand and have gone up several points. They are going so high that 3000 tons of round cranberry beans have been shipped in from Manchuria and Japan, and it is predicted that there will be some 5000 tons of these beans brought in from the Orient within the next few months. These beans are being used as substitutes for pinks and bayos, and are selling from $3.75 to $4.10.

Reports from New York say: On January 20 there were 310,000 bags of dried lima beans in all California warehouses, from which 60,000 bags or more will be retained for seed, leaving available for consumption as food about 250,000 bags, or approximately 500 carloads. The 1910 crop, from actual figures of all California warehouse returns, totaled 1,175,000 bags, out of which 25,000 bags were lost in hand picking due to damage done by the September rains. From the above figures the deduction is drawn that in the past four months 840,000 bags were shipped from California, and of these it is conservatively estimated that 800,000 bags have been consumed, as every market east of the Mississippi is reported to be practically without supplies at this date, and it is estimated that there are less than 40,000 bags now in transit. The figures as given would indicate an increased consumption over last year of more than 25%. This showing is held to be due to judicious and persistent advertising of limas by the principal interests.

Bayos, per ctl		$5.00
Blackeyes	$5.25	@5.50
Cranberry Beans	3.75	@4.00
Garvanzos	2.75	@2.85
Horse Beans		2.00
Small Whites		3.00
Large Whites	2.75	@3.00
Limas	5.35	@5.40
Pea	3.25	@3.50
Pink		5.00
Red Kidneys		6.00

SEEDS.

There is a fairly good market in all varieties of seeds at the present time, especially alfalfa and brown mustard. There will be considerable acreages of broom-corn planted this season on account of the high prices last year.

Alfalfa	18@	20c
Broomcorn Seed, per ton	$20.00@	25.00
Brown Mustard, per lb		5½c
Canary	3½@	3¾c
Flaxseed	5 @	5½c
Hemp	3 @	3½c
Millet	2¾@	3¼c
Timothy	8 @	9 c
Yellow Mustard		5¾c
Dried Peas, per ctl	3.75@	4.00

FLOUR.

This market remains about the same as when last reported. There is considerable activity being shown in shipments to northern and extreme southern points.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.20	@4.60
Oregon and Washington	4.60	@4.80

Hay and Feedstuffs.

HAY.

There is very little change in this department, due to the big commission firms of San Francisco refusing to pay any higher prices than they have been for the last four months. The situation in the country, however, is different. Hay is being held by the growers, who refuse to let go until they absolutely have to, as the March and April rains will influence the hay crop of 1911 materially. Another item which has entered into the dullness of the hay market is due to the heavy condition of the roads, which prevents the farmers from hauling their produce. It is predicted that hay is as low at present as it will be any time during the next three months. Alfalfa still continues steady, with crops very light all over the State.

Choice Wheat	$11.00@	14.00
Good Wheat Hay	9.50@	11.00
Other Grade Wheat	7.50@	9.50
Wheat and Oats	7.50@	11.50
Tame Oats	7.00@	12.50
Wild Oats	7.00@	9.00
Alfalfa	7.00@	13.00
Stock Hay	5.00@	6.50
Straw, per bale	35@	55c

FEEDSTUFFS.

There is no change in this department with the exception of cocoanut meal, which has gone up $1.

Alfalfa Meal, per ton	$18.00@	20.00
Bran, per ton	29.00@	30.00
Cocoanut Cake or Meal		26.00
Cracked Corn	33.00@	34.00
Middlings	34.00@	36.50
Mixed Feeds	28.00@	31.00
Rolled Barley	24.00@	25.00
Rolled Oats	29.00@	31.00
Manhattan Egg Food, per ctl		15c
Shorts	30.00@	31.00

Garden Truck.

VEGETABLES.

Asparagus has commenced to come in in fairly large quantities, and it is of excellent quality. It is predicted that the crop this year—unless heavy storms flood out the asparagus plantations—will be very large and prices will get rather low. One means, however, of preventing the glut which happened last year is the fact that the California Vegetable Union is going to handle "grass" in the Eastern cities and will ship it where it is needed, after the manner of the orange crop. Most of the vegetables in the San Francisco market at present come from Mexico. The west coast of the Southern republic has supplied all of the Pacific Coast States with their winter vegetables and will no doubt be one of the greatest competitors of California in vegetable lines. This is especially true of tomatoes, eggplant, and string beans. As predicted last week, onions have gone up 25c per hundred and are selling well at this increased price. On account of the warm rains the market is glutted with mushrooms.

Onions: New Yellow, sack	$ 2.00@	2.10
Garlic, per lb	4@	6c
Green Peas, per lb	6@	12½
Turnips, per sack	65@	75c
Tomatoes, per crate	90@	1.20
Eggplant, per lb	10@	12½
Cucumbers, per doz	80@	1.00
Summer Squash, per box	1.50@	2.00
String Beans, per lb	10@	15c
Cabbage	60@	80c
Green Peppers, per lb	9@	10c
Carrots	65@	75c
Celery, per crate, large	1.40@	1.75
Rhubarb, per lb	5@	6c
Mushrooms, per lb	5@	15c
Cauliflower, per doz	40@	50c
Lettuce, per crate	1.50@	2.25

POTATOES.

The Salinas Burbanks have gone up a few points due to the heavy demand for fine potatoes. The River Whites and Oregon Burbanks are also selling well, but the speculators who control the market refuse to let very large quantities go out at prices quoted below for fear that they will be used to bear the market down.

Salinas Burbanks, per ctl	$ 2.25@	2.35
River Whites, per ctl	1.65@	1.90
Sweet Potatoes, per ctl	3.00@	3.25
Oregon Burbanks	1.90@	2.15
Early Rose	1.50@	1.65

Dairy Produce.

POULTRY.

On account of the heavy weather, there is very little domestic poultry being brought into San Francisco, but the heavy influx of Eastern stock has got the market fairly well supplied. Within the last two days 9 carloads of Eastern poultry have arrived.

Large Broilers	$ 4.50@	5.00
Small Broilers	3.00@	4.00
Fryers	6.00@	6.50
Hens, extra	8.00@	10.00
Hens, large	6.00@	7.00
Small Hens	5.50@	6.00
Old Roosters	5.00@	5.50
Young Roosters	6.00@	7.00
Young Roosters, full grown	8.00@	10.00
Squabs	3.50@	4.00
Geese, per pair	2.50@	3.00
Ducks	7.00@	9.00
Turkeys, per lb., live	18@	20c

BUTTER.

Butter fluctuated greatly this last week, but it has gone down to its real level, and it is probable that it will maintain an even price from now on.

California (extras), per lb	30	c
Firsts	26	c
Seconds	24	c

EGGS.

Eggs remain the same as when last quoted. The production is increasing rapidly, and the demand is very steady.

California (extras), per doz	29	c
Firsts	28	c
Seconds	26	c
Storage (extras)	20	c

CHEESE.

The cheese market is only fairly well. The demand seems to have fallen off greatly of late.

Fancy California Flats, per lb	16	c
Firsts	14	c
New Young Americas, fancy	16	c

Deciduous Fruits.

FRESH FRUITS.

The demand for high-grade apples is very keen. Poor-grade stuff is dragging along with few pickers.

Apples, per box—		
Newtown	1.00@	1.25
Other varieties	35@	60c
Fancy Red, 4-tier	90@	1.25
Bellefleur	1.00@	1.25
Winter Nelis Pears	2.50@	3.00

DRIED FRUITS.

The dried fruit market still maintains its strength, and prunes are steady at about 7c. The raisin situation, according to the Fresno Republican, is as follows: The Fresno Home Packing Co. is contracting freely for 1911, 1912, and 1913 raisins at 3¼c., and in the past week or ten days has contracted for more than 800 tons of goods in the Orosi district. The figure named in all the three-year contracts made, is 3¼c. Business in future deliveries has been exceedingly active during the past few days; in fact, it is stated that much more interest has been evinced in 1911, 1912, and 1913 goods than in the holdover from the 1910 crop. Prices for 1910 Muscats are ruling strong at 3¼c., but the packers are not sending many buyers out. They are willing to buy at this figure, however, when the growers come to them to sell. A determined effort is being made to advance the price to 3½c., and it is predicted that before another week is ended the packers will be paying this for 1910 goods. Seedless raisins are now at a premium, both on the Coast and in the East. Sultanas and Thompsons, formerly a drug on the market, are now practically all cleaned up and what remain are being held at firm prices. Eastern reports tell of a great scarcity of seedless goods and also announce that it is almost impossible to get anything from the Coast as the seedless goods are also practically cleaned up here.

The New York Journal of Commerce says of the New York raisin market:

One of the strongest articles on the list is seedless raisins. Europe has taken so much of these to supply the deficiency caused by the shortage in the Turkish crop that there is little left to meet the needs of the home trade, which are now becoming more insistent with the approach of the spring consuming season. The primary market for California sultanas is reported to be closely cleaned up, and what is left is in few strong hands, while spot holders, who have been selling at 5½c. New York, are said to have no more to offer at that. They now ask 5¾c., and sales are reported to have been made at this price. Consumers are buying sparingly and against the actual wants of the moment. Having bought about everything obtainable for export from the coast, English operators who are having a big demand from northern Europe are seeking supplies of Thompson's seedless here, but find only limited quantities available and nothing under 7½c. New York.

Evaporated Apples, per lb	9¼@10	c
Figs, black	4½@ 5	c
Figs, white	5 @ 7½	c
Apricots	12 @13	c
Moorpark, fancy	13½@14	c
Peaches	6 @ 6¾	c
Prunes, 4-size basis	6 @ 7	c
30s, premium of 1½c.		
40s, premium of ¾c.		
Pears	9 @13	c
Raisins—		
Loose Muscatels, in sweatbox	2½@ 3	c
Thompson Seedless	4½	c
Seedless Sultanas	3½@ 4	c

Citrus Fruits.

The orange offerings are very large at present, but the demand is in fairly good shape. The Florida oranges have not been in very good condition so this has helped out the California product. The East is paying a premium for large sizes, and several of the growers have been reaping a harvest furnishing this class of oranges. The rain had a beneficial effect on the groves, but some of the growers are making a mistake and shipping the fruit too soon after the rain, so that it is showing decay. A lemon club has been formed in New York and it has agreed to ship 10 carloads of fancy lemons per week during the next four months This is to convince the New York trade of the superior quality of the California lemon over that of Sicily. In New York, at the sales on Jan. 31, 11½ carloads of navels, 6½ carloads of Thompsons, and one carload of lemons were sold. Although the weather was extremely cold, the fruit was good and sold from 5 to 10c. higher. Large navels sold from $2 to $3, while the small ranged from $1.85 to $2.10. Thompson's extra fancy ranged from $2.90 to $3.25, while fancy lemons sold from $3.50 to $4. At the auction sales held the day before the prices were not as good. There were 39 carloads of navels sold in New York and two carloads of lemons. The navels ranged from $1.65 to $2.85, while the lemons sold from $3.75 to $3.35. In Cincinnati the market declined in oranges and advanced on lemons. Four carloads of navels ranged from $1.60 to $2.05, and 2 carloads of lemons ranged from $2.30 to $3.65. The 4 carloads of Floridas ranged from $1.45 to $2. In Boston, 19 carloads of navels were sold at prices ranging from $1.65 to $2.60. The St. Louis market was weak on navels, on account of poor condition, and prices only ranged from $1.35 to $1.95. It was higher, however, on lemons, and they ranged from $2.85 to $3.65. The Philadelphia market is improving on good stock and 11 carloads of navels ranged from $1.60 to $2.45. There were 15 carloads of Floridas, which averaged $1.70. Grapefruit averaged $2.65 and tangerines averaged $1.30. In Pittsburg 11 carloads of navels ranged from $1.70 to $3.50. The total shipment of oranges to Jan. 29 has been 6636 carloads, and lemons, 1047 carloads, making a total of 7683.

Navel oranges—		
Extra choice	$ 2.00@	2.25
Choice	1.50@	2.00
Valencias, choice to fancy	Nominal	
Choice	Nominal	
Standard	Nominal	
Tangerines	1.25@	1.75
Choice Lemons	1.75@	2.25
Fancy Lemons	2.75@	3.00
Standard	1.25@	1.50
Limes	4.00@	4.50
Grape Fruit	2.50@	3.00

Nuts, Honey, Hops, Etc.

NUTS.

The California Almond Growers' Asso-

ciation is rapidly getting rid of its almonds, and has shipped another carload to New York. Already this association has shipped several thousand dollars' worth of almond kernels to San Francisco. The almond market seems to be getting brighter and is well controlled.

Almonds—		
Nonpareils	15	@15½c
I X L	14	@14½c
Ne Plus Ultra	13	@13½c
Drakes	11	@11¼c
Languedoc	10½	@11 c
Hardshells	8	@ 8½c
Walnuts—Softshell, No. 1		15 c
Standard		14½c
Softshell, No. 2		11 c
Budded		17½c

HONEY.

There is very little doing in the honey market at present, as this is between seasons and the first-class honey has been used up and nothing but second-grade stuff remains.

Com—White Sage	14	@15 c
Extracted—Water White	8½	@ 9 c
Light Amber	7	@ 8 c
Amber	5	@ 6 c
Sacramento River Comb	12	@12½c

BEESWAX.

Light	27½	@30 c
Dark	23	@26 c

HOPS.

According to reports, the hop market in Oregon, Washington, and California has been cornered by a Portland concern and it now controls some 10,000 bales. At the present time there are very few bales left on the Pacific Coast, and if the above report is true, the Eastern brewers and dealers will have to pay a high price to the hop merchants.

Hops, 1910 crop	18	@22 c
1911 Crop		11½c

Live Stock.

DRESSED MEAT.

Beef: Steers, per lb	8½	@ 9 c
Cows	7	@ 8 c
Heifers		8 c
Mutton: Wethers	9	@ 9½c
Ewes	7½	@ 8½c
Ewes	9	@ 9½c
Lambs	10½	@11½c
Hogs, dressed	10	@13 c

LIVE STOCK.

The beef market is still strong and a Seattle concern is offering 11½c. at the corrals for beet-pulp stock near Salinas. The stock raisers in that section are holding out for 12c. and even more, and so far there have been no sales reported this last week at 11½c. As the prime beef is going up, stags and worn-out milk cows are bringing higher prices, on account of the poor people who demand beef and must have it, but they take the cheaper grades instead. Hogs remain about the same with the supply and demand about equal. Some of the commission men predict that pork will go up a point in the near future. Mutton is in fairly good supply, but No. 1 stock is bringing top prices, and the demand for lamb is also keeping up. Most of the stock which has been on stubble has been sold out, so that sheep are now being held firmly and, unless good prices are paid, the sheep raisers will not let go. Veal is still hard to get, and the butchers are scouring the country trying to fill present needs.

Gross weight:		
Steers: No. 1	5¾	@ 6 c
No. 2	5¼	@ 5¾c
Cows and Heifers: No. 1	4½	@ 5 c
No. 2	4	@ 4½c
Bulls and Stags	2½	@ 3¾c
Calves: Light	6	@ 6¼c
Medium	5½	@ 5¾c
Heavy	4¾	@ 5 c
Hogs: Grain-fed, heavy	7	@ 8 c
150 to 250 lbs	8¼	@ 8¾c
100 to 150 lbs	7¾	@ 8 c
Common Hogs, per lb	5	@ 6½c
Small prime wethers	4¾	@ 5 c
Large prime wethers	4¼	@ 4½c
Ewes	4¼	@ 4½c
Lambs	6	@ 6¼c

WOOL.

This market still remains very dull, and there is nothing doing.

Fall Clip—		
Mountain Free	9	@11 c
Valley Fall and Lamb	7	@10 c
Northern	7	@10 c
Southern Spring	10	@11 c
Middle Counties	12	@13 c
Northern	18	@19 c

HIDES.

There is no change in the hide market, although tanners are trying to force down prices. The price of leather to shoe merchants has gone up, yet the hide buyers claim that leather is selling at such low prices that they can not afford to meet the demands of the stock raisers in regard to the price of hides.

Wet Salt—		
Heavy Steers, over 56 lbs.	10	c
Medium	9	c
Light Steers, under 48 lbs.	8½	c
Heavy Cows, over 50 lbs.	8½	c
Light Cows, 30 to 50 lbs.	8½	c
Kip	10	c
Veal	15	c
Calf	15	c
Dry—		
Dry Hides	18	c
Dry Bulls	15	c
Dry Kip, 10 to 15	17	c
Dry Veal, 5 to 10	17½	c
Dry Calf, 7 down	22	c
Fall Lambs	24	@40 c
Sheep Skins—		
Long Wools	$ 1.00	@ 1.25
Medium Wool, 6 to 9 mos.	60	@ 90c
Short Wool, 3 to 6 mos.	40	@ 60c
Spring Lambs	25	@ 50c

HORSES.

The next two months should see horses at a premium, especially the heavy animals which can be used in plowing and general farm work. Draymen of San Francisco say that it is impossible at the present time to get a line on a heavy draft horse.

Desirable Drafters, 1700 lbs. up.	$275@300
Light Drafters, 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	200@250
Wagon Horses, 1250 to 1350 lbs.	175@200
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	135@150
Young	200
Old Mares	100@150

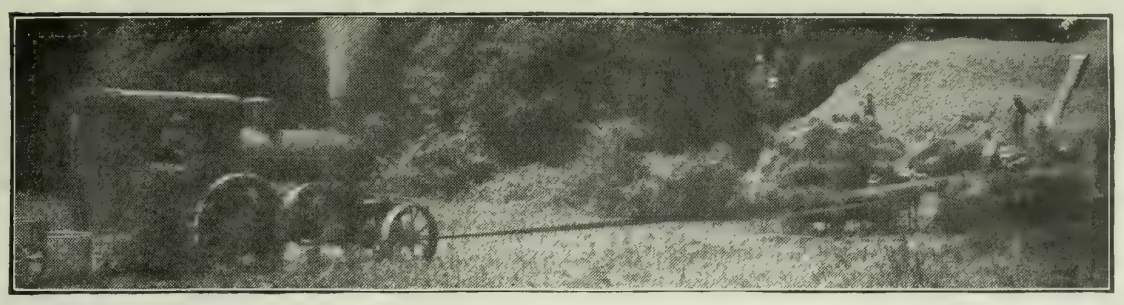
MULES.

The mule market is still keeping up its old gait and all available mules are bringing top prices. Many scrubby and mongrel mules, however, are being shipped into the State to take the place of those shipped to the islands of the Pacific where they are being used on the sugar plantations.

1200 lbs	$250@300
1100 lbs	200@225
1000 lbs	150@175
900 lbs	125@150

The American Steel Post Co. has been awarded the contract for its "Carbo Steel Posts" to be used for building the drift fence for the United States Bureau of Animal Industry, Washington, D. C., which also has a branch office in Los Angeles. This fence is being built under the detail specifications of the United States Forester at San Diego, and great care is being taken with respect to construction to make this fence serve the purpose of keeping cattle from ranging from the Mexican territory in the United States, thus prohibiting the bringing in of ticks and diseases.

The American Date Co. has sent H. F. Cole to Algiers to get date offshoots which are to be planted on the plantation of this company in the Coachella valley.



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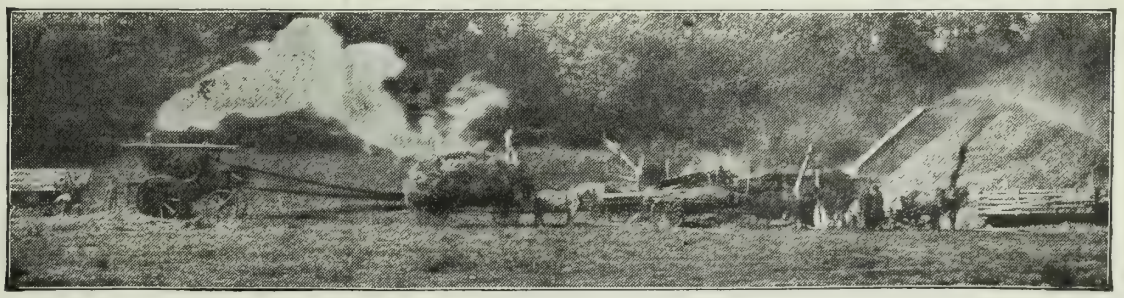
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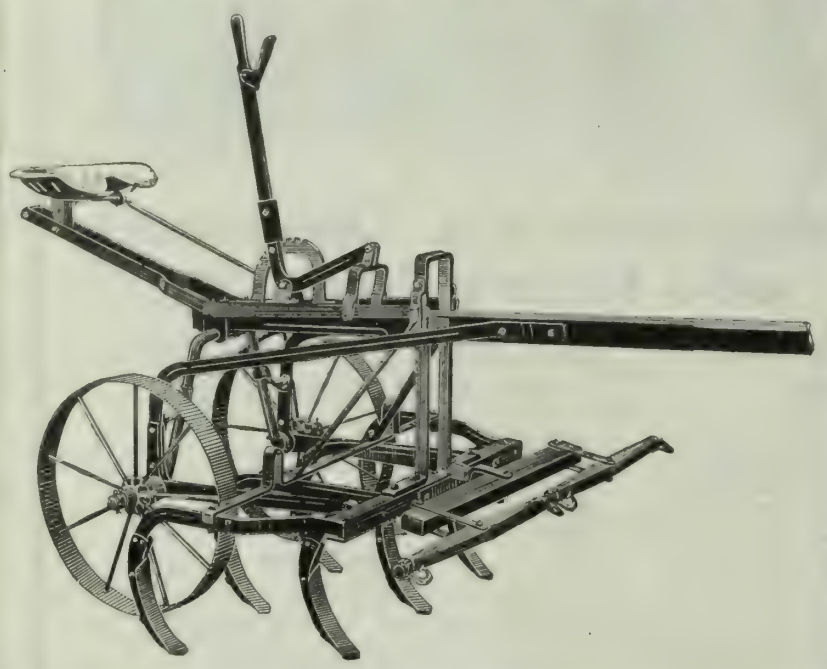
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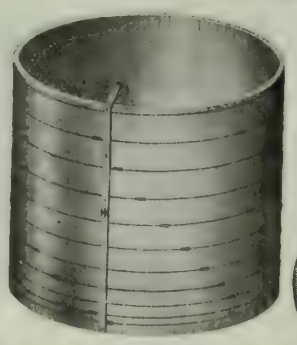
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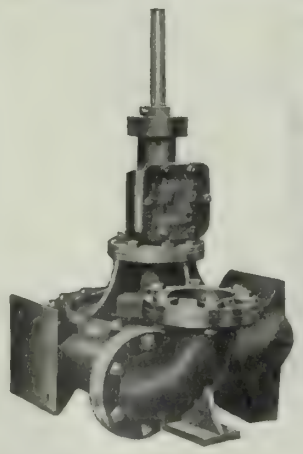
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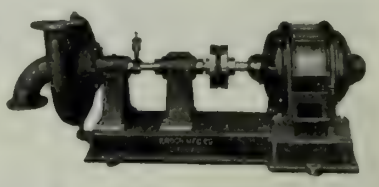
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THE PACIFIC RURAL PRESS

Vol. LXXXI. No. 6. SAN FRANCISCO, SATURDAY, FEBRUARY 11, 1911. Forty-first Year.

Drouth Resistance of the Olive.

[The great rush to olive planting in California thirty years ago was based upon the conception of the olive as a fruit-bearing tree likely to be profitable on lands which would successfully carry no other fruit-bearing tree, or as likely to be profitable on good land with less expenditure for culture than any other tree would tolerate. The result was an immense commercial propagation of olive trees and free planting of them in all sorts of hard conditions of soil and climate, and in many cases a loss of time and money invested. California fruit growers reached the conclusion some years ago that the olive in a bad place was not worth having.

We are not able to state just what constitutes a bad place for the olive, except that it is a place where the tree will not bear profitable crops, and this may be bad only for the olive, because other fruits may sometimes prove their profitable bearing under conditions which the olive refuses to honor. For nearly twenty years these disappointments have been cropping out, and they have never been explained except by the wilfullness of the olive. Barren trees have remained so through all improved treatment of irrigation, fertilization, pruning, spraying and cultivation, so that better culture does not do as a panacea for olive ills. At the same time trees will bear under what would seem to be very unfavorable conditions. Owing to increasing demand and irregular supplies, the olive is now one of the most promising and profitable fruits to grow—if one is sure of getting the fruit. The only safe conclusion is that there will be fruit where there is fruit, if the same variety of olive is planted, and that all plantings are experimental until this fact is established.

We indulge in these reflections because there has just appeared a very interesting publication by the U. S. Bureau of Plant Industry, entitled "Drouth Resistance of the Olive in Southwestern States," by Mr. S. C. Mason, who has been pursuing plant studies in southern California for some time, and we are anxious to give our readers some of his conclusions, asking them to remember that California has had the experience which we have outlined and that they should not conclude in favor of the olive under hard conditions too quickly. Remember also that there may be many standards of profitability and that a recompense which might suit an Arab in North Africa might not agree with an American's idea of what is a profitable return for his time and money.—EDITOR.]

Between the ocean and the mountains of southern California an olive industry is based on the local rainfall on lands above canal lines or lacking a sufficient water supply. Excellent examples of this type of olive culture may be found in the neighborhood of Beaumont, Riverside county; La Mirada, Orange county; Chatsworth and San Fernando, Los Angeles county; in Santa Barbara county; and also in the more northerly part of the State near Oroville.



Olive Trees—The Smaller Stunted by Excessive Pruning.

While varying considerably in their climatic conditions they all agree in these general features: A minimum temperature never below 20° and seldom lower than 28° or 30° F.; a maximum summer temperature of 105° in cooler seasons to 114° F. in extremely hot years, but with a monthly mean temperature not below 48° in winter and seldom exceeding 80° F. in summer. The annual rainfall at Los Angeles has exceeded 12 inches during more than half of the years during the last three decades, occasionally rising to 22 or 23 inches, or even higher, and only in rare years of drouth falling as low as 7½ inches, with the minimum of 4.83 inches during the thirty years recorded.

The rainfall of this region is enhanced by frequent coast fogs. The mean relative humidity from month to month is an important factor in all such cultural problems, but this is obtainable only for Los Angeles, with which point we may fairly compare Los Angeles county and Orange county. This ranges from 61 to 90 per cent for the 5 a. m. observation, and from 61 to 68 per cent for the 5 p. m. observation. This condition of atmospheric moisture would give orchards in these localities a great advantage, for instance, over the one studied at Palm Springs in the edge of the Colorado desert, except that the trees suffer more from the attacks of parasites in the more humid climate.

One of the most extensive examples of olive culture without irrigation in this region is to be found on a large ranch in the southern part of Los Angeles county, near La Mirada, Cal. Here are 500 acres in olives, the oldest set sixteen years ago and others as recently as seven or eight years ago. The planting distance was only 20 feet, giving 108 trees to the acre. The olives occupy rolling hillside land for the most part, difficult of irrigation even if a water supply were at hand. The soil is as a rule rather strong adobe, with some admixture of sand in parts of it. The nature of the hills nearest would indicate an abundance of lime in the soil, which is so important for olive production. Some degree of cultivation is given between the rows, but with the older trees the spread of the branches prevents reaching all of the surface.

The original plan was to remove half of the trees as they began to crowd, by cutting out every other row on the diagonal. The effect of this is to leave one-half, or 54 trees to the acre, in rows 20 feet apart, and trees 40 feet apart in the row alternating. This has been done with some blocks of the older trees, and is a very evident gain. Where the original stand of the older trees still remains there is evidence of crowding and lack of thrift in many cases, and the writer is convinced that a stand of only 27 trees to the acre, or 40 by 40 feet, would be still better as the trees advance in age. The great vigor and productiveness of the trees along the draws and low places where any sulplus of rain would flow give evidence that water famine had been felt by the small trees.

A notable feature of this orchard was the

(*Continued on Page 112.*)

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Feb. 7, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	1.04	18.68	26.48	58	34
Red Bluff.....	.15	14.46	14.85	62	34
Sacramento.....	.92	15.85	11.59	64	42
San Francisco ..	1.09	17.79	13.51	56	42
San Jose.....	.51	13.01	8.48	64	32
Fresno.....	.62	6.41	5.55	68	38
Independence...	.52	4.50	5.43	52	26
San Luis Obispo	1.08	17.46	11.65	66	40
Los Angeles	1.24	8.93	8.89	64	46
San Diego	1.86	7.81	5.75	64	44

The Week.

Two great goods are assured: the third is now to be striven for. The Panama-Pacific is ours; the season's rainfall needs only springtime showers; but "votes for women" still require the powers of voters to amend the constitution of California. The Senate and the Assembly at Sacramento have ordered the question to be submitted to the people at a special constitutional amendment election. We claim it to be an agricultural question because of a priority claim for equal suffrage by powerful agricultural organizations and a prevailing sentiment favoring it in agricultural communities, and we expect an overwhelmingly affirmative vote in all rural communities. Woman's mastery of important public problems was manifested first in such communities: before the women's clubs of the towns were thought of, country women were leading discussions of sex-equality in property rights, in taxation and in the management of local schools, churches and industrial clubs and associations and demonstrated their powers by their rational actions and influences. Now that they are reinforced by the organized strength of urban women and perhaps supplied with greater skill in leadership by the urban element, the full force of their long-continued advocacy will be exerted in support of the constitutional amendment at the election, which will be announced in due time.

One question alone has seemed to us important in this connection, and that is, do the women really wish to vote. It is the duty of every man to satisfy himself on that point before casting his vote. We have little patience with men who are claiming that women do not desire to vote, because we do not believe that they have any broad knowledge of the prevailing will of women, but are speaking from their own preconceptions, encouraged perhaps by the fragrance of the clinging vines which surround them—exhaled in gratitude for their stout support. We do not accept this as expressive of the collective wish of women, but rather as a manifestation of manhood's disposition to stand pat. Something more than this is needed to determine the question as to women's will to vote. The coming election will afford opportunity for women to declare their earnest desire, and they should assume the responsibility of individual and collective declaration on the subject. If it should appear that women really do not wish to vote, certainly the franchise should not be forced upon them, but if a clear majority of intelligent women does favor the voting privilege for their sex, there is neither right nor reason to withhold it. Every man should promote all promising efforts toward the necessary demonstration. It will not do to oppose the amendment merely upon an unsupported claim that women are not interested nor desirous of voting.

It is perhaps to be expected that prejudiced men will have recourse to all expedients to prevent women from exerting the influence which properly belongs to them in the settlement of this question. It is therefore not surprising that a member of the minority in the Assembly at Sacramento should make this ridiculous proposition. He is reported to have "prepared a bill which provides that any woman who accosts any male voter for the purpose of soliciting his vote, or for the purpose of ascertaining his opinion on any political question that may be submitted to the voters of this State or any political subdivision thereof on the day of any general election or special election held therein, is guilty of a misdemeanor and punishable by a fine of not less than $5."

There is no danger in such a proposition, for the legislature will make just as short work of such things as they did of the claims which were respectfully urged against the main question when it was before them. In fact, they will make shorter work of it, for men have a way of dealing with those who offer insults to women—and this is a low-browed, studied insult. Still it seems to us worth a comment because it does, in a way, signify that some men may be expected to approach the issue in such a spirit, although few will be so coarse in the manifestation of it. Aside from the disgraceful insult involved, it is, of course, ridiculous to assume an attitude of preventing a free and frank effort on the part of those who desire equal-suffrage to secure it. The author of the above proposition claims to fear the persuasions of women in influencing the votes of those who do not know their own minds. The proper treatment for such people is to disfranchise them—certainly not to consign them to the worst influences and "protect" them from the best. If a man vote for the coming amendment because a good woman requests him to do so, he is, according to our notion, striking the deepest wisdom on this particular subject—unconsciously perhaps. If he vote against it because some prejudiced man perverts him by the cry that "babies and biscuits" constitute a woman's sphere, he is too ignorant to vote at all, because he does not know that better babies and better biscuits will follow the extension of justice to women and that in a single generation better fathers may be added to the gains to the public.

But we fear we are taking ourselves too seriously. It occurs to us that we could easily show that our amended costume for agricultural women has an important connection with the equal suffrage issue. Judging by what our readers are writing to us in favor of this costume, it would seem easy to constitute San Francisco the fountain of modes for field-working women, as Paris is for the higher-ups. Figuratively speaking, there is to be a rending of garments as expressive of joy for moderns as it was of woe for the ancients. It strikes us as interesting and significant that great movements for costumic and constitutional amendments should coincide, and that both should deal with woman's freedom from restrictions and limitations. Evidently, then, the two should help each other toward this single end. If we could immediately realize the costumic reform the realization of the constitutional would more speedily follow. Its course would then be freed from all such insulting obstructions as penalizing the solicitation of votes for the amendment to which we have referred. In the first place it would be practically impossible to prove that the solicitor of votes was of the forbidden sex; second, it would be so dangerous to arraign, because of the improved defensive power of women, that no one would dare to try it. We frankly admit that we had no idea of the breadth of bearing of the new costume when we suggested it. It is often that way with great inventors and discoverers.

It is quite possible that the ascendancy of the effort for equal suffrage in this State may play an important part in the immediate development of the State. There will naturally be a rallying of working suffragettes from all parts of the world to make sure that the election goes aright. Possibly the world indeed will appreciate the general affect of a tremendous affirmative majority in this State, which stands so high intellectually and socially that it may be surely accounted a victory in the highest places and fit to be zealously worked for. Besides we shall gain the residence of rich women who will prefer to invest their funds where they can vote as well as pay taxes. This will bring us a stream of European title-holders who are seeking debt-payers to re-start them in the world. The development features of the proposition are in fact only beginning to dawn upon us. It is exceedingly fortunate that reduced rates over the Southern Pacific, Western Pacific and Santa Fe systems will go into effect March 10 and will remain effective until April 10. The new schedule provides for a rate of $25 from Missouri river points, $32 from St. Louis and $33 from Chicago. Traffic officials are confident that there will be an unusually heavy colonist travel this spring, and arrangements are being perfected to handle a big business from the day the rates go into effect. This is the chance of a lifetime for the suffragette.

The attempt of some journals to make Mr. George Shima, who is a neighbor of ours in the hill country of Berkeley, a sort of an Ah Sin in agriculture is all wrong. Mr. Shima is an expert Japanese potato grower on lands near Stockton. As potato prices have gone aeroplaning it has been charged that Mr. Shima had wickedly cornered the market and was working jiu jitsu on prices. If it were true it would simply mean that white dealers had been beaten at a game they would all have enjoyed, but it is apparently a false report in all particulars. Mr. Shima's statement is this: "I do not buy potatoes except for seed. I raise them. I find that the man that tries to make a corner is broken. I don't do that. It was published that I had 900,000 sacks on December 1. That was not so. At that time I had only 90,000, and since then I have sold in Los Angeles and San Francisco 40,000 sacks. With what I save to exchange for seed, I have now only 25,000 sacks to sell. The cause of the high price of potatoes this year is the frosts last spring. In 1909 the crop was big, and many thousand sacks were thrown away, the price was so low. The acreage in 1910 was just as great, and the price might have been as low now, if it had not been for the frost, and the fact that the crop in Idaho, Utah and Colorado was also small. The crop in Germany was small, too. That is the way they have broken the price before—by bringing potatoes from Germany and Scotland." The whole matter seems to be that

Mr. Shima had potatoes when others had none or few, and that he is selling at the market price, which is always wise when prices are high.

The Australians seem to be succeeding by the application of a very old and simple method of growing tomato plants to considerable size under protection and putting these very advanced plants in the open air about the time when other growers put out small plants from seed beds. Their practice is to plant seed beds, using bone meal fertilizer for forcing growth. Each plant when two inches high is placed in a tin and planted in a cold frame, the solder being removed from the tins, so that they can be removed without disturbing the soil around the roots when the plants are moved to the field. It is claimed that the growers have made as much as $2000 from one acre of land in growing tomatoes only. Early in the season the tomatoes brought from $3 to $5 a case at Melbourne, though the price subsequently fell to $1 a case. This practice is a method of half-forcing which will pay if prices warrant the extra cost of handling that way.

We are in favor of conservation and we are perfectly sure that coming generations will grow crops in this country on lands which are now held to be undesirable, but it is certainly going too far to preach conservation on this text: "There is no such thing as bad soil in the United States. The matter is, there is a poor man on top of the good soil." We arraign that statement for at least two reasons. In the first place it is misleading because, although possibly no soil is so bad that it cannot be reclaimed if money enough is used, it gives the idea that one can be careless about buying land and still not lose money. In the second place, it is an unwarranted reflection on the sense and wisdom of many who own land which it is not at present possible, economically, to render productive. In short, it is one of the wild, sensational declarations which are now being too often made to catch public attention. Probably all the sensational preachers that ever lived have not done the peace and sobriety of the country so much harm as one of these loose agricultural speakers can do in a single printed oration. Proceeding upon the text stated above this seems to have been the sermon: "There are a billion of acres of land on which there is constant loss by erosion, improper tillage, floods, storms, etc. Placing this loss at $1 per acre, at a conservative estimate a billion dollars is lost to the country each year that could be saved if proper methods were used." The sermon is much better than the text, which is not common when the text is from scripture, but it is quite often the case when one starts out to strike a sensation and writes his own text. There is, in fact, no appreciable relation between the text and the sermon, except in the losses of a poor man on good soil. But this sound statement is vitiated by the cry that there is no bad soil. The best man in agriculture knows very well that there is plenty of bad soil, of course, but it is not the best man who is in danger. It is the careless or ignorant man or woman who is doomed to loss, disappointment and bitterness by declarations by those in places of authority that there is no bad soil. How many have been deceived hitherto. Such people should be protected, or at least warned.

Queries and Replies.

Orange Budding.

To the Editor: What are the criticisms and advantages regarding crown budding, putting the sour stock out where one wishes the tree, and one or two years later bud instead of budding the young stock low on the trunk? Is this crown budding as good as the latter?—R., Fresno.

You probably mean budding in the head of the tree. The "crown" is properly the "root-crown" or the point where the stem crowns the roots. If we use the term "crown" for some other part of the tree, confusion is likely to result. The trouble with planting the seedling and at some future time cutting back the branches and grafting in the head above the forks is that you are undertaking an expensive operation and losing time in getting crops of fruit. Unless the budding is expertly done, you will get very irregular trees or be disappointed in the amount of re-working you will have to do. Suckers must be always watched for; that ought to be done anyway, but a sucker from a wild stock is more vigorous and worse in effects if you happen to overlook it. We should avoid all such trouble by planting good clean trees budded in the nursery. You may have to do rebudding later, if you want to change varieties, and that is trouble enough. We should not rush at the beginning into all the difficulties there are.

Sulphuring Apricots.

To the Editor: A regulation under the Food and Drugs Act has recently been carried in this State prohibiting the sale of dried apricots containing more than 0.015 per cent of sulphurous acid. This is said to have been copied from American legislation. We cannot turn out a satisfactory sample here with less than about 0.8 per cent. Could you please tell me what provisions with regard to sulphur in apricots, if any, are now in force in California? It is said that you use glucose also. Is this correct, and, if so, in what manner is it applied? I have never known it used here.—C. H. P., Renmark, South Australia.

Your authorities seem to have out-Heroded Herod, for the U. S. regulation allows 0.035 per cent of sulphur dioxide, and this amount is so innocently small that our fruit driers made so great a protest that the whole regulation has been made inoperative during the last three years while the whole question of the guilt or innocence of sulphur is being reviewed by a special commission of physiological chemists which has not yet made its report. We have now, therefore, no regulation in force except such as the fruit may encounter when placed on sale in other States or countries, and then of course it is under whatever regulations are locally in force. You seem to be using altogether too much sulphur if the fruit shows 0.8 per cent of sulphur. Our driers would probably be satisfied with 0.125 to 0.250 per cent (that is, one-eighth to one-quarter of 1 per cent), but we are not aware that they have made any formal declaration of agreement to any amount. All are waiting to see what the special commission reports, and meantime are following their own judgments as to times and amounts of sulphuring.

We do not know of any use of glucose with apricots or other fruits which are cut for drying. It was at one time used to some extent for glossing prunes, but has been generally superceded by brine (5 lbs. of salt to 100 gallons of water) or by glycerine (1 lb. to 20 gallons of water) or by a prune-juice dip made by extracting the juice from small prunes with hot water. All these dips are used just before packing and are kept boiling hot to kill insect eggs as well as to cleanse and gloss the fruit.

Pecans in the San Joaquin.

To the Editor: Would you advise planting of pecans in commercial orchards here? Walnuts in their proper location constitute some of California's best improvements. After visiting some bearing paper-shell pecans here in Fresno county, I believe a pecan orchard of choice variety would be more desirable than a walnut orchard. Any light you can give the subject would be highly appreciated.—C. E. D., Kingsburg.

We have for some time believed that pecans would do well on moist rich land in the interior valleys where there are sharper temperature changes than in the coast valleys, except perhaps near the upper coast. We are confirmed in that opinion by the behavior of trees of Mr. Edwin Gower of Fowler, who has sent us nuts not only of seedlings but of the improved varieties. We can only say that such planting as you propose seems promising on lands having moisture enough to carry the nuts to full ripening.

Finding Thrips.

To the Editor: Are there any thrips in the prune orchards of Napa valley? If so, in what localities? How can their presence be detected? Will the distillate emulsion-nicotine spray control brown scale as well as thrips?—H. E. W., Napa.

We cannot undertake to answer questions about the occurrence of particular insects in particular localities. We are too likely to make mistakes in such intensely local matters. Your constituted adviser is your county horticultural commissioner, Mr. A. D. Butler, who probably has an office in the county courthouse, or you can find him by enquiring of the clerk of the Board of Supervisors. This reference ought to be good in all fruit-growing counties. You can find thrips by shaking a cluster of blossoms, as soon as they open, over a sheet of paper or in the palm of your hand. The thrips are very minute, transparent, somewhat louse-like insects. The spray you mention would probably have little effect on the brown scale which would still be in the egg state and under cover, at the time the early spring spraying for the thrip, as described on page 73 of our issue of January 28.

How About the Dust Spray?

To the Editor: Some two years or less ago there were some communications in your paper relative to the "dust spray." The correspondents promised to make further report of their experience, but I have seen nothing further in reference to the subject, although there has since been two seasons in which to test the spray. Myself and others would be pleased to learn anything further that can be learned on the subject.—L. F. B., Shasta county.

We, too, have been patiently waiting for a demonstration of the serviceability and effectiveness of this treatment of tree pests and diseases. Will the users thereof give their conclusions and the reasons for them?

Horse Beans and Oranges.

To the Editor: Would it pay me to raise horse-beans in the San Ramon valley for fattening hogs? Horse-beans do well there. Would citrons do well there without irrigation, and would they be better than stock-beets for hog feed?—H., San Francisco.

We do not promise anyone that anything will pay. Horse-beans are good with other feeds for hogs. Theoretically they will balance well with pie-melons and beets, and both the latter will produce well on good land with proper cultivation in the valley you mention. Theoretically, also, we would rather have beets than pie-melons. The hogs will tell you the rest.

Citrus Budding.

To the Editor: I wish to bud some Maltese blood orange trees to pomelos and lemons. Do you think they will make good stock for them, and, if so, is it necessary to cut below the original bud.—Subscriber, Dinuba.

It is possible to bud as you propose, and it is not necessary to go back to the old stock. Work in above the forks.

Horticulture.

DROUTH RESISTANCE OF THE OLIVE.

(*Continued From Page 109.*)

prevalence of the common black scale, a parasite found on olive trees all along the range of the ocean fogs unless vigorously combated, and not found to a harmful extent in the interior valleys of California or Arizona. How seriously this scale interferes with the functions of the tree is a matter upon which olive growers differ widely, but there is no difference of opinion as to the scale preventing the production of an olive of good pickling qualities.

Of the varieties planted, the Mission is the most prominent and satisfactory, though considerable blocks of the Nevadillo, the Pendulina, and the Columbella are also grown.

In comparison with this orchard stands the case of a ranch two or three miles away, the soil and location being practically the same. Here 400 or more acres of olives, probably differing little at the start, have for several years been in absolute neglect. Many of the trees were never properly headed up, being mere stools of several shoots from the ground. No evidence of cultivation could be seen, but grass, weeds, and small shrubs robbed the trees of the needed moisture. This, with the close planting, had reduced the problem to one of existence instead of profitable production. There was some fruit, and occasional trees enjoying some little advantage in space and moisture were bearing fair crops. These only helped to prove the fallacy of the idea that the olive is a tree that may be planted upon dry and barren soil, given absolute neglect, and yet produce profitable crops of fruit. Here in these contrasted orchards, with soil, rainfall, and temperature similar, the difference between pruning and culture on one hand and neglect on the other made the difference between a profitable industry with a fine product and a poor and scant crop not worth going over the ground to gather.

Summary.—In several localities in southern California and Arizona olive groves have been planted along with apricots, figs, grapes, and some other fruits. The irrigation projects under which these plantings were made subsequently failed, leaving the fruit trees without any water other than the rainfall.

The local rainfall of 3½ to 8 or 10 inches annually has proved insufficient to maintain life in any of these plants except the olive, which has been found in many instances green and flourishing after six or eight years of abandonment and lack of irrigation.

Under these conditions the olive has shown the characteristics of a desert plant, competing with mesquite, cat's-claw, and greasewood in their own territory. The plantations which have been studied are the Bogart-Degolia grove near Casa Grande, Ariz., a grove near Florence, Ariz., and "Las Palmas" trees in the olive belt northeast of Phoenix, localities having a mean annual rainfall of 7 to 9 inches; and in California, the Pope olive grove near Palm Springs, in the upper end of the Colorado desert, where, with an annual average rainfall of only 3½ inches, 20 acres of olives have survived six years without irrigation and are still growing. The soils of the localities are sandy and gravelly clays derived from the disintegration of soft granitic rocks of the adjacent mountains. They are low in organic matter, but fairly rich in available phosphoric acid and potash. The soil at Palm Springs is a nearly pure granitic sand and gravel, very low in silt, clay and humus, but showing by analysis percentages of potash and phosphoric acid equal to the better agricultural soils of the Mississippi valley.

A study of the olive trees growing under these conditions has shown that unlike the mesquite and some other desert trees they do not survive by sending roots down to subterranean supplies of moisture, but develop instead a very elaborate systems of roots occupying the soil at from 2 or 3 to 18 inches in depth and adapted to gathering moisture from the lightest rainfall.

The remarkable drouth resistance of the olive is made possible (1) by the power these trees possess of extending their roots so as to gather moisture from a large area; (2) by their habit of growth in forming low spreading tops which protect the trunk and main branches from the burning heat of the sun; and (3) by the character of their leaves, which are constructed in a manner calculated to check evaporation and conserve the moisture obtainable by the roots.

The plantations studied were made according to irrigation standards and contained originally from 75 to 114 trees to the acre. These plantings have proved too thick for successful growth without irrigation.

The varieties used in these orchards are the ones commonly grown under conditions of sufficient rainfall in France and Italy or with an abundance of irrigation in California.

The publication in 1908 of Bulletin 125 of the Bureau of Plant Industry, entitled "DryLand Olive Culture in Northern Africa," by Mr. Thomas H. Kearney, has brought to our attention the existence of a great oil-olive industry many centuries old, in the north of Africa, dependent on an average annual rainfall of 9.3 inches. The principal varieties grown are probably of local origin, adapted to these conditions through years of selection.

Very wide planting allows a great spread of roots for moisture gathering, while a system of clean cultivation and dust-mulch forming in vogue in that country before it was occupied by Europeans conserves to the utmost the meager rainfall.

The most drouth resistant of these varieties, the Chemlali, has been imported by the Bureau of Plant Industry, and is being tested at a number of localities in the Southwestern States.

In view of the remarkable drouth resistance shown by European olive varieties accustomed to abundant moisture, as shown in this bulletin, it is believed that with the planting of this desert-bred variety from Africa and the adaptation to our conditions of the Tunisian methods of planting and culture, large areas of land in the Southwestern States possessing a suitable soil and climate but now undeveloped from lack of irrigation water are adapted to produce olive oil.

Trial plantations are now being made at various points in this region to determine whether such dry-land olive culture will prove profitable on a commercial scale under American conditions.

BORDEAUX SPRAYING FOR PEACH BLIGHT.

To the Editor: I have an orchard of Lovell peaches 8 or 9 years old, and I see that the bark of the trees is cracking and getting sunburnt. Some of my neighbors say it is because of spraying every year with bordeaux mixture. Is that right? I have sprayed them during the last four seasons. In the first and second year the proportion of the mixture was 10 pounds of bluestone, 12 pounds of lime, and 50 gallons of water. In the third and last time it was 5 and 7 with 50 gallons of water. Now, if spraying is the cause of cracking, what is the remedy for it?

I would spray every other year, but I was afraid of curl-leaf and did not want to take chances, Lovells being very delicate trees as you know.—GROWER, Fresno, County.

RESPONSE BY MR. T. F. HUNT, UNIVERSITY EXPERIMENT STATION.

In regard to the spraying of your peach trees, I doubt very much if the injury of which you speak is from the use of bordeaux mixture. I think that you could use the 10-12-50 formula as a fall spray without any injury at all, because rains will keep it diluted, and at that time the trees are dormant and can stand a much greater strength of bordeaux than they can in the growing season. This same heavy bordeaux applied as a spring spray might, after a series of years of continual use, show some injury to the trees.

When "peach blight" first became a serious disease in the State, and before many experiments in the control of it had been made, growers were advised to use the heavy bordeaux in the fall. Various formulas were used, the 10-10-50 being about the average at that time. A great many growers have used as much as 20-20-50 in the fall without any injury to the trees. The spring spray at that time was much stronger than is used now, ranging from 6-6-50 to 10-10-50. Subsequent experiments proved, however, that these were entirely too heavy, and that just as efficient work in the control of blight and curl-leaf could be obtained by the use of a weaker solution, carefully made and thoroughly applied, and that a great deal of material of the heavier mixtures was being wasted. If this heavy bordeaux was continuously used as a late spring spray it might, after a series of years, produce some injury, but there is no need of using the heavy spray, as the weaker solution, 4-4-50, is sufficient, and at that strength it will not injure the trees.

It is becoming a general practice (and a good one) to use the bordeaux mixture in the fall and the lime-sulphur in the spring. The lime-sulphur thus used will control the blight, curl-leaf, peachworm, San Jose scale, and it seems to soften the bark which may have become hard or "hidebound" from other causes.

During the past season, in the San Joaquin and Sacramento valleys, there has been a great deal of sunburn, especially on young trees. The bark and foliage of older trees showed signs of distress. This was due to a lack of moisture in the soil the latter part of the growing season. In a great many localities the rainfall, which was up to the average or nearly so, was so distributed that it did not fill the usual reservoirs, the supply ran short the latter part of the season, and the trees showed the effect of the shortage. This was very noticeable with the apricots. The leaves, instead of maturing and falling naturally, dried on the trees and hung on very late in the fall. This shortage of moisture at that time accounts for the hard, dry condition of a great many fruit trees in the interior valleys.

Berkeley, Cal. THOS. F. HUNT.

Citrus Fruits.

THE DECAY IN CITRUS FRUITS WHILE IN TRANSIT.

By G. HAROLD POWELL, Manager Citrus Protective League.

After the first of February the decay in citrus fruits while in transit is likely to increase. The fruit is riper, more tender, and therefore more susceptible to injury; the weather is warmer, and for a time may be more humid, and as the shipments during February, March, and April become heavier, the work in the groves and packing-houses is forced to the limit and unless systematically checked is likely to be carelessly done. A sound orange with an uninjured skin does not decay; bruised oranges are almost sure to rot, under the conditions outlined. This is the time of year when every organization, every grower, and every shipper ought to stop and look into its own operations to see whether the fruit is handled with enough care to prevent injury and decay.

A sound orange not only ships in sound condition, under any method of transportation, but it remains sound in the hands of the jobber, the retailer, and the consumer. A bruised orange may be transported in sound condition if it is iced or pre-cooled quickly after picking, but it is likely to rot as soon as it leaves the car and becomes warm and moist enough for the decay to develop.

A Business Question.—The careful handling of the California orange and lemon crop is a business question. There is enough involved in it to cause every grower and shipper to give it serious consideration. Formerly, the loss from decay in transit was estimated to vary from three-quarters of a million to a million and a half dollars annually; it is much less now. This money, in addition to the freight paid on the rotten fruit, has been practically thrown away. It can be added to the earnings of the citrus-fruit grower as the most common losses from decay are preventable by the careful handling of the fruit.

The Cause of the Trouble.—The decay question has been investigated by the U. S. Department of Agriculture for several years, and many of the growers and shippers understand it. Many of them do not. There are others who understand, but who do not practice the teachings of the Department. The principles underlying the decay in citrus fruits are therefore restated.

The most common decay in citrus fruits while in transit is caused by blue mold, a low form of plant life, which cannot grow through the healthy,

vigorous epidermis of the skin. It belongs to a class of organisms which grow on dead or weakened tissues. Blue mold on the skin of a vigorous, sound orange is in the same condition as barley would be if sown on an asphalt pavement; neither can penetrate the tissues or the soil beneath. They are similar also in that neither can grow in a good soil without heat and moisture to germinate them. The blue mold, though, will grow slowly at a temperature as low as 32° F., though its development is greatly retarded in a temperature of 40° Fahrenheit.

Practically all the decay in transit is the result of bruising and injuring the fruit during its preparation for shipment. Clipper cuts, stem, and gravel punctures, finger-nail scratches, and rough handling in the packing-houses—these are the most common forms of injury.

The U. S. Department of Agriculture has spent thousands of dollars in co-operation with the citrus industry in establishing the principles of good fruit handling. It has shown that the lemon and the orange will keep for months and can be shipped in sound condition if the fruit is handled properly during its preparation for shipment; but the Government can never do for the grower and the shipper those fundamental operations which they only can perform. It has helped to point out the causes of decay. It remains for the industry to handle its operations in such manner as to make the findings of the Government effective.

Not Easy, but Possible.—The control of the decay is a business proposition. It is practical to control it, but it is not an easy question to handle. It is not self-regulating. It is related to the methods of paying labor, the methods of fruit-picking, and to all of the business practices that surround the handling of the fruit. Any system of labor handling or of business management that places a premium on the quantity rather than the quality of work performed, is likely to lead to decay. The careful handling of the fruit is unusual, unless the grower, the organization, or the shipper has provided some method of enforcing it. It must be the business of some one to see that careful handling methods are habitually practiced. In the end it depends on the man who handles the labor and he must have the strong support of those who employ him, or decay can not be escaped.

The effect of bad handling on an orange or lemon is often difficult to see, and those who are not used to looking for small mechanical injuries are likely to overlook them. A pair of sharp eyes, however, will find most of the trouble; and the largest amount of injury is often found in the fruit of the grower who performs all of the other operations of the grove with scrupulous care, but who allows the handling of the fruit to regulate itself.

Now is the time to stop and see where you stand. Your oranges are as likely to be in the crippled and injured class as those of your neighbor. Unless your whole system of business places a premium on the care with which the work is done, the chances are more than even that you will find from 10 to 40 per cent of your fruit injured in the various operations of handling.

How to Escape Losses.—The Citrus Protective League stands squarely for the conservation of the earnings of the citrus-fruit grower. It does not believe that the citrus industry can afford to lose a million dollars a year from decay, or any considerable proportion of that amount. It knows that the principal losses from decay are avoidable. Every grower and shipper is therefore urged to consider this question now, before the favorable season for decay sets in. Standardize your picking so that all of it is done with care. Make it some one's business to enforce careful handling. Be careful of the picker who is paid by the box. Look out for the man who picks over 50 boxes per day. Be careful of the loading, the hauling, and of every operation in the packing-house, from the unloading of the fruit to the final loading in the car. Watch the fruit of each grower where it is pooled through an association. The oranges of one may show 2% of injury, while the fruit of another shows 40%. See that the points of the clippers are round, instead of pointed. Watch the emptying of the fruit from the sacks. See that the grove is fumigated next year, if the oranges have to be washed. Sound fruit is the price of eternal vigilance, but every grower and every shipper can have it if he will devote as much attention to it as he does to the culture or selling of the crop. In short, study your whole system of doing business and determine the relation of each operation to the care with which the fruit is handled. A system that insures careful handling leads to better work in every department of the citrus-fruit industry. You are urged to take this matter up with your labor, your association, your directors, your shipper, or with anyone in authority, and give it critical attention from now on.

FERTILIZING ORANGES.

To the Edtor: I have been much interested in papers in your issues of November 12 on the use of nitrate of soda for citrus fruits. May I ask what is the general and what do you consider the ideal, manuring, and when applied for orange trees from 15 to 12 years old under irrigation? I use about 2 cwt. each of superphosphate, nitrate of soda, and sulphate of potash per acre, but am dissatisfied with my yields as compared with yours in California. I get about four cases of Washington navels per tree, the cases being Imperial bushels holding, say, 80 oranges.

Renmark, South Australia. C. H. P.

[There is not only no standard for fertilizing orange trees, but there is no "ideal" which might be considered as a basis for a standard. All growers who are awake to the necessity of doing something for bearing trees, try all things and hold fast to what (they think) is good. Practically none of them has any enduring conviction or demonstration as to what is good, but they keep on trying. There is, however, one clear and enduring conviction, and that is, that continuous fertilizing must be done for profit, and our best growers are using the same materials you mention in considerably larger amounts than you apply, and use also other forms of nitrogenous fertilizers. The amounts of superphosphate and nitrate which you use would be considered homeopathic treatment by our growers. This whole question is under expert study and experiment, and it is to be hoped something more definite and edifying will be ere long available.—Editor.]

A STANDARD PACKING HOUSE

Orange growers in all parts of the State will be glad to know the sort of building which can be claimed to lead in citrus packing-houses, for a local writer claims that the plans furnished by the architect call for a structure that promises absolutely to be the finest building of its kind in southern California. When completed it will be 217 feet long and 120 feet in depth. It will have a concrete basement underneath its entire length, one portion of which will contain the box-making department and the place for storing box materials, etc. The other end of the basement will be so constructed that if in the future it is found desirable that it may be used as a precooling or cold-storage plant.

On the floor above, the main room will be 120 by 194 feet in the clear. Here will be installed the most modern and up-to-date machinery known to the citrus fruit-packing world. In addition to this there will be large and commodious rooms for receiving and weighing the oranges as they come from the orchards. The entire cost of the structure alone, not including the machinery, will be $22,500.

COVINA DOES NOT DETERIORATE.

Mr. A. R. Meserve, Los Angeles county horticultural commissioner, punches a hole in the deterioration doctrine in favor of Covina. Among other things, he is credited with saying: "With good care, which includes proper irrigation, cultivation, and fertilization, there is no limit as yet as far as Los Angeles county is concerned. Not only is there no deterioration, but the oldest orchards in this county, which are given the best care, continue to improve each year."

In support of his contention, Commissioner Meserve points to some of the orchards first set out as examples. Near Covina are navel orange trees 24 years old, which seem to be perfectly healthy and bear better and a greater quantity of fruit each year. Commissioner Meserve believes the condition of this grove alone refutes the theory of those who fear that the best cultivated orange groves will last less than 20 years.

Agricultural Science.

LESS WATER REQUIRED IN RICH SOILS.

Doctor Widtsoe, president of the Utah Agricultural College, prepared a paper for the Dry Farming Congress entitled "How to Reduce the Water Requirements of Plants," which is reviewed by the Deseret Farmer. He opened with the statement that it required from 300 to 3000 pounds of water to produce one pound of dry matter. He quoted the experiment of Pagnoul of France, who found that on poor soil it required 1109 pounds of water to produce one pound of dry matter, while on fertile soil it required but 574. Experiments in Utah brought out similar results; for instance, corn grown on a naturally fertile piece of land required 908 pounds of water to produce one pound of dry matter. When manured it required 612, adding some sodium nitrate in addition to the manure reduced it to 585. In another experiment, corn grown on sandy loam not cultivated required 603 pounds of water. When cultivated, it was reduced to 257. On clay loam not cultivated, 335 pounds were required. Cultivating reduced it to 428. On clay soil not cultivated, 753 pounds was the requirement; when cultivated this was reduced to 582.

In most sections, even in humid and irrigated ones, but especially in the dry-farming regions, water is the limiting factor in crop production. By having the soil well provided with available plant food, the plant can make more growth with a given amount of water. Manuring by putting more plant food in the soil increases production without increasing the moisture requirements. Cultivating by keeping the moisture from evaporating makes ideal conditions for germs to work on the inert plant food making it available and so a larger plant growth. Part of the value of the summer fallow comes from the plant food made available and not alone from saving up moisture.

He sums up as follows: "At the present time the only means possessed by the farmer for controlling transpiration and making possible maximum crops with the minimum amount of water in a properly tilled soil is to keep the soil as fertile as possible. In the light of this principle, the practice usually recommended for the storing of water and for the prevention of the direct evaporation of water from the soil are emphasized. Deep and frequent plowing, preferably in the fall, so that the weathering of the winter may be felt to great depths and strongly, is of the first importance in liberating plant food. Cultivation which has been recommended for the prevention of the direct evaporation of water is of itself an effective factor in setting free plant food and thus in reducing the amount of water required by plants.

Low Quality of Poor-Land Products.—In this same connection it is interesting to bring up the results of experiments conducted by Professor Snyder of Minnesota. He found, for instance, that timothy grown on poor land had a protein content of 6½ per cent, while that grown on good land contained 8¾ per cent. In other words, on the rich soil the plant put 6 per cent more food-value into the crop. In another experiment he found that corn fodder grown on poor land contained 6.6 per cent protein. On the same land manured, 9½ per cent. On clover sod manured, 10½ per cent, or, in other words, two tons of corn fodder from a rich soil contained more food-value than three tons from a poor soil.

A Restatement.—Combining these two results, we get the following: A given amount of moisture will produce at least 30 per cent more crop on rich soils than on poor ones, and the crop grown on the rich soil will contain at least 45 per cent more food-value than that grown on the poor one. In other words, the moisture that would produce 100 pounds of crop on a poor soil would produce at least 130 pounds on a rich soil,

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IT'S RAINING

And the prospects are splendid for continued wet weather.

Perhaps you have been somewhat dubious over the weather prospects, but of course everything looks brighter to you now. Better see to your wants in trees, vines and the other things you intend to plant, and send your order along quickly. This wet weather is going to swamp us with business and you had better take due notice and send us your order so that you can depend on getting just the stock you want to plant before the supply is exhausted.

FIGS

Living under your own "Vine and Fig Tree" is one of the attractive similes of "California Horticultural Life." It is literally true with the fig, that the owner of this class of property has only to care for it during the winter months, for it is becoming common practice in all the fig districts to sell the crops on the trees, while the trees are clothed in their winter garb, the buyers paying from one to two dollars per tree for the future crop, and assuming all responsibility for its maintenance, and for the harvesting of the crop. Doesn't this appeal to you, Mr. Fruit Grower?

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Can you afford to let an opportunity like this slip by when you can buy Peach Trees at lower prices than they have been offered for in past years? The stock we are offering for sale this season is not only more complete than it has ever been before, but our trees are better and have a fine root system simply because of the care we have exercised in growing them on selected soils, adapted to their most perfect development.

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and the crop raised on the rich soil would contain on an average 45 per cent more protein, which would still further increase the food-value of the crop grown on the rich soil to the equivalent of 188 pounds grown on poor soil; almost twice as much food-value on the rich soil as on the poor one from the same amount of moisture. Then again the rich soil will hold more moisture, and if there is plenty of moisture the rich soil can grow two or three times as much crop as the poor soil and with a food-value that is higher.

The Field.

THE FARMER AND THE GAME LAWS.

In a reference in last week's issue to the report of the Fish and Game Commissioners and some proposed changes in the game laws we remarked that there was dissatisfaction with them among the farmers. We are glad to receive from Mr. D. D. Bowman of Santa Cruz a copy of a very forcible statement which he recently published on the subject in the Santa Cruz Sentinel. As Mr. Bowman is a justice of the peace he knows the law, and as he is also a farmer he knows how the law hits the farmer. His writing is pointed and enlightening, and we are glad to reproduce as much as we can at this time:

SUPPORT OF THE GAME LAWS.—It is not my object so much to criticise the law as it is to consider the subject from the standpoint of the farmer and the orchardist. The law will probably be amended. If so, let us hope that the interests of, not only a special privileged class, but of all classes, may be considered.

During the last two years the subject has been pretty thoroughly discussed in the newspapers from several standpoints. It has been discussed from the standpoint of the naturalist, who would like to see specimens of all the former denizens of our forests along all our highways and in all our fields and gardens, that he may study them and thus add to his stock of scientific knowledge.

It has been discussed from the standpoint of the sentimentalist, whom the sight of a beautiful, graceful deer browsing on a farmer's orchard or vineyard fills with exquisite delight; who goes into raptures of delirious joy at the sight of a flock of quail eating up a fruit-grower's strawberries and whose heart is filled with a hysteria of rapture at the sight of a cunning little cotton-tail rabbit skinning an orchardist's apple trees. And especially has the subject been discussed and re-discussed from the standpoint of the sportsman, who wants game preserved that he may have the pleasure of slaughtering it. Plainly speaking, his view of the question is that game must be preserved at all hazards and at any expense, that he, in the pursuit of the manly pastime of hunting, may be permitted to gloat over it, as maimed, bleeding and dying, it falls a victim to his shotgun or rifle.

All—all—have had their say—that is—all except the man who furnishes pasturage for the game, whose toil feeds it, whose orchards and vineyards and gardens are destroyed by it—viz., the farmer. He is apparently a negligible quantity. His interests have not been consulted in the framing of the laws—that has been done by politicians who owed their positions to the political bosses, who are nearly all "sports" themselves and therefore, of course, look after the interests of their own class.

WHAT THE FARMER CAN DO.—Thus has it ever been from medieval times to the present. The farmer has said nothing.

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He has seen his orchards destroyed by deer and rabbits, his grapes and berries devoured by quail, the hard labor of his hands brought to naught by protected pests and he has not dared to lift his hand to protect his property.

If he dares to destroy one of these protected marauders, without having first obtained the consent of a game warden, he is forthwith haled into court and punished.

If a burglar enters the farmer's house to rob, he may be shot and killed without notice, but if a drove of deer enters his orchard to destroy his property, he must stay his hand until a game warden, appointed in the interests of sportsmen and paid mainly by the land owners themselves, gives his consent. Then, after the deer have ruined his orchard, armed with the game warden's authority, he may take his gun and go out and view the ruin of his toil and hope, for the deer, of course, are gone.

To such an extreme has game protection been carried that a farmer may not even establish a deer park or an enclosure for quail on his own land, stock it himself and kill the deer and quail, when he chooses, for his own use.

He can get permission from the State Fish and Game Commission to keep a certain number of deer or quail in captivity, but even the Game Commissioners can not give him permission to kill and eat them out of season. The legal fiction of "all game animals and birds belonging to the State" must be kept up, no matter what established industries are ruined or what new industries are kept from being established. There is no doubt but that deer and quail and pheasants could be raised at a profit, but under the law as it exists at present it is impossible. The sportsman's interests must be protected at all costs. His sport must not be interfered with, and no one else, save himself and the friends to whom he chooses to present them, must know the taste of venison cutlets or "quail on toast."

EVEN THE RABBIT.—But Santa Cruz county has gone further in the matter of game protection than almost any other county in any State in the Union. Even the grub-eaten, tapeworm infested rabbit is protected by an ordinance solemnly passed by the supervisors of this county, for the sake of the sportsman. Aside from the fact that the rabbit is rarely, if ever, fit for human food, there is about as much true sportsmanship in hunting it as there would be in hunting tabby cats in a neighbor's back yard.

From the standpoint of the farmer and the fruit grower the matter of game protection is being carried to an aggravating and ridiculous extreme. To any one who gives the matter any thought whatever, it must be evident that we cannot have both game preserves and productive farms on the same land.

If the deer and rabbits and quail are to be given the extreme protection accorded to them in this county, then we had better notify intending settlers, as well as the farmers and orchardists already here, that they are not wanted, for, as already said, we can not have game preserves and orchards at the same time and on the same land. We can have limited protection for game, but the limitation should be fixed in the interests of the farmer and not alone, as now, in the interests of the sportsman. I have no doubt that to many of our readers, it will seem incredible that, in this county, quail and rabbits, and especially deer, should be formidable pests for the farmer to reckon with. Nevertheless such is the case. In my own orchard, situated not ten miles from Santa Cruz and right on one of our principal highways, within a mile and a half of Ben Lomond and Felton, I have suffered hundreds of dollars loss through the destruction of trees by deer. Portions of the orchard have been destroyed and replanted three times—and the end is not yet.

You may advise me to kill the deer, but in this instance it is a case of "catching your hare before cooking it," for the deer feed at night and can never be seen in daylight. Of course I may not set my dogs on the deer and catch them in that way; that would be against the law. I know of others whose vineyards, once sources of great profit, are now destroyed—the work of deer and rabbits, protected for the sake of a few sportsmen.

THE WRITER'S ATTITUDE.—I do not object to the protection of fishes, shell fish, or any animal or birds that do not prey on the farmers' crops or on the orchardists' trees and vines. I care not how strict the law is in protecting the fish in our rivers and seas, and am ready, both as a private individual and as a magistrate to help enforce it. But the extreme protection of deer, quail, and rabbits is an altogether different matter, unfair to the farmer and horticulturist and against the best interests of the country.

Nor do I wish to be construed as having a grouch against sportsmen in general. I have spent too many happy days in the mountains of this State with rod and gun to find fault with others who love that kind of sport; but even while I was an ardent sportsman, I recognized the fact that my rights as a sportsman ended where the farmer's rights began, and that the agricultural and horticultural interests of this State were of more importance than the breeding of game, that I might have the pleasure of killing it.

And as I have already said, I believe in a reasonable protection for even deer and quail, but under present laws and ordinances the farmer and orchardist are not getting a square deal.

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4,000,000 Eucalyptus Trees. **Large Stock of Fruit Trees**
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The Garden.

GARDEN HINTS.

Written for the PACIFIC RURAL PRESS by G. H. HOPKINS, Burbank, Cal.

We can learn something even from the Japs in gardening operations. We have always noticed that they allow no ground to be idle, however small it is in area, but spade it up to a depth of 18 inches. They, as a people, have practiced intensive farming for ages.

Do not plow under dead weeds or rubbish. They are a mighty poor fertilizer, and the ground already has enough weed seed. Eternal vigilance in keeping down weeds will in time bring the soil in a condition that will not require so much hand weeding—a back-aching job.

[Our practice is to get all the vegetable stuff we can into the ground. We are willing to kill weeds to get humus.—EDITOR.]

We can plant nothing that will make a place more homelike than some of the climbers that do so well in California. Besides all the old varieties we have known in the East, we have here many kinds not possible in the colder States. One variety, the Australian pea-vine, is particularly fine for covering low walls or fences and even porches. It will stand considerable neglect and yet furnish abundant bloom. The wistarias and clematis vines make a rich display in their season. Another rank climber is the Bougainvillea. This vine will reach the top of the highest house and the leaf bracts make a mass of gorgeous coloring.

A favorite flower in California is the nasturtium. It will grow and bloom in places and under conditions of soil that almost no other flower will. In fact, for an abundance of flowers it should be grown on rather poor soil. The blossoms are of all the odd shades of yellow and red. The leaves are also variegated in many of the varieties. Some are dwarf in habit, other tall and used as climbers. Plant seed as soon as danger of frost is over.

MAKE THE HOME GROUNDS BEAUTIFUL.

While it is only the wealthy land owners who can have their sunken gardens, Italian gardens, and other large schemes in landscape gardening, none of us are so poor but that we can, at least in a small way, have some beauty-spot in the home ground. The arrangement of lawn, flowers, shrubbery, and trees should be according to size of grounds surrounding the house, and this space of course depends on size of the ranch, value of the land, etc. The best of our present-day gardeners do not cut up the lawn with a lot of flower beds. Where the grounds are not large, the lawn should have only a few low-growing shrubs or palms, while with a larger area occasional trees may be added. The scheme of tree planting should be with the idea of having at least a portion of the buildings in view at all times while passing along the street or highway. Tall trees like the eucalyptus should be planted at the rear of the house. Such trees as the peppers may be planted around the house, but not so close as to hide it from view. Low-growing trees may be grouped around the sides of the grounds and buildings, with the taller varieties in the background. The flowers can be banked against the house and also be used in front of shrubbery where planted at one side. All plans for planting should be made according to size of plant and tree when full grown, that is, we should try and see how they will look when matured; and to plant under-



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LLOYD R. TAYLOR, Modesto, Cal.

standingly one should know the height finally reached by the trees and shrubs planted. The planting should be done in such a manner that the taller trees will not hide the lower-growing sorts, and the grouping should be so arranged that the house is always in view, so that the view from any point along the highway will be complete.

There are many of the vegetables that are greatly appreciated by chickens. These are the chards, lettuce, cabbage, and of the roots we mention sugar beets and carrots. So when planting make an allowance for them. The benefits will be better health, more eggs, and a less expenditure for feed.

The blue rose is now being advertised by reputable Eastern nurserymen. Blue is not a very common color among flowers, and we doubt if the color of the so-called blue rose is a true blue, and we are not sure that we would admire it if it was.

Hardy perennials can now be taken up, the roots divided and reset, forming new buds. They will do better handled this way than if allowed to stand year after year without removal.

The commercial gasoline wagon has come to stay, and several are now in use near Los Angeles by the market gardeners. One lettuce grower has a machine with a wide flat rack attached so that he can load thirty to forty crates and get to the market and make his delivery to the dealers and get home again in considerably less than half the time required for a horse vehicle.

EARLY TOMATOES.

To get the most out of market gardening, it is necessary to plan to have things as far ahead of their season as possible, and this applies to tomatoes as well as anything else. In the summer time tomatoes are one of the most common of any of the vegetables or fruits. In our salubrious climate they will send up a vol unteer crop of plants wherever they were planted the previous year and if left unmolested will bear enormous crops. So one can almost depend on every garden having a constant supply until the curtain is rung down by Jack Frost at the end of the season. The writer has been quite successful in raising early tomatoes by the following method: The Earliana we consider the best variety, as it is quite hardy and one of the earliest. In many localities they can be planted out this month and, should they get killed by frost, the loss is not great and new plants can at once be set out again. Our way is to dig a hole about 18 inches in diameter and deep enough so that the plant is below the surface after being set. We prefer large, stocky plants, with a head 4 to 6 inches across, and set them in the ground up to the first branch, using the surface soil for the roots. Firm the soil and put in enough water to settle the dirt around the roots, and for an early crop further irrigation will not be necessary. The soil that is removed from the hole should be thrown on the south side, which will shade the plant. As the plant grows the hole is filled until finally ordinary level culture can be given. Plants set out this way will not be affected by the winds nor an ordinary frost. During an extremely cold spell the holes can be covered with burlap. The first growth of a tomato plant is building up a root system, so that when warm weather comes on the plant will make a rapid upward growth and along in April blossoms will begin to appear and an early crop is assured.

Years ago the writer read a book entitled "Ten Acres Enough," and we think it was written by America's leading gardener, Peter Henderson. At any rate, it was quite applicable even then to the section around New York City, while here in California we might easily say that five acres are enough. Here, where we have a corner on the climate, people are bound to come in ever-increasing numbers. The wealthy will choose the cities, the beaches, and the foothills, while the middle class will take to the valleys, where new homes are constantly being created. There may be years when this inflow of population may diminish, but it will never stop. So, as the valleys are limited in area, there can be but one result—all the land suitable for cultivation will be divided into small holdings and intensive farming will be practiced here as extensively and successfully as in France today. It is not too early to be studying up new methods in cultivation. Instead of figuring how to double our acreage, let us rather plan on doub ling our income from our present acreage. It can be done. There is hardly a crop raised in garden or field but that the average yield can be increased two-fold. Try it.

Fix up the home grounds. If there is no enjoyment in having a well-kept place, it will pay you financially in increasing the value of your property.

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Our finely illustrated booklet, "Citrus Fruits," covering the industry from the seed to the market, mailed to any address on receipt of 25c in stamps.

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AGRICULTURAL REVIEW.

VEGETABLES.

The lima bean crop is going out of Ventura county rapidly. During the present month over 12 carloads have been shipped. The price is advancing and the growers are all making money. At the present time it is estimated that there are 225,000 bags of lima beans in southern California. A large percentage of this amount is in Ventura county, while the balance is in Orange county.

According to an Eastern paper, the only ear of corn ever known to contain an odd number of rows of corn has been found by the Department of Agriculture and will be placed on exhibition at the Corn Show being held at Terre Haute. According to C. P. Hartley, the corn expert, this is the first specimen of a perfect ear of corn with an odd number of rows.

Miss Mamie Morrison, of Rough and Ready, Nevada county, raised a squash that is three feet long and a foot in diameter and weighs 56 pounds. It has been placed on exhibition at the Nevada City Chamber of Commerce.

Japanese are planting a large acreage to tomatoes near San Pedro, and they expect to be able to compete with similar vegetables sent out of Mexico. This is the first time that they have attempted to grow tomatoes in large enough quantities to compete with those grown in the southern republic.

A cannery for tomatoes will be erected near Pleyto, Monterey county, this coming summer.

The Pleasanton Hop Co. has decided not to tear up its hop-fields, on account of the promising outlook of the hop market. Although some of the buildings and vines were torn up, they have decided to let the rest remain.

The Winters Canning Co. at Suisun expects to can 20,000 boxes of asparagus this season. This company is endeavoring to secure several launches in order to carry "grass" from the islands to the cannery.

H. L. Vinneck, of Grisly Island, reports that he has raised 25 tons of tomatoes to the acre this last year.

Hundreds of asparagus packers have commenced work for the H. W. & W. E. Meek Co. of San Leandro.

PLANTING ACTIVITY.

An unusually large number of fruit trees are being set out around Paradise this season. Bartlett pears predominate, but many thousand trees of apple and almonds have also been set out. Among the planters are G. K. Bryant, H. K. Sears, Alfred Hansen, and L. M. Breese.

Planting of all kinds of fruit trees around Porterville will be greater this year than at any time in the history of this section. While citrus trees predominate, there is a large acreage of olive trees and grapes.

Many acres of almonds are being set out around Durham. It is customary in this section to plant the trees from 24 to 30 feet apart, the average being 28 feet. The maximum number of trees is about 53 to the acre.

W. S. Shippey, of Lindsay, intends to plant out a large number of olive trees this spring. The olive industry is becoming quite popular around Zante and Lindsay.

AFTER THRIPS.

A. Runyon, an orchardist near Courtland, is making a fight against thrips. He has purchased a Costello sprayer and will use Rogers' mixture and the tobacco solution for spraying.

Ah Yoke, a progressive Chinaman who runs the Baldwin ranch, near Suisun, has sent for some tobacco which he thinks will make a very effective spray against the thrip. There is a pest which attacks the rice crop, and this tobacco solution is the only effective remedy that will protect the rice. He expects to use this spray on the 150 acres of Bartlett pears and prunes of this ranch. Ah Yoke claims that the spray can be made for $1.20 for 200 gallons.

PLACER COUNTY ORANGES.

Mr. S. W. Edwards, foreman of the Parker Whitney ranch at Rocklin, in a conversation last week with the RURAL PRESS representative, stated that at the recent State Fair at Sacramento the oranges which were exhibited from that ranch took the first prize as being the most perfect oranges grown in the State. Mr. Edwards further stated that he could pick oranges from his trees two weeks earlier than in the southern part of the State. The growing of prize oranges and getting them to market two weeks earlier than other parts of the State justify Mr. Edwards in his enthusiasm for the section around Rocklin as a citrus producer.

SAN BERNARDINO ORANGE SHOW.

The first National Orange Show held in the United States will open in San Bernardino on March 6. The plan to be followed is similar to that carried out at the National Apple Show and the National Grain Show. A mammoth tent like those used in a circus has been obtained and an exhibit of citrus fruit from all sections of California and Arizona will be displayed. There will also be an exhibit of the kindred industries of citrus work, such as box-making, packing, pre-cooling, and refrigerating. All the railroads have guaranteed reduced rates for those desiring to visit the exhibition. The attendance is expected to be very large.

MISCELLANEOUS.

A bill has been introduced in the California legislature which forbids women to work over eight hours. The fruit industry is against this bill, as the claim is made that the long hours during the picking season are very necessary. All the big packing and fruit-handling associations are fighting this new law.

The Farmers Union Packing Co. of Campbell recently held a meeting and elected the following officers: P. D. Payne, president; H. A. Craig, vice-president; F. A. Ernst, secretary. Directors: J. E. Weisendanger, F. M. Righter and H. A. Brandenberg, of Campbell; Fred J. Currier, Cupertino; William A. Post, Los Gatos; Herbert Pash, Cupertino, and T. P. Jones of Lawrence.

Bruce Drummond, of the Government Date Gardens at Mecca, has an appliance for exterminating the Marlett scale, which has been injuring the date trees near Heber. He uses a gasoline torch to exterminate the scale.

Rabbit drives are being held at Merrill, Ore., in order to get rid of these pests. The county is paying a bounty of 2½c. per scalp, so that the expense of putting up the netting and other incidents of the drive are being paid by this means.

A movement is on foot to start a negro colony in the eastern part of San Bernardino county.

A bill is being introduced in the present legislature which is to provide for four experimental farms to be established in the dry sections of California where irrigation is not possible.

The Chico Normal School has opened an agricultural course and everything pertaining to farming is being taught.

The Pacific coast hop growers are taking the necessary steps to advertise their hops at the International Brewing Exhibit which is to be held in Chicago in October. It is thought by educating the brewers to the quality of Pacific coast hops that they will use them in preference to the foreign and the New York State hops.

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BURBANK CRIMSON WINTER RHUBARB. Strong plants that will yield marketable stalks the coming season, ready for delivery. Also Grapevines, Mammoth Blackberries, Loganberries, Dewberries, and Phenomenal berry plants.

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RIVERSIDE NURSERY
320 River street, Santa Cruz, Cal.
HENRY SHAW

Agricultural Engineer.

SELECTING A GAS-ENGINE.

Written for the PACIFIC RURAL PRESS
By Mr. C. R. SESSIONS.

What it is to be used for determines, more than anything else, what is the proper engine to buy. For hard, continuous service, the most reliable and most economical engine should be bought, first cost being of secondary importance. For emergency, fire, or drainage service, an engine must be reliable; economy is of little or no importance. For pumping service, for irrigation where a plant is operated only a few days or weeks in the year, a cheap engine run it its maximum power, but well taken care of, is the thing. Here the fuel used, of course, is not important. A cheap engine should be got when it is to be used in connection with an enterprise which is in the nature of an experiment and in which there is more or less of a risk.

Value in a gas-engine is associated with such factors as design, workmanship, and the reputation of the manufacturer.

Guldner, the famous German authority on gas-engines, says, "Less invention and more rational design." Gas-engines have become well standardized, and one engine is no longer better than another simply because some little patented part is used. Nowadays a manufacturer can build as good an engine as he wants to.

The slower the speed of an engine, the larger must be the cylinder to have the same power. The larger the cylinder, that is, diameter and stroke, the greater will be the weight, and therefore the cost of the engine. Of two engines selling for the same price, that engine having the larger cylinder and slower speed is better. Other things being equal, the engine having the highest compression (the pressure to which the gas in the cylinder is compressed just before explosion) will give the most power. A high-compression engine is cheaper for the same power, but is not always the best. Unless it is very well built, it will be short-lived and unreliable. Good practice has determined fairly well what is the best compression-pressure, and most of the good gas-engines on the market agree on this point of design. High compression and speed are necessary for the greatest economy, and such engines, if well built, are the best where the cost of fuel is of vital importance. A high-compression engine is "cranky" and is not as good for emergency service as a more reliable moderate-compression engine.

When the knowledge of the bore, stroke, speed, and weight of an engine is withheld from the purchaser, that engine should be regarded with suspicion. It may be a "two-price" engine, sold today as 18-horsepower, and tomorrow as 20-horsepower and a larger price. A name-plate having such information upon it is attached to electric motors, steam-engines, etc., marketed by reliable manufacturers, and there is no good reason why these vital points of a gas-engine should not be shown on the name-plate.

The simpler and more accessible an engine is, the better it is. Radical designs should be avoided, and world-beating but untried innovations should not be considered. Producer and crude-oil engines are still in the experimental stage. Small hopper-cooled engines are to be recommended. An engine with a crank-balance runs with less vibration than one having counter-weights in the rims of the flywheels. Good balance means long life. Engines with heavy flywheels run smoothly. An engine having a base extending below the flywheels is more easily handled than is one which has a base cut off directly below the cylinder and crank-pit. An engine having several parts cast in one piece is cheap, but replacement of a worn or broken part is expensive. Paint and gold lining add nothing to power or reliability, and sometimes cover some defect. Such points as arrangement and operation of valves, method of oiling, scheme of governing, location of cooling-water and fuel connections, and manner of making adjustments should be considered on their merits, and, after all, these little points are the ones which make the difference in the various makes of gas-engines.

The equipment furnished with a gas-engine should be very carefully considered. Gas-engine manufacturers have been so taken up with the making of the bare engine that they neglect the accessories that must go with an engine. Mechanical oilers, magnetos, batteries, fuel-tanks, fuel fittings, circulating and fuel-pumps, have been picked up at the last moment and have been improperly installed. Carburetors and ignition hob bies have been ridden to death, and even now some one in authority in a shop will be trying to attribute good or bad results to some spring in the carburetor, some spark-plug, some alloy-point on a make-and-break igniter, or some mysterious bend in a wire, when these results may be due to some simple mechanical change overlooked or considered unim portant. The jump-spark is not all bad, nor is the make-and-break spark all good. Each has its proper place, as has also the magneto. The automobile is doing more to decide this question than anything else, and the farmer's growing fa miliarity with the auto is making him more and more familiar with what is good and bad in gas-engines.

Whether an engine should be vertical or horizontal, whether it should have one or more cylinders, be of the two or four-cycle type, be of the enclosed or open type; whether it should have a throttling or hit-and-miss governor, or whether it should be locally manufactured or made in the East, are questions answered by conditions. These points are not all-important, and the world will not come to an end if a selection along these lines is made inadvisedly. Most single-cylinder engines are horizontal. It is considered that engines of more than 35-horsepower should have more than one cylinder because a gas-engine cylinder is made of cast-iron and the size of the cylinder is limited by the strength of this material. Engines having more than one cylinder are generally vertical engines. Two-cycle engines are used mostly for marine work for small powers and are very cheap. The four-cycle engine is much more reliable and economical, and is almost universally used. A throttling governing engine runs more regularly, but is not as economical as a hit-and-miss engine except at full load. On a light or varying load, the throttling engine wastes fuel because a rich mixture is necessary to make positive the ignition of the charge of gas in the cylinder. An engine of the enclosed type is to be preferred when the engine will be exposed to rain and dust.

Heavy, reliable, and well built machinery was demanded by the California pioneers. Eastern machinery was at first, as a rule, light and unreliable, and the East was a long way off. Local manufacturers built what was wanted and controlled the trade until conditions on the Coast have made it harder and harder for them to hold their own against the East, which has the world for a market and has conditions otherwise more favorable for manufacturing. The East is being brought nearer and nearer to us. Some Eastern engines are well built and efficient, and a patriotic prejudice in favor of the home product should perhaps not make one overlook too great a difference in price.

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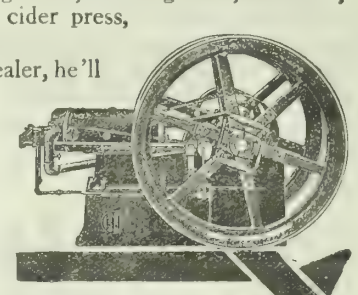
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COST OF SHEEP REARING.

It is always interesting to know what the other fellow is making out of his farm or live stock. It often happens that distance leads to the enchantment, and we think that our neighbor is cornering all the coin in the neighborhood. The following statement of the Guscetti Bros. of Sierra county, California, in the American Sheep Breeder, shows that the "golden-fleeced sheep" did not make the money they are supposed to earn for their owners. It is evident from the statement that the lambs were sold when the market was very low, as 70-pound lambs at $3 each is not very good. The small profit of $820 from 1600 ewes is not worth the trouble, but it is hardly the average for the State. The statement is as follows:

"We have gone over our books and find that the cost of producing wool and mutton in our locality is as follows.

Expense of running a band of 1600 ewes for 12 months, from April 1, 1909, to April 1, 1910.

Herder and camp tender at $45 per month each	$1,080.00	
Groceries, etc.	96.00	
Lambing expense, including groceries and supplies	745.00	
Shearing	238.00	
Dipping	156.45	
Pasture lease, reserve fees, including stock salt, hay, and feeding expense	862.00	
Taxes	201.60	
Wear and tear on outfit	60.00	
Horses' feed and grain.	28.50	
Losses, ewes, entire year, 6¼%	400.00	
Losses, lambs, 10%	495.00	
5% for restocking, etc., in adverse seasons	320.00	
Interest on investment at 10%	640.00	
		$5,322.55
(It will be noted that we have omitted the annual expense of fighting predatory wild animals, which is safely estimated at above $100. But, by not including this $100 expense nor the 10% interest paid on investment, we find that it costs us $2.92¾ per head per year to run sheep, or we come to a cost of 10¼ cents per pound for producing wool and about 4 cents per pound for producing mutton.)		
Sold 1,300 lambs, 70 lbs. average	$3,900.00	
Sold 150 lambs, 50 lbs. average	337.50	
Sold 11,200 lbs. wool	1,680.00	
Had left 100 lambs	225.00	
		6,142.50
		$ 820.00

So, if we add another $100, also 10% paid for interest on loan, we find that by starting in business with $600 cash and a loan of $6,400, which would buy 1600 ewes and equipment, one man would clear $720 per year, which is less than some receive working for wages, and would require nine years to repay loan, provided all went well and that there was no family to share this meagre yearly income. The sheepman's dollar is as hard earned as anybody's, and it is a chance business, for we know not when our entire flock may be wiped out and leave us with a $6,500 debt and only a few pelts of our own."

A NEW DAIRY BOOK.

H. E. Ross, of Cornell University, has recently written a book entitled "A Dairy Laboratory Guide." This book is designed to help the dairyman master the principles of milk-testing, the lactometer, and the acid test, and to understand the

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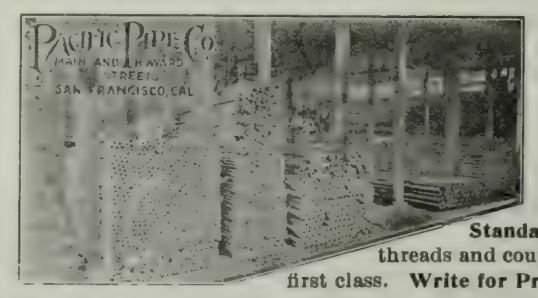
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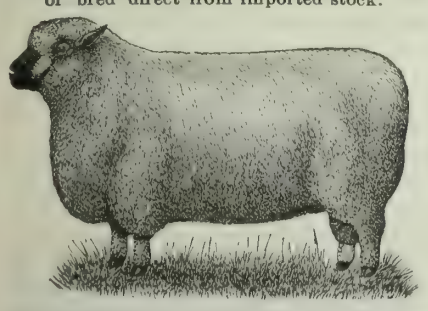
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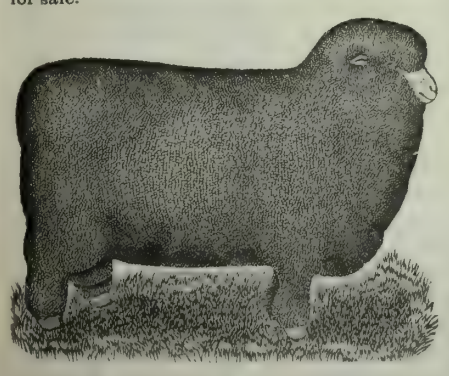
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composition of milk and the relations of the various constituents of milk to one another. This book is published by the Orange Judd Co., and the price is 50 cents net.

RULES FOR HOG GROWERS.

The Pacific coast should raise more hogs. In order to do this, better methods of raising should be in vogue. The Chicago Great Western railway is trying to help out the hog raisers along its line by sending out the following rules. Everything in this list applies to coast conditions with the exception of the corn ration, but by substituting barley or wheat in place of the corn, it should prove of benefit to California hog growers.

First—Select thrifty, vigorous, well-bred breeding stock.

Second—Do not feed the brood sow too much corn. The following rations will give good results: Ration No. 1, corn nine-tenths, oil meal one-tenth; No. 2, corn nine-tenths, tankage one-tenth; No. 3, corn two-fifths, oats three-fifths; No. 4, corn one-half, bran one-half; No. 5, corn one-half, shorts one-half; No. 6, corn one-half, bright clover hay one-half; No. 7, corn one-half, bright alfalfa hay one-half. Clover and alfalfa hay are especially good because they are cheap, bulky, laxative, muscle-producing rations.

Third—Brood sows should have exercise. Fat, lazy sows will not give good results. They should be fed light enough so that their appetites are keen, and then if allowed to follow milk cows or stock cattle, this will keep them strong and vigorous.

Fourth—Provide good shelter at farrowing time. The hog house should be dry, well lighted and free from draughts. One pig, or at most two pigs, will pay for a nice little house for each sow, and yet hundreds of thousands of farmers raise an average of three pigs per sow, all because they do not provide shelter.

Fifth—Do not overfeed the sow at farrowing time. Water is all a sow needs the first day after farrowing. The second day she can have a light feed and the third day a little more, the rate of increase depending on the size of the litter and the milk-producing ability of the sow.

Sixth—Keep the pigs growing. The cheapest gains are made when the pig is young. As soon as the pigs are old enough they should have a "side table" of their own where they can be fed away from the other hogs.

Seventh—Provide green pasture from early spring till late in the fall. The cheapest gains are made on pasture. An acre of good clover, rape or alfalfa pasture will make from 400 to 800 pounds of pork, worth at present prices from $30 to $60 per acre.

Eighth—Provide pure, clear drinking water at all times. Do not allow pigs to drink out of mud holes.

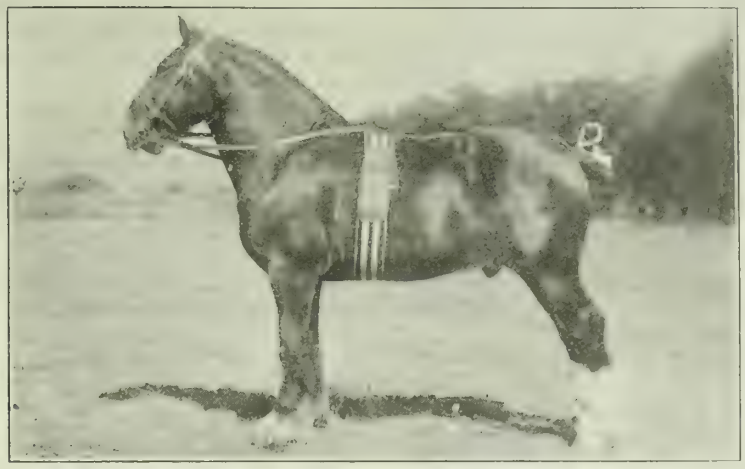
Ninth—Keep the herd healthy. To get rid of lice, dip in a coal tar or crude oil dip twice in the spring and twice in the fall. To prevent worms, make charcoal out of corncobs and other trash, mix in some salt and let the pigs eat it. To prevent cholera, vaccinate the hogs with good vaccine. Keep the buildings and lots disinfected and clean.

Tenth—You must love your pigs and strive to take a little better care of them tomorrow than you did today. The last rule is the golden rule of the hog business.

LIVERMORE HORSE SHOW.

The Livermore Horse Show which is a feature of that section, will be held again this year, and it will be on a larger and grander scale than ever before. This fertile valley is to be complimented upon its interest in the horse-raising lines, and everyone who is able to attend should take in the horse parade which shows what can be done with breeding horses in California.

Salvador Stock Farm, Napa, Cal.



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I can sell you a good horse at prices ranging between $1400 and $1600. Come to Napa and see my stock.

HENRY WHEATLEY, Napa, Cal.

TULARE DAIRY NOTES.

At a recent meeting of the Dairymen's Co-operative Creamery the following officials were elected: C. A. Sayre, president; Joe LaMarch, vice-president; W. J. Higdon, secretary, and J. P. Murphy, manager. This creamery had a very successful year, as is seen from the following report of the manager: Total pounds cream received, 2,294,520; average price, 36½ cents. Total pounds butter-fat received, 706,334.0; sweet cream sold, 24,547.8; churned, 681,787.1; average price paid above quotation, 4¾ cents; total pounds butter made, 833,272; average, 32¼ cents.

Elbert George, a successful dairyman near Tulare, sent the following account of his year's work to the Tulare Register: "After getting my December cream check, I see I have received $1352.75 for butter-fat during the year 1910, taken from 14 cows. These figures do not include hauling nor butter and cream used for the family, both of which amount to about $75 for the year. I know there are other dairies which average more per cow, as they have thoroughbred cows, but I think this is very good for a mixed herd. I feed no grain, but the cows get all the hay they can eat every day in the year, also the best green feed the season affords. I hope this will encourage some of our newcomers."

IMPERIAL VALLEY CREAMERIES UNITED.

Four of the largest creameries in the Imperial valley recently united and will have their headquarters at El Centro. This concern will be known as the Imperial Valley Creamery Co., and J. A. Robinson of Brawley will be manager. The new company includes the Imperial Creamery Co., owned by R. W. Davis; the El Centro Creamery Co., owned by Frank Peacock; the "Famous T. C. Creamery" owned by A. C. Smither, and the Valley Queen of El Centro. The reasons for combining these creameries are that they had been all operating in the same locality and by uniting they can cut down many of the expenses. It is estimated that $1500 per month can be saved on the collection routes alone. This company is now paying 35 cents per pound for butter-fat and handles about 210,000 pounds of butter per month.

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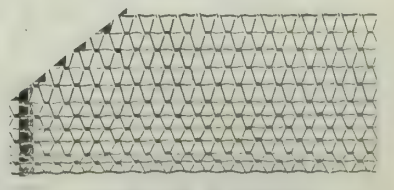
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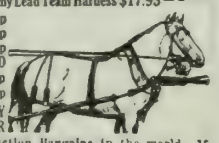
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HONEY BEES



HIVE MONEY

PHOENIX TOOL & VALVE COMPANY, 245 Market St., San Francisco

GREENBANK Powdered Caustic Soda and Pure Potash, Best Tree Wash.
T. W. JACKSON & CO., 42 Market St., San Francisco.

LIVE STOCK NOTES.

E. W. Rankin is feeding 2000 head of cattle near Brawley.

The amount of wool produced in California in 1910 was 13,300,00 pounds. This was about the same yield as for the year previous.

If the new reciprocity treaty which is now before the U. S. Senate is passed, many things can enter the United States and Canada free of duty. Among the various articles on the free list will be cattle, hogs, poultry, wheat, eggs, milk, and cheese.

China is increasing her lard exports into the Philippine Islands every year. In 1909, 3,349,000 pounds of lard was sent into the Philippines from China, while the United States sent in 155,000 pounds.

The German farmers have evolved a process for drying sugar-beet leaves so that they will save some $40,000,000 to the dairymen. According to experts, the value of the dry leaves is $15 per ton, without taking into consideration their other values. As a fodder, the dry leaves are eaten readily by the cattle and are quite free from the drawbacks rising from eating large quantities of green leaves.

The Russian Government is trying to encourage sheep raising throughout Russia, and is bringing in thousands of sheep to show the peasants what can be done with them.

DAIRY NOTES.

S. E. L. Wharton recently sold his entire herd of Holsteins to O. A. Carmichael of Visalia. These animals netted Mr. Wharton $150 per head this last year. One of the cows sold is 16 years old and is still giving a large quantity of milk.

The Modesto creameries are now paying 36½ cents per pound for butter-fat.

C. W. Thresher recently rented his dairy farm, near Marysville, to Mattes & Annis. These renters have 125 cows which they will immediately put on alfalfa.

Senator Estudillo recently introduced a bill in the State legislature which provides that butter must be certified by a commissioner appointed by the county medical society. All butter sold must have the seal of this commission pasted conspicuously on it so as to prevent the sale of impure butter.

L. A. Hall, of Modesto, recently sold his herd of Holsteins to M. M. Holdridge.

Richard Stewart, of Riverside, recently had a cow which died from the effects of eating oranges.

SAN FRANCISCO MEAT ORDINANCE.

The San Francisco Board of Supervisors has passed an ordinance that no dressed cattle, sheep or swine can be received in the city unless inspected by a local or federal meat inspector at the point of shipping. This has killed the market all over the State for stock raisers who had been shipping carcasses into San Francisco. The finest beef will be turned down by these inspectors and cremated on the ground that it has not been properly inspected, and it is probably infected with some disease. There is a movement on foot to get the San Francisco Board of Supervisors to repeal this bill, but the butchers of San Francisco who are authors of the bill, will no doubt prevent its being repealed.

THE PRICE OF BUTTER-FAT.

The following prices per pound were allowed by the various creameries for butter-fat delivered during December in Humboldt county: Central Creamery, 38½ cents; Grizzly Bluff Creamery, 38¾ cents; Capital Creamery, 39 cents; Libby, McNeil & Libby Creamery, 39¾ cents; Swift Creamery, 39½ cents; United and Sunset creameries, no report.

The Modesto creameries were paying 38 cents a pound for butter-fat last week.

The Woodland Creamery paid 40 cents a pound at its semi-monthly pay day held on January 16. This price was only paid once last year.

Poultry Department.

Conducted by M. RUSSELL JAMES.

BROODING THE CHICKS.

In brooding the chicks the important point above all others is in keeping an even temperature under the hovers—never allowing the chick to be chilled or overheated. If this point is secured it makes little difference about the style of brooder. So asserts one of the most successful poultrymen of Petaluma, and so affirm we and every person who has practical knowledge of chick rearing. The chilled chick or the overheated chick is the worthless chick. When its pitiful "yap-yap" is heard, far better for it and more profitable for the owner to end its troubles at once.



Method of Brooding Used on the Carrington Ranch.

In the artificial brooding of chicks we should get as near to nature as possible. How does Nature do it? Look at the wild birdlings tossing in the bitter winds of March! But they have a warm lined nest and a warm downy breast to hover them. Fresh air they have—a whole heaven of it—for birds are the children of the air. Chickens, too, are birds, though we are apt to forget it and ignore the fact that a fowl requires more fresh air than any other domestic animal. More chicks have been destroyed by being kept in close crowded brooders than by any other one cause. In getting close to nature, then, in brooding we must have a warm hover over a warm nest, like the birdling swinging in the winds, and always wide open to the fresh, pure air, that the chicks may run in and out at will.

On the old and successful White Leghorn poultry plant of Miss C. B. Carrington at Hayward this principle is carried out in brooding chicks by the thousand. Two rows of outdoor brooders of the largest size and of standard make are placed directly out of doors, a pathway between them. These open from the exercising room of the brooder into run ways 20 by 50 feet inclosed by inch-mesh wire fencing. (See cut.) Only about 60 chicks are kept in each of these large brooders where many poultry raisers would put double that number. There is a high and regular degree of heat kept constantly under the hovers where the chicks may "warm up" and then spread

out from under or into the exercising room or out in the sunshine and rain (after the first week) just as it suits them. They become accustomed to the changes of temperature—chill winds, frosts and rain—from the first go, but they do not have to stand around in it or huddle in chilled wet bunches. They know there is a "mother" always warm where they can thaw out their cold toes or dry off, and a cozy room to play in, and so run in and out at will just like school children playing in the snow. You should see how the little fellows enjoy digging in the wet earth and pulling out the worms, never minding the showers," wrote Miss Carrington during last week's steady rain.

The chicks are kept in these brooders and inclosures till from six weeks to two months old, when they are changed to colony houses. Replying to a question about the care of these broders in stormy weather without any protection, Miss Carrington said that there had never yet been a day so stormy but that at some time during it she could get the brooders cleaned with little inconvenience. Where there are ice and snow this style of brooding without a brooder house would not work in winter time, but in our coast climate, and with large-sized first-class brooders not overcrowded, there is no question about its turning out sturdy well-seasoned chicks.

From another poultry raiser of Castro valley we have just had a report of excellent results in brooding in a room heated by distillate as with the Arenberg brooder stove. To overcome the hothouse conditions this poultryman has his brooder room divided into two compartments, the heated one opening into the other, which has a mellow dirt floor, and which in turn opens out into an open-air runway. In raising 1000 pullets last spring, his loss at any stage of their growth was as small a per cent as in any manner of brooding.

We have also many excellent reports from those using the fireless brooders, and especially when used in the warm interior sections or after the rainy season on the coast.

Keep the chicks from chilling or overheating; make them comfortable and happy and they will thrive and grow regardless of the style of brooder.

Poultry Notes.

THE FUTURE GREAT POULTRY CENTERS OF CALIFORNIA.

At the present time Petaluma stands unrivaled, not only as the greatest poultry center of the State, but of the world. That Petaluma shall not always hold this distinction in her home State may be safely predicted. Already she has ambitious rivals in the field that will endeavor to wrest the palm from her within the next decade. A veteran poultryman and poultry editor who has done service in many States and localities, has recently pitched his tent at Niles, and he declares that Alameda county is the "future great" in the poultry industry.

Even a short stay in the section of country which centers about Stockton impresses the person who understands the requirements of poultry and the poultry market with the possibilities of a large portion of the San Joaquin valley as a great poultry center. In the PACIFIC RURAL PRESS of November 19 we gave some reasons why a locality which literally "flows with milk and honey" and is green the year round with alfalfa should be a great poultry center. We note that the people of that section are getting very wide-awake to this fact. Some of the substantial farmers about Modesto, who are of course old subscribers to the PACIFIC RURAL PRESS, have quite recently expressed to us their intention of increasing their stock of fowls and making poultry raising an important factor in their business of dairying and alfalfa growing.

Then there is the Sacramento valley, alive to the same interest, as evidenced in the many fine, first poultry shows brought off in that section during the last year. And there is Mendocino county, of which we have not as yet heard much, but which is in fact one of the finest poultry-growing sections in the State. There the climate is right, the soil is right, and the blueberry and huckleberry grow on every hillside, while as yet the land values have not gone up in an airship.

The truth of the matter is, there are many locations for future great poultry centers in the State, and wherever plentiful feedstuff may be raised, and cheap and quick transportation to the large markets secured, may be the future great poultry center of the State.

The Stanislaus News of recent date, in pointing out where Modesto's advantages rival Petaluma as a poultry center, says: "That ten years from now will see this State the greatest poultry producing center in the world, no one who has intelligently investigated the subject will deny, and that Modesto, with its natural advantages of soil and climate, is destined to play an important part in this development, will be readily apparent. Let us make a comparison of Petaluma, known the world over as a great poultry center, and our own city of Modesto, with its greater undeveloped advantages.

"In 1909, Petaluma, with a population of 7000, produced poultry products to the total value of $2,660,000. Ninety per cent of the foodstuffs fed are shipped in from other localities. No grain being raised. Petaluma is 50 miles from the San Francisco market. Reports from commission men show that 40% more poultry and eggs are used in San Francisco than are supplied from contiguous points.

"Modesto is 114 miles from San Francisco, 370 miles from Los Angeles, or within a radius of 370 miles of a population of more than 2,500,000. Los Angeles imports 70% of her poultry and eggs from outside sources. In 1909, 90 carloads of poultry were shipped into Los Angeles from the East. Fifty-eight carloads were shipped into San Francisco during the same year. The average price for 1909 paid for eggs in the Atlantic States was 24.6c.; Middle West, 17.6c., and Pacific States, 25.9c. Eastern producers are shipping, as above noted, carloads of poultry and selling at a profit. Does it not stand to reason we can ship to Los Angeles and San Francisco and sell at a greater profit? If Petaluma gets better shipping rates for poultry and eggs, it must also pay freight rates on 90% of its foodstuffs, which in the matter of tonnage will exceed the difference in cost to us in paying larger rates on our poultry and eggs; so in view of the fact that we can raise all our own grain and green stuff (which will reduce the grain bill), we can ship cheaper in the end and at a greater profit than can Petaluma. Again, the grain we raise in our fertile valley will realize a greater profit to us when converted into poultry and eggs than it now brings. Seasons do not materially affect the profits of poultry raising, and thereby one's yearly income has not the element of chance any other branch of agriculture must embrace."

If Modesto's aspirations and advantages as detailed above are not enough to make Petaluma tremble for her empire, it may be further noted that another rival is appearing on the scene. The New Utopia to be established by George Street, an idealistic Englishman, is to make poultry raising its chief business and to be located in Stanislaus county, where, according to report, 500 acres of rich sandy loam have been secured, eight miles west of Turlock, and a start will be made during January. Back in his head, says the Globe-Democrat, Street has an idea that up at Turlock may arise a rival to Petaluma, the most famous poultry center in the world. Hens and eggs always fascinated him. When in southern California he raised them, but that was before the days of high prices, and he did not make a financial success. Now that both eggs and poultry are in the cow-jumped-over-the-moon class and are aviators of renown, he wants to go back to his old love.

POULTRY.

WAYSIDE POULTRY YARDS, Petaluma, Calif.—HATCHING EGGS from S. C. White Leghorns, Buff Orpingtons, Rhode Island Reds, Light Brahmas and Houdans, $6 per 100. EXHIBITION MATINGS of White Leghorns and Black Bantams, $5 per 15; $7.50 per 30. Address Carl Gregory, Manager.

PIONEER POULTRY YARDS—Standard bred Light and Dark Brahmas, Buff Cochins, R. I. Reds, Houdans, Black Minorcas, Cornish Fowls, Brown Leghorns, Bronze turkeys, peacocks, guineas and Rouen ducks. Address W. A. FRENCH, 545 W. Park St., Stockton, Cal.

WHITE WYANDOTTES—221 egg strain. Owner first-prize cockerel, Oakland and Petaluma 1909. Eggs $2 per 15. H. B. WINTRINGHAM, Middletown, Lake Co., Cal.

INDIAN RUNNER DUCKS—Eggs for hatching, $1 per setting; $2 for 30; for 50 or more, 5c each. F. L. HUNT, Lincoln Ave., Napa, Cal.

ORPINGTONS—White, Buff, stock, eggs. Ellen Jacque, 3117 School St., Fruitvale.

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THOROUGHBRED BUFF LEGHORNS

Proven winter layers; 600 hens selected by Hogan system, in breeding yards.

Chicks, $10 per 100. Orders taken only for May and June delivery.

Eggs for hatching, $5 per $100; $1 per setting.

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Orders booked for spring delivery of baby chicks. Our specialties are Rhode Island Reds and S. C. White Leghorns.

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1st Pullet, A. Y. P. Ex.

Winners from Seattle down; 33 out of a possible 35 prizes in 3 shows this season. Bred as layers first. Stock, any age, for sale at reasonable prices. Eggs $8 and $12 per 100. Settings $2 up. Send for new free folder and prices.

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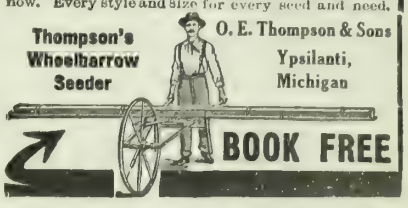
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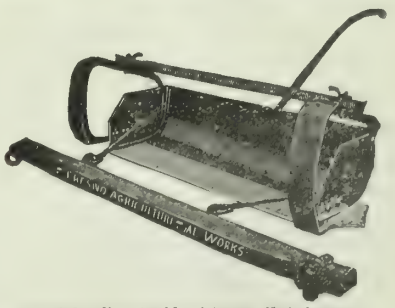
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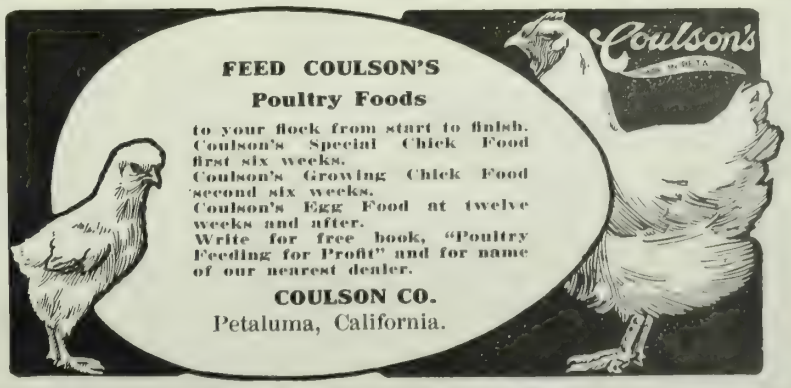
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Graton, California

The Home Circle.

"Booh!"

On afternoons when baby boy has had a splendid nap,
And sits, like any monarch on his throne, in nurse's lap,
In some such wise my handkerchief I hold before my face,
And cautiously and quietly I move about the place;
Then, with a cry, I suddenly expose my face to view,
And you should hear him laugh and crow when I say "Booh!"

Sometimes the rascal tries to make believe that he is scared,
And really, when I first began, he stared, and stared, and stared;
And then his under lip came out and farther out it came,
Till mamma and the nurse agreed it was a "cruel shame"—
But now what does that same wee, toddling, lisping baby do
But laugh and kick his little heels when I say "Booh!"

He laughs and kicks his little heels in rapturous glee, and then
In shrill, despotic treble, bids me "do it all aden!"
And I—of course, I do it; for, as his progenitor,
It is such pretty, pleasant play as this that I am for!
And it is, oh, such fun! and I am sure that we shall rue
The time when we are both too old to play the game of "Booh!"

—Eugene Field.

Ingalls' Rhapsody on Grass.

Next in importance to the divine profusion of water, light and air, those three great physical facts which render existence possible, may be reckoned the universal beneficence of grass. Exaggerated by tropical heat and vapors to the gigantic cane congested with its saccharine secretion, or dwarfed by polar rigors to the fibrous hair of northern solitudes, embracing between these extremes the maize with its resolute pennons, the rice plant of southern swamps, the wheat, rye, barley, oats and other cereals, no less than the humble verdure of hillside, pasture and prairie in the temperate zone, grass is the most widely distributed of all vegetable beings and is at once a type of our life and the emblem of our mortality. Lying in the sunshine among the buttercups and dandelions of May, scarcely higher in intelligence than the minute tenants of that mimic wilderness, our earliest recollections are of grass; and when the fitful fever is ended, and the foolish wrangle of the market and forum closed, grass heals over the scar which our descent into the bosom of the earth has made, and the carpet of the infant becomes the blanket of the dead.

Grass is the forgiveness of nature—her constant benediction. Fields tramped with battle, saturated with blood, torn with the ruts of cannon, grow green again with grass, and carnage is forgotten. Streets abandoned by traffic become grass grown like rural lanes, and are obliterated. Forests decay, harvests perish, flowers vanish, but grass is immortal. Beleagured by the sullen hosts of winter, it withdraws into the impregnable fortress of its subterranean vitality and emerges upon the first solicitation of spring. Sown by the winds, the wandering birds, propagated by the subtle horticulture of the elements which are its ministers and servants, it softens the rude outline of the world. Its tenacious fibers hold the earth in its place, and prevent its soluble components from washing into the wasting sea. It invades the solitudes of deserts, climbs the inaccessible slopes and forbidden pinnacles of mountains, modifies climate and determines the history, character and destiny of nations. Unobtrusive and patient, it has immortal vigor and aggression. Banished from the thoroughfare and the fields, it bides its time to return, and whence vigilance is relaxed, or the dynasty has perished, it silently resumes the throne from which it has been expelled, but which it never abdicates. It bears no blazonry of bloom to charm the senses with fragrance of splendor, but its homely hue is more enchanting than the lily or the rose. It yields no fruit in earth or air, and yet, should its harvest fail for a single year, famine would depopulate the world.

Appetizing Methods of Cooking Dried Fruits.

Many housewives are debarred many months of the year from any fresh fruits except apples, and it seems strange so little consideration is given to the dried products of our orchards.

The possibilities of our dried fruits are not thoroughly understood or the mention of sauce from dried apples or stewed prunes would not be considered gastronomic horrors. Dried fruits have many advantages; they are wholesome, convenient, and economical articles of diet, and, if properly cooked, are as delicious as any preparation of fruits we have for the winter.

In looking over the fruit, cut out all that is discolored, bruised, worm-eaten, or moldy; then plunge into a large pan of cold water and swiftly wash most thoroughly; transfer to a colander, drain a moment, and rinse through second water as quickly as possible. This must be quickly done to preserve every atom of flavor.

Then comes the process of soaking, which is necessary to restore the fruit as far as possible to its fresh and juicy condition before it is exposed to the action of heat. Allow the fruit to soak from 24 to 36 hours in sufficient water to cover to the depth of at least an inch; cover the kettle with a clean cloth which will admit the air and keep out the dust.

Before cooking, take the fruit carefully from the water, allow the water to settle, then pour over the fruit, being careful not to pour in the dregs; add more water if necessary (the fruit must be covered), and boil gently for an hour; add sugar very sparingly just before removing from the fire.

Apricots and peaches are delicious treated in this manner; apples and pears are also fine. Some varieties require more sugar than others; decide this by tasting.

Those who have known of prunes in the repellant form in which they are usually served will find a positive revelation if prepared by this process.

Follow these directions and give dried fruits a just trial; the most inveterate dried fruit hater will be captivated.

Fashion's Decree.

Let us rejoice and be glad that fashion now recognizes a natural waist; yea, more—she even demands the comparatively straight lines that a natural waist gives and looks with a grown upon the ugly curves that the laced-in waist produces. She may speak differently next year, but let us be thankful for present blessings and hope that women in following this fashion today may learn the wisdom of it and gain courage to defy the arbitrary dame if she should ever again call for anything that hampers our breathing organs.

Sleeping Outdoors.

If you have once slept out in the open you will never again want to sleep within walls. No matter how many windows there are in the room, and no matter if you open them all to the full, there is still a difference between the air in the room and that outside.

There is no longer a question as to the healthfulness of sleeping outdoors. The sick, of certain diseases, must have it, and the well ought to.

Those are fortunate who live in new houses, for in the last five or ten years comparatively few comfortable homes have been built without provision for sleeping outdoors.

For those living in older houses the problem is sometimes difficult to solve, but it is worth a good deal of study and actual outlay of money.

Oftentimes a very small upper porch can be made to do duty. Sometimes a corner room on the rear can be made suitable by taking the side walls entirely out and screening the openings. The swinging canvas cots used so much

The Famous Rayo

Is the Lamp of Real Beauty

because it gives the best light of all lamps. The Rayo gives a white, soft, mellow, diffused light—easy on the eye because it cannot flicker. You can use your eyes as long as you wish under the Rayo light without strain.

The Rayo Lamp is low-priced, and even though you pay $5, $10 or $20 for other lamps, you may get more expensive decorations but you cannot get a better light than the low-priced Rayo gives. A strong, durable shade-holder holds the shade on firm and true. This season's new burner adds strength and appearance.



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A Boarding and Day School for Girls

Accredited by the University of California, by Leland Stanford Junior University, and by Eastern colleges. Special courses in study are also offered.

Lessons in Drawing and Painting, Elocution, Vocal and Instrumental Music.

A course of lessons on Harmony is given each week by Prof. Wm. J. McCoy of the University of California, and is open to students outside the school.

Courses of lessons in Household Economics, with all the appliances for cooking, etc., are given each week by Miss Alice McLear, a graduate of the Drexel Institute, Philadalphia, and are open to students outside the school.

For further particulars, address

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School reopens January 9, 1911. Pupils admitted at any time.

700 Acres of Alfalfa Land TO RENT

700 acres of sandy loam, located on Putah Creek, near Winters, Solano county. Will rent as a whole or divide into seven tracts of 100 acres each, for ten years, at a cash rental of $10 per acre per year. Will put down good wells for irrigating purposes, with electric line on each piece. Alfalfa is at its best on this land. Write at once to

WYATT & WILSON
AGENTS
Winters, Yolo Co., Cal.

on porches are very comfortable, and such a one on a lower porch, although lacking in privacy, may be made to serve the purpose if nothing better can be done. A tent with sides of screening instead of canvas and a fly enough larger to protect from rain, is a good solution of the question.

Always provide enough covering so that you will sleep comfortably, or you will not realize all the benefits of sleeping in the open air.

What Can Be Done With an Egg.

The white of a raw egg makes a most satisfactory paste and for some things better than prepared mucilage.

Dip into the white of an egg both sides of the papers intended for covers for tumblers of jelly or jam, and they will hold not only securely but will be airtight.

In making mustard plaster mix in the white of an egg and there will be no danger of burning the flesh.

The white skin that lines the shell of an egg is a cooling application for a boil.

Hoarseness is often relieved by taking the white of an egg that is well beaten into loaf sugar and the juice of one lemon.

Besides serving to make coffee clear, an egg beaten up with the grounds before they are put into the water will act as a good tonic.

To prevent inflammation in a severe burn or scald, apply the white of an egg.

The white of an egg beaten stiff and salt added until thick and applied to burns makes a cooling poultice.

"Whar yer bin?" he asked, as the other boy suddenly came around the corner.

"To the doctor's."

"Fer yer mother?"

"No, fer me."

"What ails you?"

"Tongue all coated—see there?"

"What does that mean?"

"Heaps!" chuckled the other. "That means rhubarb to begin on, and loaf sugar, sweet cake, a velocipede, roller skates, and a jackknife before I git through! Don't you wish you was me?"

OUR YOUNG FOLKS' DEPARTMENT.

Conducted by M. Russell James.

"Mayn't I Be a Boy?"

"Mayn't I be a boy?" said our Mary,
The tears in her great eyes blue;
"I'm only a wee little lassie—
There's nothing a woman can do
'Tis so; I heard Cousin Joe say so—
He's home from a great college, too—
He said so just now in the parlor:
'There's nothing a *woman* can do!"

"My wee little lassie, my darling,"
Said I, putting back her soft hair,
"I want you, my dear little maiden,
To smooth away all mother's care.
Who is it, when pa comes home weary,
That runs for his slippers and gown?
What eyes does he watch for at morning,
Looking out from their lashes of brown?

"Is there nothing you can do, my darling?
What was it pa said last night.—
'My own little sunbeam is coming,
I know, for the room is so bright.'
And there is a secret, my Mary—
Perhaps you will learn it some day—
The hand that is willing and loving
Will do the most work on the way;

"And the work that is sweetest and dearest—
The work that so many ne'er do—
The great work of making folks happy,
Can be done by a lassie like you."

"The Bird and Tree Band of America."

Mr. John Davey, who has spent much time and money to inaugurate his "Bird and Tree Band", has started out upon a five months' course of stereopticon lectures to try and arouse the country upon the important subject of "The Salvation of our Trees and Birds." In a leaflet, "Life or Death," for free distribution, he gives an eloquent description of two imaginary tours of the globe taken in a modern airship 200 years ago and today, respectively.

He draws a striking picture of America's grand forests resounding with the song of birds and the hum of bees, the silver-clear waters of lake, river, and streamlet where rainbow-colored fishes gambol, and LIFE abounding and scintillating everywhere, as he viewed it in his first tour. This picture is contrasted with the second view as presented today, when the noble trees are laid low ("The pineries of the North are gone; those of the South will have disappeared in 20 years, and those of the great Pacific Coast in 50 years, so say conservative men."), the wild birds deprived of their forest homes and destroyed by every murderous device, the silvery streams polluted and poisoned by filth and acids from factories, and plunder and DEATH everywhere in Nature's domain.

Our young folks may not realize it, but this is a matter vital to them. How much of the beauty and delight of our country will be lost with the forest trees and wild songsters! Those grand trees are the most inspiring things in nature. The spirit of the winds is continually playing the musical gamut among their leaves and branches; the melodies of Eden are in the songs of their nesting birds. This is a heritage which by right should descend to the children "who shall make merry in the room we've left." Every boy and girl should belong to "The Bird and Tree Band of America."

Teachers and parents may obtain literature on the subject by addressing Miss Anna M. Nutting, Box 300, Kent, Ohio.

Learn This Lesson.

Learn to earn a dollar honestly and to spend it wisely. This is the most important life lesson for youth. It is not down in the high-school course or the college curriculum, but must be learned from the practical teachings of everyday life. The child that picks up nickels easily and hikes quickly to the corner store to spend them, is not learning it; the youth who has been supplied with every necessity and furnished with luxuries and spending money with no effort on his part, has not learned it.

Every boy and girl should be required to earn every nickel of their spending money. "Come easy, go easy," is a true adage. The nickel that has been hardly earned—that has taken some sweat, some application, some self-denial—assumes a new value in the eyes of the child. He is not in such a hurry to spend it and wants to make sure that he is getting his money's worth when he does spend it. He begins to see the point of that lesson which Franklin when a boy learned from his dear whistle, and to be careful not "to pay too much for the whistle." The true value of money as a means of independence and of gaining the things which make life worth while, is being learned, and as he grows older he begins to understand the need of saving his nickels for some more important end. Thus by earning a nickel honestly by hard work, he learns to spend it wisely and to save for the future.

Parents should provide some means by which their children can begin to earn their nickels just as soon as they are old enough to realize that a nickel will buy desirable things. And children should be taught to earn a nickel honestly; this means by doing whatever work they undertake well and faithfully; not neglecting it, or half doing it, or leaving it for mother to do.

WAYS OF EARNING THE HONEST DOLLAR.

"Where there is a will there is a way," and the children who mean business and have the grit to stay with their job will find many ways of turning a nickel which will soon grow into a dollar. Doing extra chores about home, raising some really fine vegetables on a small corner of the home garden, keeping a few hens so well that they will lay when eggs sell for a nickel apiece or raising fine varieties of pet stock which have a market value—these are a few of the many ways by which young folks may earn the honest dollar.

A GOOD TIME TO BEGIN.

Now, with the fields and gardens growing green under the bounteous rains; the hens and ducks cackling and quacking of the chicks and ducklings that will be theirs in the warm spring days, and all Mother Nature's things wide awake and growing, is a good time for our young folks, especially on the farm, to make a start, too. Get busy in your little garden patch. Buy or borrow a hen from mother, and manage to get a sitting of eggs from some breed of pure-bred fowls to put under her. Get busy and keep busy, and your nickels will begin to sprout and your dollars to grow.

To the boy or girl who gives evidence that he or she has got busy on this line and who sends us the most interesting letter in the next four weeks, we will send at the end of that time a sitting of eggs from fine exhibition matings of White Leghorns.

FARMERS EDUCATIONAL AND CO-OPERATIVE UNION OF AMERICA

All that its name implies. An up-to-date farmers organization extending over twenty-six States. California Divison now well established. Send for particulars State Secretary, Farmers Union, Box 68, Imperial, Cal.

2335-ACRE RANCH FOR SALE

We have a Stock Ranch of 2335 Acres, three running streams, two barns, two houses, well fenced, rolling hills, good soil, about 1500 acres tillable, and has produced as high as eighteen sacks of wheat per acre. Four miles southwest of Dunnigan, Yolo County.

PRICE, $18 PER ACRE

EASY TERMS.

Write for full particulars to

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WINTERS
Yolo County, - Cal.

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Merced County

LET THE CROPS PAY FOR YOUR FARM

We will sell you irrigated land in our **Merced Colony** adjoining the city limits of Merced on a crop payment plan. Make one payment in cash, then the balance of the purchase price from one-third the crop each year. We have confidence in the productivity of our land or we could not make this proposition. If you have equal confidence in yourself, write us today for particulars.

10 and 20 acre tracts. $100 to $125 per acre.

(Send this to us)

Co-operative Land & Trust Co.
595 Market St., San Francisco
(Please send me literature on your Merced Colony)
NAME .....
ADDRESS .....

MADELINE MEADOWS
Lassen County

You cannot afford to buy land in the West without first looking up **Madeline Meadows** lands.

Irrigation system now in operation.

Any size farm you may want under gravity irrigation system.

Total price including perpetual water rights.

$40.00 Per Acre

Nine years' time.

Write or call for full detailed information.

ADDRESS ALL INQUIRIES TO

MADELINE MEADOWS LAND & IRRIGATION CO.
463 Monadnock Building
SAN FRANCISCO, CAL.

THE MARKETS.

San Francisco, February 8, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The local market remains quiet, and trading is extremely dull in the North, prices being above the exporting level. Offerings everywhere are light, Sonora being practically out of the market, while other milling grades of California wheat are scarce. The feeling is rather easy, but prices have so far been maintained on about the former level.

California Club	$1.50	@1.55
Sonora	1.62½	@1.70
White Australian	1.55	@1.65
Northern Club	1.52½	@1.57½
Northern Bluestem	1.55	@1.60
Russian Red	1.50	@1.52½

BARLEY.

The spot grain is still in some demand for shipment, choice feed and brewing being wanted, though foreign shipments have been small of late. There is little movement in the local market. Stocks held at up-river points have been greatly reduced, and prices are steadily held. There is a downward tendency, however, in futures, owing to the recent improvement in crop prospects.

Brewing and Shipping	1.17½	@1.25
Choice Feed, per ctl	1.12	@1.17
Common Feed	1.07½	@1.10

OATS.

Some advance in quotations is noted, as it is impossible to buy oats here at the former figures. The clear weather is bringing out a little more demand for both feed and seed grades, and trading is fairly active, though most varieties are in ample supply.

Red Feed	$1.22½	@1.27½
Red Seed	1.35	@1.45
Gray	Nominal	
White	1.55	@1.65
Black Feed	1.10	@1.20
Black Seed	1.45	@1.50

CORN.

Trading is about at a standstill at the moment, as shipments of Eastern corn have been delayed and there is hardly anything to be had here. In the absence of any pressing demand, however, prices remain nominally at the former level. Brown Egyptian is higher.

Eastern Yellow	$1.30	@1.35
Eastern White	1.31	@1.36
Egyptian White	1.55	@1.60
Brown	1.50	@1.60

RYE.

There is little offered, but with no demand of any consequence prices are unchanged.

Rye, per ctl	$1.55	@1.60

BEANS.

Numerous changes in price are noted, mostly in an upward direction. Pinks, however, are rather easy at the present figure. Two varieties of Manchurian beans are still offered in considerable quantity, at prices ranging from $3.50 to $4. Most local descriptions are moving off at about the usual rate for this season, and so far no great scarcity has developed in anything but limas, which have again advanced in this market. It is reported that the Association has on hand only a quantity sufficient to keep its regular customers supplied for not more than 60 to 90 days, and as there are no more limas in growers' hands, it seems impossible for any Coast dealer to add to his present meager stock. A large arrival at New York last week contained only a small quantity of limas, but according to recent advices from that market there is still considerable stock offering slightly below parity with Coast figures. The movement in that direction is accordingly light at the moment. Shipments of two new varieties of European beans, intended to take the place of lima and white beans, have been received at New York, finding a ready market with the cheaper trade.

Bayos, per ctl		$5.00
Blackeyes	$5.40	@5.70
Cranberry Beans	3.75	@4.00
Garvanzos	2.75	@2.85
Horse Beans	1.75	@2.00
Small Whites	3.35	@3.60
Large Whites	3.35	@3.60
Limas	6.00	@6.10
Pea	Nominal.	
Pink		5.70
Red Kidneys		6.25

SEEDS.

Prices remain at the same level as before. Offerings of alfalfa seed have been rather large, but with favorable weather since the first of the year the demand has revived. There is also a better feeling in regard to general lines, as a few more days of clear weather are expected to bring out a strong demand.

Alfalfa	18@	20c
Broomcorn Seed, per ton	$20.00@	25.00
Brown Mustard, per lb		5½c
Canary	3½@	3¾c
Flaxseed	5 @	5½c
Hemp	3 @	3½c
Millet	2¾@	3¼c
Timothy	8 @	9 c
Yellow Mustard		5¾c
Dried Peas, per ctl	3.75@	4.00

FLOUR.

Export shipments from California ports are very light, as usual, and while there is considerable Oriental business in the North, the market is only moderately active all along the Coast. Prices are steadily maintained as for some time past.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.20	@4.60
Oregon and Washington	4.60	@4.80

Hay and Feedstuffs.

HAY.

Several small changes are noted in city market quotations, the choicer grades being lower on heavier offerings. Locally arrivals are moderate, but dealers are well supplied and are not inclined to add much to their holdings. Growers in some quarters show more willingness to sell, as supplies are fairly large, and so far prospects for the coming crop are good. Dealers claim that the supply is considerably in excess of the requirements of the remainder of this season, but as the crop is not yet assured, growers are holding pretty firmly, and high prices are being paid at many points in the interior. Alfalfa is firm at high prices, and there is no indication of any change, as there is a strong demand all over the State.

Choice Wheat	$11.00@	13.50
Good Wheat Hay	9.50@	11.00
Other Grade Wheat	7.50@	9.50
Wheat and Oats	7.50@	11.00
Tame Oats	7.50@	11.50
Wild Oats	7.00@	9.00
Alfalfa	8.00@	13.00
Stock Hay	5.50@	6.50
Straw, per bale	35@	55c

FEEDSTUFFS.

Rolled barley is a little stronger, while bran, shorts, and middlings have declined sharply, the market for these lines being weakened by large arrivals from other quarters and a decreasing local demand.

Alfalfa Meal, per ton	$18.00@	20.00
Bran, per ton	25.00@	27.00
Cocoanut Cake or Meal		26.00
Cracked Corn	33.00@	34.00
Middlings	32.50@	35.00
Mixed Feeds	28.00@	31.00
Rolled Barley	24.50@	25.00
Rolled Oats	29.00@	31.00
Manhattan Egg Food, per ctl		15c
Shorts	25.50@	28.00

Garden Truck.

VEGETABLES.

Rail shipments of Mexican produce were delayed for a few days, but are now arriving regularly at both San Francisco and Los Angeles. Two carloads of Mexican tomatoes came in the first of the week. The market is accordingly quite heavily supplied, and while the weather is more favorable to business than last week trading is limited, much of the stock coming in being of unattractive appearance. Eggplant and string beans are also supplied to this market by the Hawaiian Islands. Occasional lots of green lima beans are arriving from southern California, the last lots sold being at 15c. per pound. The same price is quoted on asparagus from the Bay district, which is not yet coming in very regularly. Most lines of local garden truck are rather easy, but unchanged in value. Mushrooms are still rather plentiful, and bring irregular prices, according to quality. Onions are becoming scarcer all the time, with a steady advance in prices, and most of the trading is on Oregon stock, which sells up to $2.50.

Onions: New Yellow, sack	$ 2.00@	2.25
Garlic, per lb	4@	6c
Green Peas, per lb	6@	12½
Turnips, per sack	65@	75c
Tomatoes, per crate	90@	1.25
Eggplant, per lb	10@	12½
Cucumbers, per doz	80@	1.00
Summer Squash, per box	1.50@	2.00
String Beans, per lb	10@	15c
Cabbage	60@	80c
Green Peppers, per lb	9@	10c
Carrots	65@	75c
Celery, per crate, large	1.40@	1.75
Rhubarb, per lb	5@	6c
Mushrooms, per lb	5@	15c
Cauliflower, per doz	40@	50c
Lettuce, per crate	1.50@	2.25
Asparagus, per lb		25c

POTATOES.

River stock is practically all in strong hands, and very firmly held, though no further advance is quoted. There is still considerable stock, but holders expect to clean up without difficulty. Some Eastern stock is coming in, and Oregon stock finds a fair demand.

Salinas Burbanks, per ctl	$ 2.25@	2.35
River Whites, per ctl	1.65@	1.90
Sweet Potatoes, per ctl	3.00@	3.25
Oregon Burbanks	1.90@	2.15
Early Rose	1.50@	1.65

Dairy Produce.

POULTRY.

Arrivals of local stock have been light for several weeks, but there is still a heavy surplus of Eastern poultry, a large lot being carried over from the previous week. There is a fair demand, however, for good large stock, and it is expected that the market will be in better shape within a few days. A few descriptions are lower this week.

Large Broilers	$ 4.00@	4.50
Small Broilers	3.00@	3.50
Fryers	6.00@	6.50
Hens, extra	8.50@	10.00
Hens, large	6.00@	7.00
Small Hens	5.00@	6.00
Old Roosters	5.00@	5.50
Young Roosters	6.00@	7.50
Young Roosters, full grown	8.00@	10.00
Squabs	3.50@	4.00
Geese, per pair	2.50@	3.00
Ducks	8.00@	10.00
Turkeys, per lb., live	18@	20c

BUTTER.

The price of extras reached 32c. a few days ago, but with a rapid increase in arrivals the market is weak at present, and some further decline is expected. So far prices have been too high to ship anything from here.

California (extras), per lb	31	c
Firsts	26½	c
Seconds	24	c
Storage (extras)	25	c

EGGS.

All fresh stock is slightly higher, owing to light arrivals, but local traders anticipate a further weakening, as the weather is favorable for production. There is a fair demand in the North, however, for any surplus.

California (extras), per doz	29½c	
Firsts	29	c
Seconds	27½c	

CHEESE.

All fresh stock is steady to firm at about the former level, but business is only moderately active, as there is considerable stock in storage which holders are anxious to unload.

Fancy California Flats, per lb	16	c
Firsts	14	c
New Young Americas, fancy	16½c	

Deciduous Fruits.

FRESH FRUITS.

Newtown and fancy red apples are higher, and cheap stock is not to be had below 50c. The demand for all grades has increased quite perceptibly this week. Pears are unchanged. Occasional lots of strawberries are coming in from the South.

Apples, per box—		
Newtown	1.00@	1.35
Other varieties	50@	75c
Fancy Red, 4-tier	1.00@	1.25
Bellefleur	1.00@	1.25
Winter Nelis Pears	2.50@	3.00

DRIED FRUITS.

Practically everything under this head is quiet at the moment, owing principally to short supplies and the resultant high prices. It is reported on good authority that Oregon prunes are entirely cleaned up, and there are very few to be had in California. Following the recent heavy buying of raisins at an advance by the packers, business has quieted down in this department. The general situation in dried fruits is well shown by a Fresno packer, who has written to an Eastern correspondent as follows:

"Apricots have all been cleaned up long ago. We have very few peaches left here, and as for the amount of raisins on hand, including all varieties, we have not to exceed 18,000 tons as against 30,000 tons at this time a year ago. The greater part of the rain-damaged goods was sold at low prices and shipped out early, as the growers realized that they would not keep over the hot weather.

"The lack of all kinds of dried fruits is having a stimulating effect on the raisin market, and the advices that are furnished us from all over the United States and Canada are to the effect that merchants' holdings are very small, and that jobbers have been adopting a hand-to-mouth policy in their buying. These conditions insure us a continuation of the present heavy sales and an early clean-up of the market at constantly ad-

"The demand continues heavy for peaches, and while quotations have not actually been advanced during the past week, the goods are being held firmly at full quotations, and the market shows a firmer feeling. There are not to exceed 9,000 tons of peaches in the State, and these are practically all in the hands of packers, with three-quarters held by packers of the Fresno district."

The New York Journal of Commerce says: "In California prunes there is a particularly strong feeling. According to some reports, the available supply on the Coast is reduced to about 50 cars, while stocks here are said to be far below the average for this time of the year. Though the demand is moderate and on the jobbing order, the spot market shows a steady upward tendency. There are, however, no quotable changes in prices. As for raisins, jobbers continue to buy sparingly, if at all, but packers are not trying to force business. According to reports, they are unable to get any more stock from growers on a 3c. sweatbox basis. Fancy seeded of special brands have sold at over 6c. Coast, but there are still some sellers of that grade at 5¾c., and sales of several cars for prompt or February shipment are reported at this price. Seedless varieties are pretty well cleaned up, and what remains is closely controlled."

Local dealers quote the following prices:

Evaporated Apples, per lb	9¼@	10 c
Figs, black	4½@	5 c
Figs, white	5 @	7½c
Apricots	12 @	13 c
Moorpark, fancy	13½@	14 c
Peaches	6½@	7½c
Prunes, 4-size basis	6 @	7 c
30s, premium of 1½c.		
40s, premium of ¾c.		
Pears	9 @	13 c
Raisins—		
Loose Muscatels, in sweatbox	2½@	3 c
Thompson Seedless		4 c
Seedless Sultanas	3½@	3¾c

Citrus Fruits.

The citrus market seems to be in good shape for this season of the year. Up to February 6 there had been shipped from the southern part of the State 7320 cars of oranges and 1197 cars of lemons. The auction markets at New York on the 6th were firm, though some easier on navels. California oranges ranged from $1.75 to $3.75, and lemons sold from $2.75 to $3.80 per box. On Tuesday the New York market was moderate, and lemon prices were good, fancies selling from $3.40 to $3.80, and choice from $3.15 to $3.40. Navel oranges selling up to $3.40 for fancy; choice, large, bringing $1.80 to $2.25, and standard from $1.85 to $2.10. Thompson's extra fancy large brought $3.40.

The Boston market was strong on oranges and high on lemons, the latter selling at about $4.45. At Cincinnati, Florida Brights sold from $1.40 to $2.10, and Russetts from $1.35 to $2.15. California navels sold from $1.70 to $1.80. At Philadelphia the market was steady, the price being a little over $2 per box for navels. At Pittsburg the market report was "steady; weather cold." Lemons brought from $3.45 to $3.55, and oranges averaged a little better than $2 per box. At Chicago, 3 cars were sold on the 6th, but little business was done, owing to the streets being blocked with snow. The St. Louis market was steady, bringing average prices. The Cleveland market was reported very strong on lemons; firm for good navels.

The San Francisco orange market has been quiet for some time past, but this week has brought a marked revival of demand. Arrivals are rather large, but find ready sale at the prices previously quoted. Lemons are also moving off

fairly well, prices remaining comparatively low in accordance with values at shipping points.

Navel oranges—	
Extra choice	$ 2.00@ 2.25
Choice	1.50@ 2.00
Valencias, choice to fancy	Nominal
Choice	Nominal
Standard	Nominal
Tangerines	1.25@ 1.75
Choice Lemons	1.75@ 2.25
Fancy Lemons	2.75@ 3.00
Standard	1.25@ 1.50
Limes	4.00@ 4.50
Grape Fruit	2.50@ 3.00

Nuts, Honey, Hops, Etc.

NUTS.

Hardshell almonds are a little easier, and local shellers report adequate supplies for the current demand, though offerings are by no means large. Softshells remain in a very strong position, as the supplies still held by the Association and by private growers are limited, and are moving off steadily at present values. There is a decided scarcity of walnuts, practically nothing being obtainable at present except from jobbers, and their holdings are by no means large.

Almonds—	
Nonpareils	15 @15½c
I X L	14 @14½c
Ne Plus Ultra	13 @13½c
Drakes	11 @11¼c
Languedoc	10½@11 c
Hardshells	7½@ 8 c
Walnuts—Softshell, No. 1	15 c
Standard	14½c
Softshell, No. 2	11 c
Budded	17½c

HONEY.

Comb honey is dull, as buyers are unwilling to pay the prices asked, but offerings are light. White comb is out of the market, and light amber finds a fair demand at full values.

Comb—White Sage	14 @15 c
Extracted—Water White	Nominal.
Light Amber	7 @ 8 c
Amber	5 @ 6 c
Sacramento River Comb	12 @12½c

BEESWAX.

Supplies are moderate, but there is little demand in any quarter. Prices are unchanged.

Light	27½@30 c
Dark	23 @26 c

HOPS.

Little remains of the 1910 crop, and everything is very closely held. The demand is light at the moment, however, and the market is quiet. Higher prices are being offered on new-crop contracts, and considerable stock has been signed up at the new figure. There is some prospect of a further advance.

Hops, 1910 crop	18 @22 c
1911 Crop	11½@16 c

Live Stock.

DRESSED MEAT.

Beef: Steers, per lb	8½@ 9 c
Cows	7 @ 8 c
Heifers	8 c
Mutton: Wethers	9 @ 9½c
Ewes	7½@ 8½c
Ewes	9 @ 9½c
Lambs	10½@11½c
Hogs, dressed	10 @13 c

LIVE STOCK.

Gross weight:	
Steers: No. 1	5¾@ 6 c
No. 2	5¼@ 5¾c
Cows and Heifers: No. 1	4½@ 5 c
No. 2	4 @ 4½c
Bulls and Stags	2½@ 3¾c
Calves: Light	6 @ 6¼c
Medium	5½@ 5¾c
Heavy	4¾@ 5 c
Hogs: Grain-fed, heavy	7 @ 8 c
150 to 250 lbs	8¼@ 8¾c
100 to 150 lbs	7¾@ 8 c
Common Hogs, per lb	5 @ 6½c
Small prime wethers	4¾@ 5 c
Large prime wethers	4¼@ 4½c
Ewes	4¼@ 4½c
Lambs	6 @ 6¼c

WOOL.

Spring wool is being shipped from Arizona, but the California clip will not start for several weeks. Buyers are taking no interest in the scattered lots of last year's wool still on hand, but it will probably be moved when the spring clip is sold.

Fall Clip—	
Mountain Free	8 @10 c
Valley Fall and Lamb	6 @ 9 c
Northern	6 @ 9 c
Southern Spring	10 @11 c
Middle Counties	12 @13 c
Northern	15 @16 c

HIDES.

The market is rather unsettled, as tanners are unwilling to pay full prices for winter hides, and some descriptions are lower. The demand, however, is fairly good for this season, and prices are better than some buying interests predicted a few months ago.

Wet Salt—	
Heavy Steers, over 56 lbs.	10 c
Medium	9 c
Light Steers, under 48 lbs.	8½c
Heavy Cows, over 50 lbs.	8½c
Light Cows, 30 to 50 lbs.	8½c
Kip	10 c
Veal	14 c
Calf	15 c
Dry—	
Dry Hides	17 c
Dry Bulls	15 c
Dry Kip, 10 to 15	16½c
Dry Veal, 5 to 10	17½c
Dry Calf, 7 down	22 c
Fall Lambs	24 @40 c
Sheep Skins—	
Long Wools	$ 1.00@ 1.25
Medium Wool, 6 to 9 mos.	60@ 90c
Short Wool, 3 to 6 mos.	40@ 60c
Spring Lambs	25@ 50c

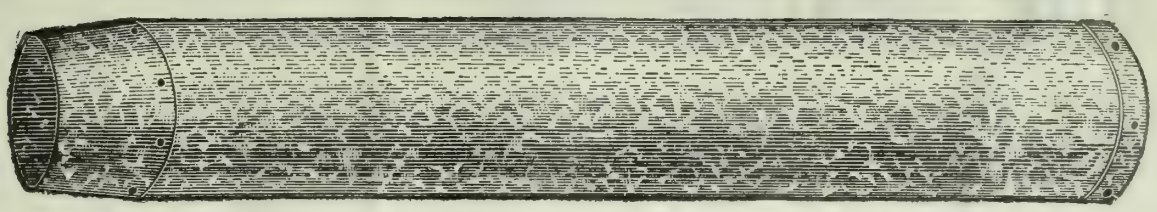
HORSES.

Desirable Drafters, 1700 lbs. up	$275@300
Light Drafters, 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	200@250
Wagon Horses, 1250 to 1350 lbs.	175@200
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	135@150
Young	200
Old Mares	100@150

MULES.

1200 lbs	$250@300
1100 lbs	200@225
1000 lbs	150@175
900 lbs	125@150

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DAVIS, CAL.

PUBLISHER'S DEPARTMENT.

A new book on "Dry Farming" by John A. Widtsoe, president of the Agricultural College of Utah, has just been received. This volume of 444 pages, handsomely illustrated, will prove a very valuable contribution to the list of dry farming publications. Where agriculture is practiced in sub-arid sections, the work of conserving moisture is of first importance, and farmers living under those conditions should have the book. Every crop that can be grown by dry farming is given attention in such a manner as to be readily understood and practiced. McMillan & Co., of 66 Fifth Avenue, New York, are the publishers, and the price is announced as being $1.50; postage extra.

Speaking of books, reminds us of the two by Prof. E. J. Wickson, of which this office is the publisher, "California Fruits" and "California Vegetables." We are sending these books out in large numbers these days, especially the first. The price of $3 and $2, respectively, makes them available to every farmer, and if you haven't one, you should send in your order without delay. Another book—"Alfalfa"—by Coburn of Kansas, price $2, should be on your shelf. We can supply it.

Among the advertisements in this week's Pacific Rural Press will be found that of J. W. Bairstow, the veteran nurseryman of Hanford, who is offering apricot trees in variety, besides some fine peach stock. A change will be noticed in the Salvador Stock Farm ad., in which Mr. Wheatley is offering fine Shire stallions at very moderate prices. The fireless brooder for chickens is again being offered our readers by Mrs. Dysle of Graton. Two cream-separator firms are also asking for your patronage, which should be of interest to dairymen. Then the advertisement of the Krogh Mfg. Co., of San Francisco, should interest every irrigationist who is in the market for a first-class pump. Look up all these ads.

ZANJARO WANTED

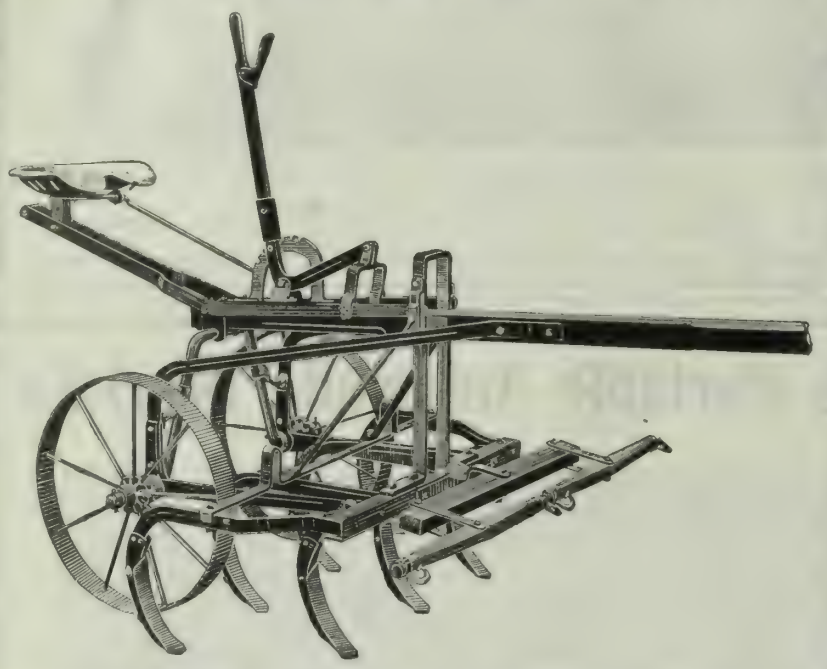
Address as below, stating experience, age, family, nationality, wages or salary in previous position; references required as to reliability, honesty, faithfulness, all around ability and affability in dealing with water consumers. Lewiston-Clarkston Improvement Co., Clarkston, Wash.

CALIFORI

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for two weeks long
A fine of

If it is a CULTIVATOR you want, why not

THE BENICIA-ORR?



The **Benicia-Orr Cultivator** is an **implement with new and original features,** which has been **designed by a practical field man.** It has been thoroughly tested and proven superior in many important particulars to any other cultivator on the market.

Our space won't permit an extended description, but the **man who knows will note** that among some of **the desirable features are: THE FRAME IS LOW; EXTENDS OUT BEYOND AND IN FRONT OF WHEELS AND DRIVER; THE ADJUSTING LEVER IS CONVENIENTLY PLACED, AND THE DRAFT IS APPLIED DIRECT.**

These features, combined with the fact that the driver's weight equalizes weight of frame, insuring ease of handling and a perfect balance in every position; that there is no weight on horses' necks, and that the size can be easily changed from seven to nine teeth, make it **a very superior implement.**

If you ever used, are now using, or expect to use, a cultivator, you will be interested in this new, up-to-date implement.

If there is no agency in your vicinity, write direct to

TO THE TRADE: We are receiving numerous inquiries for this implement. If you want an exclusive agency write us today.

BENICIA IRON WORKS
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LET US SEND YOU A SAMPLE POMONA PATENT PRESSURE GATE.

No rubber or wooden facing to rot or wear out. Absolutely water tight when closed. Locking mechanism is protected against rust or clogging with sand or dirt. Simple in construction. Cheap in price and as durable as solid iron.

THE LOCKING DEVICE

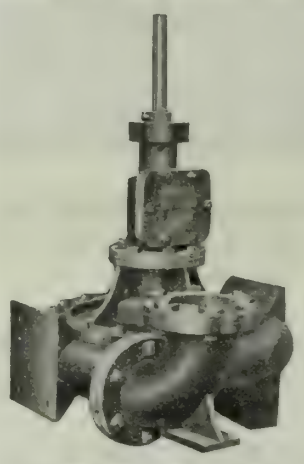
Is the simplest made, merely a tapering screw with split tapering nut socket. It locks the cover in any desired position or locks the faces, making an ABSOLUTELY WATER TIGHT JOINT.

TWO FOOT HANDLE FURNISHED WITH EVERY PRESSURE GATE FREE.

ALSO A FULL LINE OF CIRCULAR VALVES FOR ORCHARD AND ALFALFA IRRIGATION CARRIED IN STOCK.

Write for descriptive circular and price list.

POMONA MFG. CO.
POMONA, CAL.


KROGH PATENT WATER BALANCED VERTICAL PUMP

KROGH'S NEW VERTICAL PUMP

The Krogh New Water Balanced Vertical Pump contains many new and valuable improvements, same being fully explained in our Bulletin R-10, which will be mailed upon request.

We have a branch in Los Angeles at 206 N. Los Angeles Street.

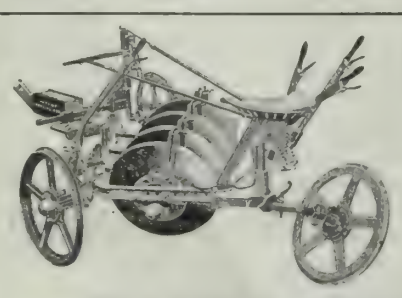
The pump can be seen in operation at our place of business.

KROGH MANUFACTURING CO.,
149 Beale St., San Francisco.

P & O

CANTON PLOWS

BAKER & HAMILTON
San Francisco Sacramento Los Angeles



MADE IN CALIFORNIA

BENICIA HANCOCK DISC PLOWS

BAKER AND HAMILTON
SAN FRANCISCO SACRAMENTO LOS ANGELES

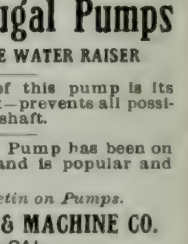
WINE TANK.

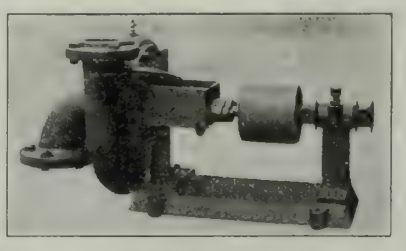
Tanks Tanks

WINDELER'S PLANING MILL AND COOPERAGE
GEO. WINDELER, Prop.

Water Tanks, Wine Tanks, made from carefully selected stock by careful and experienced workmen. "Tanks that are well made last a long time." It will pay you to get my prices before buying.

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Caton Centrifugal Pumps

A MODERN UP-TO-DATE WATER RAISER

The unique feature of this pump is its water-sealed stuffing box—prevents all possible air-leaks around the shaft.

The Caton Centrifugal Pump has been on the market for years, and is popular and inexpensive.

Write for Our Bulletin on Pumps.

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SAN JOSE, CAL.

WESTERN PIPE AND STEEL CO.
SUCCESSORS TO
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SHEET IRON & STEEL PIPE

FOR TOWN WATER WORKS
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Office, 9 Fremont Street. Works at 8th and Townsend, San Francisco, California
Water and Oil Tanks—all sizes. Coating all sizes of Pipes with Asphaltum.

THE PACIFIC RURAL PRESS

Vol. LXXXI. No. 7. SAN FRANCISCO, SATURDAY, FEBRUARY 18, 1911. Forty-first Year.

CALIFORNIA STATE

The Panama Canal and the Dairy Industry.

"What is California's greatest asset," was the question recently propounded to a gathering of men. The answers given were all influenced more or less by local conditions. One man said "farm products," another "minerals" and still another "climate." Facts, figures and arguments given to support the various contentions were all good, but after they had finished, one farsighted man said, "California's greatest asset is the Pacific Ocean. Your minerals, farm products, and climate are only a means to the end. The Panama Canal marks an epoch which places California in the world's markets. We will no longer worry whether Chicago or New York will take five carloads of oranges or one car of canned peaches, but how many boatloads does England and France want." It was not long before all the listeners had his viewpoint and realized the heritage of the California farmer.

Commerce Moving Westward.—Westward the course of empire has taken its way since the time of ancient Babylon. Every month sees new people and additional capital being brought into the State. With large unproductive areas yielding wealth, the United States behind her and the Pacific Ocean before her California is on the eve of an industrial development of wonderful magnitude. Instead of playing in the back yards of some of our neighboring States, we now have the world to play with.

Influence of Panama Canal.—The Panama Canal has changed the aspect of the continent. It has opened a door that has enabled opportunity to rush in, and let us not be found like one of Mark Twain's characters in the corner saloon when opportunity calls. The farmers of the Pacific coast will no longer figure whether they are on a transcontinental railroad, but their chief interest will be whether they are near a line which reaches tide water. All railroads west of the Rocky mountains will point to the Pacific coast. A farmer would rather be within five miles of some small electric line that reaches tide water than have a transcontinental track running through his front yard. With the development of the oil industry and power plants there will be many avenues carrying farm products to the ocean. Already the big valley is being criss-crossed with electric lines. A canal is being talked of that will put Fresno in touch with tide water. Another canal is being considered which will bring San Jose in touch with the ocean, and there are many other similar improvements being considered over the State. The government is building new breakwaters and dredging out harbors, so that the farmers of California will have cheap transportation to deep water, for this is very essential for successful competition in the world's market. Within the next few weeks deep-water ships will be taking products of the San Joaquin valley at Stockton from the docks shown in the picture to



Scene at Stockton, Where Rail and Water Meet.

This Scene Will be Duplicated in Many Other Parts of California by the Time the Canal is Finished.

Liverpool and Hamburg without unloading. In fact, farmers' prosperity from now on will be based on the availability of his lands to the point where rail and water meet.

Many European Immigrants.—Along with the California commercial development we shall see a large influx of Europeans into California. This will help out the labor situation which now confronts the farmers. Instead of laborers being diffused from New York, San Francisco will be the depot. This will cause cheaper production of all farm products and will bring in a new class of foreigners who will be assimilated with American ideals and notions.

Raise Cheaper and Better Products.—California, in order to take advantage of these opportunities, should commence to raise its products more economically and better. It will not be long before California fruit will go in large quantities into the London market and there compete in the same stalls with the best products of the orchards of Spain and Italy and the British colonies. The better the quality, the greater the demand for the fruit, and if raised cheaply it can compete in price with the products of the European countries.

New Markets for Dairy Produce.—One of the products California will have to improve is butter. We should be able to supply Mexico, South America and Alaska with butter, cheese and condensed milk. Each year more dairies are started and more alfalfa fields are planted, and the time will come when there will be more butter manufactured than can be consumed here and we will have to find a market outside the State for it. The southern republics have been averse to using butter on account of the heat and lack of facilities for keeping it, but with the installation of refrigerating plants and other methods of keeping butter and milk cool they are using more, and California should supply this demand. Also the influx of butter eating peoples into Mexico and South America has created a demand for butter throughout the entire section. At the present time all the butter comes from Denmark or Germany, and on account of the long distances has to be packed in specially designed cans. California dairy products, because of the short distance, could get there in much better shape and in shorter time, so that there will never be trouble in getting into the market if the quality is right. Take, for instance, Venezuela; last year she imported over $248,000 worth of butter, and most of it came from Denmark and Germany. With the opening of the canal we should be able to land our butter there in ten days, when it takes thirty and forty to bring it from Germany.

Improvement in Dairy Management.—Before we can expect to sell our dairy products in the world's market we must make better butter and do it more economically. The "star boarders" of the herd and consumers of profits should be eradicated. The milk yield of the herd must be improved by selection. Better feeding methods and better handling of the cream. Good butter can not be made from poor cream. When the creameries commence to demand daily cream deliveries we will see the quality of butter improved, and not until then. The creameries will also be forced to reduce the water content in the butter. Instead of 16% water, as is the case now, our butter will have to go out in competition with Australia and New Zealand butter, where the water content is around 12 or 13%.

In speaking of the causes of the poor butter submitted in the recent butter scoring contest at

(*Continued on Page 142.*)

Pacific Rural Press

667 HOWARD ST., SAN FRANCISCO.

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The Week.

We have settled so many great and important issues in these paragraphs during the last few weeks that we may be allowed to provide this week for our own house, the which if a man do not he is worse than an infidel.

We have been spending some time with the Legislature of California, in session in Sacramento, admiring the insight and incisiveness of the members thereof, endeavoring to determine whether the qualities of standpatting, reforming, progressing, and reactioning were to be learned from studies of physiognomy or speech, or voting, or what not. A philosophical treatise may emerge in due time from our abiding with these obscure and subtle phenomena. Incidentally, we have been endeavoring to supply questioning committees with the most acceptable information we could command concerning the special undertakings which the agricultural department of the University of California has been pursuing during the last two years in obedience to the statutes of the legislative session of 1909.

Perhaps all our readers do not know that, in addition to its regular work in instruction and research, as provided for by its ordinary allotment of funds from the University and the United States, the agricultural department undertakes a vast amount of special work under specific appropriations and instructions from successive legislatures. These special lines of work were undertaken upon the initiative command of different groups of agricultural producers of the State who caused the legislative bills to be drawn and successfully supported them. The Experiment Station recognizes the importance to the State of the producing interests desiring its services, and the obscure character of the problems which seemed to be limiting the volume or the profit in production, and welcomed the opportunity to serve the State as the laws providing for the work described. The character of the problems arising and the nature of the organisms and materials involved demand investigation covering considerable periods of time to reach valuable and trustworthy results, and often make it necessary also to extend the provision for the work because related lines appear of unforeseen importance.

For example, the Southern California Pathological Laboratory at Whittier and the Citrus Experiment Station at Riverside are carrying on the work desired by the southern California growers of citrus fruits, walnuts, commercial vegetables, and other products so acceptably that there is a strong demand for more men and funds for them to work with. In acknowledgment of this demand, an increase of $5000 was requested, making the appropriation for maintenance $45,500 for 1911-13. In addition to this, the southern California representatives suggested a farther extention of the work and a larger expenditure for men and equipment, and the Riverside Chamber of Commerce made a strong plea for a new research building in which work can be done on citrus problems. There are now nine bulletins (aggregating 342 pages of type) giving results of the work in southern California awaiting funds for publication.

The investigation of plant diseases in parts of the State not covered by the southern California provision just mentioned (which is limited by law to the seven southernmost counties of the State), has been vigorously pursued, three men being specially employed on the work and others contributing thereto. Notable results have been attained in the treatment of the peach blight and diseases of the pear, apple, apricot, and olive are being pursued. Several very important problems involving unthrift of trees not caused by parasitic disease have arisen which require an appropriation for the study and field experiments. The pursuit of these matters to satisfactory conclusions is earnestly desired. Two bulletins giving results of this work are now awaiting publication.

Another southern California proposition has been the investigation of the agricultural problems of the Imperial valley and adjacent regions provided for by the last Legislature by the appropriation of $600. This is being completed, and a report of results has just been printed. It is clearly demonstrated that the region is unique in character and requirements of crops, and, to determine the most profitable policies and methods, systematic experimentation is essential. The sum of $20,000 is essential for the equipment and maintenance of this work during the years 1911-13, and local representatives are urging the Legislature to provide for it.

With another appropriation of $7500 per year, viticultural investigations have been vigorously pursued, to demonstrate methods of protecting the vine against vicious enemies which have recently multiplied and occasioned great losses. A large amount of field work has been done, chiefly in co-operation with growers in infested regions. Cultural problems have also been attacked, and better methods in cultivation, fertilization, pruning, etc., are now being disclosed by the experiments on the University Farm, on the Kearney estate, and on a large number of private properties in different parts of the State. Three bulletins giving results of this work have already been published, and others are ready for printing. The maintenance of the investigations is necessary to reach demonstrations from work now in progress, and they are urgently called for by the grape interests of the State.

Quite a different line of work are the cereal investigations which are exciting wide public interest. Wheats and barleys have been found which are more productive than the varieties usually grown. Methods of growing which yield better returns with the same rainfall, have been demonstrated, and the possibility of rotations which will increase production and at the same time reduce the draft upon soil fertility are being demonstrated. The breeding of better grains by hybridization and selection is yielding most striking preliminary results. More time is needed to test out the methods and materials which are now most promising. An increased appropriation, from $12,000 to $15,000, is necessary to continue work now in hand. As shown upon another page, an effort is being made to extend the work in demonstrations of the dry-farming methods which are being used at Davis and Fresno, in other districts of small rainfall. This is perfectly feasible if funds are provided, and is likely to yield great value in the utilization of semi-arid lands.

Undoubtedly the popular interest which has placed such undertakings as these in the hands of the University Experiment Station was awakened, and has been maintained, by the effort on the part of the University, which was systematically taken up under the charge of Mr. E. F. Adams in 1896. At that date, Regent Reinstein conceived the idea that the University, in its technical branches, should come out of the academic shades and get right alongside of the men and women who were building up the State by their productive efforts and needed the light of science to advance their undertakings. At the present time, University extension in agriculture in the form of farmers' institutes, demonstration trains, field and orchard demonstrations, school agriculture, etc., is in such request that the University is unable to cope with the demand with the force and funds available during the last biennial period. In the effort to satisfy the public, the men in that branch are overworked, and other lines of work interfered with. Not less than fifty farmers' institutes, which have been called for, cannot be given this year for lack of funds, and parts of the State will not be reached at all. For these reasons an increased appropriation from $10,000 to $15,000 per year is approved by all who are familiar with the work.

Careful attention is being given by the legislative committees to the further equipment of the University Farm at Davis, and doubtless as liberal provision as can be made within the uncertainties of the State's revenue under the new system of taxation will be realized. Students now at the farm are largely in excess of dormitory accommodations, and they are obliged to seek living places far and wide in the adjacent country. Equipment for certain very desirable branches of instruction is either inadequate or absent. The teaching force must be increased if possible. All these matters are being explained to the legislators, and they are also, fortunately, visiting the farm in considerable numbers and learning its needs by actual observation of the work in progress.

Of course, farmers who are urging such generous provision for research and teaching affecting agriculture, believe that such work is good for the prosperity of the whole country, as well as for the particular advantage of food producers. People generally recognize this fact also, and non-farmers in the Legislature seem very willing to give the farmers their support in all such propositions. Although the farmers know better, they do not object seriously to the higher financial standing which their industry has attained during the last few years. In fact, they are manifesting some interest in the claim that one of the Paterson trust companies has equipped a steel-lined auto, somewhat along the lines of the motors formerly used in New York, to gather up late receipts, and is going to send it out in the country to catch wayside depositors. The car is fitted up with a desk and office equipment, including compartments for books, checks, and papers. A solid-steel safe is built in one corner. A small window, guarded with heavy steel and brass bars, and liberal space for firearms, will afford clerks protection on their travels in gathering deposits from rural people. Such a traveling bank to pick up the surplus money which farmers collect in such quantities is likely to start up again the discussion of the farmer's share in the higher cost of living. Of course, it does

not appear how the money gets to the country, except in checks which might as well go both ways by mail—but to worry over that problem would spoil the story.

Probably some one who read the traveling-bank story must be the author of a bill introduced in the Senate at Sacramento, appropriating $300,000 to be expended under the direction of the State Board of Examiners, for advertising the resources of California and calling attention to its agricultural, horticultural, and industrial advantages. In view of the fact that the farmers of California will have to pay a large part of the five millions which the State will contribute to the Panama-Pacific Exposition, and remembering that that exposition is itself a grand advertisement of the resources of the State, it hardly seems necessary to do more at this time. And then the great railways, which will have large incomes from Fair traffic, are doing what they should to promote their business, and to do it by advertising the State. It is announced that an advertising appropriation of $1,250,000 is to be spent by the Harriman railroads in 1911. The budgest is said to be the largest ever authorized by any railroad system. Both the Union and Southern Pacific lines will be double-tracked at an expense of $75,000,000. The advertising budget is to secure enough new business to operate the systems to their capacity when the second track is completed, within five years. Newspaper and magazine advertising is the central feature of the plan, but illustrated pamphlets and lecturers are to be financed from the budget, and advertising is to be placed in publications in foreign countries. It looks really as though California, in spite of all that has been done hitherto, is just at the point of becoming known.

Queries and Replies.

Irrigating Tomatoes.

To the Editor: I would like to know how much water it takes (in gallons or cubic feet) to properly irrigate an acre of land for tomatoes. The soil here is commonly known as adobe, and the customary way of planting tomatoes is 6 feet apart each way, plowing a trench of one furrow with the slope of the land for irrigating, that is, a trench between every row and a cross trench is a feeder. I might also add the land is of low level and in the dryest part of the year the surface water is from two to three feet beneath the top of the ground.—New Settler, Sunnyvale.

It is not possible to state a specific quantity of water for any crop, because the amount depends to such a large extent upon the retentiveness of the soil and upon the local climatic conditions, which determine the rate of evaporation. Of course, everywhere the duty of water is conditioned upon the character of cultivation as promoting conservation of soil moisture or otherwise. The best source of information is the behavior of the plant itself, bearing in mind that tomato plants require constant but not excessive moisture supply, and that if moisture is applied in excess it will promote an excessive growth of the plant, which will cause it to drop its blossoms and therefore be unsatisfactory and unproductive. Our judgment would be that in such land as you describe no irrigation whatever would be desirable except in years of short rainfall, and that such land, if properly cultivated, would always furnish moisture enough by capillary action to support the growth of the plant. Nothing, however, will teach you so much as a little experimentation and observation of results. The method of applying the water which you describe is the best we know of, if the slope is not too rapid.

Needs Organic Matter.

To the Editor: I have a place on a slope on foothills three miles from the ocean of what I believe to be decomposed sandstone. Many rocks are still projecting out of land which I blast and break up. The soil works freely when moist or wet, but when dry it takes a pick-axe to dig it up; a plow won't touch it. Among my young fruit trees I tried to grow peas, beans, carrots, and beets, and although I freely irrigated them during the summer and fall, and although I planted at different times, my peas and beans have been a total failure, and the beets, carrots, and onions nearly a faiure. It appears that the soil needs some kind of fertilizer. What kind and how much shall I use? For the past five years this ground has grown nothing but weeds. —Suburban, Santa Barbara.

The chief trouble with your soil is the absence of organic matter which would make it more easy of cultivation, more retentive of moisture, and in every way better suited to the growth of plants. Liberal applications of stable manure would produce best effects. No commercial fertilizer would begin to be so desirable. Of course, if you can dig into the soil large amounts of weeds or other vegetable waste material, you would be proceeding along the same line, but stable manure is better on account of its greater fertilizing content. You ought to be thankful that the soil has spunk enough to grow weeds. The Immanent Creator is still doing the best he can to help you out.

Growing Insect Powder.

To the Editor: I desire information concerning a plant designated as "sever sews" which, I imagine, is allied to the plant from which buhach or insect powder is derived in this State. I am informed that it has been cultivated to some extent in the interior valleys of this State and that descriptions of it have appeared from time to time in official publications.—Enquirer, San Francisco.

The plant from which buhach or insect powder is made is chrysanthemum cinerariae folium. It is one of the "fever fews," that name being applied to it as an ornamental plant, but not usually applied to it in its commercial connections. The only product of this powder we know of is in the hands of the Buhach Manufacturing Company of Stockton, which has lands for the growth of the plant in Merced county. Twenty years ago there was a good deal printed about the desirability of growing insect powder in California, but expectations of opportunities for production have never been realized and the plant is now of little commercial importance outside of the operations of the single firm we have mentioned.

Sweet-Potato Growing.

To the Editor: Kindly let me know through your paper if, in planting sweet potatoes, we have to make hotbeds just like those for tomatoes, or if just a plain seed-bed will do? Is it necessary to irrigate them or not?—F. J. M., Stevinson.

You can bed your sweet potatoes in a warm place on the sunny side of a building or board fence, and get sprouts all right. You will, however, get them sooner and in greater numbers by using a hotbed without too fierce heat—a slow hotbed in which the manure supply is not too large. The fact that the potato growers of your part of the valley do use some artificial heat, either from manure or by piping bottom-heat in their propagating houses, is a demonstration that such recourse is desirable to get best results. The necessity of irrigation depends upon the soil and its natural moisture supply. On a fine retentive loam, the crop is chiefly made without irrigation, if the plants are all ready under protection to put out in the field as soon as it is safe. If you are late in the planting, or if the soil is dry or likely to dry before the tubers are grown to good size, irrigation, some time ahead of the need of the plant, is essential.

Who Wants Cull Oranges?

To the Editor: I have quite a number of oranges that I am unable to sell on account of their being small. Do you know of anyone who would buy them? They are Washington navels. By not having enough water, they are small, but have a good flavor and are juicy. I thought I read some time ago that a company was forming, I think at Fresno, that would use small oranges and scarred ones to make essence of some kind. Do you know anything about it? If so, please let me know through your paper.—G. A. Kelly, Merced.

We have not heard of the Fresno undertaking. There is a limited amount of cull oranges used for marmalade by fruit-preserving establishments and a few for orange by-products (cider, oil, dried peel, etc.) in southern California. Probably more culls are used to decorate hotel dining tables, by proprietors who ought to know better, than in any other way. But all these uses put together call for so small a weight of oranges that it may be truly said that practically all oranges which are below packing grades are a waste.

Stocks for Almonds.

To the Editor: Kindly advise me which is the best root to have almond stock grafted on, peach or bitter almond? The soil is sandy. Also please let me know as to the difference in life of peach and almond in California.—Reader, Arbuckle.

In planting almonds on a deep sandy soil, we should choose trees worked on the almond root. The bitter almond and the hard-shelled sweet almond are both used as stocks for this nut, and we are not aware that any particular advantage has been demonstrated for either of them. The almond does well on peach roots also, but the almond is a better root where the soil conditions suit it. In such a soil, and perhaps elsewhere, the almond is the longer-lived, but we have seen both assuming the aspect of forest trees in wild places. Both are apt to live longer than their planters, if soil and moisture conditions favor.

Reviving Blighted Trees.

To the Editor: I have a couple of apple trees here that were hurt by the pear blight three years ago and were cut back since then; they come out each year, but the leaves curl up, and they do not do anything. I would like to know if putting any fertilizer around them would force them to put out their leaves, and if so what I should use?—Grower, Ventura.

Put some stable manure on the top of the soil around your trees now so that the rains may reach the contents of the soil, then later in the season dig the manure into the soil. Apply water during the summer time and this will encourage the trees to grow, if there is any vigor remaining in them. This treatment, however, will not protect them from the blight.

Thrips, Not Thrip.

To the Editor: Will you kindly use your influence against the introducing of the word "thrip." I noticed it in print in the Press. The nominative singular is "thrips." See dictionary. —G. W. Worthen, San Jose.

And the objective plural is also thrips, as our growers are learning from experience. In the future we will not be so flip as to write thrip, even in a joke headline.

Cereal Crops.

DEMONSTRATIONS OF DRY-FARMING IN CALIFORNIA.

By Professor G. W. Shaw, in charge of the cereal investigations of the University of California.

There is a bill now before the California Legislature calling for the establishment of four or more demonstration farms to be conducted in regions of the State which are not likely to be brought under irrigation in the near future. No more than one of these farms is to be located in one county. The bill asks for an appropriation of $15,000 for the equipment and maintenance of these farms for the first year, and $7500 for the second year.

The State has been very liberal in making appropriations for increasing and protecting her natural resources, and in aiding the fruit-grower and the farmer upon irrigated land to secure the highest returns from his labor and for the protection of his industry.

Very little has ever been asked by the farmer on unirrigated land. He has received very little recognition at the hands of the Legislature for the highest development of his crop production. He should receive at least as much consideration as the farmer upon irrigated land or the fruit-grower. The real fact of the case is he should probably receive more consideration, because it is a far more difficult matter for him to make a success than for the man who is fortunate enough to possess an irrigated farm. Further, there is a very much larger dry-land area capable of being farmed than there is of the irrigated area, and the dry-land farming conditions are much more difficult of handling than irrigated conditions.

The following facts may be cited as arguments in favor of assisting the dry-land farmer:

(1) California has approximately one million acres in fruit. For the benefit of the fruit-grower and the protection of his business, the State is expending, through the Horticultural Commissioner's office and special appropriations handled through the Experiment Stations, approximately $70,000 per annum. The dry-land farmer and grain-grower has a much more difficult problem to enable him to secure profitable returns than has the fruit-grower, and the area represented is more than twice as large. He should certainly be entitled to some consideration at the hands of the Legislature.

(2) For the protection of the dairyman, who farms largely upon irrigated land, thus making his operations much more certain of success than those of the dry-land farmer, there is an appropriation of $30,700 per annum. There would seem to be no logical reason why the man who is farming under unirrigated conditions should not be entitled to as much consideration as the general farmer under irrigated conditions.

(3) For the propagation of fish, largely in the interests of the sportsman, there is an appropriation of $20,000 per annum. Are not the conservation of soil fertility, and the increase of productiveness of dry-land farms of as much importance as the protection of the sportsman's interest?

(4) The Imperial valley farms, representing actually a small number of farmers, and working exclusively under irrigated conditions, had for the last two years an appropriation of $6000. Should not the increase of production on more than two million acres of dry-land farms be as much entitled to development?

The grain crops alone, in the eighties, rose as high as fifty million dollars, and if we add the hay crop to this, it would probably reach sixty million dollars. Through irrational and unscientific handling of the soil, this production has probably decreased under the old-style methods of dry-farming by nearly half. Recently developed methods of dry-farming have shown that it is not only entirely possible to double the present output of grain per acre by the adoption of a rational system of culture, but also that a very large area formerly considered too dry for farming operations can be profitably brought under cultivation.

These facts have been recognized by other States in the semi-arid West, among which may be particularly mentioned Utah, Colorado, Montana, and Oregon. These States are demonstrating the possibilities of greater production upon their semi-arid lands through the medium of dry-land demonstration farms conducted by the Experiment Stations of the respective States, where the farmers can make a personal study of more scientific methods in crop production under conditions of a limited rainfall.

The railroads, particularly the Great Northern railroad, have realized the great importance of demonstrating to the farmers along their line the great advantage of conservation of moisture. To this end it has maintained for several years a chain of some thirty demonstration farms where dry-farming methods are put into practice. The past season these demonstration farms, under scientific methods of culture, gave an average production of more than thirty bushels of wheat to the acre. The general farmer in the same sections who followed the time-honored method of farming made an absolute failure on account of drought. It was one of the best demonstrations that could be made to the farmers of that section of the value of modern scientific culture for the conservation of moisture.

The average production of wheat in California is at present only about 13 bushels per acre. Through work done by the California Experiment Station, it is quite evident that this production can be nearly, if not quite, doubled by the adoption of the above-mentioned methods. It is proposed to put these methods into operation in the midst of the large dry-farming areas where the results can be an object-lesson to the farmers of those regions.

It is further proposed on these demonstration farms to develop seeds and plants capable of standing more severe drought conditions than those which we now have.

The passage of this bill will only be doing for the dry-land farmer what it has been the established policy of the State to do for the fruit-grower and the farmer upon irrigated land.

CALIFORNIA APPRECIATION OF BARLEY EXTENDING.

The plan of reciprocal trade with Canada seems to be very popular with the ruling political party, California barley interests to the contrary notwithstanding. It may be that we shall have to turn our barley into beef and pork which we need, and get all the good we can from freer sale of our fruits in Canada—but that is not what we had chiefly in mind. California is evidently teaching other States west of the Rockies a higher appreciation of barley. The Colorado Experiment Station, for instance, gives an interesting statement in this line: "The growing of barley for stock-feeding purposes offers a method of cropping that can be used to advantage. The only difficulty is that many farmers are growing it to sell rather than to feed. Barley in the Fort Collins district is this year selling at the same notch with corn, and that is where it should sell for lamb feeding. After several years' work I have satisfied myself that a good, plump, full-kerneled brewing barley is as good a sheep feed as corn, when fed with alfalfa hay. I know some feeders will not agree with this, partly because the oil in corn gives the fleece of the lamb a better appearance. But actual weighing of feed and of lambs admits of no questioning. And no one who has seen our lambs at the beginning and end of a feeding period, or who saw the steers that last year sold for the highest price ever paid in the open Denver market, will deny that our feeding is up to the average of that done by the ordinary feeder. Now, admitting this, why should one retain an old prejudice against barley as a feed? It is true that for hogs it is somewhat less valuable than corn, because of the coarse hull enclosing it. And I am not prepared to contend that a light-weight, thin-kerneled barley like California feed barley is equal to corn. The California feed barley is a heavy yielder and on that basis may make up something that it lacks for feeding.

"For breeding stock the use of barley can not be too strongly advised, where it can be procured cheaply. Corn seems to burn out an animal and destroy its breeding powers, and oats and barley should take its place in this State."

Forestry.

GRAZING EXAMINERS FOR NATIONAL FORESTS.

A new Government position is disclosed by the announcement by the U. S. Civil Service Commission of an examination which will be held February 23 and 24 to find three grazing examiners for the Forest Service. The positions will pay a salary of $1200 per year at entrance. Fuller details can be had from the headquarters of the Fifth Division, Forest Service, First National Bank Building, San Francisco.

The announcement specifies that the applicants must be men, at least 20 years old, and possessed of at least one season's experience in handling range stock, together with at least one year of technical training in specified botanical studies.

The establishment of this position is in line with the objects which the Department of Agriculture has always had in view in its management of grazing on the National Forests. It is not merely seeking to prevent cattle and sheep from doing damage to forest growth and watershed conditions, as they graze on the herbage which is yearly produced in the open forests, parks, and high mountain meadows within the National Forests. Range-fed stock are a matter of decided importanee to the American people in these days of rising prices for food products and diminishing supplies, in proportion to population, of live stock; and therefore Secretary Wilson intends that every acre of National Forest range shall be made to produce as much forage as it is capable of doing, consistently with the carrying out of the other purposes for which the National Forests are maintained.

Ever since the Forest Service took over the management of the National Forests, it has been studying the range problem along with its regulation of grazing. In the beginning it was confronted with the fact that a very large part of the range had been badly abused and depleted through the competition of rival owners before any restrictions had been put upon them, and by overcrowding and bad methods of handling stock. Its supporting power had in consequence been badly reduced, and was steadily declining. To enable overgrazed areas to recuperate, and to prevent the extension of overgrazed conditions to new areas, the amount of stock to be allowed on the Forests was everywhere carefully prescribed. The results were then observed, and if it appeared that there was still over-use of the range, the numbers permitted were cut down still further. On the other hand, where recuperation has taken place, the allowance of stock has been correspondingly increased.

The proposal to appoint specialists who are both thoroughly trained botanists and men of practical experience in range matters indicates recognition of the fact that to attain the highest point of range productivity the best scientific knowledge must be applied to the study of the problems of forage production and utilization. As stock graze on the range, the effect on the different kinds of vegetation differs both with its palatability or unpalatability and with its capacity to produce seed, its time of seeding, its resistance to trampling, its manner of growth, and many other elements.

What is aimed at now is nothing less than to find out all the things on which depend the production of the largest amount of beef, mutton, wool, and hides on a given area. This involves learning how both to restrict and to time the grazing so as not to interfere with the reproduction of the most valuable elements in the forage crop, how to prevent unnecessary loss to feed through trampling and in other ways; how to exterminate poisonous plants from the range; how to prevent the loss of forage which results from the multiplication of prairie dogs and gophers; whether it is practicable to introduce new forage plants by direct seeding; and many other matters. It is to look into such matters that the grazing examiners are to be appointed.

Besides seeking to bring about the recuperation of depleted ranges, the reduction of waste, and the development of all range to what may be termed an artificial state of productiveness through control of reproduction, accompanied, it

is hoped, by the introduction of new forage plants, the studies planned will aid also at increasing the area of range available. There is much natural grazing land in the National Forests which can not be put to use, either because the country is too rough for stock to be driven in, because shipping facilities are lacking, or because of a lack of water. The construction of properly located roads and driveways and the development of water through the building of reservoirs or the driving of artesian wells are a part of the general scheme of permanent improvements planned for the National Forests. To furnish the basis for comprehensive development of the grazing resource the range will be studied in detail, classified according to the type of vegetation found, and mapped by "forties." The observations made will include notes for each forty acres upon the surface, soil, character, and density of vegetation, evidence of overgrazing or under-use, presence of poisonous plants, damage by range-destroying animals, water facilities, and accessibility. With such data in hand it will be possible to bring about much more intelligent and intensive use of the National Forest range.

Citrus Fruits.

THE USE OF NITRATE OF SODA.

In our issue of October 15 we gave an outline of the discussion on the use of nitrate of soda at the Los Angeles Soil Convention of the University of California, and in our issue of November 19 two articles qualifying the convention statements by Professors Burd and Lipman of the University. Concerning some statements made at the Soil Convention, Mr. W. S. Myers, of New York, in charge of the nitrate of soda propaganda, makes the following per contra statement:

Some time since, a convention of horticulturists in Los Angeles discussed the question of the accumulation of black alkali in the soil.

One speaker made the statement that the use of nitrate of soda would result in such accumulation, stating that in England this had become the case, and that English farmers were avoiding the use of nitrate.

The incorrectness of this latter statement is shown by the fact that the use of nitrate of soda increased last year by 10 per cent in England, and its use is constantly growing there; and nitrate is coming to be more and more appreciated there as it is on the continent of Europe.

In fact, everywhere in the world where there is progressive experiment station work, the unique qualities of nitrate of soda are putting it ahead of every other nitrogenous plant-food. Nobody who advocates the rational use of fertilizers ever recommends such large quantities of nitrate of soda per acre as would result in any abnormal accumulation of alkali salts. Moreover, the use of acid phosphates, associated as they are frequently with sulphate of lime, converts any alkali residue into harmless forms of soda. Besides, of the vast majority of soils in the United States, probably 95 per cent have a tendency to grow acid rather than to grow alkali; and nitrate of soda is therefore highly beneficial in the majority of such cases.

The use of potash salts tends to leave acid residuals, and when phosphates and potashes are used rationally, and in quantities suitable for normal plant-feeding, the question of nitrate of soda leaving an alkali residue becomes a purely fanciful and highly theoretical, rather than a practical, one, and is not worth the serious attention of a practical business horticulturist or farmer. Nitrate of soda is needed to help neutralize these residues.

In all of our literature we recommend the rational and not the irrational use of fertilizers, that is, normal amounts of the three elements of fertility. We never recommend the use of nitrate of soda alone, except at the rate of 100 or 200 pounds per acre, which is a trifling tonnage application; and we always advise, when larger amounts are used, that the horticulturist or farmer use as much or more in quantity of the phosphates and potashes.

On the other hand, in the case of 95 per cent of our soils, the use of acid phosphate tends to leave acid residuals; as sometimes do the potash salts. The actual need of nitrate of soda is therefore apparent.

MR. WOGLUM FINDS WHITE FLIES HELD DOWN IN INDIA.

Regarding the work and movements of R. S. Woglum, who was sent to investigate the white-fly in India, L. O. Howard, chief of the Bureau of Entomology of the U. S. Department of Agriculture, writes to Manager W. C. Temple, of the Florida Citrus Exchange, as follows:

"I have again heard from Mr. Woglum, and, in accordance with my promise to keep you posted on his movements, I hasten to inform you that he has thoroughly explored northern India, and has found the citrus white-fly everywhere that citrus trees were growing, even in the Khasia Hills in Assam, a very wild country, infrequently visited by white men, where the hills were densely covered with jungle, in the midst of which orange trees were mixed with wild trees, having become practically wild oranges. Nowhere, however, in India is the citrus white-fly a pest; he found it always under control. No trees were blackened, and only occasionally, in the center of a dense tree, were they abundant enough to support an appreciable amount of smut fungus. The two ladybird beetles which he found at Saharampur were present in very small numbers almost everywhere, and he found frequent evidence of true parasitism by finding white-flies bearing the exit-hole of minute parasites. The inspection extended from the province of Eastern Bengal and Assam in the east, through Sikkim, the United Provinces, into Punjab in the northwest. The time of the year has been unfavorable; the climatic conditions resembling those of our Southern States at this time of the year, practically all insect life being in the condition of hibernation. When spring opens, however, it should be possible to secure parasitized specimens and to send them to Florida.

"Mr. Woglum is supposed to have left Calcutta December 23 for Singapore, stopping at lower Burma to examine an orange section near Rangoon. Java and the territory thereabouts is supposed to be the native home of citrus fruits, and of course insect life in that region will be active at the time of his visit."

Horticulture.

THE HIMALAYAN BERRY AND OTHERS.

We have had the opinions of several different growers on the commercial desirability of this variety and the subject is of wide interest to small fruit-growers. Dr. W.-Van Fleet, the plant expert, whose sketch of the jujube we recently published, writes from Chico to the Rural New Yorker an account of the Himalayan as follows: "The Himalaya berry is an Asiatic form of the Old World Rubus fruticosus, or European bramble. It is a trailing blackberry or rather dewberry, of vigorous growth, with rather finely divided foliage and pinkish blooms. In deep rich soils with liberal culture and ample irrigation, it is highly productive, thriving best in the milder Pacific Coast climates. It has been little tested in the East, but could scarcely be expected to prove hardy where severe frosts occur. The berries are borne in large clusters, are of fair size, black when fully ripe, and of excellent flavor, but so soft in texture as to be of little value except for home use. The Himalaya is well liked and widely grown in California gardens, but the fruit is rarely seen in market. The blackberries most profitably grown in the Pacific States are the Evergreen, probably a form of the Old World Rubus laciniatus, which thrives well in the Oregon and Washington coast-levels, the Loganberry, Phenomenal, Mammoth, Lucretia, and Gardena. All are of the trailing or dewberry type, and are of doubtful hardiness in cold climates except the last two, which were probably derived from the common Eastern dewberry, Rubus trivialis. Gardena is one of the earliest of bramble berries, but is rated as poor in quality. Lucretia is everywhere favorably known. The Mammoth is the largest fruited of Judge Logan's seedlings. The glossy blackberries grow nearly two inches long and are of pleasant flavor, but plants are not always productive. The Loganberry and Phenomenal are plainly hybrids of the European red raspberry and native Pacific dewberry, R. vitifolius, the latter by Burbank. Both bear long purplish berries having a firm receptacle or core like ordinary blackberries, but with tart raspberry flavor. Both are successfully grown in California, but the Loganberry finds greatest favor abroad, and has been made to thrive, with slight protection, in the neighborhood of Washington, D. C.

ALMOND EXPERIENCE.

At a recent meeting of the Davis Almond Growers' Association, Mr. J. W. Anderson reported that the last was a slow season for selling almonds, and it became advisable to shell a portion of the crop, supplying the meats to the trade. This was found very profitable. In fact, the results more than exceeded all expectations, as from 1 to 4 cents per pound more has been realized this year than ever before during the existence of the Davis association.

Early in the selling season the price was fixed at what was considered by the association as fair and equitable. Some feared for a time that a drop was inevitable, but the original price was maintained to the end. It became necessary as above stated to shell a portion of the crop, but this was a gaining instead of a losing proposition.

J. W. Anderson, secretary of the association, and Mr. Brown of the Horticultural Department at the State Farm, have during the past year made a study of the almond industry; in particular, the subject of the best and most profitable varieties of almonds for Yolo county. They have satisfied themselves by careful investigation that the hardier varieties are more profitable than the papershell varieties, being surer and heavier bearers to an extent that more than offsets the higher price accorded the choicer varieties. Horticultural Commissioner G. H. Hecke, of Yolo county, reports that the almond tree will be the favored one in the plantings of the near future.

The Ornithologist.

THE MEADOW LARK IN CALIFORNIA.

To the Editor: I wish to call attention to Assembly Bill 191, which was introduced by Mr. Stuckenbruck on January 9 and referred to the Committee on Fish and Game. This bill is an amendment of our present law relating to the protection of wild birds other than game-birds and their nests and eggs. The change desired in the amendment is that all protection be removed from meadow larks. This same bill was introduced by Mr. Stuckenbruck two years ago and was commented upon in your columns. It passed the Assembly but was defeated in the Senate.

As far as I have been able to discover, a few people in certain localities want the meadow lark exterminated because at certain times he does damage to the grape crops and pulls up sprouting grain. Is not the present law sufficient? It permits the owner or tenant of any premises to kill every meadow lark or other non-game bird that is destroying fruit or crops.

The meadow lark is a bird of economic value. This has been proved conclusively by careful examination of the stomach contents of hundreds of meadow larks, carried on by the Biological Survey of the Department of Agriculture. The food of this bird is largely composed of weed seed. When grain is ripening and being harvested the meadow lark lives almost entirely on grasshoppers, chickets, beetles, and other insects. The bird also destroys large cutworms, army-worms, and cinch-bugs. Granting that at certain times or in certain places the meadow lark does damage crops, after the crops are harvested, the bird is no longer injurious, but beneficial. In almost every section of California the destruction of this bird would prove an absolute money loss to the State.

From an esthetic standpoint, it would be wrong to encourage the extermination of the meadow lark. It is one of our best songsters. The pas-

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sage of Assembly Bill 191 will allow gunners to slaughter these birds for potpies and sell them by thousands in the open market. It would be unwise from every standpoint to encourage boys in rural communities and country districts to use this bird as a mark for sling-shot, air-gun, and rifle. It would be inhumane to allow meadow larks to be killed during the nesting season, leaving young birds to die of starvation.

Because some complaint has been made against the meadow lark in some portions of the State, the California Fish and Game Commission has recently employed a man for the purpose of making a careful study of the economic value of certain birds, especially the meadow lark.

For the above reasons, it would be unwise to have Assembly bill 191 become a law, and it is hoped that those who are interested in bird protection will exert enough influence to kill the measure. WILLIAM L. FINLEY.

Jennings Lodge, Ore.

Crops and Fertilizers

SOME COMMERCIAL FERTILIZER HISTORY.

Less than a century ago the farmer had at his disposal but few materials for increasing the fertility of his land. True, his soil was more fertile than now, and it is fortunate that it was so, since barnyard manure was then his only restorative of worn fertility. In some sections even the value of this fertilizer was not known and the material was allowed to go to waste. Yet when barnyard manures were finally justly esteemed for their fertilizing value, it was found that all the stock kept on the farms in Europe could not produce enough manure to prevent the decline of the productive power of the soils. About this time the use of bones became prevalent, and this marked the beginning of more rational methods of soil treatment.

It was not until the second quarter of the nineteenth century, however, that new and important fertilizer materials came into the market. Various experiments and analysis of soils and crops showed the invariable presence of three essential elements of plant food—nitrogen, phosphoric acid, and potash—and how in many soils these elements were present in too small amounts to insure profitable crop returns.

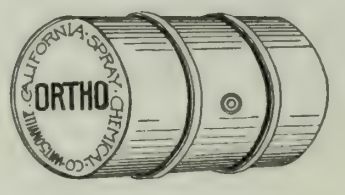
Then there came into being a great fertilizer industry. Peruvian guano held for a time a prominent place in the agriculture of Europe, and later, in the Eastern and Southern States. It was not long, however, until the deposits of the best grades of guano became depleted; yet this did not occur until the chemists had pointed the way to new treasures of plant food. Nitrate of soda, a deposit found in the rainless region of Chile, and one of the most valuable sources of commercial nitrogen today, came to play an important rôle after the middle of the nineteenth century. Wood ashes were the supply of potash until the discovery of the potash salts of the German mines. From these mines, about seventy in number, there are now shipped thousands of tons of these valuable salts to all parts of the world, to help enrich the soils thereof. When the last battles of our Civil War were fought, the phosphate deposits of South Carolina, and subsequently those of Florida and Tennessee, were ready to supply the third important constituent of commercial fertilizers. (Later on phosphate deposits were located in some of our Western States.)

Various elements from the packing-houses, such as dried blood and tankage, came later also on the market, while cot-

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ton seed meal became of great value to the Southern planters in the restoration of their lands.

There are now on the market enough of the different elements, nitrogen, phosphoric acid, and potash, in various forms, so that there is no excuse, unless it be unexpected damage from water or storm, for crop failure. True, fertilizers cannot perform miracles; good seed, intelligent methods of cultivation, and favorable season are necessary; but no sensible grower will check up a crop failure to lack of plant food.

Fertilizers are sold by reputable manufacturers all over the United States, either as specially mixed fertilizers or as "simples" alone. Furthermore, State legislation requires manufacturers and dealers to so label and guarantee all their brands that the consumer is fully protected against fraud. The tags on the bags give the formula or composition of the contents, and by a little care and study any farmer can acquaint himself with the different brands and buy and use them intelligently.

The day of prejudice against commercial fertilizers is past. The growers know that "Potash Pays"; that nitrate of soda and dried blood, superphosphate, and bone meal bring them dollars in return for cents invested, and that these three elements of plant food, used intelligently, mean bountiful crops and land that retains its productiveness.

D. I. DUNCAN.

San Francisco.

GROWING EGYPTIAN COTTON IN THE UNITED STATES.

Although the United States is the greatest cotton-producing country in the world, a large quantity of this staple is imported from Egypt every year. The variety of cotton most extensively grown in Egypt is known as the Mit Afifi; it has a soft, rather crinkly fiber of a characteristic light-brown color that renders it especially useful for certain classes of cotton goods in which the natural color of the fiber is retained.

The best Egyptian cottons bring a price second only to that paid for the highest grades of Sea Island, being used solely in the manufacture of the finest goods. They are especially suitable for mercerizing, taking this process better than the native American cottons, and are largely used for mixing with silk and for the manufacture of cloths in which a high finish and lustre are required. In 1909 the import of cotton from Egypt amounted to 72,617,89 pounds, valued at $12,101,000.

In view of the considerable value of this import, the U. S. Department of Agriculture is endeavoring to develop Egyptian cotton culture in the United States in order to supply the American market with a home-grown product. As a result of experiments that have been carried on for the past seven years in acclimatizing and breeding Egyptian cotton in the Southwest, several distinct types have originated from the stock of imported seed of the Mit Afifi variety with which the work was begun. Two of these are as distinct in the characters of the plants, bolls, and fiber as some of the newer varieties which have originated in Egypt from the Mit Afifi. A third promising type is an improved acclimatized strain of Mit Afifi rather than a new variety.

A description of the leading characteristics of these promising varieties and strains, and the methods followed in the plant-breeding work, as well as a brief account of the general progress of the acclimatization experiments with Egyptian cotton during the year 1909, is given in Bulletin 200 of the Bureau of Plant Industry, entitled "Breeding New Types of Egyptian Cotton," recently issued by the U. S. Department of Agriculture.

Spinners who have examined samples of the acclimatized Egyptian fiber grown last year in the Southwest pronounce it to be in every way as well adapted to their requirements as is the imported cotton of corresponding grades.

AREA OF LASSEN NATIONAL FOREST, CALIFORNIA.

The President has signed a proclamation eliminating 6107 acres from the Lassen National Forest, California, and adding 38,709 acres. These changes are the result of a careful field examination made by the U. S. Department of Agriculture in pursuance of a general plan for the correction of all National Forest boundaries.

The eliminations comprise lands either covered with brush or so heavily alienated as to render National Forest administration impracticable. The additions comprise lands found upon examination to be covered with a good stand of timber and to be chiefly valuable for National Forest purposes. The largest addition is adjacent to the extreme northwest corner of the Forest, west and northwest from Sheephead valley and about eight miles south of Haydenhill. An addition also is made covering the area adjacent to the Deer creek meadows and Soldier meadows in the south central part of the Forest and crossed from east to west by the old Lassen trail. Several other additions are made of small areas found upon examination to contain sufficient stands of timber to warrant inclusion within the Forest.

The unappropriated portions of the lands eliminated by this proclamation will be restored to settlement and entry after they shall have been advertised in the local papers by the Secretary of the Interior.

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The Garden.

GROWING POTATOES ON WET LAND.

We recently alluded to Mr. George Shima as the expert Japanese potato grower who has not cornered the potato market and has not tried to do so. A more interesting thing, however, is the way he gets high-class potatoes on reclaimed lands, and more interesting still the way he tells it:

"I came here twenty years ago," he says. "I worked the first year, and the next season I leased a little land and planted potatoes. When I went to sell them I got only 95 cents, and the potatoes from Salinas were selling at $1.25. They told me the delta potatoes had too much water.

"I read all the reports of the Agricultural Department about potatoes, and I found out what the matter was. There was too much stagnant water in the land. After that, when I leased land I insisted on the owner agreeing to pump out all the stagnant water. Then, when the potatoes are a few inches high, I begin to irrigate with fresh river water. This water is warm, and it helps to keep the potatoes from being harmed by frost. Fresh water is better for the potato than stagnant water—just the same as it is for a baby. Now I get nearly as much for my potatoes as the Salinas growers for theirs, and I sell my crop as far east as New Orleans and Alabama."

Shima says he owns 400 acres in his own name, but that his main plan is to stick to leasing, with a clause under which the owner must pump out the stagnant water before he puts in his crop. "Then the land is sweet and the potato is good," he says.

Shima, with his five partners in the "Shima Company," now raises one-sixth of the entire crop, and the other Japanese potato growers in the delta lands operate in conjunction with him when it comes to selling.

HOW TO TURN WASTES TO ADVANTAGE.

A Reedley writer tells of a thing which can be widely done to advantage: Several of the farmers in this vicinity are starting "compost" heaps as a means of supplying themselves with fertilizer for their orchards. The object of a compost heap is to convert all manure and other waste material about a farm into plant food and put it into such a condition that it will be easily absorbed by the tree or plant around which it is placed. Cornstalk, straw, leaves, grass, sods, muck, scrapings, manure, and all other kinds of refuse are being used to make the compost heap. All such waste is piled together and thoroughly watered, after which fermentation sets in and the refuse rots and moulds. It is necessary to see that the heap does not become too wet, as that will cause a loss of the ammonia which is a very essential element in good fertilizer. Neither must the heap become too dry or the fermentation process will cease. The greatest danger is that it may become too dry and the heap should be placed where it will catch the rainfall or be of access to water. The higher and more pointed the heap the faster the fermentation takes place.

In this way all the leaves from trees, rakings from the orchards and vineyards, refuse from the barn, and many other things which are usually considered waste and thrown away or burned, can be used and a direct benefit derived in an increase in the quantity and quality of farm produce. The method is and will prove a great success on the farms near Reedley where it is being tried.



Genuine Turkestan Alfalfa seed makes more and better hay than the common variety because of its very small stalk and astonishingly thick foliage.

It reaches its fullest growth with half the water required for ordinary Lucerne.

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1100 Jonathan Apples, 4-6 feet.
300 E. Spitzenberg, 4-6 feet.
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400 Almonds, leading varieties, 4-6 ft.
Also assorted apples, peaches, cherries, plums, prunes, shade and ornamental trees. Write for prices.
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LLOYD R. TAYLOR, Modesto, Cal.

Correspondence.

COMPETITION AND COMMISSION.

To the Editor: Your anxiety that the farmer will have to face the competition of a penal institution, I am sure, will not be shared by many farmers, for he is aware of the fact that in the end the bill is presented to him, anyhow, no matter whether these 250 unfortunate women are taken care of in a city prison, or whether they are "reformed" on a State farm. If they can sustain themselves by growing fruit and vegetables, the farmer would be relieved of taxes to that extent—if there is not too much "grafting" going on on the penal farm.

In short, the word competition does not scare the farmer to a great extent—not half as much as the odious term "commission house." From all sides the farmer is advised to grow vegetables and ship his truck to a "reliable commission house," yet the well-meaning adviser always neglects to furnish the address of such white crows. Last summer, some of us tried to supply three different "reliable houses" in San Francisco with early tomatoes of a choice grade. The market quotations were $1 and $1.25 per box, and our returns were 40, 20, and 15 cents per box! This is one of the reasons that so many "white" farmers give up truck farming in despair.

The Agricultural Department is the savior of the farmer, and there is no better or more beneficial investment than that invested in this institution, and I am of the opinion that it would be a blessing to society if all the prisoners could work in the open air under the guidance of an agriculturist. Many of these unfortunates would become interested and learn to love the occupation, and thus some souls could be saved. This would benefit rather than injure the farmer. But, dear Editor, who will save us from the "reliable commission man"?

Lincoln, Cal. A. I.

[We know no way, unless the farmers can work it out by organization. No one can or will do it for them.—EDITOR.]

AUSTRALIAN PRODUCE IN AMERICA.

Australia and New Zealand have their eyes on America as a market for their fruits and live stock. At a conference of the Australian Fruit Growers' Interstate Association, at Hobart, Tasmania, it was practically decided to arrange for a shipment of between 90,000 and 100,000 cases of apples to New York in 1911. It was suggested that there was no reason why Australian meat and fruit exporters should not co-operate in exploiting the American markets, some of the ship space being reserved for meat and some for fruit. One of the leading fruit growers and exporters at this conference stated:

"Even with the extra cost of transshipment from England to New York—between 24 and 36 cents per case—I think we would find it profitable to enter the American market, but it would suit us infinitely better if we could co-operate with the meat shippers of Australia and send our exports direct. Some Tasmanian fruit has already been sent from England to New York, and has brought fairly satisfactory prices. Our chance of succeeding there would be based on the fact that our fruit would be on the market in the intermediate season, as in England. Our fruit would be fresh, while the American fruit, then available, would be cold-storage fruit, which is not so good in flavor."

It was decided to officially recommend to the various fruit-exporting States of Australia a levy of 2 cents per case on fruit exported, in order to raise revenue to be used for the purpose of opening up new markets in different parts of the world, especially in America. Australian fruit growers may imitate the methods of the California Fruit Exchange in arranging for the grading, packing, and distribution of the fruit in different parts of the world, as the fruit trade there suffers from lack of sufficient organization and businesslike co-operation among the growers.

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AGRICULTURAL REVIEW.

NORTHERN CALIFORNIA CITRUS FAIR.

The Northern California Citrus Fair, which was held two days prior to the meeting of the Western Freight Jobbers' Association, opened at Sacramento on February 13. The displays of fruit were unique and novel, and all the various fruit sections were represented.

The large wholesale fruit-shipping houses and wineries had exhibits, and one of the booths which attracted a great deal of attention was that of Luther Burbank. Mr. Burbank furnished the most complete exhibit of his work ever given in this country. The exhibit of the State Insectary was also very interesting and showed the various insects used to combat pests.

Watsonville was represented with a huge pyramid of apples, and nearby a Dutch windmill decorated with oranges gave an idea of the fertility of Fair Oaks, Dinuba, Lindsay, and Oroville in a citrus way. Sacramento county was represented by a horn of plenty. Porterville and Exeter also had very unique and beautiful displays. Newcastle was represented with a pre-cooling plant that explained the method of cooling fruit which saves thousands of dollars to the California fruit-grower every year. The California Almond Growers' Association also had a very instructive exhibit, one of the features being an almond huller at work.

COTTON.

At least 6000 acres of cotton will be planted around Mecca in the Coachella valley this season. The experiments this last year have proved that cotton can be grown there with a good profit, and a gin was erected to take care of the cotton crop.

I. D. McCall, who started in two years ago with one acre of cotton, is now making preparations to plant 280 acres. Mr. McCall will try an original experiment of planting cotton in a growing barley field, leaving the barley to grow as a protection to the young cotton plants from the spring winds and allow it to fall over as a mulch when the grain matures. He will turn turkeys in on the grain, and the combination of cotton, barley, and turkeys should prove a profitable one. Fifteen acres will be used in this experiment.

Over 600 acres will be planted to cotton in the Palo Verde country. Only acclimated seed will be used, and this was chosen for the growers of this section by the Government officials.

A monster ditch-digger is being used on the cotton lands of the extreme southern part of the Imperial valley. This novel machine digs a ditch from one inch to 8 feet deep and from 4 to 12 feet wide. It has a capacity of a mile a day, 6 feet deep and 12 feet wide. Over 4000 acres of cotton will be planted where this digger is worked.

The total cotton yield in the Imperial valley is as follows: El Centro, 1929 bales; Brawley, 955; Holtville, 814; Calexico, 755; total, 4453 bales. The gins will be operated another month to handle the last of the crop, and it is probable that about 500 more bales will be turned out. With the product of the Imperial gin, about 500 bales, this will bring the total crop up to 5500 bales.

RECENT MEETINGS.

The Fresno County Farmers' Union recently held its annual meeting and elected F. W. Abbott, of Oleander, president; J. H. Bonesteel, of Kingsburg, vice-president; L. N. Taylor, Selma, secretary. The executive committee are M. Williamson, J. M. Hansen, and O. A. Taylor. Among the questions discussed was the labor problem, and it was decided to give Greek laborers employment in preference to Japanese this coming year.

The annual meeting of the Sutter County Almond Growers' Association was recently held in Yuba City, and the report made for the past year showed the business had been successful. The officers elected are E. S. Norton, president; J. W. Urmsby, vice-president. The board of directors consists of J. D. Ogden, H. A. Carpenter, and Richard Watson.

The Guinda Almond Growers' Association recently held its annual meeting. J. E. Winter was elected president, and L. R. Newman, secretary. The report of the secretary shows that 268,337 lbs. of almonds were shipped out last season, bringing some $33,979. The price ranged from 7 to 14c. The report shows that a great deal of good was done by this Association in not only finding markets, but in cutting down the cost of sacks and methods of handling the almonds preparatory to shipping.

RAISIN EXPORTS INCREASING.

George Robertson, the statistician of Fresno, reports that last year 8,363,485 lbs. of raisins were exported, while in 1910 15,547,00 lbs. were shipped out. He also shows that the imports of the foreign raisins fell off 2,000,000 lbs. last year. In 1909, 13,644,000 lbs. of apricots were exported, and in 1910 the figures were 18,366,000. In dried peaches we see an increase—in 1909, 2,843,000 lbs., and in 1910, 4,946,000 lbs. were exported. Prunes show a falling off—in 1909 the total amount of prunes exported was 83,128,000 lbs., while in 1910 this decreased to 64,470,000. Oranges do not show much change; in 1909, 952,000 boxes were exported, and in 1910, 962,000 boxes.

AMERICAN FRUITS IN CHINA.

According to a late consular report, California fruits are featured in the groceries in certain portions of China. A recent consignment of American apples was sold in a few days time and at a price of $2.93 for 46 pounds. California prunes sold for $3.83 per case of 25 lbs., and evaporated fruits, such as apricots and apples, sold for $5.63 per 25 lbs., and $8.10 per 50 lbs., respectively. Consul McNally says a little energy on the part of the fruit producers of the Pacific Coast

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Roses, Roses—all the leading kinds. Acacias, Silk Oaks, Peppers, Dracaenas, Hedge Plants, Fruit Trees. Black Walnut Seedlings cheap.
Giant Himalaya, Loganberry, Superlative and Yellow Antwerp Raspberries. The "San Francisco," a veritable giant among strawberries.
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Including the *FORMOSA PLUM*, the *STANDARD PRUNE* and the *PATAGONIA STRAWBERRY.*

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This fruit sells readily in the eastern markets at from $2 to $4 for a twenty-pound box.

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The Greatest Hog Feed in Existence

Planted in precisely the same manner as potatoes and require little or no care. Yield heavily and make excellent feed for stock during the winter months when feed is scarce and high priced. Prices furnished for small or large quantities.

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would create a most successful market in China for their products.

WINE AND VINE.

A portion of the B. G. Stabler vineyard near Yuba City was recently sold. There are 104 acres in the tract, and it is planted to Thompson seedless.

Several of the leading export merchants of Australia have overpurchased this season's grape crop at double the price of previous years. This is due to the advance in Australian wine making and the growing scarcity of grapes due to the phylloxera which has destroyed many vines.

The official figures of the production of wine in 76 of the 86 departments comprising the Republic of France, are as follows: In 1909 the vintage was 1,438,296,204,309 gallons, and last year 748,623,807,738 gallons.

LARGE TREES.

Mrs. M. A. H. Wolfskill, of northern Solano county, has a remarkable growth of large walnut, olive, and fig trees. One fig tree measures 11 feet in circumference and stands over 50 feet high. There is an olive tree 11 feet in circumference and 75 feet high. The slips for these trees were brought up from Los Angeles in 1850 by John R. Wolfskill. On this same ranch there is an orange tree which bore 4600 oranges this last year that netted the owner $11.40. The tree is 5 feet in circumference and 30 feet high.

PLANTING.

It is estimated that 1000 acres of citrus fruits will be set out around Ducor and Richgrove this coming year.

Over 15,000 apricot trees are being planted near Moorpark, Ventura county, this year.

The Fresno Nursery Co. reports sending three carloads of fruit trees to Texas, two carloads to Mexico, and shipments to nearly all the Western States.

Fruit planting in Mendocino county still keps up. Recent reports show a large number of pear and prune trees and berries being set out.

CEREALS.

For some time past wheat has been selling for $1.45 per cental in Sutter county, and barley from $1 to $1.10.

A large quantity of Egyptian wheat will be planted around Corcoran this spring. William Brandonburg recently planted 20 acres. The kernel of this wheat is very large and was brought from Egypt by Mr. Whitley.

STANDARDIZING HOPS.

There is a movement on foot to bring the standard of the Pacific Coast hops to the same level with the New York State and foreign product. This will be brought up before the International Convention of the Brewers' Association which is to meet in Chicago next October. As the prices run at present, New York State hops sell from 20 to 25c., while the Coast hops sell from 15 to 16c.

GROWING PECANS.

W. S. Corwin, of Highland, recently bought 100 acres of land near Lankershim on which he will plant pecan trees. Mr. Corwin imported a new kind of pecan tree never before grown in California. Its nut is about twice the size of the ordinary and comes from Texas.

FOREIGN NOTES.

Russia, in order to increase its corn production, recently sent for L. G. Michael, of Iowa, to teach the peasants how to grown corn. The results were phenomenal, and he used the parallel method, that is, he would plant according to the latest methods in vogue in the United States, and the adjoining row he would let the peasants plant corn according to their methods. The results were so startling in favor of the American system that the peasants adopted the latter methods without hesitation.

Two varieties of mustard are grown in Germany, the yellow and the brown. The yellow mustard is not only used for table purposes, but for fodder for animals. The yield ranges from 600 to 800 lbs. per acre and about a ton of stalks per acre.

The red scale is threatening the orange and lemon industry of southern Spain, and the Spanish Government has sent a representative to California to study methods of handling this pest.

The olive crop of Italy is very small, due to the ravages of the olive fly, and consequently Italian olive oil has gone up in price. In Syria, however, the olive crop was very large and will average as high as any previous year.

MISCELLANEOUS.

During this last season 3776 carloads of apples were shipped out of the Pajaro valley.

The Balfour-Guthrie company will plant 160 acres of rice near Biggs this coming summer.

J. J. Cairns, of Lindsay, sold 31 tons of olives this last season which brought him nearly $4000. It cost him $18 per ton to pick and handle the olives.

A large acreage of beets will be planted in Colusa county this season. Already 2248 acres have been pledged to the Hamilton Sugar Company.

M. M. Nunes, in the Dalles district, Kings county, reports that an artesian well has been put down 1721 feet and a fine flow was found.

The Chico Farmers' Union is making war on the gopher. This union is urging its members to get together and exterminate the gopher, so that all the breeding places will be wiped out.

A section and a half of land near Ducor was recently sold to Los Angeles capitalists for $90,000. Most of this will be planted to citrus trees.

The first Imperial valley asparagus recently arrived in Los Angeles and sold for 50c. per pound. It was of extra fine quality and the five crates shipped in were sold immediately.

The raisin growers around Fresno are contracting for their 1910 crop at 3½c.

Peter D. Doge, of Fresno, recently sold his raisin crop for the next three years to Rosenburg Bros. for 3½c.

PUBLISHER'S DEPARTMENT.

A subscriber sent to this office an inquiry a few days ago asking where he could get bees and beekeepers' supplies, and before we found time to answer, the letter was mislaid. Not remembering the name nor address of the writer, we can do nothing more than suggest that if he sees this that he will write again, or will get into communication with the Phoenix Tool and Valve Co. of this city. This firm can supply his needs. See their advertisement in another column.

New advertisers in this issue are the Willard Nursery of San Jose, which has eucalyptus trees in quantity; the Acampo Nursery, which has all kinds of fruit trees which are offered at reduced prices; Z. A. Macabbee, of Los Gatos, who has a good gopher trap; and then, too, on our market page will be found the announcement of the Galli Fruit Co., a firm that has been established since 1869. Besides the above, the advertisement of R. R. Snowden, the soil chemist of Los Angeles, will interest many. Also, if you are looking for land, there are several announcements of this character. When writing advertisers, it will help both yourself and us to mention the PACIFIC RURAL PRESS.

From an old subscriber, the following words are appreciated:

"Ever since I first came to California, now 18 years ago, the RURAL PRESS has been of more value to me than any other paper I have taken. During the hard times I was forced to cut myself down to a subscription to only one paper, and that one was the RURAL PRESS. I could not give it up. Thanking you for keeping my name on your books so long, and wishing your paper all the prosperity it so richly deserves, I am,

"Yours very truly,

"Santa Monica, Cal. J. D. B."

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AMERICAN STEEL POST CO.
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Live Stock and Dairy.

WATER FOR HOGS.

The old theory that anything is good enough for a hog is being rapidly thrown in the junk heap with the other wornout fancies such as planting crops when the moon is right, vinegar and brown paper as a panacea for all ills, and breaking a mirror will put one in line for a series of bad luck.

Cleanliness next to godliness is getting past the parlor stage and is traveling through the kitchen out among the live stock. Although some of the farmers still persist in giving muddy or stagnant water to hogs, the band of immortals is fortunately growing smaller. There is one of these unprogressive farmers living in Monterey county, and he recently voiced his sentiments in this manner: "Hogs and cleanliness don't drive double. It's all poppycock about pure water, and clean pens for pigs. The good old-fashioned way of lettin' nature take her course for yours truly. If the hog wants to wallow in filth and mire, let him; he's been doin' it all his life and is gettin' fat at it. It's all right for a lot of long-haired guys who are raisin' blooded stock or are writin' in farm papers to advocate wet nurses and enamel bath-tubs for hogs, but they don't know what they're talkin' about."

On investigating the hogs of the man who turned loose this bit of wisdom, it was found that he lost more young pigs than anyone in his section, and that it cost him more to feed them. Yet he maintained that pure water and clean pens were unnecessary. Everyone to his choice.

A pig that is growing or is being fattened needs an abundance of pure water. This is especially true in summer when the heat causes the hog to drink more water than usual, and if it cannot obtain enough, will lose weight. On the other hand, if the water is bad or stagnant, it will of necessity be forced to drink a great deal of this filthy stuff, which, if it does not cause sickness, will disarrange the system of the porker, so that it will not make the development that it should. Health in a hog is as necessary as food, and the first start should be with clean water. It is the cheapest food that enters into the development of the hog, and it is a waste of money to feed $1 barley with rotten water.

Professor Dietrich, an authority on hogs, is a firm believer in water for fattening, feeding, and growing them. He says that water is not only essential as a quencher of thirst, but that it helps to mix the foods taken into the stomach. The purer the water the more they will drink, and this will aid in the assimilation of the foods.

PACKING WOOLS.

Wool buyers are continually complaining of the poor condition of the wool packs, and the International Vegetable Fiber Committee recently issued some very valuable hints in that regard.

The evil which arises from the use of cheap jute wool packs is one which involves serious depreciation to the raw wool, and so long as it remains, the fearful loss of labor, time, and money which is incurred by the manufacturers will ultimately and always be a charge on the value of the raw material. Many spinners and manufacturers are more keenly alive than ever to the seriousness of this evil, and many pledge themselves to give preference in future to wools which are carefully packed in bales which have been tested and recommended by the committee. There have been two classes of wool packs recommended, not only on account of freedom from loose fibers (which is the main consideration), but also because of their moderate cost:

(1) A paper-lined pack which quite obviates the danger if thoroughly and securely lined. These are specially suitable for scoured wools and for the finest merino greasies, and they can be procured at an approximate cost of 3s. 9d. per bag f. o. b. London, subject to market variations.

(2) A close-woven, strong, unlined pack, made of the best material.

BUTTER-SCORING CONTEST.

Leon M. Davis, of the University Farm at Davis, reports that the Dairymen's Co-operative Creamery Association at Tulare made the highest score in the recent educational butter-scoring contest. The number of creameries responding to the call for first entry 1911, was slightly discouraging to those who are working to make the California Butter-Scoring Contest a success. Preparations had been made for the scoring and test of at least 50 entries, but only 21 were sent in. This represents not more than 10 per cent of the creameries in the State.

The butter sent in was an average lot compared with the markets, and the scores placed were as follows:

Creameries.	Score.
Dairymen's Co-op., Tulare	94½
Suisun, Suisun	94
Calif. Polyt. Sch., San Luis Obispo	93½
Castroville	93
Laton Co-op., Laton	93
Cottonwood	93
Elite, Nicasio	93
Salinas	92½
University Farm, Davis	92
Glenn County Cream. Co., Willows	92
United Creameries, Arcata	91½
Ceres	91
Stanislaus, Modesto	91
Elk Grove	91
Pozzi, Marysville	91
Riverdale Co-op., Riverdale	90½
Santa Rosa	90½
Richfield, Corning	90
Meridian	90

There were a number of mechanical defects under body and color. There seems to be a tendency at this time of the year to use too high temperatures, especially in washing the butter. This may be necessary in order to keep the moisture up, but when such a high temperature is used, some butter requires more working to get rid of mottles and streaks, than the body can stand. As a result, under such conditions, there is one or the other of these defects. Faulty washing and working are more or less responsible for defective body and color. Mechanical defects must be charged to the maker, and the ease with which he may get rid of them makes their appearance reflect more seriously upon his methods.

LIVE STOCK BREEDERS' MEETING.

The third annual meeting of the California Live Stock Breeders' Association was recently held in San Francisco. The banquet preceding the meeting was well attended, and the chosen speakers were LeRoy Anderson of the University of California, T. B. Hock, H. B. Phillips of the University Farm at Davis, H. A. Jastro, president of the California Live Stock Breeders' Association, C. W. Rubel, Peter J. Shields, Carroll Cook, Dr. Chas. Keane, A. W. Foster, Capt. J. D. Langdon, U.S.A., and George Warlow.

At the meeting many legislative questions were discussed, especially in regard to holding a State Fair at Los An-

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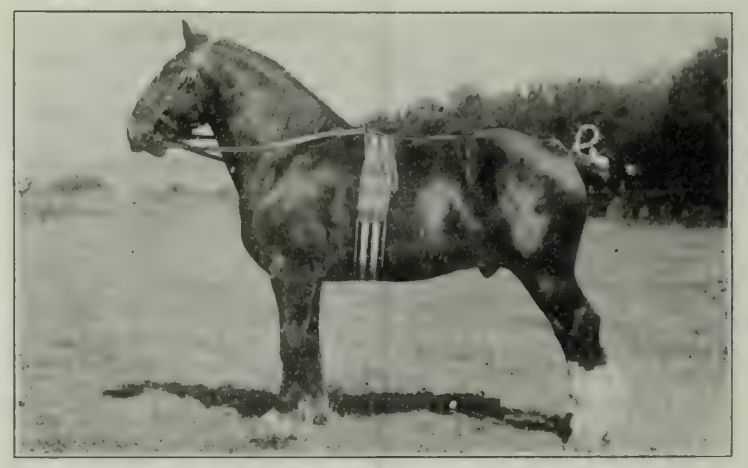
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MUCH POOR HAY.

The San Francisco hay merchants are complaining about the poor hay that is being shipped into the market. The chief cause of complaint is the amount of dirt which is found in the baled hay. Often there will be 50 or 60 pounds of rock and dirt mixed up with the hay, and this causes a reduction in price and often the rejection of a whole carload. This trouble rises from the fact that the farmers buck hay from the windrow into the cocks. The buck rake which does this work usually takes up lumps of dirt.

The hay should be stacked before being baled, as it cures much better in the stack. It costs the farmers an average of 40c. per ton to stack hay, but they have never paid this extra price on account of the good condition of the hay. When the hay is put into bales from the cocks, it is easier to dry and has not the greenness which is essential to first-class hay. Another feature is the size of the bale. The merchants prefer a three-quarter steel press. This puts up a bale that is neat and square, and one that is not overheavy, as is the case with the large rectangular bale. The bales should not weigh more than 200 to 225 pounds.

The farmers, in order to get a better price for their hay, should stack it, handle it properly so as to prevent dirt getting into it, cut it as green as possible, and put it in more attractive bales.

A REMARKABLE BEEF.

The Angus calf, Shamrock 2d, grand champion steer of the 1910 International, dressed 67.7 per cent. The live weight was 1120 pounds, while the dressed weight was 759 pounds. As this animal was only 11 months old, there was some discussion as to whether it was veal or beef. Every one who tasted the meat said it was mature beef.

The following facts, figures and percentages show actual results in the sale of the meat:

	Price per lb.
22 7-10 lbs. shanks, 3%.....	25c
91 8-10 lbs. plates, 12%.....	8c
85 4-10 lbs. ribs, 11⅓%.....	$1.50@1.75
182 lbs. chuck, 24%.....	25@50c
144 2-10 lbs. loins, 19%—	
Sirloin	1.00@1.50
Porterhouse	1.25@2.25
174 5-10 lbs. rounds, 23%.....	35c
22 4-10 lbs. flanks, 3%.....	8c
36 lbs. suet, 4⅔%.....	7c

Flank steaks, $2 pair; liver, 35c. per lb.

According to the Queensland Agricultural Journal, the Australian dairymen are having success with butter boxes made from straw pulp. It is claimed that the straw-pulp butter box is odorless and impervious to moisture. The color is dark gray and hence not so attractive as the ordinary butter box made from white pine. The sides and bottom of the indurated fiber box are molded in one piece and the lid is fixed with nails. The cost is much less than the ordinary wood box and it can be made quite strong.

Walter Gallup, of Dinuba, recently purchased a Percheron stallion, Marigold, from S. Cedarburg. This animal was imported from France by the McLaughlin Bros. of Columbus, Ohio.

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BECAUSE the fence gradually will pay for the luxuries, season by season. How? By enabling you to turn your waste into cash.

Fence your farm off into a sufficient number of fields to get the proper rotation of crops and the most advantageous pasturing and your *cash returns* each season are bound to increase. The farmer still using the old system of big fields is losing money through waste. The fields of your farm are like tables in a restaurant. The more tables the more people served and the greater the profit.

The steel in Ellwood fence is specially made for the purpose from carefully selected stock. It is hard, elastic, tough and springy. The line wires, composed of two or more wires twisted into cables give each individual wire the shape of an elongated coiled spring. The fence is therefore sufficiently elastic to take care of expansion and contraction, and yet so rigid when properly stretched as to prevent sagging. The small and permanent mesh is made by weaving one continuous wire throughout the fabric. The mesh or stay wires are so interwoven that slipping is impossible. The triangular truss is the strongest form of construction known. For this reason, Ellwood fence will stand hardest usage and still retain its shape.

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Send for copy of "Ellwood Fence News," profusely illustrated, devoted to the interests of farmers and showing how fence may be employed to enhance the earning power of a farm. Furnished free upon application.

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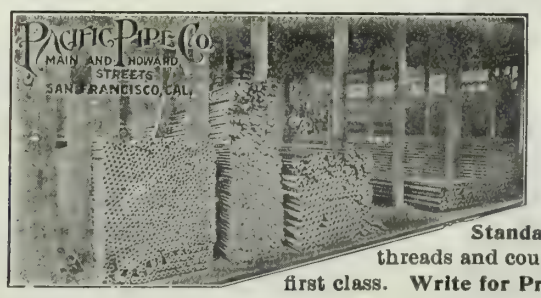
At the six World's Fairs since 1900, our Percheron Stallions have won every Championship, and every first prize except two.

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For over 40 years this wonderful remedy has been constantly proving its efficiency and value to horse owners everywhere. It has saved millions of dollars in horseflesh and untold time, work and worry.

The experience of Mr. H. R. Davis, of Madras, Oregon is merely typical of thousands. He says—

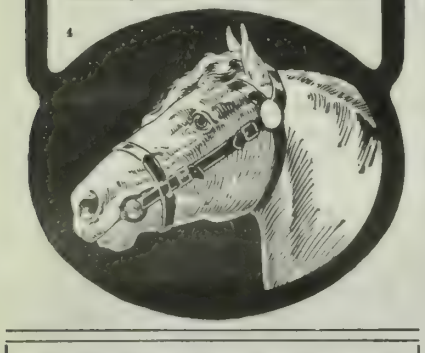
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And Mr. Oscar Masters of Peppers, N. O writes—

"I have been using your Spavin Cure for several years and it certainly is the world's greatest liniment."

Don't take chances with your horses. Have a bottle or two of Kendall's Spavin Cure always on hand—it is a sure cure. Price $1.00 per bottle or 6 bottles for $5.00. Get our valuable Book, "Treatise on the Horse"—Free at your druggist or write direct to us.

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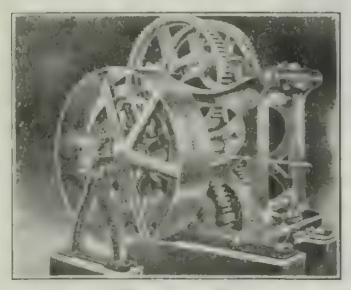
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WATER RAISING FROM DEEP WELLS OUR SPECIALTY
POMONA, CALIF.
or PORTERVILLE, CALIF.

THE PANAMA CANAL AND THE DAIRY INDUSTRY.

(Continued From Page 129.)

the University Farm, Davis, Leon M. Davis said dairymen still fail to assume any responsibility whatever in the delivery of good cream, and do not realize that the delivery of good cream is to their own interest. Poor cream makes poor butter, and tends to injure markets. Such is especially favorable to the introduction of butter substitutes. The dairy interests should do all in their power to prevent this, and their most successful step will be to put on the market a high grade of butter. The dairy farmer should have an interest in his product until it reaches the consumer.

The dairymen of California should take this criticism to heart because the consumer is getting educated to a good quality of butter, and after he is stung with a poor square of butter, he looks for the brand on the wrapper, and immediately puts it on his blacklist.

DAIRY NOTES.

The Corcoran creamery shipped to Los Angeles 35,000 lbs. of butter-fat during the month of January in the shape of sweet cream.

Many new dairies are going on the property of the Sacramento Valley Irrigation Co., northeast of Willows. Among the new settlers preparing alfalfa land for dairy purposes are F. L. Lord, H. A. Merling, R. J. Benri, and Bert Holdenride.

Every ship from New Zealand brings a load of butter to San Francisco, but on account of the use of boracic acid to preserve it, it is refused entry and reshipped to British Columbia.

There is great activity in dairy lines around Wheatland at present. Many of the farmers are putting in alfalfa, and the Horst Hop Co. has dug up a large acreage of hops to prepare for alfalfa.

The Visalia Co-operative Creamery recently held a meeting and elected the following officers: John Allen, president; M. S. Bettencourt, vice-president; Seth Smith, Jr., secretary, and W. J. Beck, manager. The report shows that during the last three months $44,762 had been paid out to patrons for butter-fat.

The Woodland creamery dispensed during the month of January, $10,935 for butter-fat. The average price paid was 36½c. per pound.

Winnipeg has a milk famine, due to many of the farmers in that locality raising wheat. The demand is so great that about 1000 gallons of milk are imported from the United States every day. The cost of the milk landed in Canada is 10c. per quart.

S. S. Farnsworth, a dairyman near Tulare, obtained $95.49 from 9 cows, during last month, an average of $10.61 per cow.

F. Kaiser of the Imperial valley is in Kern and Ventura counties buying dairy stock. Within the last few months Mr. Kaiser has imported into that valley some 500 cows.

Recent tests show that in both goats' and cows' milk the morning milk was lower in fat and total solids than the evening milk.

HE TRANSMITS HIS QUALITIES

We are retiring from the business and so offer at a reasonable price a proved foal getter. (we show his colts.)

IMPORTED PERCHERON STALLION FOR SALE

8 years old, coal black, 1900 lbs., a grand horse.

Write the PACIFIC RURAL PRESS

Horse Owners! Use GOMBAULT'S Caustic Balsam



A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish*

Every bottle sold is warranted to give satisfaction Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland, O.

A Fine Thoroughbred

JERSEY BULL

Eligible to registration, solid color, large boned animal. Must be seen to be appreciated. Write for price.

H. E. CHAPMAN,
Big Ranch Road, Napa, Cal.

IS YOUR LAND FOR SALE? It may suit some Easterner who is interested in California land. List of 20 possible purchasers sent for $1. You write direct to them, make sale, save agents' commissions. This plan is effective. Send today for list.

CO-OPERATIVE FARM AGENCY,
Vallejo, California.

MR. RANCHER OR SPECULATOR HERE IS YOUR OPPORTUNITY TO SECURE 320 ACRES AT A BARGAIN.

THE BEST PIECE OF LAND IN ALAMEDA COUNTY FOR THE MONEY

320 acres rich level land within 3 miles of Livermore and 35 miles of Oakland, adapted to the raising of hay, grain, grapes and alfalfa.

FINE FOR SUBDIVISION

$85 Per Acre $85 Per Acre $85 Per Acre

ONE-THIRD CASH, BALANCE IN 5 YEARS

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968 BROADWAY, OAKLAND, CAL.

700 Acres of Alfalfa Land TO RENT

700 acres of sandy loam, located on Putah Creek, near Winters, Solano county. Will rent as a whole or divide into seven tracts of 100 acres each, for ten years, at a cash rental of $10 per acre per year. Will put down good wells for irrigating purposes, with electric line on each piece. Alfalfa is at its best on this land. Write at once to

WYATT & WILSON
AGENTS
Winters, Yolo Co., Cal.

GET A RANCH FROM BATTLING NELSON ON EASY PAYMENTS

$350 $350 $350

$25 Cash and $5 each month buys one of those beautiful rich level 2½-acre Home Farms in the Livermore Valley. No better climate, no better land for a profitable poultry ranch. Only 32 miles from Oakland.

THIS LAND WILL DOUBLE IN PRICE WITHIN THE NEXT 3 YEARS.

BUY NOW AND MAKE THE PROFIT.

F. D. BURR CO.
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WANTED — GENERAL MANAGER for Several Large Ranches. Must possess first-class executive ability, and good knowledge of farming and live stock. Highest salary will be paid. State age and experience. Address Advertiser, Box 35, care of Pacific Rural Press Co., 667 Howard St., San Francisco.

2335-ACRE RANCH FOR SALE

We have a Stock Ranch of 2335 Acres, three running streams, two barns, two houses, well fenced, rolling hills, good soil, about 1500 acres tillable, and has produced as high as eighteen sacks of wheat per acre. Four miles southwest of Dunnigan, Yolo County.

PRICE, $18 PER ACRE

EASY TERMS.

Write for full particulars to

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WINTERS
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Merced County

LET THE CROPS PAY FOR YOUR FARM

We will sell you irrigated land in our **Merced Colony** adjoining the city limits of Merced on a crop payment plan. Make one payment in cash, then the balance of the purchase price from one-third the crop each year. We have confidence in the productivity of our land or we could not make this proposition. If you have equal confidence in yourself, write us today for particulars.

10 and 20 acre tracts. $100 to $125 per acre.

(Send this to us)

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595 Market St., San Francisco
(Please send me literature on your Merced Colony)
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ADDRESS.....

MADELINE MEADOWS
Lassen County

You cannot afford to buy land in the West without first looking up **Madeline Meadows** lands.

Irrigation system now in operation.

Any size farm you may want under gravity irrigation system.

Total price including perpetual water rights.

$40.00 Per Acre

Nine years' time.

Write or call for full detailed information.

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SAN FRANCISCO, CAL.

Poultry Department.

Conducted by M. Russell James.

BROODING THE CHICKS.

There are two bad habits which brooder chicks must be guarded against. These are huddling and cannibalism. Chicks under the care of the natural mother never get into these habits simply because the hen teaches them better. Chicks are mere babies, and though they are lots smarter than our own babies at that early age, the little creatures must be shown what things to eat and what things to do in this big, strange world. They have a craving for food, and they know that they must scratch and pick for it, but they are unable to select, and so, like the human infant, everything they can swallow goes down and is grist for the gizzard; they feel the need of hovering warmth and so bunch together, with their little cuddling call for "mother" to gather them under her wing. The hen invites them to eat the things that are good for them, and for the things they should not touch she has a shake of the head and a "kerr" which means "don't" in hen dialect. Unlike the human infant, they never cry for that which they should not have, nor eat of forbidden things. The hen gathers them under her with a coaxing call, and if a stupid, sleepy chap persists in yapping out in the cold, she will try to get him to her or will work herself over to him and hover him willy nilly. She never allows her little babies to huddle together in the cold.

Neither must the care-taker allow them to do so. This tendency, like cannibalism, must be nipped in the bud, else it will become a habit that is difficult to break. It is fatal to the quick growth of the chicks and results in more or less colds, diarrhea, and mortality in the hatch.

CHANGING THE CHICKS FROM THE INCURATOR TO THE BROODER.

Unless the incubator is crowded or the weather very hot, the chicks should be left in the machine until they are 24 hours old. On the evening of the twenty-first day the trays should be removed, together with shells and unhatched eggs. If the temperature has not been run too low during the hatch, all chicks that are worth while will be out by then, and the unhatched eggs might better be emptied into a bucket of water. If one wishes to give them a further trial, wrap them in warm flannel and place them in a warm basket under the range. Then darken the incubator, open the ventilators, keep the temperature steady at from 95 to 97 degrees, and leave the chicks to sleep and complete their development.

If the brooders have ever been used before, they should have been thoroughly disinfected, aired, and dried. On the twenty-third day of the hatch they should be all ready for the chicks; that is, thoroughly heated and prepared by sifting clean sand or dry earth over the entire floor; over this sift pounded shell, and under the hover a bedding of the siftings of the leaves from alfalfa hay. Have the heat under the hover the exact degree of that in the incubator from which the chicks are taken. Remove them in a basket lined and covered with a warmed piece of old blanket or flannel. If cold brooders (fireless) are used, either have them placed in a warm room or supply some kind of artificial heat above the hovers for the first few days. Oh, yes, we are told that the chicks may be taken right from the incubator and put into a cold brooder out of doors with the weather singing about the zero point or below. It may be true; in which case it is a curious and rather cruel experiment in the endurance of the genus Aves. But we wouldn't recommend it to the poultryman who is out for profit rather than experiment.

The brooder may be left open a few minutes after putting the chicks therein and the babies given an opportunity to skip and flap their bits of wings, and take a sip of water and a few bits of pounded shell and rolled oats (such as come in breakfast mush packages), but just as soon as they begin to make their little cuddling call and bunch together they must be put under the hover, the lid closed down and the chicks left to sleep a couple of hours.

For the first two or three days after being put into the brooder the chicks should not be allowed beyond it, and when they are first allowed out of it a small space directly in front of the brooder should be fenced in by a narrow board or strip of scantling. This space should be covered with sand and pounded shells and a litter an inch or two deep of dry alfalfa leaves where the chicks should be encouraged to scratch for chick feed. Now they should be closely watched and taught to go back into the brooder when they begin to get tired and cold. Every time they show an inclination to huddle, hustle them back into the brooder and do not let them beyond the limited space in front of it until they have learned to go of themselves back into the brooder for rest and warmth. Thus the huddling habit will be nipped in the bud.

Southern California Pigeon Show.

The popular Pacific Coast pigeon judge, Robert V. Moore, of Oakland, who judged these two shows, sends in the following notes:

The pigeon show season in California is over for this winter, and it has been the most successful in the history of the Golden State. The last two exhibitions were held in southern California. The first of the two was exclusively a pigeon show, and came off in Luna Park, Los Angeles, the third week in December, followed three weeks later by the one in connection with the annual poultry show at San Diego.

In the way of entries the former show led all others in the State this season, there being 550 birds on display. While this exceeded in numbers the one recently held in Oakland by 63 birds, the quality in most cases was not so good, Oakland being famed as the mecca of pigeon fanciers and squab breeders all over the Coast. The cup for the best display went to G. R. King of Los Angeles, the largest pigeon dealer in California. Mr. King also captured the two Show Homer cups and the two Carneaux cups. G. R. Whitney, of Los Angeles, secretary of the Southwestern Pigeon Club and one of the few fanciers in the State noted for being a true fancier of quality birds, exhibited the finest team of Short-face Tumblers and African Owls ever seen in the Far West, some of his birds costing £8 to £12 each in England. He won both cups awarded to these varieties. T. R. Quayle, of Piedmont, captured the three Jacobin cups. He showed a team of 25 birds in this variety in all the leading colors, which was one of the attractions of the show, as this pigeon represents one of the most popular varieties in the columbarium.

Pouters brought out 36 Pigmies and 19 English. The Pigmies were only a moderate lot, all being too large for this variety of Bantam Pouters. Ten of the English Pouters shown were entered for exhibitions only by W. J. Beech of Whittier, and were the best ever seen in Los Angeles. Dragoons numbered 82 birds, the largest class in the show. J. Brenton, of Los Angeles, exhibited 48 of these, capturing most of the specials for this breed. Flying Homers came next with 55 birds, 10 of which were prominent Eastern and Western record birds. Among the prominent exhibitors in this class were G. W. Richardson of Oakland and Julius Luhdorff of Visalia, the former winning the two cups, but the latter showing the best long-distance flying bird with a Pacific Coast record. Runts, the largest of all domestic pigeons, numbered 38, and most of the honors in this class fell to P. D. Hall, of Los Angeles, with his wonderful European winners in Whites, Yellows, and Blacks, the best of their variety in the world. Mr. Halmer, of the same city, exhibited a pair of immense Reds, the best ever seen here. Fan-tails, that time-worn variety known all over the civilized world, brought out but 17 entries and two exhibitors, the cup going to D. S. Heffelfinger, of San Diego. Carneaux, a variety which has little to recommend it to a fancier, brought out 27 specimens, mostly from one exhibitor. There were only 24 Maltese Hen Pigeons—a slim showing for the most popular variety in California the past five years with both fancier and squab breeder. W. L. Culver, of Oakland, won the cup on this variety with a bird of great merit which was quickly snatched up by a Los Angeles breeder for $25. There were 40 Magpies in various colors, all shown by J. F. Goforth, of San Diego, who won three handsome cups, including the one for best display by a non-member of the Los Angeles club.

The San Diego club show brought out 268 birds. Many of the winners at the Los Angeles show repeating their winnings. W. J. Head, of West Berkeley, sent down one of his fine strings of beautiful fancy pigeons and won the cup for the best Runt in the show.

THOROUGHBRED BUFF LEGHORNS

Proven winter layers; 600 hens selected by Hogan system, in breeding yards.

Chicks, $10 per 100. Orders taken only for May and June delivery.

Eggs for hatching, $5 per $100; $1 per setting.

R. M. HEMPEL,
R. F. D., No. 1, Lathrop, Cal.

F. BALDWIN'S WHITE LEGHORNS



1st Pullet, A. Y. P. Ex.

Winners from Seattle down; 33 out of a possible 35 prizes in 3 shows this season. **Bred as layers first.** Stock, any age, for sale at reasonable prices. Eggs $8 and $12 per 100 Settings $2 up. S nd for **new free folder** and prices.

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POULTRY.

WAYSIDE POULTRY YARDS, Petaluma, Calif.—HATCHING EGGS from S. C. White Leghorns, Buff Orpingtons, Rhode Island Reds, Light Brahmas and Houdans, $6 per 100. EXHIBITION MATINGS of White Leghorns and Black Bantams, $5 per 15; $7.50 per 30. Address Carl Gregory, Manager.

PIONEER POULTRY YARDS—Standard bred Light and Dark Brahmas, Buff Cochins, R. I. Reds, Houdans, Black Minorcas, Cornish Fowls, Brown Leghorns, Bronze turkeys, peacocks, guineas and Rouen ducks. Address W. A. FRENCH, 545 W. Park St., Stockton, Cal.

SULLIVANS' BUFF ORPINGTONS—1000 birds to select from. Trios, $7.50 and up. Eggs for hatching, $2 and $3. Special selection. Prices on application. Mr. and Mrs. W. S. SULLIVAN, 25 Market St., Agnew, Santa Clara Co., Cal.

DAY-OLD CHICKS—R. I. Reds, S. C. White Leghorns and Barred Rocks; also eggs for hatching; good laying strain. Fairmount Hatchery, Box 29 B, R. F. D., Santa Cruz, Cal.

WHITE WYANDOTTES—221 egg strain. Owner first-prize cockerel, Oakland and Petaluma 1909. Eggs $2 per 15. H. B. WINTRINGHAM, Middletown, Lake Co., Cal.

CHICKS, 10c.—Shipped anywhere; 30 varieties; thoroughbred chickens and eggs; free circular. Ingleside Hatchery, 807 Mt. Vernon Ave., San Francisco, Cal.

INDIAN RUNNER DUCKS—Eggs for hatching, $1 per setting; $2 for 30; for 50 or more, 5c each. F. L. HUNT, Lincoln Ave., Napa, Cal.

PETALUMA INCUBATOR CO., Petaluma, Cal.—You will be pleased with our new Free CATALOGUE. Send for it.

FREE BOOK—"Poultry Feeding for Profit," on application to Coulson Co., Petaluma, Cal., Box P.

CARRINGTON WHITE LEGHORNS—Send for circular. Address C. B. CARRINGTON, Hayward, Cal.

WHITE LEGHORNS—Chicks, eggs, cockerels. Fine stock. Reasonable. O. B. Morris, Lodi, Cal.

BRONZE Turkeys and Eggs. Ed Hart, Clements, Cal. Large size, good plumage, early maturity.

TWIN OAKS FARM—W. H. Bissell, Proprietor, Livermore, Cal.—Buff, White Orpington.

ORPINGTONS—White, Buff, stock, eggs. Ellen Jacque, 3117 School St., Fruitvale.

HATCHING EGGS—White Leghorns. Circular 164. A. H. Gregory, Fruitvale, Cal.

MANHATTAN Egg and Stock Food keeps Stock and Poultry healthy; try it.

THE ARENBERG BROODER STOVE



Proven to be the most successful Brooder Stove on the market. Awarded gold medal for most meritorius California invention at California State Fair, Sacramento, September, 1910. Burns distillate; perfectly simple and easy to manage. **Write for details.**
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The most perfect brooder made. Perfectly sanitary, perfect ventilation, no corners to crowd into. No sweating, no smothering, no oil to buy, no lamps to fill, no risk of loss by fire. No night work—just perfect. Our guarantee with every brooder. Price 75 to 100 capacity, $6.00. We pay the freight. Send for circular.

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WARD'S ORIGINAL FIRELESS BROODERS
PRODUCES STRONGER, HEALTHIER CHICKS THAN ANY HEATED BROODER
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INDIAN RUNNER DUCKS

FROM A. Y. P WINNERS.

Indian Runner Ducks lay eggs that sell as "firsts." They don't mind cold feet and they lay in winter. They eat cheap feed and lay upwards of 200 eggs a year. They mature at five months. They are well called "mortgage lifters."

Eggs for hatching. Ranch on Hayward Hill at the junction of the Livermore and Crow Canon Roads. Visitors welcome every day in the week.

MELLETTE & CO., Hayward, Cal., R 3

The Home Circle.

Our Flag.

What heart in this great nation,
  Does not with rapture thrill
And burn with ardent yearnings,
  And seek with earnest will
To hold our royal banner high,
  And keep its colors bright—
To open every silken fold
  And fling it to the light.

Heaven dropped for this her silver stars,
  And the great sea unrolled
The fabric of her mighty breast,
  To tint each silken fold.
"Lest we forget" the fateful cost,
  And pride and greed increase—
Deep tints of war lie side by side
  With the white wing of peace.

If e'er this flag is humbled,
  Our martyrs lived in vain,
And purity and peace are grieved,
  And will they smile again?
If o'er grim evils she should float,
  Setting a seal untrue,
Heaven might withdraw her silver stars,
  The sea take back her blue.

Guard, then, the banner that we love,
  With kind and jealous eye,
That leads all needy nations up
  To life and liberty—
That spreads her wing of peace abroad,
  That stands for God and right,
Then open every silken fold
  And fling it to the light.

—Mary O. Page.

A Boy's Winter.

Are you giving the boy his chance for enjoyment on the farm in the winter? In California, where work out of doors may be done practically every day, the boy may not get his share of the good times which older one enjoyed in the colder climate of the East, and which forms a happy memory.

The boy is always popularly supposed to have these pleasures in the winter, if he lives on the farm, and often he does; but sometimes fathers and mothers do not realize how passionately the boy longs for them, nor how much it will mean to his older years, if he can look back upon these happy, happy times of childhood.

Father and mother should be big playfellows, as well as parents, to the growing boy, if he is to benefit by the beautiful relationship. To go shooting with father may seem a little thing to the older man, who would rather stay at home and toast his feet before the fire; but to the boy it is the initiation into manhood; it brings to him the feeling that comradeship between his father and himself will be a matter which the coming years will give him in increasing measure; he's not so apt to marry without consulting his father, if they have become one in sport as well as in work.

And if mother will give a party now and then for Tom as well as for Bess, she will be rewarded far beyond her dreams. Tom, to be sure, will not care to wear his best clothes, and it's likely that he will be indifferent to the presence of girls; but he would like to go out in the barn and have two or three of mother's big apple pies, and a jar of doughnuts to eat while he plays all the games dear to boyhood on the dusty floor.

There is no reason why the sports which can so easily be procured in the winter days should not be enjoyed by the older members of the family; mother and father will be all the happier and all the younger for enjoying a good laugh with the boys and girls.

Blessings never seem so bright as when we look back on them; one needs to hear the old man talking of his happy winter days on the farm to know how truly bright these homely pleasures shine in the dullness of after life.

Let your boy play, father and mother; it's the surest outlet for much that will smoulder and become evil, if it is repressed. Let him have the run of the barn; give him a good gun, and don't refuse him the time to use it.

How to Clean House.

(For Men.)

Housecleaning time is dreaded justly by a great many people, but the thoughtful husband may get it through with in short order. Washing windows, for instance, is always gone about in such an awkward way, the windows being washed in statu quo, so to speak. A simpler way is to take the windows out and send them to the laundry.

Dusting the pictures is also usually attended with much hard work. A quick and simple plan is take hold of the frame firmly and swing the picture back and forth, hitting it sharply against the wall each time. This dislodges the dust, which falls to the floor and may easily be swept up.

If you have no vacuum cleaner, you may improvise one with an old bicycle pump by attaching a funnel to the nozzle. Then work the pump backward, so that, instead of forcing the air out, it will be drawn in. The rugs may soon be cleaned in this way.

Washing the woodwork is another futile procedure. Simply get a few gallons of paint and paint over the grime on the woodwork.

To repolish the hardwood floors, take your wife's manicure buffer and sit down in a comfortable position and go to work. You will be surprised at what a pleasant way this will be to while away the evenings.—Judge.

To Stain Old Floors.

An old floor, if not too badly worn, can be dressed up to look very creditably, by staining it, says Shoppol's Owners' and Builders' Magazine. At all events, it can be measurably improved in appearance by this process. It should first be thoroughly cleaned, all grease spots and splotches of old paint being removed by the use of caustic potash. The surface should then be sandpapered, and the cracks filled with putty.

A dark walnut-colored stain can be made with burnt umber, ground in oil, and boiled linseed oil. The consistence of the mixture must not exceed that of the oil, and if it needs thinning, a little turpentine will fill the bill. Or better still, ready-mixed material may be had at paint stores. Apply the stain with a rag, preferably, or a brush. If one coat is not sufficient to darken the floor enough, a second coat may be applied. If you prefer, get a light-colored stain; it is more fashionable and does not show dust as readily. The stain should be well rubbed in. Twenty-four hours after it has been applied, the waxing may be done. Shave a pound of beeswax into thin strips, and soak it over night in a gallon of turpentine, and apply it to the floor with a rag. Additional coats from time to time will add to the polish.

The Eleventh One.

A teacher in a big elementary school had given a lesson in an infants' class on the Ten Commandments. In order to test their memories, she asked, "Can any little child give me a commandment with only four words in it?"

A hand was raised immediately.

"Well?" said the teacher.

"Keep off the grass," was the reply.

The Jollier.

"He may not mean just what he says,
  But still he wears a smile—
The kind that gladdens up the heart—
  And that is worth the while.
You've failed, perhaps you know it, too,
  Yet he your work will praise,
And when he leaves you, you will find
  Your hopes have had a raise."

"The slap he gives you on the back
  Says, 'Fine, old boy!' to you.
His little jolly helps a lot
  When troubles have you blue.
He may not mean just what he says,
  But still he wears a smile;
The jollier—God bless him!—is
  A liar that's worth while."

Household Hints.

Hardwood or stained floors need not be washed with soap and water more than once every two or three weeks. If rubbed with an oiled rag once a week they can be kept in good condition.

The furniture should be washed with warm water and soap once in a while, but it must be well dried and polished afterward. To polish use a chamois-skin, or in case of hand-polished furniture it should be rubbed by hand. Do not wash oftener than necessary to remove dirt or cloudy effects.

Soft tissue paper or paper napkins are excellent for shining the windows.

The buttons should be cut off all old garments before they are thrown away. You may find use for them some day.

Particles of any kind should not be thrown in the sink, as they are liable to stop up the pipe.

Should the finger get burned while cooking, stick it in grease of some kind immediately. This will prevent blistering.

If the hair is inclined to be too oily, shake a little orris-root powder through it. Try not to get it on the scalp.

A pinch of borax in the water makes the hair soft and fluffy.

Carpets may be scrubbed with a brush and soap and water.

A few oyster shells burned in a hot fire in the kitchen range will loosen clinkers from the firebrick.

To remove ink stains from white goods soak the stained parts in sour milk for several hours.

Put a few drops of ammonia in the water in which glassware is washed.

Prune Pie.

One-half pound prunes, one-half cup sugar, one slice of lemon, two level teaspoons butter, one level tablesoon flour.

Wash the prunes thoroughly and soak over night. Cook in the same water, adding the sugar and lemon, remove the prunes, and reduce syrup to two tablespoons. Line a plate with paste, add the prunes, stoned and cut in pieces, and the Syrup. Dot over with the butter and sprinkle with the flour. Cover with paste, pressing the edges well together. Bake in a moderate oven until well browned.

No Time to Load.

Two Irishmen who were out gunning had but one gun between them; and the one with the gun, seeing a bird on the end of a limb, took careful aim to shoot, when the other cried:

"Fer Hivin's sake don't shoot, Pat."

"Why?" said Pat, astonished.

"The gun isn't loaded," said the other.

"But I tell ye the bird won't wait," said Pat.—Exchange.

I believe that the mind can be permanently profaned by the habit of attending to trivial things, so that all our thoughts shall be tinged with triviality.—Thoreau.

THE HAMLIN SCHOOL

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A Boarding and Day School for Girls

Accredited by the University of California, by Leland Stanford Junior University, and by Eastern colleges. Special courses in study are also offered.

Lessons in Drawing and Painting, Elocution, Vocal and Instrumental Music.

A course of lessons on Harmony is given each week by Prof. Wm. J. McCoy of the University of California, and is open to students outside the school.

Courses of lessons in Household Economics, with all the appliances for cooking, etc., are given each week by Miss Alice McLear, a graduate of the Drexel Institute, Philadalphia, and are open to students outside the school.

For further particulars, address

MISS SARAH D. HAMLIN,
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School reopens January 9, 1911. Pupils admitted at any time.

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Only Woman's College on Pacific Coast

Located near Oakland, within short distance of San Francisco and the great universities of the West. Full collegiate courses leading to degrees. Entrance and graduation requirements equivalent to those of Stanford and University of California. Students fitted to teach regular lines of academic work and Home Economics. Special advantages offered in music, art and library work. Well equipped science laboratories and gymnasium. Special attention to health of students and provision for outdoor life. Courses so arranged that new college students may enter second semester, opening January 11, 1911.

For catalogue and brochure of views, address President's Secretary, Mills College P. O., California.



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One Female Trout will spawn 2000. Send $1.00 for my book which tells you how to build, hatch and feed trout for the market.

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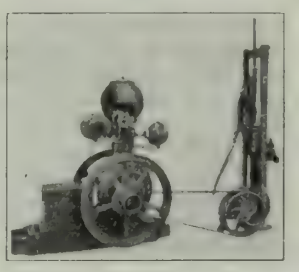
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Healdsburg, - Sonoma Co. California

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Saves 50% in power and efficiency in elevating water from an ordinary well and performs a hundred other duties on the farm. Is cheap and reliable and never out of order.



Write for information on Monitor Gasolin Engines and Monitor Windmills.

A. R. EATON & CO., 405 10th St., Oakland.

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16 in. long, 7 in. wide,	13.00
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24 in. long, 7 in. wide,	17.00
30 in. long, 7 in. wide,	20.00

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OUR YOUNG FOLKS' DEPARTMENT.

Conducted by M. RUSSELL JAMES.

Make the Best of It.

A merry heart, a merry laugh,
A face with lots of sun in it,
A merry tongue with merry chaff,
And quip with lots of fun in it!

If trouble comes, and trouble will,
When others make a guest of it,
Keep on a smiling face, and still
Strive on and make the best of it.

And if the worst comes to the worst,
And life has no more zest in it,
Well, there are fewer clouds to burst,
So why not make the best of it?

Then learn to leave behind you care—
A fool but walks abreast of it;
Don't be a victim of despair,
But always make the best of it.

—New York Sun.

Moonlight Tobogganing.

A grandpa who was a boy in the early half of the last century used to tell old-time tales to his young folks, and the following is one of them:

We were all farmer boys living in the Black Rock district in old York State. We boys had fun in those days—more fun, it seems to me, than you chaps get out of the present times. But the greatest fun of all was the Niagara river that rippled over the shingly shores as tame as any streamlet in calm summer weather, but came dashing and crashing with ice floes in the breaking up of winter.

In the summertime we boys—and girls, too—used to smuggle our parents' sap-troughs (little dug-outs used to catch the sap when the sugar maples were tapped in the spring) to the river and use them for canoes. Many a ducking we got as we paddled our canoe, for the troughs had a habit of turning turtle under us, and this was usually followed by a warming with a hickory switch, for canoeing was a forbidden sport.

In the breaking up of winter the floating ice would often become lodged against the shore and piled up into glittering icebergs, which in melting and freezing were welded together into a small mountain of glary ice. On the shore side, this often formed a grand toboggan slide which was the boss attraction for us while it lasted. We would crawl up on our hands and knees, then with a bit of thin board for a sled, would go whizzing down the steep incline. You may guess whether we youngsters made the most of our opportunities for engaging in this sport, both in and out of time. One of these occasions was impressed upon my mind by a scare that must have set me back a year in my growth. That year the floating ice had piled up to unusual heights, and the thawing and freezing had left the surface in the land side a steep sheet of glare ice. We youngsters stayed with this grand toboggan slide as long as we dared on our way home from school each day, but hadn't got nearly enough of the sport. One evening a half dozen of us boys put our heads together and planned to steal out after chores and supper, and take a slide by moonlight—and also take chances on consequences in case we were found out.

It was a keen, cold night, with a mist of frost shimmering in the bright moonlight, when we stole forth to enjoy the stolen fruits of pleasure. The toboggan slide was a sheet of glittering whiteness in the moonlight, and far too steep and glary to crawl up from that side. We had to work our way up from the other side where there was rough and broken ice for a foothold.

Just as my chum and I had reached the top a little in advance of the others, and were raising our heads out of the shadow, we saw something that nearly froze us stiff. It was an immense shadow, thrown across the snow a few rods away, of a man raising a gun to his shoulder, and the gun was being pointed our way.

"He's going to shoot us for a bear!" howled my chum, and then we both let out a yell that made the moonlight shiver, and tumbled backward upon the boys crawling up behind us, who lost their foothold, and we all rolled to the bottom together, a mass of bruised boys and crumbling ice.

The man with the gun proved to be my chum's father, whose cattle corral had been visited by a bear the night previous, and a calf killed, and he was out gunning for bruin.

Six boys went to bed that night with a certain portion of their anatomy too warm for comfort. For once, however, we were glad to get off with the lesser evil in the face of what even our scatter brains realized was a close call.

This Boy Was Prize Winner.

At the last Oakland poultry show, Richard Brook, a boy about twelve years old, won two great big cups on a pair of Bantams, one for the best bird bred and owned by a boy, and the other for the best pair of Bantams in the show.

So you see it was no "fluke win," after all. It ought to encourage the young folks to start in as poultry breeders. Wouldn't it be a good thing to have specials for both the boys and the girls in all the premium lists?—Los Angeles Poultrycraft.

There's a tip for our young folks. Why not strive to be prize-winners? If you put in your best efforts, whether you get the immediate prize or not, you will be winners. You will win the knowledge and strength to "get there" in life, which is common parlance for reaching success in whatever you undertake. Every faithful effort we make toward some worthy end helps us to success all along the line. It is those who have never learned while young to take hold of a thing and hold on to it that reap life's failures.

If our young folks are inspired by Richard Brook's example and will start in this spring trying to raise some fine chickens to enter in the fall shows, we will give them every possible help in the way of instruction and advice. Ask yourselves each this question: "If this little boy was a prize winner, why may not I be?" And then repeat to yourself the old ditty:

"All that other folks can do,
Why with patience may not you?
Only keep this rule in view,
Try, try again!"

Profit in Currants.

Here's another tip as to ways of earning the honest dollar: Set out a corner of the garden to currant bushes. There are no other fruits which may be so quickly raised and easily handled by even small children as currants, and the prices for this fruit are constantly upward in our markets. Currants may be most relied on of any small fruit for a crop, if kept free from the currant worm. Early application of helebore powder will destroy this pest, and a good crop is almost sure to follow. Remaining on the bushes from two to three weeks, they give better opportunity to market than most other berries.

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Cloverdale Citrus Fair

Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday

February 21st to 26th, 1911

Reduced Rates to Cloverdale and Return.

J. J. GEARY,
G. P. Agent.

THE MARKETS.

San Francisco, Feb. 15, 1911.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

There is very little trading anywhere on the Coast, and there is a tendency to weakness in prices. Red Russian is lower and it is hardly possible to obtain quoted prices on club, though holders are not inclined to accept less. Offerings from growers are small, and in this State they have comparatively little on hand.

California Club	$1.50 @1.55
Sonora	1.62½@1.70
White Australian	1.55 @1.65
Northern Club	1.52½@1.57½
Northern Bluestem	1.55 @1.60
Russian Red	1.45 @1.50

BARLEY.

Feed is a little easier, with less interest shown by local buyers, though prices on the spot grain are fairly well maintained. Brewing and shipping are steadily held at the former level. The demand for foreign shipment has quieted down a little, but considerable barley is moving East both by rail and water.

Brewing and Shipping	1.17½@1.25
Choice Feed, per ctl	1.12½@1.15
Common Feed	1.07½@1.10

OATS.

White oats are nominal, nothing of desirable quality being offered. Choice lots, if available, might bring as high as $1.70. There is little change in other descriptions, offerings in most lines being ample for the current demand. Feed grades are quiet, but there is some demand for seed.

Red Feed	$1.22½@1.27½
Red Seed	1.35 @1.45
Gray	Nominal
White	Nominal
Black Feed	1.10 @1.20
Black Seed	1.45 @1.50

CORN.

Considerable poor stock is offered at lower prices, but good dry corn is still scarce, and prices are held at about the former level. The demand here is small, and there is no trading of any consequence.

Eastern Yellow	$1.30 @1.35
Eastern White	1.31 @1.36
Egyptian White	1.55 @1.60
Brown	1.50 @1.60

RYE.

This grain finds very little demand locally, but offerings are small and prices firmly held, nothing being obtainable now under $1.60.

Rye, per ctl	$ 1.60

BEANS.

Prices again show considerable change. Bayo beans have declined, and are still weak. There has been considerable importation of this variety from South America, and supplies here are quite plentiful. Pink beans are quiet and easy, but good offerings are held up to the former quotation. Pea beans are again in the market, being offered at the figure quoted. With the exception of limas, all other descriptions are higher, and the demand for both large and small whites shows considerable increase. Black-eyes are very firm at the prices last quoted, and limas are in an extremely strong position. The stock still held on the Coast is rapidly diminishing, and is likely to be cleaned up within a few weeks. The Eastern market is well cleaned up, all recent arrivals there having been sold for distribution. Chicago and other large markets in the Middle West have been buying freely since the first of the month. It is significant that 171,000 bags were shipped from California during February, 1910, which is more than the estimated supply in the State at the first of this month. It is therefore apparent that the importation of cheaper substitutes for lima beans can have no appreciable effect on the market, for the remainder of this season at least.

Bayos, per ctl	$4.75
Blackeyes	$5.40 @5.70
Cranberry Beans	4.00 @4.25
Garvanzos	2.85 @3.00
Horse Beans	2.25 @2.50
Small Whites	2.45 @3.60
Large Whites	3.45 @3.60
Limas	6.00 @6.10
Pea	4.25
Pink	5.60 @5.70
Red Kidneys	6.25

SEEDS.

Heavy storms in the last few days have interrupted the movement to some extent, though there is still a fairly good demand for most varieties, and some activity is expected during the rest of the month. Alfalfa is moving off fairly well. Prices remain as before.

Alfalfa	18@ 20c
Broomcorn Seed, per ton	$20.00@ 25.00
Brown Mustard, per lb	5½c
Canary	3½@ 3¾c
Flaxseed	5 @ 5½c
Hemp	3 @ 3½c
Millet	2¾@ 3¼c
Timothy	8 @ 9 c
Yellow Mustard	5¾c
Dried Peas, per ctl	3.75@ 4.00

FLOUR.

The local market is rather quiet, though there is a fair demand for shipment to Central and South America. There is still considerable Oriental business, and the demand there is expected to increase, but this business is taken by the Northern mills.

Cal. Family Extras	$5.40 @5.80
Bakers' Extras	5.40 @5.80
Superfine	4.20 @4.60
Oregon and Washington	4.60 @4.80

Hay and Feedstuffs.

HAY.

More hay is being shipped into San Francisco than for some time past, and the offerings at present, dealers say, are considerably larger than the market can absorb. This has a tendency to weaken prices, and the market is further weakened by increasing anxiety to sell among the growers through the country. There is no particular shipping demand at present, and it is expected that the market will continue dull and oversupplied for some time to come. Prices in some parts of the country are pretty well maintained, but are hardly as strong as last month. Conditions are fairly favorable for the new crop, though there has been damage by flood, and considerable seed has been killed by the continued rains. Alfalfa is still in a strong position. The demand continues active, and with comparatively little on hand at present, there is no doubt that the market will be almost completely cleaned up before a new crop is available.

Choice Wheat	$11.00@13.50
Good Wheat Hay	9.50@11.00
Other Grade Wheat	7.50@ 9.00
Wheat and Oats	7.50@10.50
Tame Oats	7.50@11.00
Wild Oats	7.00@ 8.50
Alfalfa	8.00@13.00
Stock Hay	5.50@ 6.50
Straw, per bale	35@ 55c

FEEDSTUFFS.

Alfalfa meal is a little stronger, nothing of good quality being offered below $20. Otherwise prices are as last quoted, bran, shorts, middlings, and rolled barley being rather easy. Everything is quiet, owing to the increase of green feed, and most descriptions are plentiful.

Alfalfa Meal, per ton	$20.00
Bran, per ton	25.00@27.00
Cocoanut Cake or Meal	26.00
Cracked Corn	33.00@34.00
Middlings	32.50@35.00
Mixed Feeds	28.00@31.00
Rolled Barley	24.50@25.00
Rolled Oats	29.00@31.00
Manhattan Egg Food, per ctl	15c
Shorts	25.50@28.00

Garden Truck.

VEGETABLES.

Both local and Oregon onions show considerable advance, and are still very firmly held, though the high prices are causing a decreased demand. Supplies of miscellaneous garden truck have been fairly large for the last few days, and on some lines prices are lower, though some of the imported vegetables are higher. There are no summer squash or string beans offered at the moment. Most arrivals of green peas are unattractive, and are dragging at lower prices, though good lots find a ready market. Tomatoes show a wider range, depending on quality, while eggplant, cucumbers, and good bellpeppers are higher. Celery is higher, but rather easy at the present figure, and lettuce is weak and plentiful. Mushrooms continue to arrive freely, and find a fairly good demand. Rhubarb shows a wider range, bay stock getting the preference. Asparagus from the river district is arriving more freely, but prices are well maintained, some fancy lots having sold up to 50c. The canners will be large buyers later in the season.

Onions: Yellow, sack	$ 2.40@ 2.50
Oregon	2.50@ 2.60
Garlic, per lb	4@ 6c

? ? ? ? ? ?

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Reference—Any Bank or Mercantile House

Green Peas, per lb	5@ 8c
Turnips, per sack	65c
Tomatoes, per crate	75@ 1.50
Eggplant, per lb	10@ 15c
Cucumbers, per doz	1.00@ 1.25
Cabbage	60@ 80c
Green Peppers, per lb	9@ 15c
Carrots, per sack	65@ 75c
Celery, large, per crate	1.50@ 2.00
Mushrooms, per lb	5@ 15c
Rhubarb, per lb	5@ 10c
Lettuce, per crate	1.50@ 2.25
Cauliflower, per doz	50@ 75c
Asparagus, per lb	50c

POTATOES.

Choice Burbanks from the Salinas and Lompoc districts are higher, and early rose also show a slight advance. Other varieties are unchanged, but values are firmly maintained, though trading locally is quiet. A few new potatoes have arrived, and were cleaned up at 5c. per pound. Growers in the Atwater district are preparing for a large acreage of sweet potatoes, for which high prices have prevailed all season.

Salinas Burbanks, per ctl	$ 2.10@ 2.20
River Whites, per ctl	1.65@ 1.90
Sweet Potatoes, per ctl	3.00@ 3.25
Oregon Burbanks	1.90@ 2.15
Early Rose	1.65@ 1.85

Dairy Produce.

POULTRY.

The demand is by no means active at the moment, and while the excessive supply of Eastern poultry has been disposed of, continued large arrivals from that quarter keep the market in an easy condition. Arrivals of local stock, however, are small. Fryers and roosters are lower. Turkeys are weak, with liberal receipts of dressed stock which finds little demand.

Large Broilers	$ 4.00@ 4.50
Small Broilers	3.00@ 3.50
Fryers	5.50@ 6.50
Hens, extra	8.50@10.00
Hens, large	6.00@ 7.00
Small Hens	5.00@ 6.00
Old Roosters	4.50@ 5.50
Young Roosters	6.00@ 7.50
Young Roosters, full grown	7.50@ 9.00
Squabs	3.50@ 4.00
Geese, per pair	2.50@ 3.00
Ducks	8.00@10.00
Turkeys, per lb., live	18@ 20c

BUTTER.

While supplies of firsts and lower grades are ample for local needs, extras are scarce, and after some fluctuation an active buying movement has caused a slight advance. Firsts are also higher, while storage stock is weak at a decline, with increasing pressure to sell. The following prices are quoted by the San Francisco Dairy Exchange:

California (extras), per lb	32 c
Firsts	27½c
Seconds	24 c
Storage (extras)	24 c

EGGS.

Extras stood higher for several days, but larger arrivals and accumulating supplies have caused a general decline below last week's quotations on all grades.

Californias (extras, per doz	27½c
Firsts	27 c
Seconds	26½c

CHEESE.

There is little feature to the cheese market at present, the demand for most grades being rather moderate. The only change is a slight advance in fancy new Y. A.'s.

Fancy California Flats, per lb	16 c
Firsts	14 c
New Young Americas, fancy	17½c

Deciduous Fruits.

FRESH FRUITS.

All grades of apples, except bellefleurs, show a sharp advance. This is due principally to the increased shipping demand which is taking several cars of storage apples nearly every day. The principal movement is to the English market, which is taking Newtowns, though there is a good Eastern movement of red apples. The local demand is moderately active, and ordinary stock, which is also beginning to clean up, is also higher. Pears are about out of the market.

Apples, per box—	
Newtown	$ 1.35@ 1.65
Other varieties	.75@ 1.00
Fancy Red, 4-tier	1.25@ 1.50
Bellefleur	1.00@ 1.25

DRIED FRUITS.

The open quotations given out by local packers remain as before, though there seems to be an upward tendency in several lines, peaches being particularly firm. Considering the prices asked, and the comparatively light offerings of most varieties, trading is fairly active. Packers are firm in their views, and there is apparently very little of anything except raisins left in growers' hands, while the latter are steadily diminishing. Some districts have been about cleaned up, most recent sales being at 3c. or a little more. An effort is being made to organize the apricot growers of the State, with a view to obtaining better prices. The New York Journal of Commerce says:

"In California prunes, particularly in sizes smaller than 40s, the feeling, both here and on the Coast among holders, is decidedly firm and the tendency of prices is upward. However, buyers hold off and there is little business to report in stock in either position. Never before since the trade in California fruits was in its infancy, has a 7c. f. o. b., four-size bag basis been asked at this time of the year. Sellers, however, insist that the statistical position warrants not only this, but a higher price, and are indifferent to lower bids. Apricots are scarce and are not being forced, but the Eastern trade is showing little interest in them. Peaches also are very quiet. The market, however, is firm and there is no pressure to sell goods for spot or forward shipment."

According to Fresno reports, a number of contracts for future raisins have been made around 3¼c., and it is reported that 3½c. is offered for 1910 muscats to be delivered August 1, or 3c. for spot delivery. Most packers have secured enough stock to cover immediate requirements. The New York Journal of Commerce says: "For California seeded raisins the demand is limited. In view of the strong views of growers, packers are reluctant to do business in seeded stock for prompt shipment from the Coast at anything under 5¾c. f. o. b., and it is said that few of them are willing to book orders at that figure. Local jobbers show little interest in forward offerings. The consuming demand for raisins is slow, and the spot supply seems to be ample to take care of it for some time to come. California loose raisins are in small compass, both here and on the Coast, and the market is firm. The Coast market is bare of bleached Thompson's raisins, the small remnant of the stock having been sold to England. Spot stocks of this grade are in small compass, and so far as can be learned, is all in second hands. The market here is strong, with an upward tendency."

Evaporated Apples, per lb	9¼@10 c
Figs, black	4½@ 5 c
Figs, white	5 @ 7½c
Apricots	12 @13 c
Moorpark, fancy	13½@14 c
Peaches	6½@ 7¼c
Prunes, 4-size basis	6 @ 7 c
30s, premium of 1½c.	
40s, premium of ¾c.	
Pears	9 @13 c
Raisins—	
Loose Muscatels, in sweatbox	2½@ 3 c
Thompson Seedless	4 c
Seedless Sultanas	3½@ 3¾c

Citrus Fruits.

The local demand, including the shipping business from San Francisco, is fairly active at present, navel oranges being the principal feature. Arrivals were light for a few days, but are now sufficient for all demands. Tangerines are plentiful, and are offered at lower prices, while lemons have advanced in sympathy with the producing markets. Mexican limes, which are becoming scarce, are also higher. An Eastern commission man now in San Francisco predicts a greater demand for California citrus fruits in the East this year than ever before.

The citrus markets in the East seem to be holding up well, and the reports from New York of Tuesday's sales include 22½ carloads of navels, 2 cars of Thompsons, and 1½ cars of tangerines, besides smaller loads of valencias and bloods. The attendance at the sales was good, and the fruit was fair, selling a little higher than during the past week. Extra fancy navels brought from $2.75 to $3.60; regular, $2.60 to $3.10. Choice large brought from $2.05 to $2.55; regular, $1.85 to $2.40. Standards, large, brought from $1.60 to $1.90. Thompsons, extra fancy, sold from $2.80 to $3.30. Orchard-run brought $2.65 to $2.70. Tangerines, halves, fancy, $1.15 to $2. Bloods, fancy, $1.50 to $2.15. Lemons, fancy, brought from $3.70 to $3.90.

In the Boston market on Monday the weather was cold, but the market was better on oranges and easier on lemons. The highest price secured for oranges was $2.75, which ranged downward to $1.60. Lemons brought from $2.80 to $4.20 per box. On the same day, at St. Louis, the market was favorable, and oranges brought from $1.85 to $2.45. Lemons ranged from $2.35 to $3. At Philadelphia, 10 cars of California oranges brought from $1.40 to $2.65 per box; 30 cars of Florida oranges brought from $1 to $2.50 per box, averaging $2.05; grapefruit averaged $2.15; lemons sold from $3.40 to $3.70. At Pittsburg the market was pretty steady on oranges and strong on lemons; prices on navels ranged from $1.60 to $2.40, and lemons averaged $3.60 per box. The Cleveland market, on the 13th, was reported very strong; 7 cars of oranges were sold, averaging from $1.70 to $2.30; lemons averaged about $3.60. At Cincinnati, the same day, the market was steady on both oranges and lemons; navels brought from $1.40 to $2.30; lemons averaged $2.45.

Orange shipments from California to February 14 amounted to 8283 carloads, as against 4847 carloads to the same date last season. The total lemon shipments to February 14 were 1251 cars, as against 1111 cars last year.

Navel oranges—	
Extra choice	$ 2.00@ 2.25
Choice	1.50@ 2.00
Valencias, choice to fancy	Nominal
Choice	Nominal
Standard	Nominal
Tangerines	.75@ 1.25
Choice Lemons	2.25@ 3.00
Fancy Lemons	3.00@ 3.50
Standard	1.25@ 1.50
Limes	5.50@ 6.00
Grape Fruit	2.50@ 3.00

Nuts, Honey, Hops, Etc.

NUTS.

The 1910 almond crop in the Solano district was about cleaned up by the recent sale of Frank Gordon's crop at about 13c. There is very little left in growers' hands anywhere in the State, and with an increased demand in the last few weeks the market shows renewed strength, prices having advanced about ½c. on all descriptions. The walnut business is now almost entirely a jobbing proposition, as there is little or nothing to be had from growers. Prices are firmly held at the former level.

Almonds—	
Nonpareils	15½@16 c
I X L	14½@15 c
Ne Plus Ultra	13½@14 c
Drakes	11¼@11¾c
Languedoc	11 @11½c
Hardshells	8 @ 8½c
Walnuts—Softshell, No. 1	15 c
Standard	14½c
Softshell, No. 2	11 c
Budded	17½c

HONEY.

There is little feature to this market, prices and conditions remaining about as before. All grades are in light supply, and extracted finds a fair demand, while comb honey is quiet.

Comb—White Sage	14 @15 c
Extracted—Water White	Nominal.
Light Amber	7 @ 8 c
Amber	5 @ 6 c
Sacramento River Comb	12 @12½c

BEESWAX.

No change in prices. The market is dull, both supply and demand being light.

Light	27½@30 c
Dark	23 @26 c

HOPS.

There is not much business at the moment, as growers are holding out for higher prices on new-crop contracts, and buyers are nto yet willing to pay the figures asked.

Hops, 1910 crop	18 @22 c
1911 Crop	15 @16 c

Live Stock.

DRESSED MEAT.

Beef: Steers, per lb	8½@ 9 c
Cows	7 @ 8 c
Heifers	8 c
Mutton: Wethers	9 @ 9½c
Ewes	7½@ 8½c
Ewes	9 @ 9½c
Lambs	10½@11½c
Hogs, dressed	10 @13 c

LIVE STOCK.

Gross weight:	
Steers: No. 1	5¾@ 6 c
No. 2	5¼@ 5¾c
Cows and Heifers: No. 1	4½@ 5 c
No. 2	4 @ 4½c
Bulls and Stags	2½@ 3¾c
Calves: Light	6 @ 6¼c
Medium	5½@ 5¾c
Heavy	4¾@ 5 c
Hogs: Grain-fed, heavy	7 @ 8 c
150 to 250 lbs	8¼@ 8¾c
100 to 150 lbs	7¾@ 8 c
Common Hogs, per lb	5 @ 6½c
Small prime wethers	4¾@ 5 c
Large prime wethers	4¼@ 4½c
Ewes	4¼@ 4½c
Lambs	6 @ 6¼c

WOOL.

Values remain as before, but are little more than nominal, as buyers take no interest in the market at present. The movement of the spring clip should begin in about a month, but until then there will be no activity.

Fall Clip—	
Mountain Free	8 @10 c
Valley Fall and Lamb	6 @ 9 c
Northern	6 @ 9 c
Southern Spring	10 @11 c
Middle Counties	12 @13 c
Northern	15 @16 c

HIDES.

There has been little improvement in the Eastern market, and there is accordingly a slightly better feeling here. The local demand, however, continues slow, as most offerings are in poor condition, and there has been no advance in prices.

Wet Salt—	
Heavy Steers, over 56 lbs.	10 c
Medium	9 c
Light Steers, under 48 lbs.	8½c
Heavy Cows, over 50 lbs.	8½c
Light Cows, 30 to 50 lbs.	8½c
Kip	10 c
Veal	14 c
Calf	15 c
Dry—	
Dry Hides	17 c
Dry Bulls	15 c
Dry Kip, 10 to 15	16½c
Dry Veal, 5 to 10	17½c
Dry Calf, 7 down	22 c
Fall Lambs	24 @40 c
Sheep Skins—	
Long Wools	$ 1.00@ 1.25
Medium Wool, 6 to 9 mos.	60@ 90c
Short Wool, 3 to 6 mos.	40@ 60c
Spring Lambs	25@ 50c

HORSES.

Desirable Drafters, 1700 lbs. up	$275@300
Light Drafters, 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	200@250
Wagon Horses, 1250 to 1350 lbs.	175@200
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	135@150
Young	200
Old Mares	100@150

MULES.

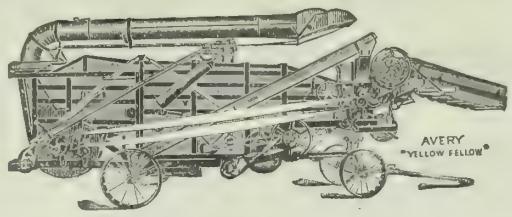
1200 lbs	$250@300
1100 lbs	200@225
1000 lbs	150@175
900 lbs	125@150

The first carload of machinery for the Western Ice & Pre-Cooling Co. is being installed at Oroville. The building has been completed and the machinery will be ready for operation by March 10. The Western Pacific, Southern Pacific, and Northern Electric have all built spur-tracks to this plant.

The Avery "Yellow Fellow" Grain Separator

It's the Machine to *Make You Money* —Mr. Thresherman

Built to last—not one of the kind that is worn out as soon or before you get it paid for. Better braced frame, heavier shafting—tank steel windstacker, not sheet iron—tool steel teeth, not machine steel—these are samples of the stronger—longer lasting—construction of the Avery.



THE AVERY "YELLOW FELLOW"
The Thresherman's Money Maker and the Farmer's Grain Saver

No Tinkering

A Thresherman bought a new Separator, used it only three years, and last season bought a new Avery. He gave as one reason—"We know there will be no tinkering teeth or other delay with the Avery."

"The whole season through without a single breakdown" is the story that Avery Threshermen tell us time after time. That's one of the reasons they are big money makers for their owners.

Threshes Fast

"Yellow Fellows" are "record run" makers. No flimsy contraptions in the feeding devices or on the racks to slow everything down. Larger runs and more profits are the *rule* with owners of Avery "Yellow Fellows."

It's the Machine to *Save Your Grain* —Mr. Grain Growing Farmer

In order to show you just what an Avery Separator will do in saving your grain, we have made a large number of canvas tests. These tests show an average saving of 99.92 percent. Think of it—only 1-13 of 1 per cent wastage. *Almost nothing.* The way to make sure that your grain goes into the wagon and not into the straw is to get it threshed with an Avery "Yellow Fellow" Separator. Insist upon its being a Grain Saving Avery that threshes your grain.

And It Does Extra Good Cleaning

A farmer wrote us "Never had such a clean job done before." An elevator owner says, "The Avery 'Yellow Fellow' sends me the cleanest grain that I ever received." Study the construction of an Avery and you will easily see why it's a grain saver and a grain cleaner.

Does Quick Work and Gets Away

"No tinkering around" is what one farmer wrote about the work of an Avery "Yellow Fellow" and that tells the whole story. Does clean work and quick work and isn't always breaking down on your job. Cleans your job up right and does it quick.

Furthermore—Avery Separators Are Backed Up By the Strongest Warranties Against Breakage and on Separating and Cleaning the Grain of Any Threshing Machines Made

Find Out All About the Avery "Yellow Fellow" Separator

If you are a thresherman you ought to investigate it fully because it's a Money Maker for you. If you are a Grain Growing Farmer you ought to find out all about how it will Clean and Save your Grain.

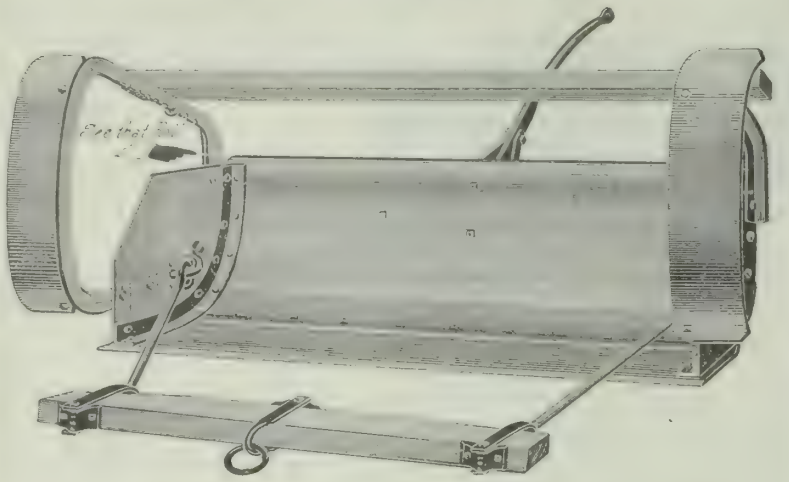
Write at once for our large free catalog showing the Avery "Yellow Fellow" in natural colors, and telling all about how it is built. Address your letter or postal as follows:

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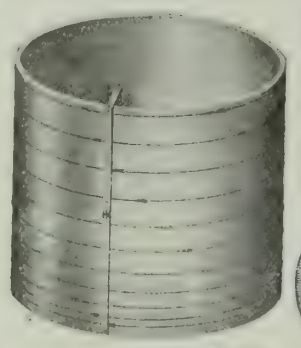
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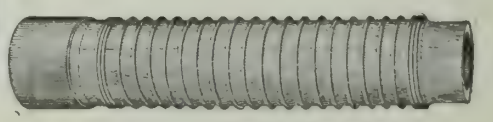
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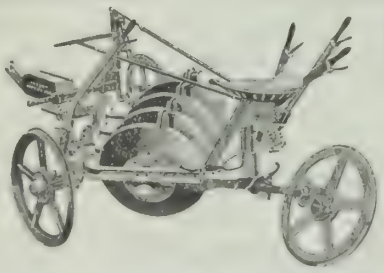
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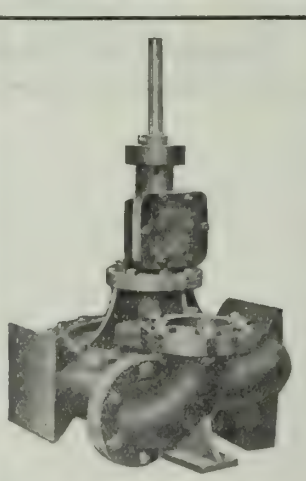


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CALIFORNIA STATE

THE PACIFIC RURAL PRESS

Vol. LXXXI. No. 8. SAN FRANCISCO, SATURDAY, FEBRUARY 25, 1911. Forty-first Year.

The English Walnut in Northern California.

Written for the PACIFIC RURAL PRESS by Professor R. E. SMITH, of the University of California.

A recent article in the columns of the PACIFIC RURAL PRESS by Mr. Leonard Coates suggests a horticultural tendency which is becoming more and more apparent, namely, the extension of the walnut growing industry into portions of California farther north than have hitherto been considered adapted to the commercial growing of this crop. As Mr. Coates truly states, the idea that the walnut crop can be produced on a commercial basis only in Santa Barbara, Ventura, Los Angeles and Orange counties has now been thoroughly exploded, and it is evident to the well informed observer that the walnut growing industry is showing a very decided tendency to change its principal location from the southern to the northern portion of the State. This is due mainly to three factors:

Walnut Industry Moving Northward.—First, the fact that a large portion of the present southern California walnut acreage has proven good citrus territory, and in the southern coast counties the lemon and the valencia orange are annually crowding out hundreds of acres of walnuts. All through this section walnut trees of prime age, and even those in the best of condition are being cut down at an expense greater than the value of the wood in order to plant to lemons and valencia oranges.

The second factor involved is the deterioration and partial failure to produce satisfactory returns in the case of a large acreage of seedling walnuts in the south, due partly to walnut blight, but much more to inferior quality of these seedling trees, several generations removed from the original type of the Santa Barbara soft-shell. Disappointment and partial failure has also come through the planting of large areas of land poorly adapted to the English walnut root, much of the said land being well adapted to citrus culture. The third reason for this change in the walnut industry is the growing realization that there are many sections in the northern part of the State where walnuts of the proper varieties may be grown successfully and profitably, regions where the land may be obtained much more cheaply than in the walnut country of the south. Still another quite important reason has been the poor results obtained from many deciduous orchards and vineyards in the north and a demand for some crop to take the place of such plantings.



Two-Year-Old Eureka Graft on Royal Black Root.

All in all, therefore, it is evident that among our future walnut centers may be San Jose, Stockton, Santa Rosa, Napa, Modesto, and some other northern points as well as Whittier, Santa Ana, Santa Barbara, Santa Paula or the other present centers of the walnut industry.

A Significant Instance.—The purpose of the present article is to call attention to the work of one of the pioneers in up-to-date walnut culture in the northern part of the State, Dr. W. W. Fitzgerald of Stockton. With others whose efforts along this line have received more or less prominence through the RURAL PRESS, Dr. Fitzgerald long ago began to realize the possibilities of commercial walnut culture in his section of the State. Like these others, he was particularly impressed with the necessity of avoiding the greatest mistake made in southern California, namely the planting of large areas of seedling trees of unknown and uncertain quality. He foresaw particularly the necessity of paying strict attention not only to the top of the tree, but also to the kind of root upon which to graft his chosen varieties. With this in mind he began a series of careful investigations all over the State and has continued for several years to seek the best in walnut culture which could be obtained through the previous experience of other sections. On a ranch near Lodi he made extensive plantings of walnuts, largely in an experimental way at first, testing all the varieties and selections of the English walnut which showed any promise whatever for his section, and also planting from year to year a great variety of walnuts of various species and kinds for the purpose of determining the best root for a grafting stock. Much information of general value for northern California has come from these investigations.

The practical operations of grafting and budding the walnut also received attention and the doctor has become as skilled and successful an operator in such work as in his own profession. His figure is as familiar in the tops of the black walnut trees about Stockton as in the operating room of the local hospital.



Walnut Orchard With Peaches as Fillers.



Walnuts Interplanted With Grape Vines.

The Pictures Speak.—The accompanying pictures show some of the most significant features of the walnut industry in northern California. The first shows a two-year-old Eureka top, grafted upon a Royal black walnut. The use of the best type of black walnut root, whatever it may be for a given soil or locality, is and should be the almost universal plan in this portion of the State.

The second and third pictures show walnuts inplanted respectively with vines and peaches. In

(*Continued on Page 152.*)

Pacific Rural Press

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The Week.

We are having an ideal February following the generous drenching of January. The clear, cool air is giving splendid conditions for field work of all kinds and is restraining too rapid rush into blooming. The frosts have wrought some injury to tender things, but this is exceedingly small and local, while the general condition has been beneficent. The citrus fairs at Sacramento and Cloverdale have also enjoyed the advantage of midwinter salubrity. Contrast the temperatures with those brought by the blizzard which swept from the Great Lakes to the Gulf of Mexico, and one can realize anew the peerless climatic endowment of California.

Responding to the high February temperatures of our environment, we find our bosom burning with pride over the glories and achievements of our professional guild. We are living in the age of professors, just as our ancestors lived in the age of stone, of wood, of brass, and the like brilliant materials. You can get from professors new systems of taxation which jolt the finances of a State, and you can get sanitary and hygienic formulae which demonstrate that Methusaleh was allowed to drop off in his callow youth because his parents did not provide a bathtub and window-screens. If there is really anything that our colleagues cannot do we have not yet found it out, and it is therefore no surprise to us that a professor has just settled the whole disturbing question of the abandonment of agriculture by rural youth by a formula not only simple, but blissful and profoundly satisfying.

Professor E. C. Druley, of Kokomo, Indiana, has discovered a way of counteracting the rush from the farm to city life which he thinks will work out. His idea is to have young men of the cities wed rich farm girls and live on the farms of their wives. He hopes his university students to whom he gave this advice will begin the experiment. Among the advantages of such a plan he suggests the physical development of weakened city youths and the happiness of girls who might otherwise go without husbands, owing to the departure of all the country boys to the cities. His plan would be, he says, a tremendous force for the improvement of farm life, inasmuch as the city advantages which the husbands would install in their new homes would cause a reversal of the current of population, so that farms would again be occupied, and increased farm production and a decrease in the high cost of living would follow.

How simple is greatness!—which, if we mistake not, has been observed by earlier philosophers. The sage of Kokomo declares his working hypothesis and then proceeds to its demonstration by the true laboratory method. He urges his pupils to proceed at once, or as soon as may be, upon post-graduate studies in order that he may have ample data. He may be able to point out within a decade how many thousand acres of American soil he has saved from invasion from the south of Europe by this grandly patriotic and paternal policy. But we do not wish to wait for the demonstration. We do not desire to lose so much time. In fact, the youth of California cities can not afford to wait. Our ducal estates are being dismembered so rapidly by promoters and colony-creators that the young man who waits is lost. There are scores of rural belles in California who will be hunting titles in Europe with the proceeds of sales of princely ranches long before demonstration of the Druleyan (or it may be the Dooleyan) hypothesis. Therefore, we swallow the prescription here and now, and urge our city young men who thirst for farms whose broad acres would be warmed to wonderful production by the effulgent glow of the tender passion, to take to the rural highways with the most resplendent autos their loving parents will provide.

But we weary of this discussion from the point of view of the young people. It is so unnecessary: they generally settle these things for themselves, and furnish their own hints thereto, the sage of Kokomo to the contrary notwithstanding. We have no doubt the proposed way of settling the ruling rural problem will take like wildfire, and we naturally feel our anxiety awakened in the interest of rural parents who are our logical parishioners. We burn to give them some suggestion as to how they can deal in their acres and their daughters with some chance of getting the good end of the trade. To them we suggest in confidence that the recourse is not new, and they can learn much from the worldly wisdom of their ancestors. Recall the case of Mr. Abraham Isaac, who sent his son, Isaac Jacob, out from the city of Gerar to seek a wife in the grazing districts of Padanaram with a retinue of camels and servants fit to command the attention of a rural papa. The young man had heard of the daughter and the sheep business of Mr. Laban, and decided to attach himself thereto for the sake of getting back to the land, a la Professor Druley. We regret that we have not space for all the details of the way the scheme worked out, but, in a word, it may be said that the game had two sides, all right, and it was diamond cut diamond between the city young man and the rural father-in-law. There are many suggestions in the way the latter made the candidate for favor work seven years for his board, bunkoed him with the wrong girl, and made him work seven years more for the right one—and so secured fourteen years' work without wages for two girls, the like of which we imagine no one could attain from the modern young man in the way of value for uxorial goods delivered, half of it somewhat shop-worn, if we remember correctly. But the net result was not so clear, for the city young man, from the reading of some pre-Darwinian treatise, got knowledge of some new tricks in sheep breeding, and the father-in-law had to drive him off the ranch with all his illy acquired property in order to save a few old rams which, not being amenable to treatment, were about all that was lef; to the original owner after the young man really got his back to the land and learned how to strike outwards.

From this good old experience, we take it, the rural parents of the present day can take some wholesome warning if the Druleyan method should really become prevalent. They should surely require a diploma from an agricultural college as a surety that the young man has had the farming spirit and point of view thrust into him—to a certain distance, at least. They should also insistently require that he should read regularly the Pacific Rural Press as a conservative expounder of agricultural faith and practice, and should guard him zealously from the perusal of frenzied farming which is now filling the pages of the popular magazines. While the courting, which the young woman will probably insist upon as her feminine right, is going on, he should successfully grow several crops, larger than the land ever produced before. He should be required to take a full bath every evening and never come to the table in his shirt-sleeves. He should take his prospective mother-in-law to church every Sunday morning, so the old man could have, at least once a week, a good, quiet smoke on the piazza or in the chimney corner, as the seasons change. This would give him a chance to think hard, so that the young man could not work some sort of a skin-game on him, such as young Jacob played upon Laban. After seven years of this, let him dole out a daughter and an acre of land, and move his title deeds to a new hiding place. If all works well, and the young man makes good in his farming, he can board him seven years more, and then give him another—acre of alkali; and so on.

Somehow, this question of matrimony seems to be all-embracing, agriculturally speaking. Now the Germans are getting jealous of the surplus English women who are capturing the unmatched Canadian farmers. According to a letter to the Tageblatt from a Prussian suffragette, German girls are preparing to compete with English girls for Canadian husbands. Referring to a recent announcement that 5000 English girls were wanted to become wives of young Canadian farmers, the writer says, among other things, that "since the German Government does not pay the least attention to the colossal surplus of German girls, and as the high price of meat makes it increasingly difficult for respectable girls to get married, the girls of our circle will emigrate to Canada and become British subjects to gratify the aspirations of Canadian bachelors. The Prussian Government will then realize that women to whom the right to vote is refused have been driven into the arms of England." What a chance for California! If we only allow women to vote, these colossal German girls may come to the arms of Californians. Now, voters of California, do your duty!

But there is another new element moving into California farming. Telegrams from the North and East tell of the starting toward California of an army of the "Industrial Workers of the World" which is being recruited in all the cities and is to move to a destination in Fresno, California. These people propose to beat their way on the railroad when possible and to walk when no other means of travel presents itself. Munsinger, a German; Fress, a Polander, and two other men, to be chosen before the start, will be the leaders. They say that their plan is to fill Fresno with unemployed men and hold gatherings on the streets. By collecting large numbers of men, they say, they expect to make the local authorities tired of arresting them and cause the taxpayers to protest at the expense of feeding them while incarcerated. They say they are coming to take part in a "free-speech" fight in Fresno. We can assure them that there will be no free-speech fight in Fresno, but there is likely to be something very ready for idle hands to do and very different from the mischief which Satan provides for them. They are not likely to get free board, either in jail or out of it. If we do

not mistake the spirit of Fresno and other valley counties which seem likely to be provided, there will be a good, long piece of the new State highway surveyed through the valley, and every hobo who strikes the valley will be put at a good, wholesome piece of rock-breaking before he gets to Fresno or on arrival. Such people can have all the free speech they are entitled to, and it is so much more comfortable to talk when you have the upper end of a rock-hammer to lean upon. If enough of these people come, we ought to get the State highways all built for the cost of the grub and the mounted engineers to see that the lines are built according to the plans. The old Roman army roads are still monumental. In the coming centuries the old hobo road may commemorate the deeds of the Workers' Industrial Army which came to California to talk and remained to work.

Some of the first fruits of California's victory in securing the Panama-Pacific Exposition are already falling, and they are ripe and delicious. California has demonstrated a spirit which the whole country should embody. Senator Elihu Root, of New York, speaking before the Pan-American Commercial Conference in Washington, D. C., last week, said to the representatives of interior States: "If the Middle West is not sufficiently interested, you must follow the example of San Francisco and do as it did. That is what you want to do in Kansas and Nebraska, and Iowa and the Dakotas—you must, through all the relations that you have, and by every means in your power, represent to the people in those great interior States, who have but little direct relation with the ocean commerce of the world, the real conditions under which we exist."

Speaking of the Pan-American Association of Republics, it seems a long cry from the Argentine to California, and yet Mr. Frank Whitworth said to a reporter, as he sailed from New York to Buenos Ayres, that his object was to look into the exportation of sheep from Argentina. He said a shipload of sheep that recently arrived at San Francisco from Argentina caused a drop in the price of lamb from 9½ cents to 7 cents and that the lamb was better than the domestic article. If this statement is correct, it is easy enough to find the reason. The Argentine is paying due attention to the growing of mutton sheep, while our local product is still largely from the old Merino crosses which we have grown for wool. There ought to be a sharp hint in this statement.

Queries and Replies.

Walnut Growing

To the Editor: I am preparing to plant a tract to walnuts in Ignatio valley. I gathered native California black walnuts last fall and stored them in the dry till January 7. Following the advice of some successful ranchers and growers of nuts there, I then put down three or four inches of partially rotted stable manure on the south side of a barn, put the walnuts down in a single layer on top and covered with two inches of sand, since which time they have been exposed to the heavy rains of January. I wish to enquire whether this method has been generally successful; whether the manure might unfavorably affect germination? In the East, we consider freezing and thawing essential to crack the nuts. What opens the nuts in this climate? The water-level on my ranch in midsummer varies from five to fifteen feet below the surface—rich, level, valley soil clear down. What are the limitations as to depth to water as regards the successful culture of the walnut grafted on native California black? Where the depth to water is too shallow for walnut trees planted as above, would cutting off the tap root and transplanting succeed better?—Planter, Oakland.

We certainly should not try to start walnuts that way. Such a dose of manure is enough to kill anything but a vegetable marrow. The nuts should have been put on deeply dug soil and covered with sand and a little coarse manure for protection from drying out. It is possible that the constant rains of January may have cooled down and leached out the manure so that its strength and heat could not injure the sprouts, but it is a pretty dangerous experiment. We would like to know how manay trees you get. Walnuts open by the action of moisture; freezing and thawing are not necessary. We do not know how far walnut roots go for moisture, but your water is certainly high enough. You need not worry about the tap root; if the tree needs a higher system of lateral roots it can make it; if it needs tap roots it can also make them. If people would think less about forms of roots and more about getting soil and moisture right for root growth, the tree would be the better pleased—and so would we.

Vetches and Peas.

To the Editor: I have tried vetch and field peas and cow peas, each trial being a pronounced failure. Since I learned of the action of nitrogen-forming bacteria upon legumes I have thought that the absence of such may have been the cause of such failures, unless our climatic conditions will not permit. After the soil once becomes properly inoculated with bacteria, will it remain so for succeeding crops such as alfalfa? Please state the advisability of sowing sorghum, kafir corn and milo for green forage in our section.—W. E. L., Covelo, Mendocino county.

Whether your legumes failed for lack of bacteria can not be told without knowing whether they were sown at the right time to secure the assistance of favoring moisture and temperature conditions. The Canadian peas and vetches should have a chance to make a good part of their growth in the rainy season; cow peas must be kept out of the frost, and after such late planting must have plenty of summer moisture. Common experience is that California soils generally do not need inoculation, having probably secured it from native or early-introduced legumes, like burr clover. The sorghums you mention may be expected to make a fair summer growth as far from the coast as you are. They need a good deal of heat to make a large return.

Grains for Chickens.

To the Editor: We new colonists here along the Feather river are quite interested in knowing what variety of grain adapted for poultry food will be the best to grow, with and also without irrigation.—Beginner, Live Oak, Sutter county.

Wheat is a standard grain for poultry feeding, and a summer growth of Egyptian corn (which will not endure the frost as wheat does) is also largely used. Indian corn is also satisfactory, under the general rules for compounding poultry rations which are laid down by all authorities on the subject. Egyptian corn is very successful in your part of the State, and, on lands which are winter-plowed and harrow to retain moisture, very satisfactory results can be secured by summer growth without irrigation from planting as soon as frost danger is over.

Coast Valley Crops.

To the Editor: Can red clover be successfully grown in the northern part of Napa county on fairly good bottom land, and what is the best time for sowing same? How will the soy bean or cow pea thrive, and have they any beneficial results on the land, and what is the best time for planting same? Can you recommend the use of sawdust for bedding cows, and has the manure any injurious effect on the land? Can corn be grown thick enough so it will yield, say, 15 tons of ensilage per acre?—Subscriber, Pope valley.

Red clover requires quite a moist soil to live through the summer without irrigation. Seed should be sown as early in the autumn as the ground can be got into good condition. Soy beans and cow peas will give a good summer yield on moist land. They should be planted when you find it safe to plant corn—after danger of frost is over—on land which has been well plowed and harrowed earlier in the season. Under favorable conditions 15 tons of silage per acre can be attained. It is, however, rather a high figure.

Rye Grasses Better Than Brome.

To the Editor: I see in an Eastern seed catalogue "Bromus Inermis" very highly spoken of as pasturage. Do you know anything of it, and do you think it would be suitable for reclaimed tule land in the bay section?—A. B., San Francisco.

The seed can also be had from California seedsmen. Both English and Italian rye grasses have proved better than Bromus Inermis on such land as you mention. The latter is commonly known as Hungarian brome grass or awnless brome grass and it was introduced to this State from Europe about 25 years ago and the seed distributed by the University Experiment Station. Hungarian brome may be better on rather dry lands, although it will not live through the summer on very dry lands in this State, but we would rather trust the rye grasses on reclaimed lands, providing, of course, that they are sufficiently free from salt to carry tame grass at all.

Stimulating Cover Crops.

To the Editor: An article by Mr. J. J. Fox in your issue of November 26, 1910, interests me very much, as he suggests several ways of helping exhausted orchard land, and I wish to try one of his remedies, but wish your advice first. I can get stable manure in quantities at a sawmill, five miles distant, next summer, but my land lacks humus, as the "fiillaree" only grows two to four inches long, so I would like to know if I could not get nitrate of soda and stimulate it so as to get a good cover crop to turn under this spring.—Reader, Badger.

Yes, you can force cover crop growth with nitrate of soda, but it is getting pretty late to do it this year. It is getting very near the time when the cover crop ought to be plowed under.

Stocks for the Orange.

To the Editor: Would it be to any advantage to bud the Washington navel on grapefruit and lemon roots?—A Subscriber, Fresno.

The grape fruit or pomelo is a good root for the orange, and some propagators prefer it. The lemon root is not used at present, because of its effect in causing a coarse growth of tree and fruit and because it is more subject to disease than the orange root. In fact, we grow nearly all lemons on orange roots.

Grafting Mulberries.

To the Editor: What is the best fruit to graft on a wild mulberry tree? When is the best time to graft? The tree is four years old.—Reader, Lodi.

Nothing but a tame mulberry, and it is now the time to do it.

Spraying Peaches.

To the Editor: Will you kindly inform me, through the columns of your paper, what is the best spray for peaches this late in the season?—Subscriber, Modesto.

Bordeaux mixture or lime-sulphur wash of proper strength, according to the condition your trees are in when you get at it.

Citrus Fruits.

FEEDING CITRUS TREES.

To the Editor: I am seeking light on the matter of soils. I have been giving some attention to our soils, especially subsoils in this valley for three years. We found trees decaying and dying apparently in good soil. For a long time we could see no explanation till we found the root-rot fungus. This we now find very frequently in surprising situations. Then, too, in searching for the reason why we do not raise more oranges to the acre, a task assigned to me to find out. I have also been asked to give some of the subsoil conditions in this section of the State in their relation to citrus decadence. In all this search many surprising things have come to me out of soil investigations which have been conducted during the past ten years. The matter of soil fertilization with toxic agents, destroying soil fertility, is giving me some very interesting ideas. But so many of these new ideas have been sent out so recently from their source that they need to pass through a process of finishing before they can justly be disseminated, that I have come to you for your views on a few points at this time.

I have come to think, as Guizot once said in France in her earlier days, "that there was hardly any great idea, hardly any great principle of civilization which did not have to go through France to be disseminated." Just so in matters of horticulture in this State, it seems that before we can promulgate these startling discoveries that they must go through our State university and take on the modifying and finishing touches of our higher culture in these lines, if not in everything that belongs to a higher plane of living and thinking.

The first thing I want to ask is this: Is there any difference in their action between the feeding root systems of an orange tree and those of any deciduous tree? These root hairs on deciduous trees, Prof. Wood in his botany taught, are deciduous with the leaves. What is the nature of those on the orange?

I understand that all these feeding tips are constantly forming and can feed only a short time, taking up the food which they seek and then are covered over by a kind of cork coating which prevents absorption as they pass by the excreta of the plant. You are familiar with Prof. Milton Whitney's claim. He says all plants, especially cultivated ones, feed in this manner. I take it that this is well illustrated in annual plants, like wheat. I called the attention to this difference in the habits of these root hairs on evergreen and deciduous trees, as it had reference to the vicissitudes of soil and climate, the latter being dormant during the most trying season of the year. I simply suggested, may not this difference be taken into consideration when handling this stock for planting? Where can I get anything on this point? Does this feeding tip as it advances in search of food, and coating over with "balloon cells" become a permanent part of the root system, by the formation of rootlets?

What do you have on the statement about the concentration of the plant food salts in the soil water being in constant proportion, whatever the nature of the soil from which it is taken? The Soil Division of the Agricultural Department at Washington seems to have established this fact. I do not understand that there is the same amount of concentration in all different soils, but that all soils give the proportion of these salts, such as nitrates, potash, phosphates, etc.

Sacramento valley is destined to become a very important agricultural center, and the citrus production is destined to be a leading part of horticulture; but the way the sale of land is to be promoted by bringing to this valley Eastern families, seems to demand that some means should be devised so that we may promote the "tenderfoot" so that he shall not put his saving into an orange grove in soil that never can bring him returns. Can we do anything to guide these people who will make our best citizens, if we can not help them avoid mistakes which when made can not be corrected?

ELMORE CHASE.

Response by Professor C. B. Lipman.

To the Editor: At your invitation I offer the following remarks by way of reply to the questions which Mr. Chase puts:

First, as to the manner of the feeding of citrus trees as compared with that of deciduous trees. From all that I have been able to glean from the work of the plant physiologist, the difference is one of degree rather than of kind, that is to say, there can be but little question that, as Mr. Chase surmises, all of the feeding of trees is done by the new root tips which the trees keep producing annually and that at the time when the tree is dormant, these are simply doing a minimum amount of work, but have by no means stopped their activities. It has been found by plant physiologists that during the winter, plants having no leaves still have a slow but steady rate of transpiration. Now, in the case of the orange tree, this is a very much increased activity on the part of the root tips, that is, they are active throughout the winter season because they have to supply food materials for the green leaves which are constantly on the citrus tree. Further than that it is impossible to say anything as to the manner of feeding or the rate of transpiration occurring in citrus trees, because of the fact that no one, to my knowledge, has ever investigated this subject, despite the fact that it offers, I believe, one of the most fascinating fields for investigation and one which is pregnant with great possibilities for the plant physiologist. We are just beginning to get an inkling of what this may mean through the very recent experiments of Dr. MacDougal, at the Desert Laboratory, at Tuscon, Ariz. I feel certain that very interesting data would be brought to light by a study of the transpiration of citrus trees during the several months of the year, noting the rate for each and the amount of plant food withdrawn. These data would unquestionably be valuable, not only to the plant physiologist, but also to the student of soil fertility in his investigations on the plant food relationships in soil. From the above remarks it would appear that there is no essential difference in the development of the root hairs or root tips and their functions in the feeding of both deciduous and citrus trees, and I can see no possible connection between this condition and the root toxin theory promulgated by the Bureau of Soils.

As to the latter, I might add that there is nothing so far in the work of investigators of this country or abroad, with the exception of that of the Bureau of Soils, which would justify the claim that root toxins excreted by the roots of plants are responsible for the infertility of soils and their great deterioration. In view of the fact that so much has been written on the subject by Dr. Hopkins and the argument fully given on both sides of the question in his recent book entitled, "Soil Fertility and Permanent Agriculture," I do not feel that it is necessary for me to go into a lengthy argument on this subject, which has been under discussion for the past ten or twelve years. I do, however, wish to make a statement with reference to Mr. Chase's question in regard to the concentration of the plant food salts in soil water. This, as he claims, has been pronounced to be constant by the Bureau of Soils in their investigations of the soil solution, but if he will examine the data given by Dr. King in both of his books on soils, he will find that all of the soil solutions or soil extracts, made with water from various soils, were in accord with the actual nature of the soil so far as cropping is concerned, that is to say, a poor soil showed a water extract which contained but small proportions of plant food, while a soil that was producing good crops showed an extract with a much larger proportion of the various important plant foods. If Dr. King's books are not accessible to Mr. Chase, he will find the same data in Dr. Hilgard's book on soils.

Just a word more on this subject may be pertinent here and of interest to Mr. Chase. Anyone who is sufficiently familiar with soil conditions will not deny that certain materials which may be inimical to the welfare of plants, if accumulated in sufficient amounts, are secreted by their roots, and moreover, that in the intense decomposition processes which take place through the activities of the various soil organisms, there are even larger amounts of materials which, in solutions, would have a detrimental effect on plant growth, but in soils well supplied with a complex mixture of various compounds, both organic and inorganic, these roots and other poisons, being produced in comparatively small amounts, are neutralized, and for the Bureau of Soils to make the claim that nitrate of soda, superphosphates, and sulphate of potash, as representing the fertilizers, only have value as a neutralizing agent for these toxins, is to claim something which, by the following argument, would seem to be without foundation. Can it be possible that material varying so widely as nitrate of soda, ammonium sulphate, dried blood, green manures, barnyard manures, hoof meal, and cotton seed meal, would all have the same power to neutralize the toxins of the soil, being used indiscriminately and interchangeably for one another? That would seem to be a far-fetched interpretation of their action, since we know that any one of them will improve conditions in the soil when the nitrogen is missing therein.

I wish to add further that I spoke to Mr. Chase at considerable length on the subject of the soils in the vicinity of Fairoaks when I was on the Demonstration Train on its last trip through that territory, and I explained to him my views on their peculiar conditions. I think it rather useless and a loss of time to seek for the cause of the deterioration of some of their citrus orchards around Fairoaks in either the soil toxin theory or the decreased feeding capacity of trees, when there are more obvious reasons for this decrease in the output of these trees. Among these is notably, in that whole district, the layer of hardpan, which is so close to the surface and which allows the trees only a small area for feeding, in addition to producing water conditions which are far from being satusfactory. They have also grown many trees there for some time without the use of cover crops, and, knowing as we do the small amount of humus which exists in the soils of the whole arid region, that is another obvious reason for the decrease in the output of fruit. I wish to add, therefore, that I have no faith whatever in the statements that are being circulated through the State with reference to the decadence of the citrus trees. I believe that where we find a decrease in the output of fruit it is usually due to poor methods of cultivation, fertilization or irrigation and poor methods for the care of the tree as regards pruning, etc. It only seems reasonable to expect that on a soil having hardpan at from twelve to eighteen inches from the surface that the trees will not produce as well as they will on good deep soil having a plentiful supply of humus, retaining its water well and being supplied with the necessary plant foods. I believe, therefore, that even in the hardpan districts around Fairoaks conditions can be greatly improved where blasting has been done for the purpose of planting trees, by the growing of green manure crops and by using phosphate fertilizers, because I think that a good many of the soils in that vicinity have a small content of phosphoric acid and would therefore be benefited by such fertilization. Proper planting methods and choice of trees, along with the methods above mentioned, will bring complete denial of the decadence scare which has been circulated throughout the State.

CHAS. B. LIPMAN.

University of California, Berkeley.

Horticulture.

SOUR SAP IN THE APRICOT.

To the Editor: I have some apricot trees which seem to have the so-called sour sap. After bearing they die on one side and then the whole tree dies in a few weeks. Kindly give an answer in your paper about this sour sap or whatever ails my trees. S. E. R.

Fresno.

Answer by Mr. T. F. Hunt.

To the Editor: The sour sap of the apricot trees is a trouble which has been long in the State and occurs more or less every year, but the last year seems to have been very much worse than is usually the case. This disease is one of a class which is generally known as a physiological trouble, that it, it is not caused by any fungus or bacteria, but is due to some interference with the normal functions of the tree. This trouble has been unusually bad in the San Joaquin valley this last year, and a great many conditions seem to have had a bearing upon the case. If you will remember, the

weather was very cold last year and the trees became dormant, then in the spring there were a few days of warm weather, the trees started up rather vigorously and then there were a few days of very cool weather which seemed to check the flow of sap, thereby causing a fermentation in the tissues of the tree. This fermentation changes the chemical composition of the sap in such a way that it can not be readily used by the plant, thus causing the exudation of gum which you see on your trees. As you probably know, there is quite a little difference in individual trees beginning growth in the spring of the year. Those trees which were farthest advanced at the time of the cool weather which checked the flow of sap in a great many cases were killed outright. Others not so far advanced were affected, but made an attempt to recuperate. After a long time some of them seemed to be able to withstand it, while others were dragged along and finally died. Those trees which were late in coming out were but slightly affected, if at all. The degree in which a tree suffers seems to depend upon the stage of advancement when these unfavorable conditions occur. Quite often trees so affected in the spring with very favorable conditions afterward recuperate and do very well the rest of the season. On the other hand, if conditions are very unfavorable for the growth of the tree or it is weakened by root rot or some other local trouble, they may drag along for the whole season, just barely existing.

Now as to cure: As it was not caused by any organism there is no spray which we know of that will help correct this trouble. I think this very severe attack which we had the last year is quite unusual, and if we do not get a repetition next year, which is highly improbable, the trees with good cultural conditions should come out and do well. I would suggest spraying with either lime-sulphur or Bordeaux, not with the idea of curing this particular trouble, but to control blight and curl leaf, thereby giving the trees a chance to revive without being further weakened by being attacked by these two troubles.

THOMAS F. HUNT.

University of California, Berkeley.

IS THE HORTICULTURAL LAW ADEQUATE?

To the Editor: We are not sure whether the fault lies with the law or its enforcement, but there is an evident weakness in the State horticultural quarantine system. It is possible today, in spite of the many years that our horticultural quarantine system has been in operation and several amended laws under which it has worked, to bring nursery stock into the State without the knowledge of any quarantine officer and to distribute it without let or hindrance over the whole State. Our horticultural system seems to be a haphazard one, and is left largely to the good faith of the importers. For instance, there are no less than 21 counties in the State which have no county horticultural commissions. Many of these are border counties, and into them infested nursery stock could be brought without question. Now, what is there to prevent stuff, so brought into the State, from being distributed to other counties? It is true that there are many pests and diseases that we have not yet got in this State, but really, it would appear from our poorly guarded borders that this is more due to luck than to care. It is a fact, too, that in spite of the horticultural quarantine system, some of the worst pests which we have, have been admitted under the very eyes of those who should have detected and kept them out. The black aphis of the peach, for instance, entered Placer county in spite of the fact that that county had a horticultural commission, and from there it has spread to several other counties and will probably reach every peach section of the State in time. The hop aphis, one of the most serious pests of the hop grower, has found its way into the hop yards of the Sacramento valley in spite of the quarantine. The white fly, that great scourge of the orange growers of Florida, is reported to have been established for fifteen years in Marysville before any of the horticultural commissioners discovered it. The question arises, to what extent does this protective system protect? And further, where does the fault lie; is it in the law or in the enforcement?

The question of the competency on the part of those whose duty it is to enforce the law naturally arises, and this question is forcibly brought before us in the case of the importation of foreign nursery stock into Alameda county. It appears that a shipment of stock was received there and inspected by the county commissioner, a man who had passed his proper examination as to qualification before the duly authorized board of horticultural examiners, and who had a certificate of competency. This commissioner passed upon this stock and released all that he believed to be clean. The news of the arrival of foreign nursery stock reached the State Horticultural Commissioner, and he sent a man from Sacramento to re-inspect it, which he did, and destroyed it, thereby discrediting the work of their own man. Now, another question naturally arises, if the State commissioner can not accept the work of a man duly accredited by the examining board, what is to be done in counties beyond his reach, when foreign stuff is imported?

The fruit industry of California is too important a one to take any chances with, and it should be most efficiently cared for. How this is to be done it is hard to tell, but it is evident that the present system does not come up to the necessary standard.

HORTICULTURIST.

THE ENGLISH WALNUT IN NORTHERN CALIFORNIA.

(*Continued From Page 149.*)

this case these crops were planted with the walnuts, a practice which is entirely permissible if the latter be planted at a sufficient distance apart. Such a planting is even more significant, however, of the possibilities of replanting many of the present unprofitable orchards and vineyards of northern California with a profitable and attractive crop. Numerous scattering trees and small orchard plantings indicate beyond a doubt that, with a judicious selection of variety and root, large portions of the region within 150 or 200 miles of San Francisco bay may grow walnuts with success and profit.

As to overproduction, a study of walnut prices during the past few years, together with a knowledge of the acreage of bearing trees which is being cut down in southern California at the present time, leaves no apprehension of such a trouble occurring for many, many years. Most important for the prospective planter is to start judiciously, avoiding the mistakes of others and availing himself of the experience of men as Messrs. Fitzgerald, Leib, Coates, Tribble, Hutchinson, Wiltz, Burgess, and others whose names are familiar to readers of the RURAL PRESS in connection with northern California walnut culture.

The Ornithologist.

THE MEADOW LARK PROBLEM.

To the Editor: The constant complaint of the farmers of the State as regards the meadow lark has caused the State Fish and Game Commission to take up the study of the economic value of this bird. It is the desire of the commission to acquaint those interested with the work and to gain their co-operation. Knowing that this is a problem of great interest to the many readers of the PACIFIC RURAL PRESS, I enclose an article entitled, "Is the Meadow Lark the Farmer's Friend?" in the hope that you may find it worthy of a place in your paper.

H. C. BRYANT.

Assistant Fish and Game Commissioner.

Berkeley.

Is the Meadow Lark the Farmer's Friend.—As soon as man began to replace the grass-grown meadows by grain fields, and the forest by orchards, or in other words, began to replace the natural by the artificial, there followed a great change in the behavior and distribution of animal life. These changed conditions soon began to cause the farmer trouble, for the birds and animals, unable to obtain food from natural sources, had to turn their attention to the cultivated grains and fruits. So for the last twenty-five years the study of the economic relations of certain birds and animals has become an important one.

In the West, where great tracts of land are yearly being brought under cultivation, it is not surprising that some of the animals cause trouble. Four years ago a plague of meadow mice in Humboldt county, Nevada, cost the farmers of that region 15,000 acres of alfalfa, as well as many hundreds of dollars used in exterminating the pests. During the last two or three years the report has been growing that in the interior valleys of California the meadow lark annually destroys hundreds of acres of sprouting grain.

Two years ago the complaint of the farmers of the State against the meadow lark was instrumental in causing the change of the laws regarding the protection of birds. But even the new law, allowing the killing of any bird found destroying crops, by the owner of the property, has not settled the question. In January of this year, Assemblyman Stuckenbruck introduced into the legislature a bill to permit the shooting of meadow larks. He says that the birds destroy not only grain, but have lately developed a fondness for melons that is proving disastrous to the cantaloupe crop.

Many ranchers claim they have lost over ten acres of grain from meadow larks alone. The bird is accused, and undoubtedly with reason, of boring down beside the sprout with its long bill and eating the kernel of grain, leaving the sprout to die. The least injury occurs in barley fields, for with this grain the sprout is not always killed when the kernel is removed.

On the other hand, however, the meadow lark is known to destroy quantities of injuriuos insects, such as grasshoppers, weevils, white grubs, etc. Weed seeds also form an important part of its food. Nor is the fact that the lark is one of the finest song birds to be overlooked.

The evidence in favor of the bird certainly calls for a study of its habits. The wholesale slaughter of any bird before the evidence from both sides is impartially considered is to be deplored. The work on this problem, therefore, will undoubtedly be watched with interest by the farmers of the State, as well as those who value the bird for its esthetic qualities.

The United States Biological Survey has already done much valuable work on the subject. This, however, has been extensive rather than intensive. The time has come when a specialized study of the meadow lark is important and necessary. This work has been taken up by the State Fish and Game Commission. It is their hope that a two-years' study of the problem, with the use of improved methods, may do much toward settling the question.

The inquiry.—The following is a brief outline of the methods to be employed:

1. An accurate determination of the food of the meadow lark made from the examination of enough stomachs to make the result significant.
2. A careful discrimination between harmful, neutral and beneficial insects and weed seeds found in the stomachs.
3. An elimination of error by the taking of birds, in the same locality, in at least seventy-five different places in the State, twice a month, throughout the year, thus affording a valuable comparison and making possible the mapping of the districts where the depredations are excessive.
4. A careful field study of the habits of the meadow lark in life, with reference to the choice and amount of food consumed, and especially to the food of the young.
5. A collection of extracts from letters by well known ranchers, under the heading, "What I Think of the Meadow Lark."

What It Is Expected to Determine.—The data compiled by these methods will furnish:

1. An approximately correct estimate of the kind, quantity, and choice of the food of the meadow lark.
2. A fair appraisement of the meadow lark from the economic standpoint, in dollars and cents.
3. A convincing array of testimony from the men who know the bird.
4. Finally, an answer to the question, "What shall we do with the meadow lark?"

Any one interested or having information upon this problem is urged to communicate with H. C. Bryant, Assistant State Fish and Game Commission, East Hall, University of California, Berkeley.

Agricultural Engineer.

SELECTING A GAS ENGINE.

Written for the PACIFIC RURAL PRESS
By Mr. C. R. SESSIONS.

(Concluded from PACIFIC RURAL PRESS *of February 11.)*

Good workmanship is not apparent to one who is not familiar, and is only proved in the test of hard service. One mechanic is a better workman than another and the tools in one shop are better than those of another. One company may insist that the erecting machinist assemble only such parts as are well made, while another company demands that the poorly made parts must be patched up and that the erector must turn out so many engines each day. One manufacturer may make all the parts of his engine, using jigs and templates that cost considerable more than the engine itself but are paid for when a large number of engines are built. A small factory will build each engine separately and save the cost of the templates and jigs, but because parts of different engines of the same size are not exactly alike, not duplicates, they are not interchangeable, and the replacement of worn or broken parts can not be made unless the engine is brought back to a shop and the new parts machined and fitted in place. As an example, take the rings which spring out against the cylinder wall and make the piston tight. The proper way to make these rings is to machine them roughly to size, cut and close them in to give the necessary spring, and while they are held in a jig (made specially for this purpose) turn or grind them to the proper dimensions. Such rings are perfectly round, exactly alike, and will be a good fit from the start. A poor way, and one that is often practiced, is to machine the ring, leaving it a little large, for further fitting and cutting, springing and fitting it into the cylinder and groove in the piston by hand. Such rings are not round, are not alike, and are not, therefore, interchangeable, and must be run for awhile until either the ring or the wall of the cylinder is worn to a fit. A ring of this kind can not be replaced except by a machinist.

Finish costs money, and unnecessary finish is a waste of money. Truth needs no varnishing, and a simple engine carefully built by competent workmen using good tools need not be polished or gilded.

A good reputation is a valuable asset of a factory. When it is known that a manufacturer is not only willing but ready to fairly and squarely stand behind the gas engine he builds, that engine is worth more. Interest in the customer should not cease with the sale of an engine, and the reputation of the factory demands that the engine give satisfaction. When a company fails, this backing and the supply of replacement parts is gone. Sometimes a large selling company will have a lot of engines made to order by some shop not making a specialty of such work. When these engines are not a success a new lot under a new name and of a different design is put on the market. Such engines have no backing, and any guarantee given, while being legally binding, is of no actual value. An agent who frequently changes his agency either does not know enough to select a good engine or is being continually influenced by a larger margin of profit made by selling a new high priced but poor engine. A good standard make of engine has a high second-hand value and a high value is given to it in the appraisement of improvements.

Some one has said that a farmer buys but one engine and that the so-called "follow up" and "trouble" eat up the profits in the gas engine business. For this reason some engines are marketed by extraordinary selling methods and forgotten by the manufacturer. An orphan engine of this kind is sure to give trouble, and about all the purchaser can do is to go out behind the barn and cuss the chickens or the family horse, because the agreeable gas man, like Dr. Foster who went to Gloster in a shower of rain, won't go that way again.

A guarantee of from one to five years against the failure of parts of an engine is usually given. Good engines give little trouble, and it has been said that in the case of one company who gave a long guarantee, the replacements did not cost more than 60 cents to an engine. This guarantee, of course, did not take into account natural wear and failure through accident.

In order to avoid interference between the exhaust piping and the belt, for instance, some general idea of how the engine will be set up is necessary. All engines are not alike, and difficulties have arisen when the time has come to install them. The arrangement of the exhaust pipe, muffler or exhaust pot, and fuel and water piping should be studied. When a muffler can be dispensed with a saving in power is effected. Care should be taken to see that the pulley is of the right diameter and has a crowning face a little wider than the belt. When a tight and loose pulley on the driven machinery is necessary, then the pulley on the engine should have a flat face a little wider than twice the width of the belt. A standard sized engine shaft is an advantage, because then a stock wood or all steel pulley can be easily fitted, and, if necessary, quickly changed. A cast-iron pulley attached to the arms of the flywheel does not admit of this change.

The price of an engine, like the price of wheat, is an uncertain quantity. The cheaper engines list at about $35 to $45 per horse power, conservatively rated. This price includes electrical equipment, fuel tank, suitable pulley, and lubricators, etc. Discounts of from 10 to 15 per cent are made when competition exists, and when a large engine is figured on the bid is at a price which corresponds to a discount of as much as 20 to 25 per cent. The gas man likes to sell f. o. b. cars for cash, and when you are sure of what you want this is the best way to buy. Definite specifications (the only way to really get the advantage of competition), the assurance of quick action and cash with the order have caused some very large cuts in prices. The gas man can buy pumps cheaper than one not in the business, and for this reason it is an advantage sometimes to buy the engine and pump from him, because he can disguise a cut in the price of his engine by figuring in the pump at what it costs him. The pump men will not allow him to directly sell the pump at cost, and he dislikes to have the low price quoted on the engine to become public property.

Ultimate value should be the determining factor in selecting a gas engine. The cheapest in the end, and not the cheapest to buy, is best.

PROFESSIONAL DIRECTORY

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No "replanting" if such stock is used.
Also good stock smaller plants. General Nursery Stock.
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Muirs, Lovels, Elbertas, Tuscan Cling, Phillips Cling, Orange Cling

All money makers for drying, shipping and canning. All stock grown by ourselves, absolutely true to name and free from disease. We can supply the above stock in three grades:

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We have shipped out this season four carloads to Mexico, three to Texas, two to Arizona, two to Oregon, one to Idaho, one to Colorado, one to New Mexico. Our daily shipments have averaged in assorted orders one carload a day since January 1st., demonstrating that we are recognized as the leading growers of First Class Nursery Stock in California.

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For fall and winter planting; also Flower Seeds for fall sowing.

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Forestry.

CONSTITUTIONALITY OF FOREST RESERVES ATTACKED.

An attack on the conservation policies inaugurated by the Roosevelt Administration, more serious probably than any heretofore made, was embodied in an appeal presented to the U. S. Supreme Court in Washington, last week, to declare unconstitutional the creation of the big forest reservations of the West.

The information is given out that failure to win on this proposition is not to end the campaign of the anti-conservationists. They have prepared to fight a step further against the alleged independence of the forest reservations from the State laws, on the theory that the Federal Government, in creating them, holds the land merely as a big land proprietor and not with any prerogatives of sovereignty.

The fight has arisen out of the attempt of the United States to enjoin Fred Light, a Colorado cattleman, from "allowing his cattle to trespass" on the Holy Cross Forest Reserve in that State. Despite Light's claim that the formation of the reserve without the consent of the State was in violation of the Federal Constitution, and that action for trespass could not be maintained under the Colorado laws, unless the land in question had been fenced, the Federal Circuit Court issued the injunction. The case was appealed to the Supreme Court and it was advanced for oral argument.

Colorado has joined in the fight against the Federal Government. Attorney General John T. Barrett heads the corps of attorneys carrying on the fight for Light. Among the attorneys are James H. Teller and former Senator Henry M. Teller. An outline of the arguments they will present to the Court has just arrived in Washington in a brief.

THE CLAIMS.—The brief develops the argument that by withdrawing from settlement and improvement the large areas of land, the Western States are not being treated on an equality with their sister States, all in violation of the Constitution.

"Other States were left free to develop through the settlement of public lands within their borders—the settlers having free pasturage upon such lands and timber therefrom for their necessities—until the entire area of lands having any value become private property," it is argued in the brief. "To withdraw large bodies of land is to deprive a State of these advantages and to deny to it constitutional equalities with other States."

With one-fifth of its area withdrawn from development and permanently exempt from taxation Colorado has been curtailed greatly in its right to develop and secure increase of revenue, it is declared. It is shown that the total forest reserve in Colorado is equal to the area of the States of Connecticut, New Hampshire, and Massachusetts.

The question is asked as to what is the legitimate end, within the scope of the constitution, to be served by the system of reserves. According to the brief, the general answer is, that it is to conserve the national resources by providing for a continuing supply of timber, regulate the flow of streams and preserve power-sites from being monopolized.

It is contended that the Federal Government was not created to carry on such a work, even the "general welfare" clause of the Constitution not being broad enough to include this object. Even if the power did exist, it is argued, it could not be exercised without the consent of the States directly affected.

"That the power to establish these re-



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It reaches its fullest growth with half the water required for ordinary Lucerne.

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and many rare plants.
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12,000 Winesap, Rome Beauty, Jonathan, etc.
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PLUMS—Satsuma, Hale, Kelsey, etc. Luther Burbank's new "DUARTE"—two weeks earlier than Satsuma.
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To Exterminate
GROUND SQUIRRELS, GOPHERS, also BORERS, ROOT APHIS, etc. on Fruit Trees.
Carbon Bisulphide
Is the only effective remedy.
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GRAFTED WALNUTS
ALL KINDS
GRAFTED PAPER SHELL (Giant) PECANS, walnut scions and grafting wax. ELBERTA PEACH and GRAND DUKE PLUM in quantity. All kinds of nursery stock. Send a list of your wants for special prices.
TRIBBLE BROS., Elk Grove, Cal.

serves may be highly desirable," continues the brief, "and that it can be more effectually exercised by the Federal Government than by the States need not be denied—though the latter proposition is not here admitted—yet that affords no ground for asserting the existence of the power.

"This is a Government of enumerated powers, and the doctrine of inherent powers, which has, in recent years, been revived by men high in authority, finds no support in the rulings of this court.

"It is of infinitely more importance to us," it is added in the brief, "that the public lands become the homes of liberty-loving citizens than that the supply of timber of unborn generations should be conserved, or that the national revenues be increased by a few paltry millions."

DESIRABILITY OF COTTONWOOD.

In many parts of California, notably those which have extremes of heat and cold which may exclude some other trees, the cottonwood is worthy of attention. The Desert Farmer of the Imperial valley speaks of cottonwood enterprises in this way: During the past year a new industry has been started in Coachella valley which bids fair to open up immense possibilities throughout southern California, and particularly in Coachella and Imperial valleys.

Near Mecca, on the shore of the Salton Sea, after investigating and experimenting for over a year, the California Cottonwood Timber Company began the preparation of the soil and the planting of cottonwood trees. To the man from the East, used to the slow growth of all vegetation in the temperate zone, the results achieved are almost unbelievable, but to the dweller in the desert who has seen the immense production of melons, cotton, onions, etc., under the influence of the semi-tropic climate of these valleys, there will be nothing strange in the statement that these trees, planted in March, April, and May of this year, have attained in many instances a height of 18 feet and a diameter of 4 to 5 inches, while hundreds of them are 12 and 14 feet high and 2 to 3 inches in diameter. Growing ceases with the first heavy frosts, to begin again in February, making nine months growth out of the year. Throughout the valleys there are large numbers of trees planted in single and double rows that have attained a diameter of 12 inches in four years from the time of planting, and there are instances which show trees 18 and 20 inches in the same length of time.

Some will ask, "Of what use is the cottonwood, anyway?" If you will turn to the Government reports, you will find that out of all the woods grown in America suitable for box-making, the cottonwood stands first both as to lightness and strength; also that cottonwood stands second in amount of veneer used, among all the woods of the country; that a large percentage of the cooperage stock comes from cottonwood. It is exported to Europe for the manufacture of musical instruments; it makes the best excelsior known to commerce.

There are certain characteristics of soil that are necessary to the successful handling of the tree as a commercial product, and there must be an abundance of water with frequent irrigation. The company referred to above has made a careful study of its subject, and is making a big success of the enterprise. It is entirely willing to give to any man in the valley any assistance or information. Officials of the company believe that the time is not far distant when there will be 10,000 acres of cottonwood trees planted and growing in Coachella and Imperial valleys.

$250 REWARD IN GOLD COIN

The above reward is offered for competent proof that Ortho Lime-Sulphur Solution is even equalled or matched by the average output of any other lime-sulphur plant in the United States or Canada in the following points, to wit:

First, the container;
Second, the average strength;
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Ortho Lime-Sulphur Solution is sold in 55 gallon galvanized steel drums; tests always approximately 36 degrees Beaume, about 15 to 20 per cent stronger than any other average solution. The best is never too good. The first cost is no greater than that of the weakly made. The Ortho Way is the best.

CALIFORNIA SPRAY-CHEMICAL CO.
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HIGH GRADE FERTILIZER
For Orchards, Vineyards, Gardens, Lawns
GUARANTEED ANALYSIS shows a fine compound of sheep manure and commercial plant foods. Write for free booklet "A Recipe for Making Gold." It gives details and instructions for using.
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PEACH TREES
True to Name. Strong and Vigorous
Including Muirs, Lovells, Albertas, Tuscan, and Phillip Cling and all leading varieties. Also a full line of Pears, Plums, Prunes, Cherries, Apples, Apricots, Almonds, Walnuts and Chestnuts. A full stock of Thrifty Vines. Write for prices on amount you need.
OAKDALE NURSERY, W. F. Wheeler, Prop., OAKDALE, CAL.

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ESTABLISHED 1884
Leading varieties of Pear, Apple, Plum, Prune, Peach, Apricot and Almond Trees. Grape Vines. Orange and Lemon Trees. Ornamentals, etc.
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THOS. S. DUANE, Prop., Martinez, Cal.

150,000 2-year old Sweet Stock
Not dug-over culls, but splendidly rooted, strictly first class 2-year-olds. A bargain stock for those who want the best in this variety. I offer a good size at lowest quotations.
ONE YEAR SWEET STOCK. ONE YEAR SOUR STOCK.
Navels, Valencias, Lemons.
CHAS. S. McMILLAN, 300 South Marengo Avenue, Alhambra, California
Citrus Trees Exclusively

Villa Anna Nursery
Spineless Cactus as food for farm animals and poultry a special culture.
ASK FOR FREE INFORMATION.
Santa Rosa, California.

AGRICULTURAL REVIEW.

WITH THE FRUIT GROWERS.

A dispatch announces that the Earl Fruit Co. is arranging to make Porterville the head marketing center of that concern in the State.

It is stated that over 1000 acres are being planted to orchards around Healdsburg, Sonoma county. Over 120,000 fruit trees have already been purchased by planters in that vicinity.

April 29 has been set as official raisin day at Fresno. Efforts will be made to have a three-day celebration, to begin on Friday, April 28, and last over the 30th, at that place.

It is now stated that there are approximately 10,000 tons of raisins held by packers and growers around Fresno that are unsold. This holdover crop is about one-third less than it was at this time last year.

The Delano packing-house in Tulare county has closed a very successful season, and plans are now being made to put in another grader, so that next year from 100 to 150 cars of citrus fruit may be handled in the season.

Up to the end of last week over 1000 cars of citrus fruit had been shipped from Riverside for the season.

The nineteenth annual Citrus Fair is now in progress at Cloverdale, Sonoma county, and will continue until Sunday night. These exhibitions have always been attended by large crowds of people, and have proven a great advertisement for that section. The exhibits this year are better than usual, and comprise not only citrus fruits around Cloverdale, but fruit and other exhibits from various parts of Sonoma county, including Sebastopol, Santa Rosa, and other sections.

J. Onstott, of Yuba City, is planting 100 acres of Thompson Seedless grapes on his place a mile east of Sutter City.

John Peters, of Sutter county, is planting 26 acres to peaches, mostly Tuscan and Phillips clings.

The section around Riverside has shipped out 1330 carloads of oranges and four carloads of lemons to date.

J. E. Haskell, of Sutter county, planted French prunes in soil ranging in depth from 1½ to 6 feet. The trees made a growth of 13 feet in one year. To get through the hardpan underlaying the soil, Mr. Haskell dug holes 3 feet in diameter down to the hardpan and then put in a half stick of No. 2 giant powder. This powder broke the hard crust and gave the roots a chance to go down.

Juan Rodriquez of Arroyo Grande has six acres in strawberries which net him annually between $800 and $900.

During the last two weeks Crawford & Davis, of the Imperial valley, sold 138 dairy cows in that section.

Over $100,000 worth of almond land has been sold within the past few weeks around Durham, Butte county. Most of the land was in small tracts and will be set out to almond trees this season.

Lincoln, Placer county, will soon be the center of a very large fruit district. In that vicinity there will be over 10,000 fruit trees planted this season.

The following awards were made by the committee in charge for the best exhibits at the Citrus Fair at Sacramento last week: Pioneer Fruit Co., of Sacramento, gold medal for best display of citrus fruits; Butte County Citrus Association, silver medal for second best display; Exeter exhibit, silver medal for third best display; Porterville Chamber of Commerce, bronze medal for fourth best display; Butte County Citrus Association, bronze medal for fifth best display.

The Berry Growers' Association of Sonoma county has closed a contract with the California Fruit Canneries Association for the 1911 crop of berries at $50 per ton. Last year the price was $40. The Association expects to raise 800 tons of berries the coming season.

Oroville is now planning to hold a citrus fair from the 20th to the 25th of the coming November.

F. S. Rice and associates of Oakland, who have purchased 100 acres of apple land near Berry Creek, in Plumas county, are now planting out part of the acreage to apples and will sell it to prospective settlers.

GENERAL AGRICULTURAL NEWS.

Durst Bros., of Wheatland, are clearing about 400 acres of bottom land on the Bear river which they will plant to alfalfa and hops.

The American Hop & Barley Co. and the Central Trust Co. have leased their hop lands of more than 1000 acres near Nord, Butte county, to Harry Frazier, who will plant out most of the acreage the coming season to hops.

The Colusa Sun states that a total of 1775 acres was reported as being guaranteed to be planted to sugar beets this season in the several districts around that city.

Fifteen carloads of lima beans were shipped from Ventura last week by the Lima Bean Growers' Association via steamer to the New York market. The 604,500 pounds of beans are worth $33,274 and are about the last of the 1910 crop from Ventura county. Growers are now getting ready to plant the 1911 crop and expect a good season as the heavy rains have put the ground in good shape.

A large acreage of new ground will be seeded to Alfalfa, in Kings county this spring. Alfalfa seed is selling there at 17c. per pound.

The Farmers' Union of Gridley recently received a quantity of tomatoes to be distributed to its members. The Union also placed an order for several cars of gypsum to be used as a fertilizer.

Governor Hoke Smith of Georgia has sent out warning to growers of Georgia and South Carolina to look out for at-

CHICO NURSERY COMPANY
GROWERS OF HIGH GRADE NURSERY STOCK
Prompt attention given to orders sent in by mail. Write us for prices on Apples, Peaches, Pears, Cherries, Plums, Prunes, Apricots, Almonds, Eng. Walnuts, Blk. Walnuts, Figs, Grape Vines and Berries. Ornamental Trees, Flowering Shrubs and Roses. Catalog free.
CHICO NURSERY COMPANY, Chico, Cal.

Eucalyptus in Variety
The best that 40 years experience can produce, being grown slow, in the cool atmosphere of the coast, are more hardy and more vigorous than those grown in the hot interior of the State. Correspondence invited.
W. A. T. STRATTON, Petaluma, Cal.

EUCALYPTUS TREES GENERAL NURSERY STOCK
4,000,000 Eucalyptus Trees. Large Stock of Fruit Trees
ORANGE COUNTY NURSERY & LAND CO., FULLERTON, CAL.

TREES
LARGEST STOCK ON THE PACIFIC COAST
All Varieties---
All True to Name
We are authorized Commercial Propagators and call particular attention to
The Formosa Plum
Largest size, heart shaped and light cherry red in color. Best grower and shipper on the market.
The Standard Prune
Best combination drying and shipping prune ever offered. Enormous and never-failing bearer. Strong, healthy grower.
Patagonia Strawberry
Has a most exquisite flavor—is a very strong grower and a remarkably fine keeper.
BURBANKS NEW CREATIONS
Wonderful Pomegranate
If you have strong alkali or very damp ground, there is nothing that will bring you such handsome returns as this, the showi st of all fruits. Color like the Baldwin apple, only three times the size. Sells readily in the Eastern markets at from $2 to $4 per 20-lb. box.
WE HAVE A FINE STOCK AND ARE PREPARED TO OFFER SPECIAL INDUCEMENTS.
We are prepared to fill your orders for any quantity of
Figs Apples
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make the greatest and cheapest hog feed in existence. Planted like potatoes. Require no care. Yield abundantly. Write for quotations on large or small quantities.
26 Years Experience.
We have had over 26 years' experience in growing reliable nursery stock. If you desire good trees let us have your orders.


1600 Acres
devoted exclusively to our business. We have the largest nurseries on the Pacific Coast. Write us about your requirements.
Our Annual Illustrated Price Catalogue
which lists and describes over 2000 varieties of trees and plants and also "California Horticulture"—the fruit growers' guide—will be sent FREE if you mention this ad. Write us to-day
Paid-up Capital, $200,000
Francher Creek Nurseries
(Incorporated)
Geo. C. Roeding, Pres. and Mgr.
P. O. Box 18, Fresno, Cal.

tempts of parties who have gathered a great number of live boll weevils, as he is convinced they are preparing to scatter these pests in the cotton fields to reduce the crop the coming year in order that they may bull the price of cotton.

J. M. Waterman, of Oxnard, has made a proposition to the Ventura Board of Trade, that if that city will donate him two lots, he will erect a cannery thereon and be ready for business this season. The Ventura merchants are at work securing subscriptions to purchase the property.

The Sutter County Farmer states that the mud hens have increased in number so greatly that they have become a menace to the grain fields near the tules.

MISCELLANEOUS ITEMS.

A rabbit-drive by the farmers in Sutter county last week which was participated in by 30 men and covered a space of about two sections wide, resulted in securing 300 rabbits which were killed and sent to San Francisco, where they sold for $2 per dozen.

A Farmers' Union was organized at Paradise, near Chico, last week. The Union hopes to sell the fruit of its members collectively better than could be done by individuals.

A meeting of the directors of the Hallwood Irrigation Co. was held at Marysville last Saturday, at which the statement was made that the canal they have been working on will be completed within three months and that 5000 acres will be irrigated from it this year. This district lies a few miles east of Marysville.

The demonstration train started Wednesday for another trip, covering the southern half of the State, extending over a period of about three weeks. This week the train was at Owens Lake district, and will reach Los Angeles Sunday. It will be in the southern counties until the following Sunday, when it will be at Riverside, and the last week will be in the Imperial valley. So far this year the interest in the train has been much greater than last season.

The Chuckawalla irrigation bill passed Congress last week and has been signed by the President. This law will allow to be carried into effect a huge irrigation project in the eastern part of Riverside county. Most of the land of the Chuckawalla valley is now owned by Riverside and Corona parties, and as soon as the dam can be built it will be placed under irrigation.

The J. B. Robertson ranch, consisting of about 1000 acres of foothill land in Tulare county, suitable for citrus fruits and alfalfa, was sold last week to Edwin Alderson of Los Angeles. It is expected that the new owner will plant out the ranch as soon as possible.

The Winters Canning Co., of Suisun, has made arrangements for putting up the largest amount of asparagus. Spring delivery contracts have been made with the growers, and as the crop will be large, the pack is expected to be very heavy.

Oakdale, Stanislaus county, is to have a Rose Carnival on April 21, day and night.

A paper read before the American Chemical Society at Chicago in September, 1910, which contains an itemized account of a 160-acre farm near Elgin, Ill., shows the cost of producing milk, according to the figures submitted, was 2.43c. per pound.

Farmers representing 20,000 acres of land held a meeting at Stockton last Saturday and discussed the subject of protecting their holdings from overflow during the high water each season. The land is located north of the Calaveras river and east of the diverting canal in San Joaquin county. The estimated cost of draing this land is $13,000.

POULTRY NOTES.

Officers of the Santa Clara Poultry Association are leading a movement to organize a Pacific Coast Poultry Association to prepare for a great exhibition of fancy fowls at the Panama-Pacific Exposition. A meeting is to be held at San Jose, March 2, to get the project under way.

A meeting of poultry raisers was held at Watsonville last Saturday, at which preliminary steps were taken to organize the Santa Cruz County Poultry Association.

A Poultry Association was organized at Ashland, Ore., last week.

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60 Prunes on Myrabolan, 3/4 feet.
140 Prunes on Myrabolan, 2/3 feet.
70 Sugar Prunes on Almond, 3/4 feet.
1000 Peaches, Muir, Lovell, Phillips, Triumph, Elberta and Assorted, 4/6 feet.
1800 Apples, Jonathan, E. Spitzenberg, Banana and others, mostly 4/6 feet.
125 Huntingdon Elms, 4/7 feet.
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Live Stock and Dairy.

HOG FEEDING.

Green grass or a pasture of some kind is absolutely necessary for economical pork raising. No one should go into the hog business to make money unless they have pasture. By raising the young porkers on grass the gains made are the cheapest possible kind, and when the fattening period arrives money expended for grains does not eat up the returns from their sale. Grass builds up the frame and body of the pig much faster and better than will barley, corn or wheat. In fact the California hog raiser who makes the most money in this business never feeds grains of any kind until the animals are being finished for the market.

Alfalfa makes the best feed for the growing pig and the brood sow. The heavy grains overheat the body and cause constipation. It also produces a feverish condition that frequently causes a sow to eat her young. When a sow does this, it is due to some unnatural condition, and liberal rations of succulent grass, ashes, charcoal or salt fed prior to farrowing time will prevent it. Small litters of scrubby pigs are also caused by feeding a heavy grain diet. This is more liable to happen with the fall litter than in spring. On account of the abundance of grain and screenings at this time, the farmer thinks that the grain is cheap, and they put all this heavy feed into the troughs that they can. Last fall a San Benito county farmer lost most of his litters, and on investigating the cause found out that his hired man had been feeding the brood sows on wheat screenings.

One of the benefits derived from feeding grass is the exercise caused by the hog foraging over the fields. It not only puts them in a healthier and better condition to resist disease, but also forces them to grow to a much larger size than they would had they been fed in pens.

Several California farmers have had success this last season feeding their hogs on barley and wheat hay instead of a straight diet of barley, wheat or "gyp" corn. The Easterner who has fed corn all his life will no doubt scoff at this method of fattening hogs, but if some of them will try it they will find the gains, while not as large possibly as if fed on corn, will no doubt be more profitable in the long run. When hogs are fed hay in this manner it should be given them in low racks so that they can get at it easily, but with sufficient protection afforded so that they will not pull it through and trample it. A hog will waste a great deal of his food especially hay, but when it is kept in this manner the waste is very small. With hay selling at its present low price this makes very cheap feed.

As there is very little corn in California, barley is the best grain on which to finish hogs. Denmark, which produces the choice bacon of the world, uses barley almost exclusively in fattening its hogs. The Danes claim that they do not get the results from corn or other cereals that they do from barley. Barley produces a sweeter meat than corn, and the flesh is just as solid. In order to get the best results from barley, skimmed milk or whey should be fed in conjunction with it. This ration balances well and causes quick gains. When possible skimmed milk should be fed throughout the life of the porker, and many fine looking hogs are sold to the butcher every day in California which have had no other feed than alfalfa and skimmed milk throughout their life history.

A large economical method of finishing hogs is to turn them out in the stubble fields where they can pick up the loose grain and seeds which have escaped the thresher or header. Also when the hog is skirmishing around in the stubble fields it picks up green grass and bugs, wnich are essential to its welfare.

Charcoal, charredwood, ashes and salt should be kept in the fields where the porkers will have access to them. Some farmers put a mixture of half salt and half ashes in the troughs near the water. In that way the animals eat more of the mixture and also drink more water, which is very good for them. It not only helps flush out the system, but keeps the body cool so that there is no loss of weight from overheating.

A NEW FROZEN DAIRY PRODUCT.

A new frozen dairy product has just been brought out by the Dairy Section of the Iowa Experiment Station at Ames. This product, which has been named "lacto," is made of loppered whole or skim milk, with the addition of eggs, sugar, lemons, and flavoring materials. lacto has a more pleasant flavor than sherbets and ices, and contains considerably more nutriment. It contains as much protein as ice cream, less fat, and more acid.

Lacto can be made in the household on a small scale without buying a commercial starter. Take a bottle of good, clean, fresh milk which has not been heated, and set it away at a temperature of from 68 to 70° F. until it coagulates. If it coagulates as a smooth, solid curd without pinholes, if the aroma is clean and pleasant, and the flavor nice and creamy, it can be used as a starter for a larger amount of whole or skimmed milk.

The milk when ready to be used for lacto has a mild, clean, acid flavor. The curd must be thoroughly broken up. This is accomplished by pouring it from one pail to another until it is as smooth and velvety as rich cream. From this "lacto milk" the various lactos are prepared.

One of the most popular kinds is cherry lacto. This is prepared from the following formula, which is sufficient for 5 gallons of the finished proddct:

3 gallons lacto milk;
9 pounds sugar;
12 eggs;
1 quart of cherry juice or concentrated cherry syrup;
1½ pints lemon juice.

The sugar is first dissolved in the lacto milk. The eggs are then prepared. The whites and yolks are kept in separate containers and each lot is beaten with an egg-beater. Both the yolks and whites are then added to the milk. The mixture is thoroughly stirred and strained through a fine wire gauze. The fruit juice is added last. If there is any indication of the juices precipitating the casein they should be left out until the mixture has begun to freeze. The freezer is run until it turns with difficulty, when the paddle is removed. The brine is removed and the freezer repacked with ice and salt and left for an hour before the contents are served.

THE NEW DAIRY BILL.

Senator Martinelli of Marin county has introduced a bill into the legislature which should prove of great benefit to the dairymen of California and should be supported by them. The men who are working at Sacramento at the present time in favor of this bill are S. A. Carver of Los Angeles, president of the Creamery Operators' Association; Judge P. J. Shields of Sacramento; W. H. Rousell, president of the San Francisco Dairy Exchange; Secretary Andreasen of the State Dairy Bureau; J. Pourhm, president of the Dairy Delivery Association, and J. H.

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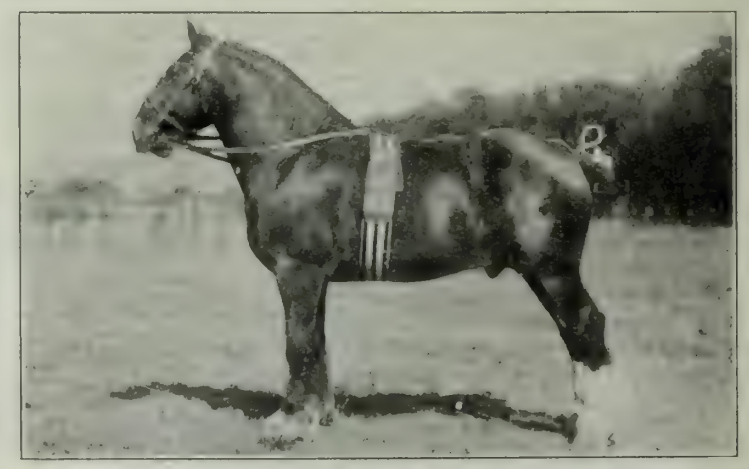
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Severin, secretary of the California Co-operative Creamery Association. It will be seen from this list of dairy luminaries that the best men in the State of California are supporting the bill.

The provisions of this bill are that no one can handle milk in a room that is connected with the living apartments of any human being or animal. This will forbid people from skimming or separating the milk in the kitchen or in the stable after milking. All ice cream must contain cream and not milk, and if it is not up to a 12% standard it must be advertised as ice milk and not as ice cream. All butter must be sold by the pound and not by the roll. The name of the maker of the butter must be stamped upon the wrapper, where it was made, and its weight.

LIVE STOCK NOTES.

J. W. Merrill, who has a farm near Colusa, recently sold 13 hogs for $127.50. These animals were not quite six months old.

Reports from Sutter county are that the feed for sheep is in fairly good condition and that within the next few days the grass will be high enough to supply all needs. The lambing season is now on and the percentage of lambs is up to the average.

The Fresno County Cattlemen's Association recently met at Fresno and elected D. C. Sample, president; J. A. Rogers, vice-president; and J. D. Collins, secretary.

The Butte county farmers are having a difficult time getting enough horses to do their spring plowing. This shortage is due to the fact that many of the farmers sold out this last winter to buyers that were scouring the country for available norse flesh. They offered such high prices for good woork horses that the farmers fell for the bait and are now wishing they had kept their stock.

A recent report of the Department of Agriculture shows that mules made the greatest increase in value during the year 1910. According to this report the average value of mules over the United States is $125.62, horses $111.67, milk cows $40.49, sheep $3.73 and swine $9.35. The highest and lowest average value per head of farm animals by States are given as follows: Horses, highest in Massachusetts and Rhode Island, $148; lowest, New Mexico, $82. Milk cows, highest in New Jersey, $53.50; lowest in Alabama, $25. Sheep, highest in Connecticut, $5.60; lowest in Mississippi and Louisiana, $1.90. Swine, highest in Maine, $13.10; lowest in Florida, $4.60.

SALE OF DAIRY COWS.

The sale of the dairy cows of A. Radtke of Turlock was very successful. Thirty head of dairy cows sold at an average price of $80 per head. The highest price paid for one cow was $130, and seven graded cows brought $730. It will be seen from this that the dairymen of the State are paying the price for good cows, but they refuse to handle animals that do not come up to a certain standard. It behooves the stock raisers to go in for quality instead of quantity. It pays better to raise two good cows than four mediocre ones.

A recent Tennessee report shows that during 1909 the average cost of keeping the station herd of 30 cows was $5.66 per cow greater than for 1908, due to a more liberal grain ration. The average increased production for each cow over 1908 was 375.2 lbs. of milk and 23.14 lbs. of butter-fat, and the average increased profit per cow was, for milk, $4.72, and for butter, $11.01.

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The purpose of this Bureau is to furnish farmers with information on better farming. If you have any worthy question concerning soils, crops, pests, fertilizer, etc., write to the I H C Service Bureau, and learn what our experts and others have found out concerning those subjects.

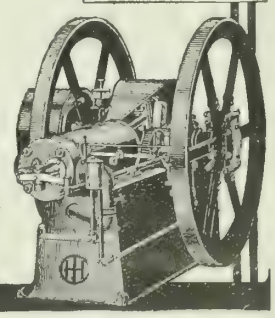


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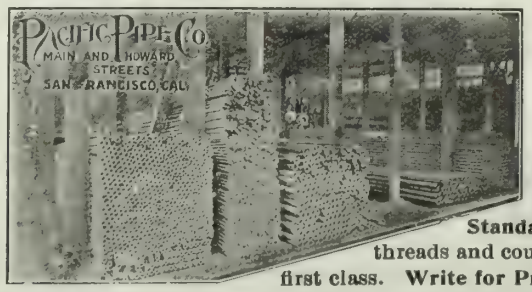
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SILOS HEATING.

To the Editor: Is there any danger of a barn burning from spontaneous combustion due to a silo being built in the barn. H. E. C.

Napa.

There is no danger of the silo overheating and setting fire to a barn—or, at least, if there ever has been such a case we have never heard of it. Most of the cases of spontaneous combusion of hay in barns can be traced to matches being dropped in the hay and the mice nibbling them. When the ensilage is curing, it often gets warm, but never to the point of combusion. Water is usually in silos, especially when the fodder is dry, and people often think this is to prevent ensilage from catching fire. Water is also used for the purpose of making the ensilage jucier and curing sweeter. The closer the silo is to the barn the better it is to handle it, as the ensilage is usually fed in the winter, when it is rainy. A combined silo and barn makes it possible to take the ensilage to the stalls without having to carry it in the wet or forcing the animals to eat it out in the open.

DAIRY NOTES.

The Central California Creamery Company's dry milk plant at Ferndale will open next month. This plant cost $60,000 and will handle 14,000 pounds of milk for drying purposes each day.

J. W. Stough of Stratford has been experimenting with Arabian alfalfa. He has planted 21 acres and is very enthusiastic over the results. In some sections in Tulare county the Arabian alfalfa has yielded 21 tons to the acre of seven cuttings, or an average of three tons to a cutting.

The Holtville Creamery is building a complete plant at Holtville, Imperial valley. This makes two creameries at this point, as recenty four of the other creameries at Holtville consolidated under the name of the Imperial Valley Creamery Company.

The Modesto Creameries paid 35 cents a pound for butter-fat last week.

The David Jacks Company of Monterey county is planning to divide its large holdings into small dairy farms and will erect houses and plant alfalfa for this purpose.

New Zealand dairymen make old hay more palatable by pouring 15 gallons of hot water over every 600 pounds of hay.

The Florida Alfalfa Syndicate was recently incorporated in Kings county. This concern is under the supervision of Samuel I Rosenthal, and there will be over 1000 acres in alfalfa.

Milking machines are becoming very popular in New Zealand. Most of those used are made in Australia and some of them milk 100 cows every two hours. They work on the principle of suction and compression and are doing away with manual labor, which is just as difficult to get there as in California.

PREVENTING A COW SUCKING.

To the Editor: In a recent issue of the RURAL PRESS you gave several ways of preventing a cow sucking herself. A neighbor says putting a bridle on that sort of cow is the best plan of all. Any cheap bridle bit will do so long as it has a "break" or hinge in the middle. Adjust the bit carefully from halter and in a few days the cow will learn to eat and drink without any discomfort whatever. She can do anything she did before except suck herself. It looks so good and easy and humane that it ought to be tried. P. ALLING.

Lodi.

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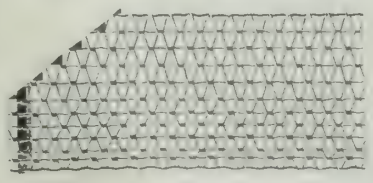
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MR. RANCHER OR SPECULATOR HERE IS YOUR OPPORTUNITY TO SECURE 320 ACRES AT A BARGAIN.

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320 acres rich level land within 3 miles of Livermore and 35 miles of Oakland, adapted to the raising of hay, grain, grapes and alfalfa.

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700 Acres of Alfalfa Land TO RENT

700 acres of sandy loam, located on Putah Creek, near Winters, Solano county. Will rent as a whole or divide into seven tracts of 100 acres each, for ten years, at a cash rental of $10 per acre per year. Will put down good wells for irrigating purposes, with electric line on each piece. Alfalfa is at its best on this land Write at once to

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Winters, Yolo Co., Cal.

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$25 Cash and $5 each month buys one of those beautiful rich level 2½-acre Home Farms in the Livermore Valley. No better climate, no better land for a profitable poultry ranch. Only 32 miles from Oakland.

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We have a Stock Ranch of 2335 Acres, three running streams, two barns, two houses, well fenced, rolling hills, good soil, about 1500 acres tillable, and has produced as high as eighteen sacks of wheat per acre. Four miles southwest of Dunnigan, Yolo County.

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Merced County

LET THE CROPS PAY FOR YOUR FARM

We will sell you irrigated land in our **Merced Colony** adjoining the city limits of Merced on a crop payment plan. Make one payment in cash, then the balance of the purchase price from one-third the crop each year. We have confidence in the productivity of our land or we could not make this proposition. If you have equal confidence in yourself, write us today for particulars.

10 and 20 acre tracts. $100 to $125 per acre.

(Send this to us)

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(Please send me literature on your Merced Colony)
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You cannot afford to buy land in the West without first looking up **Madeline Meadows** lands.

Irrigation system now in operation.

Any size farm you may want under gravity irrigation system.

Total price including perpetual water rights.

$40.00 Per Acre

Nine years' time.

Write or call for full detailed information.

ADDRESS ALL INQUIRIES TO

MADELINE MEADOWS LAND & IRRIGATION CO.
463 Monadnock Building
SAN FRANCISCO, CAL.

Poultry Department.

Conducted by M. Russell James.

FEEDING THE CHICKS.

Natural brooding, as we have seen, is a warm, dry nest, a warm, downy hover, and freedom to go out at will in all kinds of weather. In the natural feeding of the chicks, the first food is tiny seeds, and grit which the mother selects for them. In a day or two, as the little beaks harden, the chicks nip off bits of grass and tender herbage, and just as soon as the little legs are strong enough to follow her, the hen begins an eager search for bugs and worms. Here we have it—seeds, greens, and insects. No hard-boiled eggs or wet sticky messes. The chick has a gizzard that calls for bits of grit to furnish it with grinders, and for food to grind. If it has not the class of food that will stimulate the tough muscle of the gizzard to exercise, that organ fails to gain strength and tone, and the chick becomes a dyspeptic. Those who have made a study of the subject have found that in a chick fed on soft food the first few days of its life, the gizzard presents a pale, flabby appearance very different from the firmness and healthy color of the chick fed on small seeds and cracked grains.

FOOD FOR THE BABY CHICK.

For the first week or ten days of its life, the grain food of the baby chick should consist of rolled oats, the kind that come in the breakfast mush packages, and of some standard brand of chick feed. We would emphasize the point of buying only a proven grade of chick feed. Although the poultryman might mix his own chick feed, it is more convenient and really cheaper for him to buy it for the short time it is needed, and in a good grade he gets greater variety than he could well secure himself, and also better proportions. But beware of the cheap grades of chick feed. They are liable to be composed of inferior or damaged grains and seeds, and contain too great a proportion of the cheaper ingredients, such as grit, charcoal, etc.

For the chick's first feed, rub a handful of the dry rolled oats fine in the hands and sprinkle it over pounded shells. Have a fountain of the self-feeding kind, or even a can turned bottom up over a straight-edged saucer and a nail-hole on each side of the can about an inch from the rim, and full of pure water with the chill taken off if the water is cool. It is not necessary to teach the chicks to drink, except in rare cases. The more forward ones soon dip in, and the others follow suit. For the second feed, give the chick feed sprinkled over some dry alfalfa leaves for litter. About the second day cut tender grass, or lettuce, or mustard leaves very fine with the shears, and sprinkle it with the grain food. Alternate the oats and chick feed and gradually leave off the rolled oats. When about a week old, give a very little whole wheat in the evening, and after the chicks are two weeks old, let their evening feed consist of cracked corn, wheat, and chick feed alternated, after which the chick feed may be gradually dropped out and the whole wheat and chacked corn used entirely.

TOE-NIPPING AND CANNIBALISM.

As before stated, the above is one of the bad habits which brooder chicks must be guarded against. It arises from the intense craving for animal food. The young of all animals require more muscle and tissue building foods than mature animals, for they have to build their house from the ground up, as well as furnish repairs and keep up the heat and energy of the system. The egg of which the chick's first food consists is animal food, and where this leaves off in the natural state, insects take its place. Even in the non-carnivorous mammalia, the first food is milk, which is an animal food. The chicks crave animal food and need it when they are but a few days old, and it is a mistake to keep it away from them until eight days or two weeks old, as some poultry raisers think proper. From the very start the chicks are out for worms; they see the tiny toes twinkling in and out under the down, and these represent worms when they have no mother to tell them better, and when they draw blood from the toes, the habit is formed, and they become veritable cannibals, and will pounce on any of their number that is unfortunate as to show a raw or bare spot, and devour the poor little creature alive.

CHICKS REQUIRE ANIMAL FOOD.

But meat is not just the same as insects. It is much more concentrated and indigestible for the chick. If fed in too great quantities, or in a careless manner, it will cause diarrhea and worms, and the same with milk. This is the method we have found safe and satisfactory: About the third day after putting the chicks in the brooder, or when we begin to let them out in the runway, we have a beef or sheep heart cooked tender, and seasoned with salt and pepper. This we cut into small strips like tiny worms, and when the chicks begin to go for each other's toes we scatter a handful among them. As soon as they get a good taste of the meat, they forget toes and everything else, and such running and scrambling, and pulling and hauling! Two, three, or even four chicks will often get hold of one piece and pull for all they are worth until the meat parts and the chicks tumble "heels over appetite." It beats any circus. But only a very little of even this carefully prepared and tender lean meat must be given at a time, and that but once a day. As the chicks get older this meat may be chopped with young onions and mixed with rolled oats, stale bread, or shorts for the noon meal. Never give the chicks raw meat or that which is the least tainted. In the matter of feeding milk, the safest plan is not to feed it to brooder chicks except in the form of curd or used to make chick bread, and after the chicks are a month old to moisten the dry mash.

RULES FOR FEEDING.

Feed only dry food the first month.

Don't feed bran or beef scraps to young chicks.

After the third day begin to feed finely cut greens.

And as long as the chick lives feed plenty of tender greens.

Begin to feed a little well-cooked lean meat about the fourth day.

Keep pure water, grit, and charcoal always before the chicks.

From first to last, let the night feed be only grains and green feed.

After a month the chicks may be fed a mash at noon, as much as they will eat up clean in half an hour.

This mash should be made of lean meat, vegetables, rolled barley, and cracked corn, all well cooked and chopped and made dry with shorts—not bran—and seasoned with salt.

Never let the chicks eat stale, unclean, or mildewed food, and never let them eat any food out of their droppings or out of soured and dirty troughts.

Poultry Culture in China.—Poultry culture in the Far East is still in its infancy. Nowhere is this more evident than in China, where methods of breeding and transportation are the most crude. No effort is made by the Chinese at poultry farming on a large scale, and the specialist is conspicuous by his absence. It is surprising to see this, for China is a country where chickens form one of the principal articles of food, and are always in great demand. Although there are no large breeders, nearly every house or hovel has its brood of chickens running around the door, their runs being the narrow, dirty streets, and more often the rubbish heap which is at every open space. The home of the chickens is a split-bamboo basket, which at night is put in some corner of the house, most frequently under the bed. The common practice in South China, and I think it may be safely said throughout China, is, roughly, as follows: Almost every home in the country villages, and frequently in the big towns, has one or two broods of chickens. As these grow up, new ones are hatched. When the first brood reaches full size, it is sold to a man who periodically visits the place for that purpose. As he buys them he puts them into his baskets, and when he has visited the whole of the village, he puts a basket on each end of his bamboo, and trots off to the next village, when he has all he can carry, he goes to the nearest market town and sells them to some wholesale dealer at a small profit.—Ex.

THOROUGHBRED BUFF LEGHORNS

Proven winter layers; 600 hens selected by Hogan system, in breeding yards.

Chicks, $10 per 100. Orders taken only for May and June delivery.

Eggs for hatching, $5 per $100; $1 per setting.

R. M. HEMPEL,
R. F. D., No. 1, Lathrop, Cal.

F. BALDWIN'S WHITE LEGHORNS



1st Pullet, A. Y. P. Ex.

Winners from Seattle down; 33 out of a possible 35 prizes in 3 shows this season. **Bred as layers first.** Stock, any age, for sale at reasonable prices. Eggs $8 and $12 per 100. Settings $2 up. Send for **new free folder** and prices.

49 Washington Ave , San Jose, Cal.



Egg City Hatchery

Orders booked for spring delivery of baby chicks. Our specialties are Rhode Island Reds and S. C. White Leghorns.

W. L. SALES,
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POULTRY.

WAYSIDE POULTRY YARDS, Petaluma, Calif.—HATCHING EGGS from S. C. White Leghorns, Buff Orpingtons, Rhode Island Reds, Light Brahmas and Houdans, $6 per 100. EXHIBITION MATINGS of White Leghorns and Black Bantams, $5 per 15; $7.50 per 30. Address Carl Gregory, Manager.

PIONEER POULTRY YARDS—Standard bred Light and Dark Brahmas, Buff Cochins, R. I. Reds, Houdans, Black Minorcas, Cornish Fowls, Brown Leghorns, Bronze turkeys, peacocks, guineas and Rouen ducks. Address W. A. FRENCH, 545 W. Park St., Stockton, Cal.

DAY-OLD CHICKS—R. I. Reds, S. C. White Leghorns and Barred Rocks; also eggs for hatching; good laying strain. Fairmount Hatchery, Box 29 B, R. F. D., Santa Cruz, Cal.

WHITE WYANDOTTES—221 egg strain. Owner first-prize cockerel, Oakland and Petaluma 1909. Eggs $2 per 15. H. B. WINTRINGHAM, Middletown, Lake Co., Cal.

CHICKS, 10c.—Shipped anywhere; 30 varieties; thoroughbred chickens and eggs; free circular. Ingleside Hatchery, 807 Mt. Vernon Ave., San Francisco, Cal.

INDIAN RUNNER DUCKS — Eggs for hatching, $1 per setting; $2 for 30; for 50 or more, 5c each. F. L. HUNT, Lincoln Ave., Napa, Cal.

PETALUMA INCUBATOR CO., Petaluma, Cal.—You will be pleased with our new Free CATALOGUE. Send for it.

FREE BOOK — "Poultry Feeding for Profit," on application to Coulson Co., Petaluma, Cal., Box P.

CARRINGTON WHITE LEGHORNS—Send for circular. Address C. B. CARRINGTON, Hayward, Cal.

WHITE LEGHORNS—Chicks, eggs, cockerels. Fine stock. Reasonable. O. B. Morris, Lodi, Cal.

BRONZE Turkeys and Eggs. Ed Hart, Clements, Cal. Large size, good plumage, early maturity.

TWIN OAKS FARM—W. H. Bissell, Proprietor, Livermore, Cal.—Buff, White Orpington.

ORPINGTONS—White, Buff, stock, eggs. Ellen Jacque, 3117 School St., Fruitvale.

HATCHING EGGS—White Leghorns. Circular 164. A. H. Gregory, Fruitvale, Cal.

MANHATTAN Egg and Stock Food keeps Stock and Poultry healthy; try it.

THE ARENBERG BROODER STOVE



Proven to be the most successful Brooder Stove on the market. Awarded gold medal for most meritorius California invention at California State Fair, Sacramento, September, 1910. Burns distillate; perfectly simple and easy to manage. **Write for details.**

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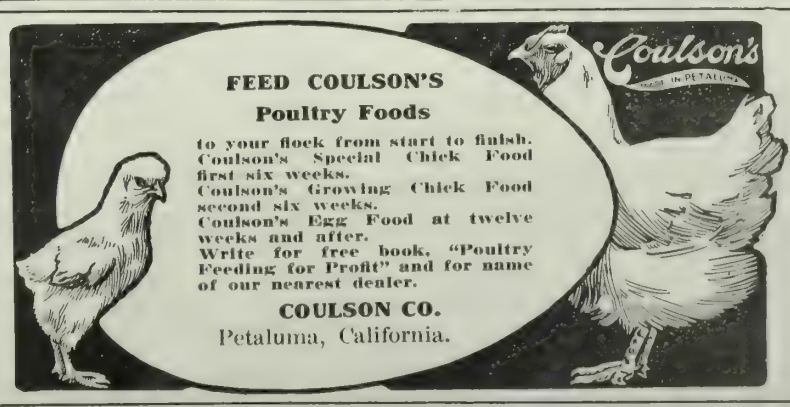
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The most perfect brooder made. Perfectly sanitary, perfect ventilation, no corners to crowd into. No sweating, no smothering, no oil to buy, no lamps to fill, no risk of loss by fire. No night work—just perfect. Our guarantee with every brooder. Price 75 to 100 capacity, $6.00. We pay the freight. Send for circular.

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INDIAN RUNNER DUCKS

FROM A. Y. P WINNERS.

Indian Runner Ducks lay eggs that sell as "firsts." They don't mind cold feet and they lay in winter. They eat cheap feed and lay upwards of 200 eggs a year. They mature at five months. They are well called "mortgage lifters."

Eggs for hatching. Ranch on Hayward Hill at the junction of the Livermore and Crow Canon Roads. Visitors welcome every day in the week.

MELLETTE & CO., Hayward, Cal., R 3

The Home Circle.

In the Old Man's Garden.

The trees go marching up the hill,
  The brook goes sliding down;
The world is never standing still;
  The country moves to town.

The children grow to make the men;
  Their songs make sad hearts gay.
And men turn children once again;
  So runs the world away.

God give me then a merry heart,
  And give me songs to sing!
And let me feel, when friends must part,
  The brush of angel's wing.

And let my simplest actions be
  So loving, sweet, and mild,
The blind may even come to see
  How God was once a child.

—Harvey White.

Hanging Onto the Useless.

Don't accumulate! An hour of throwing away saves days of cleaning up.

A nerve specialist declares one cause of his rapidly increasing wealth is the mania most women have for hanging on to the useless. When we learn to live with fewer belongings we will have fewer jangling nerves.

A worker on the verge of a break-down from keeping her crowded apartment in condition was told by a wise friend to go home and throw out or give away everything in room, closet, or bureau drawer that was not absolutely to be justified by necessity—and not to be too elastic in the reading of necessaries.

The command was obeyed. The girl took a Sunday off and made hay with her possessions. By the end of the day the room looked as if an unpaid installment agent had paid it a visit, and all the hidden places were refreshingly empty. Without the extra work of constant cleaning, with the nervous fret of cramped quarters removed, the girl's nerves and spirits quickly improved. She is making arrangements for a non-accumulating club among friends overburdened with possessions.

There are three things it pays to accumulate—health, knowledge, and enough money to keep one from dependence. Most of our things are open to suspicion as belonging to the nonessential class.

Besides saving agony of mind at housecleaning time and extra sweeping and dusting daily, getting rid of nonessentials in material things helps to solve the servant problem. The housekeeper with a liking for household junk is usually a devotee of intelligence offices.

There are women who accumulate to the point of niggardliness; others have no idea of the restfulness and artisticness of open spaces; more are just cluttery. They are not accumulators by instinct—rather from procrastination. They always mean to tear up and discard, but that throwing-away moment never seems to arrive.—Boston Herald.

Scalloped Potatoes and Onions.

Pare potatoes and cut them in thin slices; cover with boiling water and let boil five or six monutes; drain, cover with cold water, and drain again. Butter a baking-dish suitable to send to the table; put in this a layer of the sliced potatoes, and grate over them a little onion, or add a few fine rings of onion; season with salt and pepper. Continue the layers, seasoning in the same manner, until all the ingredients are used. Pour in milk to cover the potato. Let bake between two and three hours, adding milk as needed. When baked, there should not be an oversupply of liquid in the dish, but the potatoes should not be dry. This dish may be prepared with cold cooked potatoes, and the time of cooking cut down to less than an hour. Serve in the dish.

The Toilet.

A good cold cream containing as little grease as possible is excellent to rub on the face before applying powder. Take great care to remove as much of the grease as possible before using the powder.

Face powder loses a great deal of its harmfulness if the face is thoroughly washed before retiring.

A few drops of benzoin in the rinsing water will benefit your large pores.

A pinch of borax or a few drops of ammonia in the bath will soften the water.

The egg shampoo is very good as a wash for the hair. It is easily prepared—merely beat up the yolk of one egg and add it to one pint of soft, luke-warm water, to which one ounce if rosemary spirits has been added. This is an excellent wash for hair subject to dandruff. Beat the mixture thoroughly and use it warm, rubbing it well into the scalp and rinsing it afterward with several fresh waters.

His First Bite.

He had never fished before, says an exchange, and his rod was new and shining with resplendent varnish. Faultlessly attired, he was whipping a trout stream when by some odd chance he got a bite, a one-pounder from the way the line strained. He did not play the fish at all, but with rod held straight ahead, he slowly and steadily reeled him in. Presently the fish's head appeared below the end of the rod. Did he stop? No; he kept on reeling the fish in, and finally the lsh's head touched the top. The man even tried to pull him through the ring. Just then the man turned and saw a stranger standing on the bank. With a bewildered look he said: "What shall I do now?" "The only thing you can do now," the man said, "is to climb up the pole after him."

Household Hints.

After washing the coffee-pot, set it on the window-sill with the lid off and let it air for a few hours.

The teapot may be treated in the same manner.

About once every week, or even every two weeks, put a teaspoonful of baking soda in the coffee-pot, fill it with water, and let it come to a boil. It can be cleaned very easily if this is done.

If the chickens have a cold or a cough, dip a quill in turpentine and mop their throats inside. You will be surprised at the result.

Use hydrogen peroxide for cuts and wounds. It is not poisonous, but it is inflammable. It is excellent for drawing the soreness out of wounds made by cuts, tacks, or canker. Apply the liquid in small quantities until it ceases foaming.

In the bright sunlight on a railroad station in Georgia slept a colored brother. He snored gently with his mouth ajar, and his long, moist tongue resting on his chest like a pink plush necktie. A Northerner climbed off a train to stretch his legs, unscrewed the top of a capsule, and, advancing on tiptoe, dusted ten grains of quinine on the surface of the darkey's tongue. Presently the negro sucked his tongue back inside his mouth and instantly arose with a start and looked about him wildly. "Mistah," he said to the joker, "is you a doctah?" "Nope." "Well, then, kin yo' tell me whar I kin fin' me a doctah right away?" "What do yau want with a doctor?" "I'm sick?" "How sick?" "Powerful sick." "Do you know what's the matter with you?" "Suttin'ly I knows what's de matteh wid me—mah gall's busted."

Waste in Cooking.

Four pounds of beef in boiling or stewing loses about one pound of its substance; but you have it all in the broth or gravy if you have kept the pot closely covered. In baking, 1¼ pounds will be almost entirely lost, unless you have plenty of vegetables in the dripping-pan to absorb and preserve it. In roasting before the fire you lose nearly 1½ pounds. Do not think you save the waste in the shape of dripping. It is poor economy to buy fat at the price of meat merely for the pleasure of drying it out.

Little Myra Explains.

Little Myra Lee had been in school but a few days when her mother had occasion to write a note to the teacher, and signed herself Mrs. Kent. Thinking she might have misunderstood the child's name, the teacher asked an explanation.

"Oh," said Myra, with a charming confidential air, "you see, my mamma got married again, but I didn't.—Lippincott's.

Your Own Baking Powder.

You can make baking powder as good as the best. It will be pure and will cost you less. One pound cream of tartar, ½ pound bicarbonate of soda, and 5 ounces of cornstarch. Sift together five or six times and bolt through cheesecloth. It is best to do it on a dry day. Keep air-tight.

Couldn't Do It.

"I can't stay long," said the chairman of the committee from the colored church. "I just came in to see if yo' wouldn't join de mission band."

"Fo' de lan' sakes, honey!" replied the old mammy, "doan' come to me! I can't even play a mouf-organ."—Lippincott's.

The Boss Tree Protector

Made of Yucca Palm



Is cheap, durable, and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frost sunburn, grasshoppers or dry winds. Can be easily moved; will last for years Send for samples.

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10 in. long, 7 in. wide,	$9.50
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1380 Willow Street, Los Angeles, Cal.

The Fresno Scraper



Send for Raisin Machinery Catalogue.

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A Boarding and Day School for Girls

Accredited by the University of California, by Leland Stanford Junior University, and by Eastern colleges. Special courses in study are also offered.

Lessons in Drawing and Painting, Elocution, Vocal and Instrumental Music.

A course of lessons on Harmony is given each week by Prof. Wm. J. McCoy of the University of California, and is open to students outside the school.

Courses of lessons in Household Economics, with all the appliances for cooking, etc., are given each week by Miss Alice McLear, a graduate of the Drexel Institute, Philadalphia, and are open to students outside the school.

For further particulars, address
MISS SARAH D. HAMLIN,
2230 Pacific Avenue.
School reopens January 9, 1911. Pupils admitted at any time.

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Cheap as wood.

All sizes for every purpose.

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Sow Seeds Evenly Perfectly—Quickly

Here's the famous Thompson Wheelbarrow Seeder that has meant better stands of alfalfa, clover, timothy, red top, orchard grass, blue grass, etc., for nearly forty years. Over 200,000 now in use—all making big money by increasing crops and saving seed. Sows most uniformly and economically, covers all ground evenly—never wastes seed. Sows any amount to the acre, fast or slow—30 to 50 acres a day. Hopper carried close to the ground—wind does not affect the work of

Thompson's Wheelbarrow Seeder

Works equally well on rough or smooth ground. Lasts a lifetime but quickly pays for itself. Perfectly balanced. Made in every style and size to meet every condition. There's a Thompson for you no matter what seed or how many acres or what quantity to the acre you sow. Lightest, strongest and most durable. Weighs 45 to 50 pounds complete. Large wheel runs easily. Any body can use it. Absolutely guaranteed.

Send name on postal now for complete catalog showing many styles and sizes. Write quick if interested in increased profits. Address

O. E. Thompson & Sons
Ypsilanti, Michigan

FARMERS EDUCATIONAL AND CO-OPERATIVE UNION OF AMERICA

All that its name implies. An up-to-date farmers organization extending over twenty-six States. California Divison now well established. Send for particulars State Secretary, Farmers Union, Box 68, Imperial, Cal.

OUR YOUNG FOLKS' DEPARTMENT.

Conducted by M. RUSSELL JAMES.

Our Young Folk's Letters.

The letters from our young folks which have been fluttering like apple petals into the office of the PACIFIC RURAL PRESS the past week are something of a revelation to us. We really began to think that all the RURAL PRESS' children had grown up years and years ago. This lively evidence of real young folks in its family is like the bursting forth of blossoms on the bare, brown limbs of the orchard trees. These letters are good reading for old folks as well as young ones. Like the springtime, they bring a breath of freshness and reviving life. And, too, they bring something more to those who think they see a decadence in American virility. As long as we have boys and girls who walk two miles to school, climb trees, ride horseback, bring home the cows, hunt the eggs, and grow up among growing things on the soil in the free, open country, there will be no decadence in the American nation. We welcome you, young folks, to the columns of the PACIFIC RURAL PRESS. If we can help you, you also can help us.

Concord, Cal., Feb. 7, 1911.

Dear PACIFIC RURAL PRESS:

I see that you want the young folks to write about the farms they live on. My papa has had the RURAL PRESS for many years, and my grandfather used to take it about twenty-five years ago, I think.

My papa has 14 acres of vineyard, and we have walnuts, almonds, apples, peaches, cherries, plums, apricots, figs, quinces, and olives. My papa is planting almond trees. My papa raises hay and grain every year. We have sheep, and we have about 40 lambs, and we have cows and pigs and chickens and pigeons. I forgot to say that we have loganberries in our yard and also Himalaya berries. We had our last chrysanthemums last month and they are pretty yet.

I am eleven years old, and have always lived on a farm. I was born on this very farm. I have always had a happy and good time on this farm, as most children do at their own homes. I always like haying time, because I can romp and play hide-and-seek around the hay shocks. I can ride horseack, and I can milk cows. I have two sisters and two brothers, and they all go to school except my youngest brother. My oldest sister goes to the University of California. We live two and a half miles from Concord and go to school there. We drive to school. My sister hunts the eggs, and my papa pays her for it. Last summer we got about $30 a month off the eggs we sold.

They are building a new electric line from Oakland to Bay Point, and it runs through our valley. I would like to have the RURAL PRESS publish stories about Indians and wild animals.

Yours truly,
HILDA T. GEHRINGER.

[NOTE.—After the rush of spring advertising is over, the manager of the RURAL PRESS has promised more space to the young folks. Then we will try and find some good stories "about Indians and wild animals" for Hilda.]

Chico, Cal., Feb. 6, 1911.

To the PACIFIC RURAL PRESS:

I am writing my first letter to the Younk Folks' Department. I live at the Chico Forestry Station, and my father takes the RURAL PRESS. I am twelve years old, and am in the sixth grade at school. I am glad that I live out in the country, as I have a good time and am very healthy. I have two brothers; one is older than I, and one younger. I have a dog that thinks lots of us. His name is Buck. We named him from a story, 'The Call of the Wild." There was a big dog in it called Buck. We live two miles from town and go to school there. When the weather is good we walk, and we like the exercise. In May, at the last of the school term, we have the annual school picnic. The children form in line and march out to the picnic grounds. We have races and games, and prizes are given to the winners. The small children have a Maypole and dance around it. In the parade there is a May queen, and a large dog pulls her cart. Everybody is invited to the picnic. Those who do not bring lunches can get them at the lunch counter.

We have a cow and two horses. The cow belongs to my father, but the horses belong to the University of California. My father is raising a few eucalyptus trees and other kinds. He has several hotbeds. There are a great many birds in the trees all around, and the quail go past the house every morning and evening. Our State flower, the golden poppy, grows all around here. A mile or so above the Forestry there is a small hill called Pansy hill that is just covered with wild pansies and other wild flowers.

Yours truly,
CARYL MILLER.

Marysville, Cal., Feb. 6, 1911.

To the PACIFIC RURAL PRESS:

I live on a farm. It is about seven and a half miles from town. We have about three acres in trees—apricots and peaches and figs and almonds, and some prunes and plums. My father has wheat, barley, oats, and alfalfa, and he will plant corn in the spring. Last year he raised 400 bushels of corn. We have five horses and six cows. We are only milking two cows; the rest are stock cattle. We have about 400 chickens. Last week we lost thirteen chickens by a coyote. We are getting about 130 eggs a day. I like to gather eggs.

I am ten years old, and in the fourth grade at school. I have a mile and a half to go to school. I like to go in the rain. The lessons I like best at school are arithmetic, reading, history, geography, and English lessons. In our school we have fourteen pupils. I have a little sister and a brother. My sister is eight years old and my brother is eighteen months old. Every morning I go for the mail, about one-eighth of a mile. Sometimes I ride the horse for exercise. I like to ride horseback. Sometimes the cows go away, and then I have fun riding after them. I like to climb the trees when springs comes, for birds' nests, but I don't always take the eggs. In the spring we have lots of flowers.

Yours truly,
RUTH WILSON.

Did You Know This?

Only one ear of corn has been known to produce an odd number of rows of grain. This ear was grown in Illinois in 1910 and was sent to the Department of Agriculture ten days ago. The corn expert of the Bureau of Plant Industry says that the history of agriculture does not reveal another specimen of a perfect ear of corn with an odd number of rows. It was loaned for exhibition the first time to the Terre Haute, Ind., Corn Show held this month.

Horace Greeley was born on a New Hampshire farm so poor that the family finally abandoned it. But what Greeley learned there gave him a lasting interest in agriculture, and the dream of his life was to end his days on a little farm.

The Famous Rayo

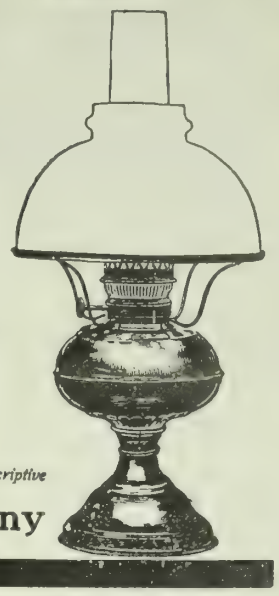
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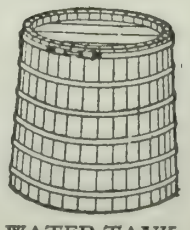


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PHOENIX TOOL & VALVE COMPANY, 245 Market St., San Francisco

THE MARKETS.

San Francisco, Feb. 21, 1911.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

There has been no improvement in the demand, and pressure to sell is increasing among large holders and northern growers, causing greater weakness all along the coast. Prices here are lower than those in the north at present, California Club having taken a sharp drop. All other grades are lower, though Sonora and White Australian are fairly steady. Sacramento valley growers are getting about $1.30.

California Club	$1.37½@1.40
Sonora	1.60 @1.65
White Australian	1.55 @1.60
Northern Club	1.47½@1.52½
Northern Bluestem	1.30 @1.55
Russian Red	1.42½@1.50

BARLEY.

There has been considerable export movement this week, and fairly large shipments are moving East, though the local market is not active. Shipping and brewing grades are in a rather strong position, owing to the steady demand, and choice feed is steady, but common feed is inclined to easiness. Prices, however, are unchanged.

Brewing and Shipping	1.17½@1.25
Choice Feed, per ctl	1.12½@1.15
Common Feed	1.07½@1.10

OATS.

Continued dullness prevails in this market. Prices remain on the same level as before. Red and black oats are quite plentiful, and neither feed nor seed grades find much demand. There is some inquiry for white and gray, but it is impossible to get desirable stock in any quantity.

Red Feed	$1.22½@1.27½
Red Seed	1.35 @1.45
Gray	Nominal
White	Nominal
Black Feed	1.10 @1.20
Black Seed	1.45 @1.50

CORN.

Arrivals of Eastern corn for the last week have been fairly large, but much of this stock is for shipment elsewhere, and little of it is of attractive quality. Jobbing prices, as quoted below, are unchanged.

Eastern Yellow	$1.30 @1.35
Eastern White	1.31 @1.36
Egyptian White	1.55 @1.60
Brown	1.50 @1.60

RYE.

Quotations are little more than nominal, both demand and supply being confined to narrow limits. Holders ask the following figure:

Rye, per ctl	$ 1.60

BEANS.

There is no general activity at the moment, but dealers report a steady inquiry for small lots for shipment, and the movement is quite satisfactory for this season. All descriptions are firmly held at about the former level, the only change being in bayos, choice lots of which are higher. According to advices from Ventura county, dealers there estimate the remaning stock of limas at about 275,000 bags. This is larger than former estimates, but only about half the stock on hand a year ago, and there is a steady movement from southern California to consuming markets, both in the East and middle West. Prices, though no higher, are very firm, and there is every prospect of an early clean-up at about the present values. In the San Joaquin valley district it is believed that the acreage in beans will be the largest in many years, as they are being planted on much of the flooded grain land. Stockton dealers predict that about 30,000 acres more than usual will be planted.

Bayos, per ctl	$4.75 @4.85
Blackeyes	5.40 @5.70
Cranberry Beans	4.00 @4.25
Garvanzos	2.85 @3.00
Horse Beans	2.25 @2.50
Small Whites	3.45 @3.60
Large Whites	3.45 @3.60
Limas	6.00 @6.10
Pea	4.25
Pink	5.60 @5.70
Red Kidneys	6.25

SEEDS.

The prevalence of fair weather in most parts of the State has greatly stimulated the demand for many lines of seeds, and the market is now quite active. Prices on all descriptions are steadily held at the quotations which have prevailed for some time.

Alfalfa	18@ 20c
Broomcorn Seed, per ton	$20.00@ 25.00
Brown Mustard, per lb	5½c
Canary	3½@ 3¾c
Flaxseed	5 @ 5½c
Hemp	3 @ 3½c
Millet	2¾@ 3¼c
Timothy	8 @ 9 c
Yellow Mustard	5¾c
Dried Peas, per ctl	3.75@ 4.00

FLOUR.

Northern millmen have reduced prices 10 cents on export and 20 cents on patent grades, following the weakening of the grain market. Local quotations are still as before, but some reduction is expected. Shipments to the Orient from the north are extremely heavy, and are expected to increase in the next few weeks, but there is comparatively little movement from this port, and the local market is quiet.

Cal. Family Extras	$5.40 @5.80
Bakers' Extras	5.40 @5.80
Superfine	4.20 @4.60
Oregon and Washington	4.60 @4.80

Hay and Feedstuffs.

HAY.

Arrivals here continue to increase and as there is no unusual demand the market is dragging along without any indication of improvement. Dealers report great difficulty in handling the arrivals, and have sold considerable of the ordinary grades at concessions from the quoted prices. Fancy wheat hay has been well maintained, but is by no means firm. Consumers are buying only on a hand-to-mouth basis, and apparently expect still further reductions. Many outside holders are endeavoring to place their hay here, and while they are dissatisfied with the prices the approach of assessment day has brought out large offerings. The coastwise and export movement is small. Alfalfa remains the strongest item on the list, but offerings are a little larger than last week, and prices show somewhat less firmness. The outlook for this description, however, is still good.

Choice Wheat	$11.00@13.50
Good Wheat Hay	9.50@11.00
Other Grade Wheat	7.50@ 9.00
Wheat and Oats	7.50@10.50
Tame Oats	7.50@11.00
Wild Oats	7.00@ 8.50
Alfalfa	8.00@13.00
Stock Hay	5.50@ 6.50
Straw, per bale	35@ 55c

FEEDSTUFFS.

Most items under this head are finding a very moderate demand at present, owing largely to the increasing supply of green feed. Cracked corn is lower, and a further reduction has also been made in bran. Shorts and middlings are also weak, though prices remain as before. The last three articles are in large supply and there is some pressure to sell among northern millmen.

Alfalfa Meal, per ton	$20.00
Bran, per ton	25.00@26.00
Cocoanut Cake or Meal	26.00
Cracked Corn	32.00@33.00
Middlings	32.50@35.00
Mixed Feeds	28.00@31.00
Rolled Barley	24.50@25.00
Rolled Oats	29.00@31.00
Manhattan Egg Food, per ctl	15c
Shorts	25.50@28.00

Garden Truck.

VEGETABLES.

The shortage of coast onions is now bringing in some outside stock, a car from Idaho being sold off at $2.50 per ctl. Arrivals from other markets are likely to be rather large in the next month. The best Oregon onions are a shade higher, and local stock, though unchanged in price, is very firm. Receipts of vegetables from southern California have been very light for a few days, though liberal shipments of Mexican tomatoes, egg plant, etc., are coming in. The tomatoes (repacked) are bringing very stiff prices, and egg plant is also a little stronger. Green peas have been very scarce, the only arrivals being from the Los Angeles district. The dry weather this week has caused a decreased supply of mushrooms, which are higher. Cucumbers and green peppers continue to bring strong prices, but the demand is limited. Very little lettuce is coming in and all attractive offerings find ready sale at a sharp advance. Rhubarb is unchanged, with no material increase in the supply. Natural growth asparagus is held at the top quotation, but there is considerable forced stock offering at lower figures. It is reported that the output of asparagus in the San Joaquin will be the largest in several years, but the greater part of it will go to canners.

Onions: Yellow, sack	$ 2.40@ 2.50
Oregon	2.50@ 2.65
Garlic, per lb	4@ 5c
Green Pear, per lb	10@ 15c
Turnips, per sack	65c
Tomatoes, per crate	1.25@ 2.00
Eggplant, per lb	12½@ 15c
Cucumbers, per doz	1.00@ 1.25
Cabbage	60@ 65c
Green Peppers, per lb	9@ 15c
Carrots, per sack	65c
Celery, large, per crate	1.50@ 2.00
Mushrooms, per lb	35c
Rhubarb, per lb	5@ 10c
Lettuce, per crate	2.00@ 3.50
Cauliflower, per doz	50@ 75c
Asparagus, per lb	35@ 50c

POTATOES.

Trading locally is not especially active, being confined to current market needs. Salinas Burbanks are getting the preference, and best lots are considerably higher, but very little river stock will bring the top figure. The supply is said to be very light, however, and Stockton reports indicate a close clean-up within a few weeks. Oregon stock and Early Rose are unchanged. Sweets are becoming very scarce and have again advanced quite sharply.

Salinas Burbanks, per ctl	$ 2.20@ 2.35
River Whites, per ctl	1.65@ 1.85
Sweet Potatoes, per ctl	3.25@ 3.50
Oregon Burbanks	1.90@ 2.15
Early Rose	1.65@ 1.85

Dairy Produce.

POULTRY.

The market was fairly active for a few days, but is very quiet after the holidays, and prices, though no lower, are inclined to easiness. Local producers are shippng hardly any chickens to this market, but four cars of Eastern came in early in the week, giving all the market could absorb. Turkeys are plentiful and weak, with little demand.

Large Broilers	$ 4.00@ 4.50
Small Broilers	3.00@ 3.50
Fryers	5.50@ 6.50
Hens, extra	8.50@10.00
Hens, large	6.00@ 7.00
Small Hens	5.00@ 6.00
Old Roosters	4.50@ 5.50
Young Roosters	6.00@ 7.50
Young Roosters, full grown	7.50@ 9.00
Squabs	3.50@ 4.00
Geese, per pair	2.50@ 3.00
Ducks	8.00@10.00
Turkeys, per lb., live	18@ 20c

BUTTER.

Storage stock is no longer officially quoted, but there is considerable movement at irregular prices. Supplies of fresh stock have increased materially and extras and firsts have been dropping all week, being steady at present quotations. The decline has brought out a large buying movement. The following prices are quoted by the San Francisco Dairy Exchange:

California (extras), per lb	26 c
Firsts	25 c
Seconds	24 c

EGGS.

All fresh eggs have declined quite sharply, owing mainly to increased production. Arrivals are too large for current requirements, but speculators are buying heavily at present figures, and it is reported that considerable stock is going into ice-houses, though this is unusually early for storing.

California (extras), per doz	22 c
Firsts	20 c
Seconds	19 c

CHEESE.

There is little business at present aside from immediate needs, and a slight decline in both flats and Y. A.'s.

Fancy California Flats, per lb	15½c
Firsts	13½c
New Young Americas, fancy	17 c

Deciduous Fruits.

FRESH FRUITS.

Strawberries have been scarce for some time, but a large arrival from southern California a few days ago sold up to $2.25 per crate. More regularity in the arrivals is expected within a few weeks. The market on apples is rather a monotonous proposition, though there is still quite a large demand for export and Eastern shipment, with a prospect of a better clean-up than seemed likely last fall. The local demand is a little better than last week and prices on all lines are firmly held at the recent advance.

Apples, per box—	
Newtown	$ 1.35@ 1.65
Other varieties	.75@ 1.00
Fancy Red, 4-tier	1.25@ 1.50
Bellefleur	1.00@ 1.25

DRIED FRUITS.

Quotations on fruits in growers' hands show very little change, the inside figure on prunes being slightly higher, while pears are lower. The quotations on most fruits are little more than nominal, as there is scarcely anything left in the hands of growers. It is believed, in fact, that figs and apricots are entirely cleaned up. The large sizes of prunes no longer command a premium, as there has been more demand for small stock, which has become extremely scarce. It is reported that the last car of Oregon prunes available for shipment has been bought for New York. The movement East is not especially active in any line, but with the present gradual movement everything should be cleaned up early in the summer. Raisins are less active than a few weeks ago, the packers having provided for immediate needs, but stocks in growers' hands have been reduced to comparatively small proportions and are closely held. A private report from Fresno says: "The packers have bought up nearly the entire raisin crop of 1910. None of them have been heavy buyers, but the goods are well distributed among all packers. From the best estimates obtainable there are still in growers' hands from 4000 to 6000 tons, but these are held largely by growers who are able to carry them through, and who are holding for a 4-cent sweat-box price. December and January shipments of seeded goods, the reports say, were from December 1, larger than for the corresponding months of the last four years."

The New York Journal of Commerce says: "The market for spot goods is still quiet, the movement being regulated by the immediate needs of consumption, which, while not large, are about up to the average for this time of the year. The general tone of the market is firm, but the strongest article on the list and the one which receives most attention is prunes. The continued strong advices as to the statistical position on the coast, in conjunction with the comparatively small stocks in distributors' hands and the fact that the spring consuming season is close at hand have stimulated buying interest at this end. Inquiries sent out to California are becoming more numerous, but still buyers hesitate to pay the full asking price on such stock as they can secure, and comparatively little business is being done. Coast holders are indifferent sellers.

"Some brokers report renewed interest in peaches for shipment from the coast, but on the whole the market on both spot and future deliveries is dull and prices are somewhat nominal. Apricots seem to be neglected, but are not urged for sale.

? ? ? ? ? ?

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Very little is offered for shipment from the coast.

"Raisins are stronger in sympathy with advices from California, but there is not much demand for spot goods and no business of consequence in forward shipments is reported."

Evaporated Apples, per lb...	9¼@10 c
Figs, black	4½@ 5 c
Figs, white	5 @ 7½c
Apricots	12 @13 c
Moorpark, fancy	13½@14 c
Peaches	6½@ 7¼c
Prunes, 4-size basis.....	6½@ 7 c
Pears	8½@12 c
Raisins—	
Loose Muscatels, in sweatbox	2½@ 3 c
Thompson Seedless	4 c
Seedless Sultanas	3½@ 3¾c

Citrus Fruits.

The New York citrus market has been a trifle lower than our last report. On Monday of this week there were 38 cars sold at auction at that point, extra fancy nevels bringing from $2.80 to $2.30 per box. Extra choice brought from $2 to $2.20. Orchard run brought $2.45 and standards $2.10. Some cars sold for even less money, but was owing to the poor condition of fruit. Lemons brought from $2.85 to $3.30 per box. On the 20th inst. at Boston the market was reported as better on oranges and easier on lemons. One car of navels from Corona sold for $3.75. From this price the market ranged downward to $1.90. Lemons brought from $3.25 to $3.50. Tangerines sold for $1.50 for half boxes and bloods $1.65 for halfs. On the same day the Pittsburg market was reported steady and the prices ranged for navels from $2 up to $2.75. Lemons sold for $2.75. Also on the same day at St. Louis the market was reported firm on good fruit, but prices were low on account of condition of quality of fruit offered. Ten cars were sold, the highest quotation being $2.85, from that down to $1.50 per box. Lemons brought $2.75. At Philadelphia, on the same date, 29 cars of Florida's were sold, ranging from $1.10 to $3.80 for oranges; grape fruit, $1 to $2.50; Tangerines, $1.30. California navels sold for from $1.75 to $2.60 per box and lemons brought from $2.70 to $3.55.

The total number of cars shipped from California up to and including the 19th inst. for the past week are, oranges 521 cars, lemons 44 cars.

In San Francisco prices remain exactly as before on all lines of citrus fruits. Oranges have been coming in very freely for several days, and the supply is abundant for local requirements, though the local demand this week has been unusually brisk, and there is always some demand for shipment from this market. Tangerines, however, find comparatively little demand. Limes remain firm at the recent advance, other descriptions being without special feature.

Navel oranges—	
Extra choice	$ 2.00@ 2.25
Choice	1.50@ 2.00
Valencias, choice to fancy.	Nominal
Choice	Nominal
Standard	Nominal
Tangerines	.75@ 1.25
Choice Lemons	2.25@ 3.00
Fancy Lemons	3.00@ 3.50
Standard	1.25@ 1.50
Limes	5.50@ 6.00
Grape Fruit	2.50@ 3.00

Nuts, Honey, Hops, Etc.

NUTS.

There is very little feature in this department, the movement in the trade being very slow, though a little stock is still being bought in the country. The supply in first hands, however, is about exhausted, and no large lots of California almonds are offered anywhere. California walnuts are closely cleaned up, stocks held by jobbers being comparatively light, but there is no great demand at the moment. Prices are unchanged and the present values are likely to stand for the remainder of this season.

Almonds—	
Nonpareils	15½@16 c
I X L	14½@15 c
Ne Plus Ultra	13½@14 c
Drakes	11¼@11¾c
Languedoc	11 @11½c
Hardshells	8 @ 8½c
Walnuts—Softshell, No. 1...	15 c
Standard	14½c
Softshell, No. 2.....	11 c
Budded	17½c

HONEY.

All descriptions remain quiet, with very little attractive stock offered. There is not much demand for anything, though extracted is moving in a limited way locally. Conditions are favorable for the best honey season in years in the south coast district.

Comb—White Sage	14 @15 c
Extracted—Water White ..	Nominal.
Light Amber	7 @ 8 c
Amber	5 @ 6 c
Sacramento River Comb....	12 @12½c

BEESWAX.

Offerings are small and with little demand the market is quiet, prices being steady as formerly quoted.

Light	27½@30 c
Dark	23 @26 c

HOPS.

There is a little stronger feeling in regard to future contracts, though buyers are still slow to take hold at present figures. Little doing here in 1910 crop, but some buying is reported in Oregon at about the figures quoted.

Hops, 1910 crop	18 @22 c
1911 Crop	15 @16½c

Live Stock.

DRESSED MEAT.

Beef: Steers, per lb.....	8½@ 9 c
Cows	7 @ 8 c
Heifers	8 c
Mutton: Wethers	9 @ 9½c
Ewes	7½@ 8½c
Ewes	9 @ 9½c
Lambs	10½@11½c
Hogs, dressed	10 @13 c

LIVE STOCK.

Gross weight:	
Steers: No. 1	5¾@ 6 c
No. 2	5¼@ 5¾c
Cows and Heifers: No. 1....	4½@ 5 c
No. 2	4 @ 4½c
Bulls and Stags	2½@ 3¾c
Calves: Light	6 @ 6¼c
Medium	5½@ 5¾c
Heavy	4¾@ 5 c
Hogs: Grain-fed, heavy.....	7 @ 8 c
150 to 250 lbs.....	8¼@ 8¾c
100 to 150 lbs.....	7¾@ 8 c
Common Hogs, per lb.....	5 @ 6½c
Small prime wethers	4¾@ 5 c
Large prime wethers	4¼@ 4½c
Ewes	4¼@ 4½c
Lambs	6 @ 6¼c

WOOL.

It is still too early for the spring clip, and buyers are taking no interest in anything else. New prices will not be available for two or three weeks.

Fall Clip—	
Mountain Free	8 @10 c
Valley Fall and Lamb....	6 @ 9 c
Northern	6 @ 9 c
Southern Spring	10 @11 c
Middle Counties	12 @13 c
Northern	15 @16 c

HIDES.

The hide market remains about stationary, with very little demand from local tanners.

Wet Salt—	
Heavy Steers, over 56 lbs.	10 c
Medium	9 c
Light Steers, under 48 lbs.	8½c
Heavy Cows, over 50 lbs..	8½c
Light Cows, 30 to 50 lbs..	8½c
Kip	10 c
Veal	14 c
Calf	15 c
Dry—	
Dry Hides	17 c
Dry Bulls	15 c
Dry Kip, 10 to 15.....	16½c
Dry Veal, 5 to 10.....	17½c
Dry Calf, 7 down.....	22 c
Fall Lambs	24 @40 c
Sheep Skins—	
Long Wools	$ 1.00@ 1.25
Medium Wool, 6 to 9 mos.	60@ 90c
Short Wool, 3 to 6 mos...	40@ 60c
Spring Lambs	25@ 50c

HORSES.

Desirable Drafters, 1700 lbs. up.	$275@300
Light Drafters, 1500 to 1650....	225@275
Chunks, 1350 to 1500 lbs.....	200@250
Wagon Horses, 1250 to 1350 lbs.	175@200
Delivery Horses, 1050 to 1250...	125@150
Desirable Farm Mares.....	135@150
Young	200
Old Mares	100@150

MULES.

1200 lbs.....	$250@300
1100 lbs.....	200@225
1000 lbs.....	150@175
900 lbs.....	125@150

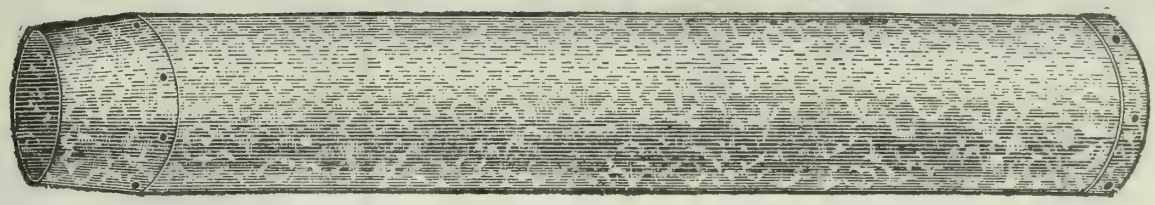
PUBLISHER'S DEPARTMENT.

It is hardly necessary to call attention in this issue of the PACIFIC RURAL PRESS to the advertisement of the Fresno Nursery. This firm is now doing a tremendous business, and in some lines their large stock is about sold out, while in others, notably peaches, they are making special inducements to clean up their big stock. This firm is strictly reliable, and if you need any nursery stock, read their announcement before placing your order.

This office has plenty of the editions of "California Fruits" and "California Vegetables" on hand to fill orders. We have not advertised them in the RURAL PRESS for the past three weeks, owing to pressure made on our columns by other announcements, but we want your orders for the books just the same.

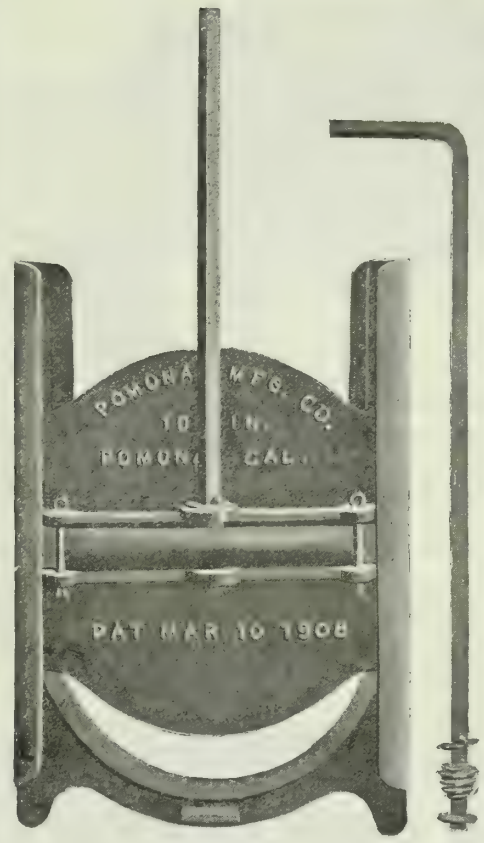
Have you written to the Krogh Mfg. Co. of this city for a copy of their Bulletin R-10, which tells about their new vertical pumps? It is sent free and contains valuable information along irrigating lines.

SAVE YOUR TIME WATER AND GRADING BY IRRIGATING WITH AMERICAN SURFACE IRRIGATION PIPE



The **PIPE RECOMMENDED BY ALL USERS.** It is the **ONLY SCIENTIFICALLY CONSTRUCTED SURFACE IRRIGATION PIPE** on the market. **THERE'S NO ROUND SEAMS TO LEAK,** retard the flow of water or weaken the pipe. This pipe is easily handled and cheaper than flumes. It will last a lifetime. For irrigating alfalfa it is the only pipe to use. We make **RIVETED PIPE AND TANKS.** Write for Illustrated Catalogue also **SPECIAL IRRIGATION FOLDER** which may mean much to you.

American Steel Pipe & Tank Co., General Offices 342-43 Pacific Electric Bldg., **Los Angeles, Cal.**



LET US SEND YOU A SAMPLE POMONA PATENT PRESSURE GATE.

No rubber or wooden facing to rot or wear out. Absolutely water tight when closed. Locking mechanism is protected against rust or clogging with sand or dirt. Simple in construction. Cheap in price and as durable as solid iron.

THE LOCKING DEVICE

Is the simplest made, merely a tapering screw with split tapering nut socket. It locks the cover in any desired position or locks the faces, making an ABSOLUTELY WATER TIGHT JOINT.

TWO FOOT HANDLE FURNISHED WITH EVERY PRESSURE GATE FREE.

ALSO A FULL LINE OF CIRCULAR VALVES FOR ORCHARD AND ALFALFA IRRIGATION CARRIED IN STOCK.

Write for descriptive circular and price list.

POMONA MFG. CO.
POMONA, CAL.

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A CARTRIDGE CHARGED WITH DEATH—Positively the most effective method known for exterminating burrowing pests. Better than poison, for it is absolutely safe and acts ONLY on pests that burrow. Tests made by the Department of Agriculture resulted inunqualified satisfaction. Awarded the Grand Prize A.-Y.-P. E., Seattle. Simple, safe, effective. Send for booklet. Sold by Dealers. If not, write to Hilt Fireworks Co., Seattle, Wash.

KILLS GOPHERS SQUIRRELS

For Sale By DUPONT POWDER CO., San Francisco, Salt Lake City, Portland, Seattle, Spokane, Denver and St. Louis



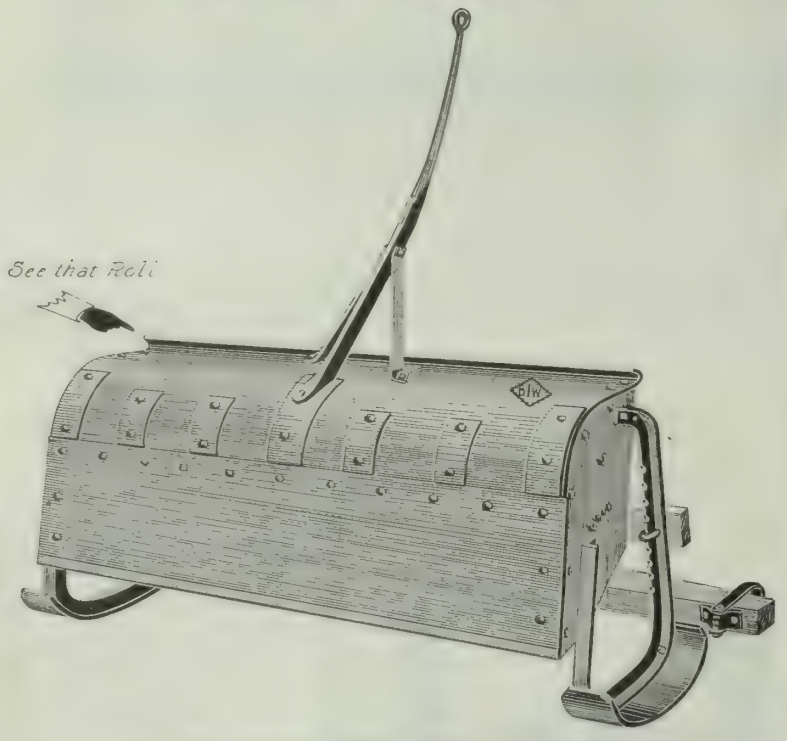
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Rugs Made From Old Carpets a Specialty

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We pay freight *one* way on all orders.
The largest and best equipped factory in the State.

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BENICIA FRESNO SCRAPER



"B" Pattern, Without Shoes, Dumped

Made in the usual sizes. 3, 3½, 4 and 5 feet.

This is the same scraper as shown last week, but in a different position.

This illustration shows "that roll" and the B1W THEY STAND FOR QUALITY!

"That roll" is the BACKBONE which keeps the bowl from buckling and breaking where handle is attached. You have seen SCRAPERS WITH BROKEN BACKS. So have we, but THEY WERN'T THE BENICIA KIND.

Be sure you buy the BENICIA kind which has Roll at the top and the mark B1W on the back, then you get the best.

BENICIA IRON WORKS

814 PACIFIC BUILDING, SAN FRANCISCO, CAL.
FACTORY BENICIA, CAL.

Schandoney & Harrington Equalizing Hitches

WHAT ARE THEY?



A combination of Eveners that make every animal in a team pull its share of the load and no more. Makes the lazy ones do their work and the free ones are not pulled to death.

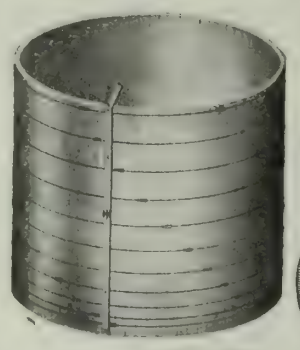
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WHAT ARE THEY?

The greatest time and money saver on a farm. They are so handy that you would wonder how you got along without one after using it.

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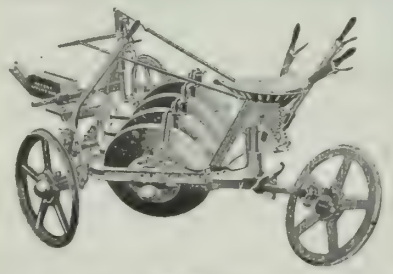
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FRUIT AND VEGETABLE BOXES OUR SPECIALTY.
WRITE FOR PRICES.

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MADE IN CALIFORNIA

BENICIA HANCOCK DISC PLOWS

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GASOLINE ENGINES. TRACTION ENGINES.



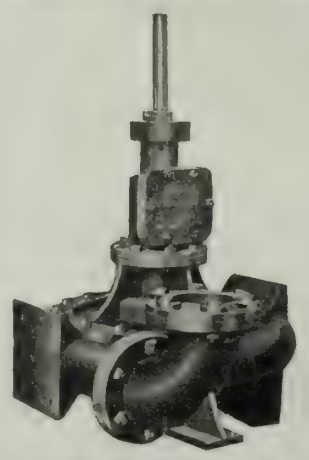
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ALL KINDS OF MACHINERY REPAIRS ON SHORT NOTICE.

DIXON, CAL.

CENTRIFUGAL PUMPS. ELECTRIC MOTORS.



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KROGH'S NEW VERTICAL PUMP

The Krogh New Water Balanced Vertical Pump contains many new and valuable improvements, same being fully explained in our Bulletin R-10, which will be mailed upon request.

We have a branch in Los Angeles at 206 N. Los Angeles Street.

The pump can be seen in operation at our place of business.

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149 Beale St., San Francisco.

WESTERN PIPE AND STEEL CO.

SUCCESSORS TO
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Hydraulic, Irrigation and Power Plants, Well Pipe, Etc. All Sizes.
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Water and Oil Tanks—all sizes. Coating all sizes of Pipes with Asphaltum,

THE PACIFIC RURAL PRESS

Vol. LXXXI. No. 9. SAN FRANCISCO, SATURDAY, MARCH 4, 1911. Forty-first Year.

Sheep in the Forest Reserves.

[The popular impression has existed for some time that a sheep in the forest was something worse as a destroyer than "a bull in a china shop." A few years ago the great professional forest-preservers and the little amateur nature-lovers made the country ring with cries for the prohibition of the sheep, and the people, who were naturally impressed with the sublime sentiments which they invoked in support of their utter exclusion policies, really came to believe that total abstinence was essential and that local option in the matter of sheep was a league with Satan. All during these years there were many people who had grown old in forest life and industry who knew that the general issue made against sheep was irrational and manifested ignorance of the relation of grazing to forest conservation, and they did what they could to enforce the truth. The effect was very slight at first, for almost every man's tongue and pen were against them. There is, however, reason to think now that a change is coming over the professional and public mind on this subject. In the PACIFIC RURAL PRESS of February 18 there was a very interesting article describing the demand of the Forest Service for expert "grazing examiners," properly qualified by knowledge of plants and of handling stock, who could help the Forest Service carry out Secretary Wilson's policy "that every acre of National Forest range shall be made to produce as much forage as it is capable of doing, consistently with the carrying out of the other purposes for which the National Forests were maintained." This announcement naturally gives the stockmen new courage to bring their old contentions to public knowledge in the hope that recognition will now come to the old truth that the way to preserve the forests is to rationally use the forests. At the last meeting of the National Wool Grower's Association, Mr. D. P. Smythe, secretary of the Oregon Wool Growers Association, presented a paper from which we shall take parts which seem to us exceedingly interesting and important in the present juncture of affairs.—EDITOR.]



Vista in a Forest Fit to Resist Fire.



A Forest Opening Affording Fine Grazing.

The nation as a whole little realized the tremendous and appalling damage that could be done to our national forests by fire until after we had passed through the awful forest conflagrations during the summer of 1910. It has set the whole country in a state of fearful anxiety and put them to devising some successful means of preventing a recurrence of the horrors we have just passed through.

After several years of unsuccessful fire fighting by the Forest Service, and especially their inability (and that of the entire Nation, for that matter) to handle or prevent the 1910 fires, it becomes essential that we should use some other method than men, axes, and shovels to prevent destructive forest fires.

After some careful personal observation, a careful study of the question, and after obtaining the experiences of the pioneers of the Western forests, I have come to the definite conclusion that the only successful prevention of future big uncontrollable fires in our forests is grazing of live stock therein to the full capacity, and especially by sheep. The accumulation of two or three years growth of grass, weeds and underbrush produces a highly combustible agent, ideal for spreading rapidly a small camp or lightning fire; in a short time this insignificant camp fire is beyond human control, sweeping forests, farms and all animal life before it. The grass is not only burned, but the big trees are destroyed also. It requires some highly inflammable agent, such as this, to spread a fire through the actual trees and timber itself; without it the spread and expansion of a fire is impossible.

Put a band of ewes to foraging on these forest acres and they will keep down this rank growth of weeds, grass and underbrush, absolutely taking away the necessary and only agent, thus making big forest fires such as we had last year impossible and without materially injuring the trees and growing timber. These weeds, grass and underbrush were not intended by the Creator for posterity, but for the present use of a struggling humanity. Then why not by all means to save our forests and foster an important industry, encourage sheep grazing thereon instead of restricting and preventing it?

The history of the past thirty years bears out my statements. Smythe Brothers, of which I am a member, lease some fifty-five thousand acres of forest lands owned and controlled by several timber companies. These lands are adjacent to and in fact extend to the Whitman National Forest in Oregon. We rent these lands for our sheep during the summer months. The managers and owners of these timber companies have repeatedly said to me: "Mr. Smythe, if we could not get you sheepmen to fairly jump over each other in an endeavor to pay us a rental for our timber lands, we would gladly come to you and offer a goodly sum that your sheep might go upon our lands in the summer and graze them to their full capacity. It's the only practical insurance we have against forest fires."

They do not in any manner restrict or prevent

(*Continued on Page 182.*)

Pacific Rural Press

667 HOWARD ST., SAN FRANCISCO.

TWO DOLLARS PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

PACIFIC RURAL PRESS CO. - - - PUBLISHERS

Advertising rates made known on application.

E. J. WICKSON - - - - - - - Editor
FRANK HONEYWELL - - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Feb. 28, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.24	23.29	31.55	56	30
Red Bluff	.14	15.89	17.64	60	32
Sacramento	.44	16.81	13.95	62	34
San Francisco	.23	19.55	16.33	60	38
San Jose	1.00	16.66	10.18	64	32
Fresno	.08	7.01	6.48	64	30
Independence	.34	4.84	6.34	54	22
San Luis Obispo	1.24	20.00	14.08	70	36
Los Angeles	.86	10.65	10.96	74	40
San Diego	1.82	10.32	7.13	70	42

The Week.

Just about once in a score of years there comes a snow flurry in the California valleys such as came this week in nearly all parts of the State. It seems to be particularly designed to round out the education of our native sons and daughters—to give them the cultural advantage of handling a snowball before any of them come to voting age. Please do not overlook the cunning allusion to daughters' voting. We hold it to be the honorable duty of every suffragor to slip into his public utterances, whenever possible, words which shall indicate that the suffragette in California is a foregone conclusion. We do it coolly and deliberately—alongside a snowball—and we hope it will strike the eye of the opposition. Aside from its educational and political significance, then, the snowball in the California valleys is a poor sort of thing; it comes together with a large scrape which includes much gravel and splinters, and it often falls apart before it finishes its flight. If you try to fit it to do something deadly by soaking and leaving it over night to harden, as you did in your Eastern boyhood, you cannot find it in the morning. You will be more apt to find a plump mushroom simulating its appearance and indicating the ephemeral character of the California snowball. We have heard of a locality in which the rapid disappearance of a snowball has become proverbial, but such a place seems to be unnecessary. Failing, then, to serve any useful purpose, and unable to do any injury because of its warmth and swiftness, the valley snow flurry in California becomes merely a decorative feature of the landscape, introducing a picturesqueness which is increased by its rarity—a sort of a kiss of the North upon the blushing cheek of the South, which does not blanch, but heightens color, if we read the novelists aright.

And that reminds us that we have just caught a clue to account for a number of letters recently received asking advice as to the prospects of skunk farming in California. We have had to plead ignorance as to culture methods and conditions which would best befit these "interestin' little cusses," as the great American nature-faker, Josh Billings, called them. Besides, we did not see why California should attract the attention of intending skunk farmers, except possibly through the exaltation of the State for perfume farming which has recently been indulged in popular prints. It now appears, however, that skunk farming in New York, where the industry seems to have been littered, has come to a full stop because in that State the skunk is protected and has a closed season extending from March 15 to November. Last October a New York skunk farmer had to pay $100 for having a pen of skunks fattening for sleek furs, because the law is not only against killing, but against having skunks in possession on any of the long summer nights during which skunks can gambol and squirt in the moonlight to the delight of the countryside. The only time one can legally be seen in the company of a skunk in New York is from November 1 to March 15, and that is just the time when it would be practically impossible to find a skunk to be seen with. Not being versed in the theory of the New York game law, we do not know why the skunk should be a "game bird." It is not usual for game laws to consider the agricultural aspects of things, and perhaps that does not matter, for the only agricultural art of the skunk which we know of is his skill in clearing roosts and sucking eggs. However, the law is apparently death to skunk farming in the Empire State just the same, and the skunk farmers seem disposed to come to California. And now we are in doubt whether to advise them to come or not. Who can help us on that proposition? Wholly apart from the skunk, however, it seems to us that anyone who desires to domesticate and reproduce animals which yield a useful product should not be hampered in his work, for that is agriculture. So long as he can pursue his industry without menace to others, he should have ownership in his stock and be allowed to handle it as business requires. If furs can be produced from animals bred for that purpose, such an industry should be encouraged by the laws and not forbidden in the interest of a few who desire to shoot either for fun or for profit. Why, for example, should people be prevented from breeding deer and marketing venison? Any law which prevents that is an injustice and an impertinence. We are glad that the California law is likely to be amended so that venison production may be possible. But that does not answer the skunk question.

And yet we are not at all opposing "sport" in its high and true sense. There was once horse-racing which was a true sport. It was about the time, perhaps, that the "dominie and his fast horse" dawned in American history and literature. It is true that the horse-racing parson had rather a hard time in his day, but at present, so low has racing fallen, and so much broader has become the conception of clerical fitness, that the old past between the deacon and the parson might be pursued on the road to heaven instead of being counted clearly hellward. However this may be, it is clear that modern racing is distinctly infernal, and not only the deacon and the parson, but all other high-minded people, even though they may have a sporting affiliation, are opposed to its continuance because it is a demoralizing abomination. It is now illegal to have racing in California with betting of any sort. The Legislature now in session passed the law, and the Governor has signed it. Commenting upon this event, the Breeder and Sportsman of this city says: "There will be few who have the best interests of horse breeding at heart who will regret the death of racing as conducted at Emeryville during the past few years. A great sport, one that has had the support and endorsement of the best citizens of the land in days gone by, has been legislated against because it had been taken out of the hands of the breeders and admirers of the thoroughbred horse and placed under the control of those who made of it a business in which the entire revenue was derived from gamblers. Thoroughbred racing has been anything but a sport in this State for several years, and the people demanded its suppression." This is the way the legitimate breeding interest and the interest of good citizenship, honor and honesty look upon the prohibition of "race track touts" and all their villiany. It was necessary to crush out the evil for the sake of public morality and decency. Now that this has been done, there should be a revival of true sport and intelligent interest in breeding for speed contests which shall be clean and fit for ladies and gentlemen as in the old time. We shall even look again for the parson and the deacon on the track, driving their own horses, unless indeed those high spiritual leaders should have evolved so far that custom shall require them to sit in their automobiles at the trackside.

Speaking of laws, sports and that sort of things, larks naturally suggest themselves. Upon another page is an outspoken letter from a Tulare reader on the behavior of the meadow lark and an impeachment of his song by placing him in the crow class. The quality of song is, of course, a matter of taste, concerning which dispute not. Our correspondent is evidently so deeply impressed by the evil deeds of both that they sing to him alike. We are glad that the matter of larks before the legislature seems to be taking rational form, and that by the local option method. We hear that Assemblyman Stuckenbruck has decided to amend his bill so as to exclude those counties where protection for the song bird is desired. Under the amendment, if the bill passes, it will not be unlawful to kill meadow larks in Tehama, Butte, Sutter, Colusa, Glenn, Yolo, Sacramento, San Joaquin, Stanislaus, Merced, Fresno, Tulare or Kern counties. In all other sections of the State the protection is left on the song bird. If the larks show as much sense as ducks they will regulate their habitations according to the freedom from shooting, and the lark-saving counties will be as full of melody as the other counties are free from profanity. Let those have larks as wants 'em; it seems to be a fair adjustment of the issue.

We can not refuse ourselves the luxury of another word about those 5000 English girls who are coming to marry an equal number of Canadian settlers. This time it is to picture the joy of the women-promoters of the scheme as matchmakers. The story says: "The bulk of the happy 5000 say farewell to their English home in May. Arrived at the eastern ports of Canada the girls will be safely conducted by responsible women officials of the Canadian Northern Railroad Company to the various homes of welcome already established in various centers. Representatives of the National Council of Women will then play a prominent part in getting the girls placed." Just think of that: earth-made matches by the box for each of those National Counsellors of Women! How can the women waste time working for votes when there is a game like that in the cards?

But now there arises an issue which seems to run exactly counter to the Kokomo philosophy of Professor Druley, to which we alluded last week. The surplus women in the country are not to be allowed to be quietly absorbed by the young city farmers who will marry them. Plotting is already active to throw into the country a lot of rivals of the girls with the land and the issue seems to be whether the man will really take the heiress or the cook. It is too bad to clutter up a

plan, which is almost at the point of realization, by the intrusion of this old question which always unsettles a man. It must come, however, for Mrs. Oliver P. Belmont of New York has reached the conclusion that there is an oversupply of women factory workers and that the best relief is to persuade the girls to take up farming as an occupation. She has set aside about 200 acres for a school of agriculture for women. An experienced woman farmer has been engaged to instruct pupils in practical farming. There will be a matron on the new farm to chaperone the girls and to teach them cooking, housekeeping and home-making. We are quite saddened at the turn this matter is taking. We had hoped to see the Druley plan triumph; the young man in his golf suit, the young woman in her automobile and the parental acres pouring out cash by the sackful to sustain the higher class country life which the magazines tell us is now due to arrive. We hoped to live to see country life with some class to it. But now Mrs. Belmont steps in with the old notion that a rural housewife should cook and tries to steal the heart of our young men through his stomach. And the worst of it is that we fear she will get it.

Queries and Replies.

Manurial Musings.

To the Editor: I would like to ask some questions about the value of different forms of manure from the standpoint of the man who buys it by weight. In the case of dairy manure in summer, what is the relative value of the weekly or semi-weekly corral scrapings which are tramped fine and air-dried; and of the fresh, wet manure from the stable? I do not understand that the latter has appreciable water added, and the amount of sand in the corral scrapings would be small.

In the case of horse manure in summer, what is the relative value of a ton from the stable pile, and a ton which has accumulated for some months in the corral, drying very quickly, and being tramped fine?

In the case of grape pomace, would not the large value shown by analysis be chiefly in the seeds? My observation is that these are exceedingly slow to become available in the soil. Would composting break down the shell of the seed? Is there anything that could be added to the compost heap that would materially aid, without causing any valuable ingredients to be lost?—R. L. R., San Gabriel.

Exact information could only be secured by determining the moisture in every particular lot which enters into comparison. An approximate knowledge can be secured by generalization. Fresh, mixed animal manure is usually calculated to contain about 75 per cent of water. Manure which has been quickly dried, without fermentation and without leaching by rains, may be worth four or five times as much per ton. Nothing, however, short of analysis would determine the value of any particular lot, for that depends somewhat upon the way the animals are fed, as well as upon the moisture content.

Grape pomace would be slowly available because of the slow disintegration you mention. It could be hastened by drying and grinding, but we do not believe this or other treatment would return its cost. Decay by moisture promoted by composting with manure, kept at a low temperature by continuous moisture would render it sooner available, but this would involve labor which, at our wage rates, would probably make the material cost more than it is worth. This is probably a case in which time is cheaper than money.

Can a Man Farm?

To the Editor: Is it possible for a man with a few acres well cared for and carefully tilled to make a living and pay out on a purchase of land at $125 per acre? What capital over and above the first payment on the land would a person need to get started and be sure of making his living and meeting his payments? Could a good carpenter make wages and take care of a small tract for a year or so until well under way?—Reader, Iowa.

We consider $125 per acre for good land with a good water right a fair price. We can not give advice as to financing a farming operation. It depends more upon the man than upon the good land. There are men who would, by intensive cultivation of salable stuff and right use of water, pay off the full value of the land from its produce in a couple of years. Others will never pay off. Of course, the nearer you can come to paying for the land at the beginning, and the more money you have for improvements, the more satisfactory your situation would be in every respect. There would undoubtedly be a good chance for carpenter work in view of the improvements going on in colony development, and considerable self-help could be secured in that way. You do not say whether you have lived upon a farm or not, or whether you know anything about farming. We need but advise you that farming is a very complicated business and that a basic knowledge derived from experience is a proper foundation to build upon in the light of the modifications of farming which are now being accomplished by the fuller application of scientific principles.

Corn Growing for Silage.

To the Editor: With fair cultivation, will an acre produce about 10 tons of ensilage without fertilization—it being bottom land? How should it be planted?—the rows closer together than three feet, or should it be planted the usual width between rows, and thick in the rows? If fertilizers were to be used, what kind would you recommend? Would you recommend deep plowing followed by a packer and harrow so as to preserve the moisture?—Reader, Napa.

You ought to be able to get ten tons of silage per acre from corn grown on good corn land. It can be best grown in rows sufficiently distant for cultivation, closer in the row than would be desirable for corn, and yet not too crowded, because corn for silage should develop good ears and should be cut for silage about the time when the glazing begins to appear. If your land needs fertilization, stable manure or a "complete fertilizer" of the dealers would be the proper thing to use. It would be very desirable to plow corn land deeply the preceding fall, followed by a packer or harrow to settle down the land below, but do not work down fine. Keep the surface stirred from time to time during the winter and put in the crop with the usual cultivation in the spring as soon as the frost danger is over.

Spraying for Pear Blight.

To the Editor: Will spraying with bluestone control or cure the pear blight? If so, when and how often would you spray?—C. E. L. Hopland.

It will neither control nor cure it. It would kill spores which happened to be on the bark, but the bacteria are inside and come out in exudations of sap or gum or honey and are carried by bees and other insects to opening flowers or otherwise get to the tissue beyond reach of sprays.

Stock for Apples.

To the Editor: Do you recommend French seedling stock as greatly to be preferred to that grown in this country? Where would you advise seedling stock to be secured?—R. P. T., San Bernardino county.

French seedling stock is generally used because it is graded and furnished in uniform sizes; also, because it can usually be purchased for less than seedlings can be grown under our labor conditions. Locally grown apple seedlings are apt to be irregular in size and, as already stated, cost more than the properly graded imported stock. We can not tell at the moment where you can best buy apple seedlings, whether locally grown or imported. You had better correspond with the leading nurseries advertising in our columns, for they usually have surplus stock to sell at more reasonable rates than one could get by smaller individual importations.

Apples and Alfalfa.

To the Editor: I have recently come across a proposition to sow apple orchards in the interior of southern California with alfalfa. Quite a large orchard on the Cudahy ranch in this county has been so treated, and the result is said to be more than satisfactory. The apples are said to be superior and the crop heavier, to say nothing of a half or two-thirds of an alfalfa crop in addition to the crop of apples. What do you know about it? Is alfalfa being used by others in this way? What information on this subject can you give me? The statement made by the manager of the Cudahy ranch is an important one, and he is a very able business man and very conscientious in his statements.—Planter, Los Angeles.

It is perfectly rational to grow alfalfa in fruit orchards if the water supply is ample for both the trees and the intercrop and the owner will not yield to the temptation to waterlog his trees for the sake of getting more alfalfa. It is even more desirable in the interior than near the coast, probably. In Arizona some growers have for a number of years practiced growing alfalfa in orchards, cutting the alfalfa without removing it, counting that clippings are worth more to them through their decay and the increase of the humus content of the soil. Even where this is not done, the alfalfa will add to the humus of the soil by its own wastes both from root and stem. The presence of an alfalfa cover reduces the danger of leaf and bark burning either by reflected or radiated heat from a smooth ground surface, and some trees are very much benefited by this protection in regions of high temperature. This might be expected to be the case with the apple, which is somewhat subject to leaf burning in our interior valleys.

Fertilizers for Alfalfa.

To the Editor: Please tell me what fertilizers to use for alfalfa. We have a good soil—a sandy loam.—Beginner, Hickman.

It is not at all usual to use fertilizers on alfalfa planted on good ground. Its growth may be stimulated by the application of gypsum. Beyond that, a good deep soil needs only water to return a maximum product. You can, of course, experiment with different fertilizers, so they may be available in order to determine for yourself whether, under your conditions, it would be desirable for you to use them. The application of common builder's lime, of stable manure, of superphosphate, would be materials most likely to produce good results—if the soil needs them, and the plant will tell you that by its behavior; providing, of course, that it has enough water to take advantage of your good soil.

Rootknot of the Vine.

To the Editor: What damage does the black knot do to grape vines? My vines have the knots occurring around the crown. Is there any remedy for them; also what is the cause?—Subscriber, Lodi.

The knots may develop to such an extent that the vine may be so reduced in growth as to be unprofitable; they may also be killed outright. The treatment is to remove the knots with chisel and mallet and paint the wound with bordeaux mixture. The cause is a bacterium which enters the tissue and sets up the abnormal growth. This subject was treated in detail in a long article in the Pacific Rural Press of September 10, 1910.

Horticulture.

THE INSPECTION OF NURSERY STOCK.

From the last report of Mr. W. H. Volck, county horticultural commissioner to the supervisors of Santa Cruz county:

The planter of a young orchard is entitled to start with healthy trees. There will be diseases and pests enough to contend with after the orchard grows old without having such troubles started with the young trees. Most of the diseases on account of which the trees are rejected already exist in this county, and most of the nurserymen make this fact a point in their objections to entire rejection of a shipment. The argument used is that the county commissioners or inspectors, at the destination of the shipment, can go over the trees and remove such as may be objectionable, allowing the rest to pass.

This course may be followed, in some cases, with good results. These cases I would define as the instances where there is evidence of thorough inspection at the shipping point. Under such circumstances the occurrence of a diseased tree in a shipment would be very exceptional, and the receiving inspector might throw this specimen out, feeling reasonably sure that the double inspection had resulted in the elimination of all infected stock.

Scant Inspection.—On the other hand, where the percentage of infection is too high to allow of the supposition that there had been anything like thorough inspection at the shipping point, an entirely different case is presented. It is clearly not the duty of the horticultural commissioner of the receiving county to do the inspection work of the commissioner of the county from which the stock was shipped. Further, when there is a considerable percentage of infection the inspector can never be sure that all has been eliminated. Especially is this true where the disease or past is concealed within the tree, as is the case with borers. In such cases thorough double inspection is almost indispensable. For the benefit of all receiving inspection to insure proper thoroughness, the original inspector should indicate on the inspection tag such troubles as he found and sorted trees out for.

Rejection.—For the above reasons I have taken the stand that all shipments showing a serious percentage of infection should be entirely rejected. Several such rejections have been made during the month, and more or less exception to this procedure has been taken by the nursery companies from whom the rejected stock came. In nearly every case the rejected shipments bore inspection tags signed by the county commissioner. The usual wording on these tags was as follows: "I have inspected the trees in this shipment and find them to be clean and free from disease."

Such a positive statement is quite misleading to the purchaser of trees and to railroad agents. In several cases the station agent was on the point of releasing shipments on account of the statement on the inspection tag. It appears that commissioners and inspectors are in the habit of giving nurseries a general inspection and then issuing a lot of tags to be attached to individual shipments. In such cases the wording of the inspection tag should clearly state that the individual shipments are not inspected. Frequently the commissioner has great confidence in the nurserymen of his county, and this confidence is often well founded, but a large nursery business involves the hiring of much help which may be careless and do things that the nurseryman himself would not sanction. For this reason the general inspection tag often means very little.

Better Methods Desirable.—More uniform methods of inspection are desirable. The State horticultural law provides for thorough inspection of nursery stock by giving the county commissioner the power to appoint as many inspectors as may be required to do the work. With the backing of this law the county commissioners can make nursery inspection as thorough as they may consider necessary.

The stock rejected here has consisted mostly of apples, other varieties were also included. Root diseases were the cause of most of the rejections; borers, woolly aphis, crown gall and root knot and root rot fungus being the principal troubles. In some cases where there was a small amount of woolly aphis the roots were dipped in soap and tobacco such as described in the December report. [PACIFIC RURAL PRESS, January 28, 1911.]

Citrus Fruits.

THE PREVENTION OF DECAY IN CITRUS FRUITS.

By Mr. G. HAROLD POWELL, Manager Citrus Protective League of California.

There appears to be more decay in oranges in transit this year than usual. This condition seems to be due to a number of factors. The crop is larger than ever before, and the labor is pushed to the limit in the groves and packing-houses. We have records of pickers who are averaging from 150 to 200 loose boxes per day, and every inducement is held out to them to increase their output. We find that many houses are washing more fruit than usual. The worst cases are in these houses. We have records of fruit that is supposed to be handled carefully, that show from 20 to 50% of mechanical injury. The decay develops as a result of the handling of the fruit after it leaves the trees. It does not decay while it is hanging on the tree. A few oranges that have been punctured by insects, or that are affected with black rot, or are injured in other ways, may rot before they are picked.

While the mechanical injuries caused by the handling of the fruit, the washing, the pressure of the cover on the high packs, and other things that can easily be seen account for most of the decay this year, they do not appear to account for all of it. There seems to be a large amount of physical injury to the navel end of the orange, caused by the conditions of growth and by the black rot. These conditions make the fruit unusually susceptible to improper handling and easily infected with blue mold. It requires unusual care in handling and unusual sanitary precautions to prevent decay this year.

The Relation of Black Rot to Blue-Mold Decay in Oranges.—Nearly twenty years ago Mr. N. B. Pierce, of Santa Ana, who was then connected with the U. S. Department of Agriculture, investigated the nature of black rot in oranges. This disease is unusually severe this season. It is caused by a fungus belonging to the genus Macrosporium. Mr. Pierce found that this fungus gains entrance to the fruit through splits and imperfections in the navel while the fruit is immature and hanging on the tree. The injuries to the navel which appear to be caused by the conditions of growth, may be too small to be seen with the naked eye and may not occur in the exposed parts of the navel. Mr. Pierce found that these spores or seeds of black rot, like those of blue mold, can not enter the healthy, unbroken skin of the fruit. It is probable that it gains entrance to the orange in the fall, when it is immature, and that the first fall rains or heavy dews cause the spores to germinate and enter those fruits in which the tissues of the navel have been split apart or weakened in growing. It was found by Mr. Pierce that from 10 to 60% of the oranges that dropped from the trees in 1892 as late as March 1 were affected with this trouble. He found also that from 1 to 5% of the entire crop was so affected in the sections in which he worked.

The oranges that are affected with black rot ripen prematurely, and can be detected early in the season by their high color, but as the season progresses this distinguishing mark is lost and the affected fruit is packed for shipment.

We do not know the conditions of climate, of soil-treatment, and of other cultural handling that cause the navel end of the orange to split.

Nothing can be done at this time of the year to prevent the damage caused by black rot. We do not know that it can be controlled in the fall, but it has been suggested by Mr. Pierce that experiments be tried with dry lime and copper sulphate before and after the fall rains. Bordeaux mixture or some of the sulphur remedies might be effective. It might also help in reducing the disease to pick the oranges from the ground and destroy them. It is not enough to plow them under.

There is a direct connection between black rot and the amount of blue-mold decay in transit. The black rot breaks down the tissue of the fruit and acts as a mechanical injury in so far as its susceptibility to blue mold is concerned. Therefore, many of the oranges affected with black rot become affected with blue mold while the fruit is hanging on the tree or while it is in transit. These oranges are particularly susceptible to rough handling, as the tissues have already been weakened. It is probable also that whenever the conditions of growth cause the navel to split in the fall, this part of the orange remains weak and is unusually susceptible to rough handling. Therefore, in a season like the present one, it is doubly important that fruit be handled with unusual care to prevent injury to the navel, and also that every precaution be used to lessen the chances of infection.

The Influence of the Packing-house Manager on Decay.—No one set of men in the citrus industry can exercise a greater influence on the decay in question than the packing-house managers. They are in constant touch with the growers; they often control the harvesting; they can regulate the handling of the fruit in the packing-house and can absolutely control the sanitary conditions in the house.

The infection of the fruit by blue mold depends largely on the prevalence of decayed fruit in or near the house. This matter can be regulated by the packing-house manager. If there are 1000 injured oranges in the house and only one blue-mold spore, there is but one chance of infection. If there are 1000 spores in the house, the chances are multiplied a thousand times. The packing-house manager can reduce the chances of infection by enforcing a few simple sanitary precautions. A prominent association manager who has had years of experience in the technical handling of the decay question recently said that 75% of the decay can be eliminated by keeping the decayed fruit out of the house and by a rigid practice of cleanliness in every operation.

Suggestions to Packing-house Managers.—The following suggestions are offered to the packing-house managers. Their hearty co-operation is asked in putting these suggestions into practice. It is a business question and affects the interest of every fruit grower vitally.

Do not allow decayed oranges to accumulate under the brusher, the bins, or hoppers, or around any part of the machinery, or in any part of the house. Sweep the house clean every day, wash the machinery frequently, and destroy every orange that is not fit to ship.

Do not allow decayed oranges or lemons to enter the washing machine, the brusher, or any part of the machinery. This happens frequently in many houses, and one decayed orange passing through the machine infects it and spreads the disease.

Do not brush the fruit if it is already clean. The brush is a most effective way of spreading disease. The bristles carry the spores into the mechanical injuries of the fruit.

Do not wash the fruit unless it is smutty. Segregate the clean fruit and wash only that which actually requires it. There is no more effective method of spreading blue mold than the washing machine, especially the old tank type of washer. The water furnishes ideal conditions for the growth of the disease. This is especially true of navel oranges. The water accumulates and is held in the folds of the navel.

Do not try to disinfect the water for blue mold. This disease can not be killed by any strength of copper sulphate or permanganate of potash that would not be injurious to the fruit.

Do not place boxes of decayed fruit on the windward side of the house, or have the cull-pile near the house. Clouds of spores are carried in with every gust of wind. They settle on the machinery, on the fruit, in the bins and boxes, and increase the chances of infection.

Do not handle decayed fruit with gloves and afterward handle the sound fruit with the same

gloves. No surer methods of infection could be adopted.

Do not keep the decayed fruit in boxes that are afterward to be used in the grove. Provide special boxes, mark them, and use them for nothing else.

Do not allow the hucksters to sort over cull fruit that contains decayed oranges or lemons, unless the cull-pile is removed some distance from the house; the spores rise in innumerable numbers in handling the rotten fruit.

Do not fail to wash the picking boxes, if decay starts while the fruit is in them. This applies also to lemon trays. It is a wise precaution to line the bottom of lemon trays with paper. It reduces the injury to the fruit and makes it easier to keep the trays clean.

Do not fail to line the rot boxes with paper in such a way that the papers may be folded over the boxes when full. This will prevent the spread of an enormous number of spores.

Do not allow the graders to throw decayed fruit in the rot boxes. Have it placed in them carefully. The spores from a single rotten orange or lemon thrown into a rot box spread throughout the house.

In cleaning lemons which have been next to decayed fruit, use a damp sponge to prevent the spores from flying through the house. Clean the sponge frequently.

Do not let up on the campaign for careful handling. It was never needed more than in the present year.

These suggestions are made to supplement the careful handling of the fruit, and not to take the place of it. They apply to the citrus industry some of the simple fundamental precautions that are in everyday use in prevent the spread of human diseases.

Do not forget that the cleanliness and neatness of the packing-house is an infallible indication of the care with which all the fruit-handling operations are carried out.

The Vineyard.

THE BOUSCHET GRAPES.

Written for the Pacific Rural Press
By Professor F. T. Bioletti of the University of California.

For many years two varieties of grapes known as the "Petit" and the "Alicante Bouschet" have been extensively planted in California, and recently another grape of similar character, the "Grand Noir de la Calmette," has been introduced and highly recommended. It may be useful, therefore, to review the history of these vines and to consider what claims they have to superiority, and whether it is desirable to give them a large place in future plantings.

The Bouschets are the result of a successful attempt to combine the heavy bearing of the varieties of southern France with the intense color, early ripening, and late budding of the "Teinturier male," a variety cultivated in the center of France in the region of Orleans. The Teinturier has never been planted much on account of its poor bearing when short-pruned, its lack of vigor when long-pruned, and the mediocre quality of its wine.

In 1828 Mr. L. Bouschet de Bernard commenced experiments in the crossing of the Teinturier with the Aramon, the Carignane and the Grenache or Alicante. His crosses commenced to fruit in 1836, and by 1840 he had several acres planted with the most promising forms. His son, Mr. Henri Bouschet, continued these experiments from 1855 to 1870 and made numerous crosses, using as material, besides the varieties above mentioned, Mourastel, OEillade, and several others, all heavy-bearing varieties. At present there exist in collections over 60 of these crosses, but only a small number of them are being utilized on a practical scale. Many of them have been introduced into California and tested, notably by the late Mr. Crabbe of Oakville, Napa county, but the three mentioned above have alone been planted to any extent.

Petit Bouschet.—This variety resulted from the fertilization of an Aramon vine with pollen from the Teinturier and was one of the first crosses made by L. Bouschet and the first to be cultivated extensively.

It has been largely grown in the south of France, in Spain, in Algeria, and Tunis. Its main interest at present is in the fact that it has been used as a parent in crosses with other heavy-bearing varieties and has thus become the father of a large number of valuable varieties showing the colored juice of the original Teinturier.

The Petit Bouschet is vigorous and produces well. It has a spreading habit of growth and gives good crops with short-pruning. Its buds start late in the spring and it ripens its fruit early. Its wine is deeply colored, but lacking in flavor, aroma, and high qualities generally.

Alicante Bouschet.—The variety which we cultivate under this name in California seems to be the "Alicante Henri Bouschet," which is the result of a cross between the Petit Bouschet and the Grenache. There are many other varieties produced in the same way, eleven being described in Viala's monograph on the Bouschets. Four of these varieties resemble each other very closely and are often found mixed in the vineyard. They are of nearly equal value, but the Alicante Henri Bouschet seems to unite the most points of superiority.

This variety is at present the most widely planted of all the Bouschets and is taking the place of the Petit Bouschet nearly everywhere, and especially in Algeria. It differs from this latter variety in the form of its leaves which are smooth and shining on top, bulging in the middle, and with the edges more or less rolled toward the under side. The grapes are larger, firmer, and more pulpy than those of the Petit Bouschet, and when ripe, with a red instead of a pink juice like that of the latter. The wine, while not of a high quality, is superior to that of most of the other Bouschets. In other respects its cultural characters are similar to those of the Petit Bouschet.

Grand Noir de la Calmette.—This variety, originated by Mr. Henri Bouschet in 1855 at the same time as the above, is the result of a cross between the Petit Bouschet and the Aramon. As it is a recent introduction in California, some observations on its characteristics by Mr. Viala may be of interest.

"Of all the Bouschet hybrids, the Grand Noir was the first and most widely distributed in vineyards. Its late budding, great vigor, early ripening, its abundant production with short-pruning, and its relatively good wine (less flat than that of the other hybrids, but deteriorating quickly, according to Henri Bouschet)—all these advantages have led some grape-growers to consider it well adapted to rich slopes and also to valley lands subject to spring frosts. The Grand Noir de la Calmette has, however, according to our observations, the serious defect of being irregular in its bearing. From this point of view it is not so good as the Alicante Bouschets, which, moreover, produce better wine."

This variety resembles the Petit Bouschet in leaf, shape, and size of berries, color of juice, and time of ripening. Its canes grow more upright.

All three Bouschets do very well on nearly all resistant stocks tested except Riparia, Solonis, and 1616. For Californian conditions the Alicante Henri Bouschet seems to be the best, except in certain parts of the coast regions where this variety in late seasons fails to develop the proper amount of sugar. In such cases the Grand Noir is probably to be preferred.

Uses of the Bouschets.—The main value of the Bouschets in California is the intensity of the color of their wine, which is only excelled by that of the original Teinturier and of certain American hybrids such as Alicante Ganzin. It will, on the average, be from 5 to 10 times as intense as that of the Zinfandel, in the cooler regions, and 3 to 5 times in the hotter.

The color is, however, not nearly so stable as that of some other varieties and requires special care to maintain it in the wine. By blending with acid grapes, the use of tartaric or citric acid, and the moderate sulphuring of the juice before fermentation, its tendency to drop can be controlled to a great extent. As a color grape for the hot interiors, however, none of the Bouschets tested have shown themselves equal to the St. Macaire, which is a superior grape for the purpose, its main defect being that it requires long-pruning.

None of the Bouschets should be planted with the idea of producing a fine wine. In this respect they are in no way superior to the Carignane. They have the superiority over the Zinfandel of being more neutral in flavor and therefore more easily improved by blending with finer varieties.

In short, the two Bouschets recommended above have been and will be useful in California as vigorous, heavy-bearing, easily cultivated vines to increase the color of fine wines in certain districts and of bulk wines in others. In future plantings, however, it seems they should have little place, as such varieties as Petite Sirah, Beclan, and Cabernet, which should be and are being planted in the fine wine districts, have sufficient color themselves, and, in the regions of bulk or common wines, the most suitable varieties for improving not only the color but other characteristics of the wines is the St. Macaire or similar highly acid grapes.

Sylviculture.

A TRIBUTE TO THE TAMARISK.

To the Editor: I read with much interest Dr. Hall's article in the Pacific Rural Press of February 4, on the tamarisk tree, as I have been familiar with this tree since early childhood. I do not know when my father planted the two trees at our home here in the Santa Clara valley, but I remember as far back as the late seventies, and the trees were quite sizable trees then. I recollect these trees particularly, for I used the long, slender switches, which were tough and lasted well, on my lazy school pony.

I can testify as to the hardiness of the tamarisk. One of our trees was planted near a large live oak tree which gradually overgrew the other tree. The tamarisk, reaching out for the sunlight, grew on a slant. It would grow so crooked that several times it had to be cut back to save the tree from falling over. Then it would send out, the following spring, the delicate, slender twigs which Dr. Hall describes. Finally I had to dig out that tree when it was about to be overwhelmed by the more vigorous oak.

The other tree is growing not over ten feet away from a very large, tall, soil-impoverishing poplar tree. The ground around the tamarisk has not been cultivated or fertilized in thirty years or more, to my actual knowledge, and the tree is on the edge of an ancient waste-water ditch, running summer and winter, yet the tree, although not large, thrives and each spring bears quantities of the beautiful pink blossoms. Reading that the tree could be grown from cuttings, I planted several last year (rather just stuck them into the ground) and they are growing nicely.

A California Winter Garden.—Last Sunday morning, February 5, after a month of rainy, stormy weather here in the Santa Clara valley, the sun shone brightly, and I decided to take some flowers out to the graves of our loved one in beautiful Oak Hill cemetery. "There isn't a thing in the yard," said my sister, "you'll have to stop at the florists." I was sure, however, that I could find something, and I did, even though our garden receives very indifferent care and looks rather forlorn after the winter's storms. I gathered a large bunch of callas (and there is no better flower for the purpose for which I wanted them), then a bunch of the white fleur-de-lis, enough of the white China lilies for three or four vases, some Shasta daisies and white marguerites, and a number of bunches of California violets. I could have picked violets all day and made no impression on the beds. Violet picking is a back-breaking job. Had I wanted them, I could have picked quantities of the brilliant yellow china lilies and the double daffodils or jonquils, not to mention the feathery yellow acacia, branches of "pussy willow" blossoms, the pink flowering quince and some straggling rose buds. As it was, I had my buggy full of beautiful flowers at a time when press dispatches tell of Eastern blizzards.

Californian.

San Jose.

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QUESTIONS THE WHOLESOMENESS OF HARE.

To the Editor: There is a practice concerning the health of the people which ought to be brought to the attention of health officers and city consumers. It is known to a certainty that men kill jack rabbits for the city markets and ship all they kill. They must be sold or the business would not continue. I have lived in the city aand have seen these "hare," as they are called, for sale. Now we who live in the country could not be persuaded to eat rabbit. Grown rabbits are almost without exception diseased. Disgusting "rabbit boils" are in the flesh, usually near the skin. These can be stuck and drained, and the appearance is not so bad, but the diseased meat is not helped thereby. Some claim it is a local infection caused by jiggers, not a consti tutional disease. Even they will not eat the rabbit at all.

I have heard market hunters, of low ideals, to be sure, boast of the horrible specimens sent for the unwise city consumer to buy. Now, to the country mind, not a single grown rabbit is fit for human food.

Hunting for the market benefits the farmer by helping to rid him of a pest; but some of us do not want benefits gotten that way.

ERSTWHILE CITY DWELLER.

Fresno.

[This seems rather a broad statement. What do others know about it?—EDITOR.]

AREA OF THE KERN NATIONAL FOREST REDUCED.

The President has signed a proclamation eliminating 33,526 acres from the Kern National Forest, California. These changes are the result of a careful field examination made by the U. S. Department of Agriculture in pursuance of a general plan for the correction of all National Forest boundaries.

The lands eliminated by this proclamation are a portion of the Owens River valley and consist of two separate areas, one lying to the north and northeast of Owens Lake and the other extending in a southerly direction from the south end of the lake. The forest boundary as now established follows closely along the base of the foothills on the east slope of the Sierra Nevada range.

The unappropriated portions of the lands eliminated by this proclamation will be restored to settlement and entry after they shall have been advertised in the local papers by the Secretary of the Interior.

ALASKAN AGRICULTURE.

Alaska, that far-away country of the Northwest, is determined that its light shall not be hidden under a bushel. Energetic people of the territory have taken up the matter of having an Alaskan agricultural exhibit at the American Land and Irrigation Exposition, which is to be held in Madison Square Garden, New York City, November 3 to 12, 1911.

This news is of value chiefly because Alaska has never been considered an agricultural country, but, strange as it may seem; there are some fifty thousand acres ready for development, and hay, grain and vegetables have been raised there with splendid success. The market in the near-by wealthy gold mining camps makes the product of the soil almost as valuable as the gold.

If the promoters of Alaska's industry succeed in arranging for the exhibit, samples of all grains, vegetables, etc., will be collected this summer and sent to New York.

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Muirs, Lovels, Elbertas, Tuscan Cling, Phillips Cling, Orange Cling

All money makers for drying, shipping and canning. All stock grown by ourselves, absolutely true to name and free from disease. We can supply the above stock in three grades:

4-6 ft. in lots of 50 trees and over of one kind - - - - $8 per 100
3-4 ft. in lots of 50 trees and over of one kind - - - - $6 per 100
2-3 ft. in lots of 20 trees and over of one kind - - - - $4 per 100

We want to emphasize the fact that we do not buy any stock from Orientals, amateurs and parties who grow trees one year, pumpkins the next. Our stock is of our own growing by experts who have devoted their lives to this business. Our trees are budded on

SALWAY PITS, the Strongest Growing Seed Stock

making our trees thrifty and well grown. Remember the first cost of a tree cuts no figure if you GET WHAT YOU BUY, and it is dear at any price, even as a gift, if it turns out UNTRUE TO NAME. Patronize a reliable Nursery. We have been pleasing our patrons for twenty-one years which, as a consequence, has built up our business and made our firm the most reliable growers of TRUE TO NAME NURSERY STOCK in THE WEST.

WE CARRY A FULL LINE OF

Cherry, Almond and Prune Trees.

We have shipped out this season four carloads to Mexico, three to Texas, two to Arizona, two to Oregon, one to Idaho, one to Colorado, one to New Mexico. Our daily shipments have averaged in assorted orders one carload a day since January 1st., demonstrating that we are recognized as the leading growers of First Class Nursery Stock in California.

SEND US A LIST OF YOUR WANTS FOR SPECIAL PRICES.

PRICE LIST FREE

THE FRESNO NURSERY

F. H. WILSON, Proprietor.

928 I Street. Also I and Kern Streets, Fresno, Cal.

Genuine Florida Sour Orange Seed-Bed Trees

Extra fine one-year stock—the best to be had. Be sure you are getting the genuine article. If you will send your orders in now, we are prepared to fill them, be they large or small; but order early, as the supply is limited.

Three thousand fine large two-year **Valencias.** Get our prices.

SOUTHLAND NURSESIES,
F. H. DISBROW, Proprietor,
R. D. 1, Pasadena, Cal.
Phones: Main 949 - Home 2520.

TILTON APRICOT

and its introducer has it for sale, along with **Early Royal** and the **Routier Peach** 'Cots, also the best varieties of **Freestone and Cling Peaches.**

J. W. BAIRSTOW
Hanford, Cal.

TREES

Eucalyptus, Pinus and Cypress in boxes

Ornamental Trees and Roses, Shrubbery

PRICES ON APPLICATION

Pacific Nursery
H. KEMPF, Prop.
3041 Baker St., San Francisco

RHUBARB FOR PROFIT
A FREE BOOKLET ON
Rhubarb Culture
$1000 profit per acre; plant now. Berry plants of all sorts. Cut this adv. out and mail today.
J B. WAGNER, Pasadena, Cal.
The Rhubarb and Berry Specialist
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FEIJOA SELLOWIANA
The wonderful new flowering and fruiting plant 25 cents to $2.
AVOCADO OR ALLIGATOR PEAR
50 cents and $1
and many rare plants.
COOLIDGE'S RARE PLANT NURSERY
PASADENA, CAL.

TREES
A fine stock of French and Imperial prunes, apples, plums, peaches and general fruit stocks also palms, roses and other ornamental plants Send for price list.
PLEASANT VIEW NURSERY
A. F. Scheidecker, Prop.
SEBASTOPOL, CAL.

APPLE TREES
12,000 Winesap, Rome Beauty, Jonathan, etc.
Cherries, Calimyrna Figs
PLUMS—Satsuma, Hale, Kelsey, etc. Luther Burbank's new "DUARTE"—two weeks earlier than Satsuma.
Pioneer Nursery Co., Dept. P, **Monrovia, Cal.**

To Exterminate
GROUND SQUIRRELS, GOPHERS, also BORERS, ROOT APHIS, etc. on Fruit Trees.
Carbon Bisulphide
Is the only effective remedy.
For sale by dealers and manufacturers.
WHEELER, REYNOLDS & STAUFFER
OFFICE 624 California St., San Francisco.

GRAFTED WALNUTS
ALL KINDS
GRAFTED PAPER SHELL (Giant) PECANS, walnut scions and grafting wax. ELBERTA PEACH and GRAND DUKE PLUM in quantity. All kinds of nursery stock. Send a list of your wants for special prices.
TRIBBLE BROS., Elk Grove, Cal.

The Ornithologist.

ARE BOUNTIES REALLY BOUNTIFUL?

Mr. C. H. Dwinelle of Fulton, Sonoma county, who has the advantage of over a third of a century of experience and observation in California agriculture, sends us a copy of a communication which he recently addressed to a local journal, and we are sure that our wider circulation of his pointed claims will stimulate observation and inquiry upon the important subjects which he discusses:

MOOTED BOUNTIES.—We read that someone offered bills in the legislature of California providing bounties for the killing of the following quadrupeds and birds: Coyote, $1; gray or black wolf, $2.50; timber wolf, $3; bobcat, wild cat or lynx, $1.50; skunk or raccoon, 50 cents; mountain lion, panther or cougar, $7.50; great horned owl, sharp skinned owl, Cooper's hawk, goshawk, duck hawk or pigeon hawk, 25 cents; butcher bird, 10 cents; blue jay, 5 cents.

Having been for much of his life engaged in farming and the raising of various kinds of live stock, and since early childhood a student of wild animals and their relations to each other, and to humanity, the writer most emphatically protests against a large part of the above named bounties.

OWLS AND HAWKS.—Take for example the owls and hawks. While one may occasionally kill a chicken or other domestic fowl, for every one of such depredations it kills thousands of animals which tax the cultivator of the soil to an enormous extent, and in some cases make farming unprofitable. Everyone in this Western country knows the pocket gopher by its evil deeds. A resident of East Oakland told us of a pair of owls that lived in his stable, and at night caught gophers about the neighborhood, always carrying each gopher caught to the roof of a veranda before eating, or giving it to the young owls in the nest. Our informant could observe the owls at short range, through a window blind, and he counted as many as sixteen gophers brought there by the birds in one evening. If kept up for a year that would mean 5840 gophers made "good." Admit that the birds may have been working overtime, on account of having young in the nest, and cut down the average to one-half, and still these owls could hardly be classed as undesirable citizens. And owls catch not only gophers, which come out of their holes freely at night, but rats, mice, rabbits and other farm pests.

And the hawks pursue the same quarry by day. While the pocket gopher rarely ventures away from his hole in daylight, a hawk can catch him by waiting patiently by the side of his open hole until his head appears, and then throwing him out by a quick blow from his claw. The ground squirrel is easier game for a hawk, particularly when starting out from the parental burrow to hunt for a new home. And the ground squirrel preys not alone on the farmers' crops, but is a far greater chicken thief than a hawk is. That is not generally known, even among farmers, the squirrel is so sly. He may slip in through a back fence and carry off young chickens, one by one, unnoticed by their owner. Finally, when the shortage is noticed, it is commonly attributed to rats, or a weasel: We once lost five chicks out of a brood of seven within two days, before the squirrel was shot and found stuffed with baby Dominiques. So far as we know we have never lost a chicken by a hawk. Hawks also help to keep down the jackrabbit crop. A young rabbit in its "form" is very helpless.

We were long ago so convinced of the

$250 REWARD IN GOLD COIN

The above reward is offered for competent proof that Ortho Lime-Sulphur Solution is even equalled or matched by the average output of any other lime-sulphur plant in the United States or Canada in the following points, to wit:

First, the container;
Second, the average strength;
Thirdly, the uniformity.





Ortho Lime-Sulphur Solution is sold in 55 gallon galvanized steel drums; tests always approximately 36 degrees Beaume, about 15 to 20 per cent stronger than any other average solution. The best is never too good. The first cost is no greater than that of the weakly made. The Ortho Way is the best.

CALIFORNIA SPRAY-CHEMICAL CO.
WATSONVILLE, CAL.



HIGH GRADE FERTILIZER
For Orchards, Vineyards, Gardens, Lawns
GUARANTEED ANALYSIS shows a fine compound of sheep manure and commercial plant foods. Write for free booklet "A Recipe for Making Gold." It gives details and instructions for using.
FANCHER CREEK NURSERIES, Fresno, Cal.
GEO. C. ROEDING, Pres. and Mgr.

PEACH TREES
True to Name. Strong and Vigorous
Including Muirs, Lovells, Albertas, Tuscan, and Phillip Cling and all leading varieties. Also a full line of Pears, Plums, Prunes, Cherries, Apples, Apricots, Almonds, Walnuts and Chestnuts. A full stock of Thrifty Vines. Write for prices on amount you need.
OAKDALE NURSERY, W. F. Wheeler, Prop., OAKDALE, CAL.

MARTINEZ NURSERY
ESTABLISHED 1884
Leading varieties of Pear, Apple, Plum, Prune, Peach, Apricot and Almond Trees. Grape Vines. Orange and Lemon Trees. Ornamentals, etc.
Catalogue and prices on application.
THOS. S. DUANE, Prop., Martinez, Cal.

150,000 2-year old Sweet Stock
Not dug-over culls, but splendidly rooted, strictly first class 2-year-olds. A bargain stock for those who want the best in this variety. I offer a good size at lowest quotations.
ONE YEAR SWEET STOCK. ONE YEAR SOUR STOCK.
Navels, Valencias, Lemons.
CHAS. S. McMILLAN, 300 South Marengo Avenue, Alhambra, California
Citrus Trees Exclusively

Villa Anna Nursery
Spineless Cactus as food for farm animals and poultry a special culture.
ASK FOR FREE INFORMATION.
Santa Rosa, California.

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Give Your Soil Food

Soil becomes worn out and run down the same as human beings. Send to-day for our FREE Booklet

"THE FARMER'S FRIEND"

It explains how to build up the productiveness of your land. State nature of soil and what you grow and we will tell you, free of charge, the class of fertilizer needed. Write today.

PACIFIC GUANO AND FERTILIZER CO.

310 Sansome St., San Francisco. 503 Central Bldg., Los Angeles.

LARGE, FINE, 1911 CATALOG

OF

SEEDS,

Plants, Bulbs, Poultry Supplies, etc., now ready for mailing. Send for one—worth having—free and postpaid. Send addresses of five or ten others, and we will send you for your trouble, postpaid, a five cent packet of our best seeds, your selection, for each five names you send.

West Coast Seed House

111, 113, 115 Winston St.,

LOS ANGELES, CAL.

Ruehl-Wheeler Nursery

FRUIT, ORNAMENTAL AND CITRUS TREES

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NURSERIES:

East San Jose and Edenvale,

SAN JOSE, CAL.

Citrus Trees

(Exclusively)

Buy now, and it pays to buy the best.

We offer a complete, clean, vigorous stock, which we think are as good as can be grown.

POLLARD BROS.,

Corner Mission St. and Los Robles Ave., South Pasadena, Cal.

BULBS

For fall and winter planting; also Flower Seeds for fall sowing.

NEW CATALOGUE just out; send for a copy. **Now is the time to sow Payne's Royal Exhibition Pansy Seed,** the best strain on the Pacific Coast. **Giant Perfection Stocks** and **Christmas Flowering Sweet Peas.**

THEODORE PAYNE

Seedsman and Nurseryman, 345 S. Main St., Los Angeles, Cal.

great usefulness of hawks that we gave strict orders that none should be killed on any land owned by us. Shelters which will enable chickens to escape from hawks can be easily made by putting forked sticks in the ground, laying poles across them, and over all a layer of brush a foot or eighteen inches from the ground. Hawks eat great quantities of large insects, such as grasshoppers, mole-crickets, and beetles. Hawks were formerly very numerous in California, and ground squirrels and other rodents in but moderate supply, but when the hawks were mainly killed off the rodents became a veritable plague, and have unquestionably cost the State millions of dollars. Note the effort now being made to suppress them in Contra Costa and Alameda counties, at enormous expense.

EVEN THE BLUE JAYS.—We believe that even the butcher birds and the blue jays do farmers more good than harm, as most of their time is spent in hunting insects.

No, do not offer bounties for the killing of the farmer's best friends who work for him "days and nights and Sundays," just for their board. Let the laws stand as inflicting fines on those who would harm them. New York indulges in the folly of offering bounties for the killing of crows, etc., but long ago saw the error of her ways and protected them instead.

AS TO COYOTES.—Some, if not all of the counties offer larger bounties than the above bill proposes. Has the gentleman proposing that California shall again go into the coyote business, never read of what her last venture in that line cost her? When we were in the sheep business and a certain few coyotes bothered us, we did not ask for State aid; we cimply killed those coyotes, and let the rest go on eating rabbits, gophers, etc.

There are those who think that if the exact facts were known it would be seen that even the coyote more than pays his way.

As to gray and timber wolves, cougars and other wild cats, we have no use for them, but we would not make it profitable to raise them "on the sly," as has been done at sundry times and in diverse places.

In general, it is best to go a little slow, read history and consult the naturalists of the United States Department of Agriculture, before legislating on these matters.

WHAT THE MEADOW LARK DOES.

To the Editor: I would like to say a few words about that "beautiful songbird," the meadow lark, that Mr. Finley praises so highly. I think Mr. Finley must live in town, or else they do not raise meadow larks where he lives. If he will come down into Tulare county he will see larks by the hundreds and thousands. Here the lark is considered the greatest nuisance the farmer has to contend with. I believe the larks destroy more than the squirrels, because there are so many more of them. Here they go in flocks of three and four hundred together. I have had young grain just coming through the ground pulled up by the acre. The lark with his long sharp bill drives a hole down by the side of the grain stalk till he finds the seed, when up comes seed, stalk, and all. Here it has got to be almost impossible to raise Egyptian corn on account of the meadow larks and linnets. Then again, in watermelon season, the beautiful meadow lark comes in again. This is a great melon country, and when the melons are about half grown, along comes the sweet-singing lark with his long, sharp bill, and pecks holes in the melons, causing them to sour and rot.

Oh, I love the meadow lark, all right—

PURE ANIMAL MATTER AMMONIATES

GOLD BEAR FERTILIZERS

FOR CALIFORNIA SOILS

TANKAGE

The Citrus Fruit Growers of California use thousands of tons of Tankage annually

Tankage is the best form of Organic Nitrogen.

HUMUS-FORMING. ALL AVAILABLE.

We are the largest Pacific Coast producers of High-Grade Tankages in perfect mechanical condition and of

"GOLD BEAR" FERTILIZERS

Will ship direct to you no agent near you

WRITE FOR FREE PAMPHLET

WESTERN MEAT COMPANY

Fertilizer Department, SAN FRANCISCO, CAL.

REX YOUR TREES WITH THE FAMOUS REX SPRAYS

Our Standard Rex Lime & Sulphur Solution is being used by the principal fruit growers in every State in the Union. See that Rex is on your barrel, and not some imitation that is untried.

Rex Arsenate of Lead is made under the latest scientific formulas; applicable to all climates and conditions in the United States. Remember, that which is good for one district is not necessarily good for another, and if you want something that is good for all places, please ask your dealer or correspond with the

CALIFORNIA REX SPRAY COMPANY, Benicia, California.

KIRKMAN NURSERIES

TREES THAT GROW AND BEAR TRUE TO NAME

We are wholesale growers of deciduous and citrus fruit trees, grape vines and eucalyptus trees.

Our stock this season includes 650,000 DECIDUOUS FRUIT TREES alone. A large lot of these are on Eastern seedling root, which has proven to be almost proof against root knot.

Get the best stock available and at the most reasonable cost from a man who selects the buds and scions of the best strains.

Deliveries made from our sales yards at Fresno, Madera, Merced, Turlock, Banning and Chico.

ADDRESS MAIN OFFICE, FRESNO, CAL.



LARGEST CITRUS NURSERIES IN THE WORLD

Parties contemplating the planting of citrus groves this coming spring will do well to send for our prices soon, as there will evidently a a shortage of strictly first class stock. Write today for particulars, or, better still, pay us a visit so that we may be able to show you just what we have.

Our finely illustrated booklet, "Citrus Fruits," covering the industry from the seed to the market, mailed to any address on receipt of 25c in stamps.

SAN DIMAS CITRUS NURSERIES

SAM DIMAS, CALIFORNIA

but it would be that I would love to wring his neck. I hope that Assembly bill No. 191 will be made a law, and I wish it was stronger. I wish there was a bounty of two cents each on larks. In fact, they are getting so numerous here that if the present law is not taken off, the larks are going to take the country. And speaking about the lark being such a beautiful song-bird—so is the crow.

L. A. CAMPBELL.

Dinuba.

AGRICULTURAL REVIEW.

WITH THE FRUIT MEN.

A permanent restraining order has been granted by Judge Welborn in the Circuit Court against the use of the Converse raisin-seeding machine. This machine has been used by several seeding companies at Fresno.

The famous citrus grove consisting of 155 acres of oranges, near Porterville, owned by J. J. Vosburg and J. H. Williams, has been sold to Robert Baird of Pasadena. The consideration is said to be $170,000.

The managers of the National Orange Show, which is to be held at San Bernardino from March 6 to 11, make the prediction that this season there will be shipped from California 48,000 carloads of oranges and lemons. Of this number, 7000 cars will be lemons and 41,000 cars of oranges. This vast number exceeds by 8000 cars any former season. As compared to Florida, the California production is 16,400,000 boxes to Florida's 5,000,000.

The San Joaquin Table Grape Growers' Association, at its annual meeting, held last week, elected directors for the ensuing year. The report of the work done last year showed that the Association marketed about 240 acres of table grapes for its members. The following are the directors elected: C. A. Black, W. A. Young, G. W. Ashley, G. H. Gillette, A. S. La Salle, G. O. Thornton, Otto Spenker, D W. Bird, W. C. Brown.

A. W. Phelps & Co. began last week the erection of a new packing-house at Fullerton. With the completion of this building there will be 14 packing, grain, and fruit warehouses at that place.

A dispatch from Ripon, Stanislaus county, states that A. Bacelieri has secured options of 8250 acres of land in the south San Joaquin, in which he hopes to have other parties join with him in planting to olives.

A shipment of 10,000 fruit trees was received at Colfax last week to be set out in the orchards near there.

M. Haddock, a rancher near Lankershim, in the San Fernando valley, caused the arrest last week of two county horticultural inspectors while endeavoring to enforce a horticultural law. Mr. Haddock claims that he had not been served with a notice that his orchards were infected prior to the attempt made by the inspectors to spray his trees.

It is estimated that 20,000 trees of various varieties will be planted in the vicinity of Merced this spring. The majority of the trees to be planted will be figs and almonds.

The famous Riviera orchard owned by White, Cooley & Cutts, was sold last week to Mark Elberg of San Luis Obispo. The ranch consists of about 380 acres, is located partly in Butte and partly in Sutter counties, and is planted almost entirely to fruit trees.

Apricot trees in the foothills on the east side of the Santa Clara valley commenced blossoming last week. Blenheims were the first variety to blossom, followed by the Moorparks. Unless the rain comes to damage the pollen, the chances are that a heavy setting of fruit will take place.

A large number of parties around Healdsburg, Sonoma county, are planting prune trees this season. In most cases the acreage is small, but in the aggregate will make a large addition to the prune production of that district.

On last Tuesday afternoon a meeting of apple growers was held at Sebastopol, and an organization formed known as the Sebastopol Apple Growers' Union. The new organization has been incorporated, and the object is to work for the best interests of its members.

A very large acreage, said to be 1000, will be planted to citrus fruits, including oranges, lemons, and grapefruit, by a development company northwest of Rialto this season. A pipe-line is being constructed to carry irrigating water to the new district.

A report was sent out last week by the Newark Fruit Canning Co. stating that the prospects for a large crop of apricots and peaches in the district around the southern end of San Francisco bay were very good. A good-sized crop is anticipated, the quality is expected to be very good, and as the stocks of canned and dried fruit are light, prices will doubtless be good also.

Louis F. Scribner, of Pasadena, is at present at Sebastopol where he has quite a force of people at work sending out Himalaya berry plants by mail. Mr. Scribner hopes to send out something like a million plants in this manner before the season closes.

A new fruit company has been organized at Santa Cruz, known as the Ewell Fruit Co., and incorporated for $50,000.

Dr. E. E. Baker of Oakland has assumed the management of the Tropical Fruit & Production Co., capitalized at $2,500,000, with offices in San Francisco. The company expects to raise and purchase tropical fruits and will operate its own steamer to carry products from Panama to San Pedro.

The San Lorenzo Canning Company's plant, which has been lying idle for some time, is again being put in shape for canning the coming season. Efforts are now being made to secure as much as possible of the early crop of asparagus.

A new cannery is to be built at Newark, Alameda county, at once, that will be ready to handle vegetables by April 1.

For some time past the news has been whispered around in fruit circles that several of the largest green-fruit brokerage firms in California would be purchased by an Eastern concern. Within the past few days the matter has been made public from New York. The dispatches stated that the Earl Fruit Co., which is the biggest deciduous shipping concern in the country, as well as the Pioneer Fruit Co., the next largest, and the Producers' Fruit Co., another large shipper, besides several smaller concerns, have all passed under the control of Joseph Di Giorgio, formerly of Baltimore, but now of New York. The new owner of these companies is said to have associated with him Hugh Connolly and Jas. R. Fanning, both prominent auction-house people in the East. It is further stated that the interest controlled by W. E. Gerber of Sacramento for several years past, secured $500,000 for the control of the Earl Fruit Co., and that the control of the Pioneer and Producers' companies cost about $100,000. For some years these companies have marketed their fruits through the California Fruit Distributors, and it is expected that the same marketing method will be pursued, leaving Manager McKevitt in charge. It is not expected that this change of control will materially affect the handling of deciduous fruits the coming season.

A note from Elmore Chase, of Fair

MORSE'S Onions

THE AILSA CRAIG ONION

Is the greatly advertised English exhibition onion, so highly recommended by our State University.

Our "1911 Garden Guide" tells all about the onion, which is considered the best of all onion novelties. Mailed free; write today.

C. C. MORSE & CO.
123 Market Street
San Francisco

COOPER

SMYRNA PARK NURSERIES

360 acres devoted entirely to Deciduous Trees.

WHOLESALE and RETAIL.

Write for special price list on all varieties of Peaches, Plums, Cherries, Pears, Almonds, Nectarines, Apples, etc. **Trees True to Name.** Strong, healthy and vigorous. Immediate deliveries.

CAMPIN & MOFFET, Props.,
Ceres, California.

EUCALYPTUS TREES

BY THE MILLIONS

for November and Spring planting. Trees planted in November will stand the summer heat and produce a larger per cent of live trees. Our 21 years of experience places us in the front ranks of successful growers, which should mean something toward your success. Write us for information.

COVINA NURSERIES,
312 Byrne Bldg., corner Third and Broadway,
Los Angeles, Cal.

Best Nursery Stock

IF YOU WANT THE BEST NURSERY STOCK, PUT UP IN THE BEST MANNER AND AT A FAIR PRICE, SEND US A LIST OF YOUR WANTS AND WE WILL GLADLY QUOTE YOU.

EUCALYPTUS IN ANY QUANTITY, AS WELL AS A FIRST-CLASS LINE OF GENERAL NURSERY STOCK.

MARSHALL NURSERIES, Box 652, FRESNO, CAL.

REDUCED PRICES ON EUCALYPTUS TREES

We offer a large stock of the tree that made San Jose famous—the tree of the sudden saw log—the tree that will yield you an income as long as time shall last. The genuine Blue Eucalyptus; also the red gums Rostrata and Tereticornis.

Roses, Roses—all the leading kinds. Acacias, Silk Oaks, Peppers, Dracaenas, Hedge Plants, Fruit Trees. Black Walnut Seedlings cheap.

Giant Himalaya, Loganberry, Superlative and Yellow Antwerp Raspberries.

The "San Francisco," a veritable giant among strawberries.

Prices right. Lists mailed free. Correspondence and inspection invited.

Wolesale and retail. Write and see if we are not a LIVE WIRE.

HARDING NURSERY COMPANY
Corner Chase and Alum Rock Ave., San Jose, California.

Special Prices on all the Leading Varieties of

Almonds, Peaches, Plums, Apricots and Cherries

All trees strong and thrifty.
Guaranteed true to name.

ACAMPO NURSERY COMPANY, : Acampo, Cal.

Oaks, states that so far this season he has inspected 10,000 trees, more than half of which were almond, before they were set out in Sacramento county. A better grade of nursery stock is being planted this year than usual.

The first carload of oranges shipped from the Oasis ranch, in the Coachella valley, brought $3.95 per box.

AGRICULTURAL NEWS ITEMS.

Celery growers in Orange county received $78,000 for January output. They expect to receive a total of $400,000 for this season's crop.

The original estimate of 2000 acres planted to cotton in the Coachella valley for the coming season will doubtless be exceeded. Some claims are made that fully 6000 acres will be devoted to cotton this year.

The first carload shipment of cabbages from the Coachella valley was made this week. The acreage is small this season, but the quality will be good. The early Winningstadt variety has been generally planted.

Over 200 acres have been contracted to be planted to tomatoes in the Healdsburg section this season. The California Fruit Canneries Association will take all that can be raised on this acreage at $7 per ton, where the grower furnishes his own boxes. The tomatoes will be shipped to Santa Rosa.

J. W. Dougherty cut the first asparagus of the season on his farm near Lodi last week. Mr. Dougherty has a big crop of "grass" as a result of an experiment of planting it on the sandy sediment soils instead of peat lands, and as a result of his success it is predicted that many other farmers in that vicinity will become growers of this vegetable.

A large acreage in the southern part of Tulare county is being planted to eucalyptus this season. Several million trees have been received by planters in that locality.

The sewer farm belonging to the city of Fresno will soon be a money maker. For the past season the barley hay on this place sold for $3500. At this time 200 acres on the farm are being planted to alfalfa.

The Los Angeles Public Market Co. has filed papers for reincorporation with a capital stock of two and a half millions of dollars. The increased capital stock will allow this company to enlarge its building, making it one of the largest public markets in the world.

M. Lovelace recently purchased a big traction engine, with which he intends to plow 5000 acres of the Huron Sink in the west side of Kings county, which he will plant to Egyptian corn.

MISCELLANEOUS NEWS NOTES.

The Sutter-Butte Canal Co. filed articles of incorporation with a capital stock of $2,500,000, last week. This new corporation will do business in Butte and Sutter counties, and expects to build canals for irrigation in that district. It is stated that most of the stock of this company will be sold in the East.

A meeting was held at Vancouver, Wash., last week, which was attended by 200 delegates, representing 38 associations, for the purpose of organizing a corporation with a capital stock of $10,000,000. The purpose of the corporation is to clear the logged-off lands between the Cascade range of mountains and the coast.

The new alfalfa mill at Orland is to be rushed to completion as soon as the spur track from the S. P. is run into their grounds.

News from Lake county states that Alcove valley, on Kelsey creek, about four miles south of Kelseyville, has been purchased by a syndicate and will be used as a reservoir for a big irrigation project. A dam to cost $150,000 is to be built, which will impound sufficient water to irrigate the whole of Big valley. If this project is carried out, it will be the biggest event for the farmers that has ever happened in Lake county.

Francis P. Anderson, of Minnesota, purchased last week from the Dunsmuir estate, 160 acres, one and a half miles north of Ferris, Riverside county. The new owner will plant 60 acres of land to eucalyptus and 100 acres to alfalfa.

A new basket factory is to be established at Lodi by W. P. Angelo, the owner of the Pacifc Basket & Barrel Co. of San Francisco. The new factory will be ready for turning out baskets by the first of April.

The supervisors of Fresno county have joined with Tulare county officials in a war of extermination against ground squirrels.

The Colusa Sun is advocating that the farmers living in the valley around that town should sink artesian wells, so that the fine land there may be placed under irrigation.

There is an unusually large crop of acorns around Inwood, Tehama county. It is estimated that there are over 1000 head of porkers in the scrub oak thickets at this point. The principal feeders are Mr. Elwood, Mr. Chatam, J. D. Aldridge and W. H. Rupert.

PUBLISHER'S DEPARTMENT.

If you read the full-page announcement of the Fresno Nursery Co. that appeared in our last week's issue, you probably noticed that there was an omission of a part of a sentence in the ad. This omission was not intentional, simply a mistake. Read the ad. again this week, and if you are thinking of planting peach trees, send to this firm for catalogue and price-list. The Fresno Nursery is long established, has good trees, true to name, and the price and treatment you will receive will be right. F. H. Wilson, the proprietor, and Chas. A. Chambers, the secretary, are well known to many RURAL PRESS readers who have done business with them for years past.

Attention is called to the advertisement of the H. O. Harrison Co., of San Francisco, who are the Coast Agents for the "Everett 30" automobile. Write to the firm for their printed matter describing their car, if you are thinking of buying a machine.

Business is good in agricultural books these days. Not only are we selling large quantities of "California Fruits" and "California Vegetables," but also sending out other books, especially those treating of hogs, poultry, and alfalfa. A new book on our shelves is "Swine in America," by Coburn, price $2.50 postpaid. Send for it.

Available Nitrogen

is *the* thing in practical fertilizing.

Nitrate of Soda

is the cheapest and most available form of Nitrogen for all crops.

"The Cost of Available Nitrate," Sent Free

It is worth dollars to you. In this book Prof. Voorhees shows how the American farmer could have saved $17,000,000 on the cost of nitrogen in 1909. Address

Dr. William S. Myers, Director of Propaganda 71 Nassau Street
No Branch Offices NEW YORK

EUCALYPTUS IN VARIETY

WATCH THIS SPACE FOR SLAUGHTERING PRICES. WILL DISCOUNT ANY QUOTATION FOR TREES OF OUR QUALITY. Plant the Petaluma Blue Gum of sterling value that has made the Eucalyptus famous over the Coast. Am prepared to ship on sight by carload.

Address, W. A. T. STRATTON, Petaluma, Cal.

Plant Now

8 CALIFORNIA CRACKER JACK SWEET PEAS FOR 25 CENTS

Each Color in Separate Packet.
Dorothy Eckford, pure white.
Hon. Mrs. E. Kenyon, pale yellow.
King Edward VII, deep rich red.
Lady Grisel Hamilton, lavender.
Aurora, orange, striped white.
Gladys Unwin, pure pink.
Helen Pierce, mottled blue and white.
Helen Lewis, orange pink.

Sweet Peas free by mail.

FREE—Our new Seed Book for 1911—describing many new and rare creations in flowers and vegetables.

H. M. SANBORN CO.
517 14th St., Oakland, Cal.

The Boss Tree Protector

Made of Yucca Palm



Is cheap, durable, and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frost, sunburn, grasshoppers or dry winds. Can be easily moved; will last for years. Send for samples.

Price

	Per 1000
10 in. long, 7 in. wide,	$9.50
12 in. long, 7 in. wide,	10.50
14 in. long, 7 in. wide,	11.50
16 in. long, 7 in. wide,	13.00
18 in. long, 7 in. wide,	14.50
24 in. long, 7 in. wide,	17.00
30 in. long, 7 in. wide,	20.00

YUCCA MANUFACTURING CO.
1380 Willow Street, Los Angeles, Cal.

HEMINGWAY'S LEAD ARSENATE

THE PERFECT PRODUCT

Combines the highest standard of manufacture with chemical and physical qualities giving sticking power, miscibility and extremely fine division. It meets the most exacting requirements of the modern scientific orchardist.

HEMINGWAY'S LEAD ARSENATE fully complies with the new federal law. 15% Arsenic Acid guaranteed. Send for booklet and prices.

Full stocks carried by
C. HENRY SMITH, Coast Agent,
24 California St., San Francisco, Cal.
HEMINGWAY'S LONDON PURPLE CO., LTD., 64-66 Water St., New York.

SURPLUS TREES

170 Prunes on Peach Root, 4/6 feet.
200 Prunes on Peach Root, 3/4 feet.
100 Prunes on Almond, 4/6 feet.
40 Prunes on Almond, 3/4 feet.
60 Prunes on Myrabolan, 3/4 feet.
140 Prunes on Myrabolan, 2/3 feet.
70 Sugar Prunes on Almond, 3/4 feet.
1000 Peaches, Muir, Lovell, Phillips, Triumph, Elberta and Assorted, 4/6 feet.
1800 Apples, Jonathan, E. Spitzenberg, Banana and others, mostly 4/6 feet.
125 Huntingdon Elms, 4/7 feet.
Write for prices.

T. J. TRUE,
Stanislaus Nursery, Modesto, R. D. 1.

EUCALYPTUS

All varieties and sizes; extra hardy stock. "The finest trees I ever saw," is the verdict of all who see them. Write today for free booklet P on their culture, etc. Questions gladly answered.

LLOYD R. TAYLOR, Modesto, Cal.

BLACKBERRIES

There is big money in growing Giant Himalaya Blackberries.
For early, plant Early Crandall.
We still have Grapevines, Rhubarb, Dewberries, etc.

Strawberry Plants All Sold.

Address for Prices

G. H. HOPKINS & SON,
Burbank, Cal.

SEED CATALOG READY TO MAIL

The leading Seed Catalog of the West—Lilly's Catalog. Your 1911 crop depends on GOOD seed—send for this Catalog and get the best. Write now to the
CHAS. H. LILLY CO., Seattle, Wn.



Ask for SNOW'S GRAFTING WAX

IN USE ALL OVER THE STATE
For sale by all the large groceries, or
D. A. SNOW, Lincoln Avenue, San Jose, Cal.

BERRY PLANTS

LOUIS F. SCRIBNER
PASADENA, CAL. R. F. D.

EUCALYPTUS

Best varieties, large well rooted plants. Some balled for distant shipment at trifling extra cost. Large lots grown by contract Circular Free.

RIVERSIDE NURSERY
320 River street, Santa Cruz, Cal.
HENRY SHAW

Live Stock and Dairy.

FEEDING BREEDING EWES.

The lambing season has just commenced in California and the following excerpt from a speech of C. J. Kennedy before the Iowa Sheep Breeders and Wool Growers Association should prove of benefit to the sheep men.

"Immediately after the lambs are weaned the ewe flock should receive attention. The aim should be to feed and handle the flock in such a way as to secure the largest number possible of strong, healthy lambs at lambing time.

The practice of "flushing" the ewes is a good one. By "flushing" we mean puttin the ewes on a ration that is highly nutritious and very palatable, for about three weeks previous to the time of mating in order that they may be rapidly gaining in flesh when bred. "Flushed" ewes not only produce more twin lambs, but are much more likely to breed. Some may say that twins are not desirable. Experiments show that ewes suckling twins do not lose any more flesh than those with one lamb and that twins make as rapid gains as singles. This is an easy way to double the profits of the breeding flock. For "flushing" the ewes, a good alfalfa, clover or rape patch will serve a useful purpose. Where these are not available a grain ration, composed of equal parts by weight of bran, oats and corn, fed to the extent of one pound per day per ewe in addition to the regular pasture will prove very helpful."

Another valuable food not touched upon by Mr. Kennedy is the feeding of carrots to the breeding ewes. The David Jacks' Corporation of Monterey county handle thousands of ewes every season, and they find that carrots are the best milk producers. The more milk the ewe gives, the greater the size of the lamb, and if a lamb is not given sufficient milk while young it becomes stunted and no amount of subsequent feeding will make up for the lack of nourishment as a lamb.

THE DEADLY ANTHRAX.

In his report, State Veterinarian Dr. Charles Keane gives the following page on anthrax, which he says has continued to be the cause of severe losses to our live stock during the past two years, as it has been in former years. As long as live stock are run on infected pastures, just as sure will fatalities occur from this disease. Once infected, a pasture remains infected indefinitely, and as soon as the feed in such a pasture becomes short, animals start to die. This is probably due to the fact that infection exists close to the grass roots. This fact is so well recognized on some of our larger beef ranges, on which in former years anthrax was the cause of severe losses, that the infected range is not allowed to be fed off too close. The cattle are taken off early and only put back after a new growth of feed appears.

On many of the smaller ranches this procedure can not be carried out on account of lack of feed. On these places, in most instances, preventive vaccinattion is attempted, with variable results. In some instances cattle continue to die after vaccination, while in others vaccination when properly performed, appears to check the progress of the disease.

Anthrax is a very serious disease, especially when it occurs in a dairy herd. It is directly communicable to man, who may possibly become infected through the milk from an infected cow. The disease appears very suddenly, as a rule, one or more cows being found dead which a short time previous were apparently enjoying good health. While any disease in a milch cow that causes a high fever will eventually suppress milk secretion, there is a period, however, during the early stages of the disease in which milk is secreted.

Grave danger exists if such milk is used for human consumption. On account of the virulence of this disease, and its suddenness in attack, measures are adopted by this Department to prohibit the use for any purpose of milk from any cows in a dairy where anthrax exists. Such milk is ordered destroyed immediately after milking and until such time as it would appear that the disease has abated.

During August and September of 1909, serious outbreaks of anthrax occurred among the cows in four dairies in Solano county. Two hundred and three cows died from this disease in these four dairies in the course of about two weeks.

The following reports of outbreaks of anthrax were investigated by this Department during the past two years:

Kings county, on three ranches; Merced county, on four ranches; San Benito county, on three ranches; Stanislaus county, on one ranch; Kern county, on one ranch; Contra Costa county, on six ranches; Glenn county, on one ranch; Colusa county, on one ranch; Solano county, on seven ranches; Yolo county, on two ranches; Inyo county, on eleven ranches; Monterey county, on three ranches; Tehama county, on five ranches; Sacramento county, on two ranches; San Joaquin county, on one ranch; Sonoma county, on one ranch.

The above does not come near representing the outbreaks of anthrax during the past two years. In many instances deaths among live stock due to anthrax occur on the ranges along our large river courses and no notification is received at this office regarding same.

LIVE STOCK NOTES.

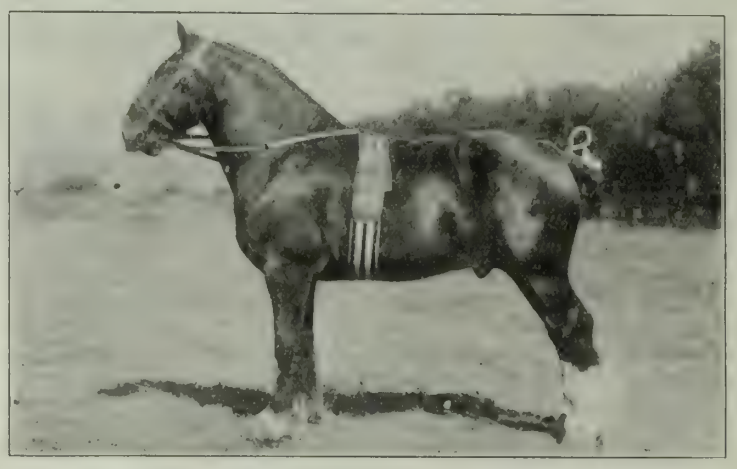
A letter received the past week from Thornton S. Glide, of Davis, states that he has bought all of the Short-horn cattle belonging to his mother, Mrs. Lizzie S. Glide, of Sacramento, including all the registered show herd as well as the range cattle. This famous herd of Short-horns was started over thirty years ago by the late J. H. Glide. All were originally registered, but on account of numbers of the stock running on the range, the work of registering had to be discontinued, at least that part of the herd that was not kept confined. However, the range herd are all pure-bloods, though not registered, as only the very best bulls that money could buy have ever been used on the range. As a breeding herd, the fact of this stock being run on the range the year round and not fed nor pampered, will make them more valuable to many breeders who want foundation stock. Mr. Glide has an announcement of 100 bulls for sale in this issue.

M. M. Nunes has brought suit asking for a restraining order of injunction precluding Dr. George Gordon, county livestock inspector of Kings county, from interfering with the removal of his 150 cows and 100 hogs from his ranch, sixteen miles south of Hanford. Mr. Nunes claims that Dr. Gordon did not visit his ranch when he placed it under quarantine.

Receipts of live stock at the Union Stockyards at Chicago up to February 15 this year are much heavier than during 1910. For the first 45 days of 1911 the increase in receipts for cattle were 23,116 heard; salves, 15,059; hogs, 114,822; sheep, 150,208; horses, 1080.

According to the Price Current, the number of hogs packed from November 1 to February 15 in the various packing centers, from Chicago westward to the

Salvador Stock Farm, Napa, Cal.



I have unquestionably the best lot of Shire Stallions on the Coast and I am selling at prices which are lower than you have been in the habit of paying for inferior stock.

I can sell you a good horse at prices ranging between $1400 and $1600. Come to Napa and see my stock.

HENRY WHEATLEY, Napa, Cal.

FOR SALE

100 SHORT-HORN BULLS

KING EDWARD'S GET Won 32 Prizes at State Fair Sacramento 1910

IN SINGLE OR CARLOAD LOTS

These Bulls are range bred and sired by calves of King Edward, Hillcrest Hero, and other prize bulls. For further particulars write to

THORNTON S. GLIDE

Davis, - - - - Cal.



America's Leading Horse Importers

At the six World's Fairs since 1900, our Percheron Stallions have won every Championship, and every first prize except two.

At the recent California State Fair our Percherons and French Coach Stallions won 14 Gold Medals and both Championships.

When you want the best come to us.

McLAUGHLIN BROS.,

OAKLAND, CALIFORNIA COLUMBUS, OHIO

AGO FLOOR OIL

Pratt's Animal and Poultry Regulators The best on the market

C & S AXLE GREASE—30 years of satisfaction.

H & L AXLE GREASE—for 60 years in constant use.

THE ONLY PERFECT LUBRICANTS

Use only one-fourth of what you would use of any other.

WHITTIER COBURN CO.

San Francisco Manufacturers

AGENTS WEATHERPROOF COMPO ROOFING

ARGO COAL OIL

ASK YOUR DEALER FOR

EL DORADO COCOANUT OIL CAKE

FOR

CHICKENS AND MILK COWS

Cheapest Food in the Market to-day. If your dealer doesn't carry it,

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149 CALIFORNIA STREET, SAN FRANCISCO.

WESTERN PIPE AND STEEL CO.

SUCCESSORS TO

FRANCIS SMITH & CO., Manufacturers of

SHEET IRON & STEEL PIPE

FOR TOWN WATER WORKS

Hydraulic, Irrigation and Power Plants, Well Pipe, Etc. All Sizes.

Office, 9 Fremont Street. Works at 8th and Townsend, San Francisco, California

Water and Oil Tanks—all sizes. Coating all sizes of Pipes with Asphaltum

Horse Owners! Use
GOMBAULT'S

Caustic Balsam
A Safe, Speedy, and Positive Cure
The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from **Horses and Cattle, SUPERSEDES ALL CAUTERY OR FIRING.** *Impossible to produce scar or blemish* Every bottle sold is warranted to give satisfaction Price **$1.50** per bottle, Sold by druggists, or sent by express, **charges paid,** with full directions for its use. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland, O.

HORSES AND CATTLE.

JOHN LYNCH, breeder of Registered Short-horns; milk strain. High class stock. First-class dairy breeding. Smooth cattle. Best pedigree. P. O. Box 321 Petaluma, Cal.

BULLS AND COWS FOR SALE—Short-horned Durhams. Address E. S. Driver Antelope, Cal.

POLLED JERSEY CATTLE—Some on Pacific coast. Chas. S. Hatfield, Secretary, Springfield, Ohio.

N. H. LOCKE CO., Lockeford, Cal. Jerseys. Service Bulls and Bull Calves for sale.

SWINE

STUDARUS & CUNNINGHAM, Mills, Cal. Registered O. I. C. swine.

BERKSHIRE AND POLAND-CHINA HOGS. Both sexes. C. A. Stowe, Stockton, Cal.

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroughbred Berkshires.

GEO. V. BECKMAN, Lodi, San Joaquin Co., Cal. Registered Poland-China Hogs, both sexes.

G. A. MURPHY, Perkins, Cal. Breeder of Champion Herd of Berkshires; also Short-horns.

H. B. WINTRINGHAM, Middletown, Lake Co., Cal. Breeder of Tamworths.

ANGORA GOATS FOR SALE.
Three young registered bucks and 600 ewes and wethers cheap.
F. S. RICE,
3020 Champion St., Oakland, Cal.

Cutter's Anthrax and Blackleg Vaccines

are given the preference by 80 per cent of California stockmen because they give better results than others do.

Write for Prices, Testimonials and our New Booklet on Anthrax and Blackleg

THE CUTTER LABORATORY
P. O. Box 257, BERKELEY, CAL.

Proteina SOY BEAN OIL MEAL
46% PROTEIN and 10% FAT
Cows, Calves, Poultry
ALL FARM ANIMALS
Highly recommended by all authorities. The U. S. Agricultural Department says: "It is almost without an equal as a concentrated feed."
Sold by Dealers. Ask for Literature.
PACIFIC OIL MILLS, SEATTLE.

FOR SALE
FOUR THOROUGHBRED AYRSHIRE BULLS, Aged 12 to 20 Months.
If you don't want tuberculosis, breed the Ayrshires.
J. W. & J. D. McCORD
Phone Red 123. Hanford, Cal.

HERCULES HARNESS SADDLES HORSE COLLARS
They Last Longer
The only sure way to get a **HOME** Industry Harness is to look for the Hercules stamp. Made by W. DAVIS & SONS, San Francisco, Cal. Your Dealer has our Catalogue

Blake, Moffitt & Towne
Dealers in **PAPER** **1400 FOURTH ST., SAN FRANCISCO**
Blake, Moffitt & Towne, Los Angeles
Blake, McFall & Co. Portland, Oregon

Rocky Mountains, amounted to 7,615,000 head, as against 7,825,000 head the same time the previous season.

W. E. Meek had his herd of hogs on Bradford Island, Sacramento river, vaccinated for cholera recently. Mr. Meek hopes by having hogs vaccinated at this time that they will be immune the coming season from cholera.

George L. ("Tex") Rickard left New York recently, saying that he was bound for Argentina to go into the cattle and sheep business in that country. Mr. Rickard states that he is through with the fighting game, as there is nothing in it. Mr. Rickard, with many others, is looking to Argentina as the great future stock-breeding section.

Southern farmers are reported to be securing good mares for the purpose of breeding mules in the South, commencing this season. Heretofore most mules were raised in the Northern States and brought South and sold to the farmers for plantation work. The climate and conditions are such that the breeding of mules in the South ought to be very profitable.

A meeting was held at Chico last week at which parties from Oklahoma agreed to put in a $14,000 alfalfa-meal mill at that place if local residents would take $7000 of the stock. The proposition is now before the Business Men's Association.

According to figures compiled by the Census Bureau, there was killed in the United States for food purposes in the year 1909, 36,443,000 hogs, as against 31,900,000 head of all other animals.

DAIRY NOTES.

According to the Imperial Enterprise, a farmer named J. D. Conrad, having 40 acres near there, sold last year from his place $2386.97 worth of products, mostly from the dairy. His figures for 1910 were as follows:

Live Stock	$ 187.27
Hay	35.00
Butter-fat	1381.36
Chickens	440.60
Turkeys	207.69
Grapes	26.70
Miscelalneous	48.35
Hogs	60.00
Total	$2386.97

A movement has been started in the vicinity of Holtville in the Imperial valley to establish a cooperative creamery at that place. The capital stock of the new concern is placed at $20,000, of which $4500 was subscribed at a meeting held recently. J. D. Kendrick was elected president of the company and L. D. Smith, secretary.

The consolidated creameries around El Centro, now known as the Imperial Valley Creamery Co., are paying out about $70,000 per month in cream checks to ranchers. The new consolidated concern claims to be saving $3000 per month by handling the business which was formerly transacted by four creameries. This saving is divided between the milk producers and the creamery operators.

Uriah Serviss is having 80 acres adjoining Gridley planted to alfalfa and will erect a large barn preparatory to starting a large dairy.

The city council of Berkeley has a milk ordinance before it, which if passed will allow none but inspected milk to be sold in that city, and milk must pass certain standards before being offered for sale. The ordinance also calls for the employment of a milk inspector who is a veterinary surgeon. The proposed ordinance calls for a minimum score of 80 on dairy-farm milk, and 90 points on city milk plant produce, as determined by official city scoring, all milk to be


Heavy Fence For Economy

WOVEN-WIRE FENCES must be heavy as they have to turn animals by sheer strength of the wire. A fence with barbs is protected from excessive pressure because the animal fears the barbs. Remove the barbs and the greatest strength of the animal is thrown upon the fence. Its wires must be larger and stronger. To have a long-life woven-wire fence the fence must be heavy.

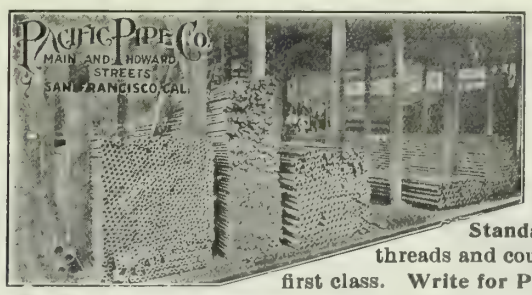
AMERICAN FENCE

is a thoroughly galvanized square mesh fence of weight, strength and durability. Large wires are used and the whole fabric is woven together with the American hinged joint (patented)—the most substantial and flexible union possible. Both wires are positively locked and firmly held against side slip and yet are free to act like a hinge in yielding to pressure, returning quickly to place without bending or injuring the metal.

Dealers Everywhere—Stocks of American Fence are carried in every place where farm supplies are sold. The Fence is shipped to these points in carload lots, thereby securing the cheapest transportation, and the saving in freight thus made enables it to be sold at the lowest prices. Look for the American Fence dealer and get the substantial advantages he is enabled to offer. He is there to serve the purchaser in person, offer the variety of selection and save the buyer money in many ways.

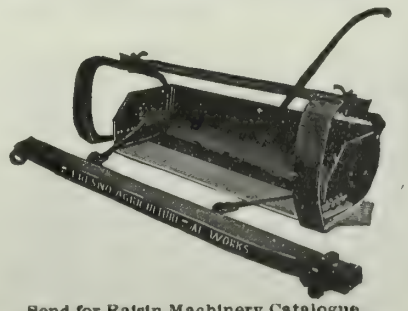
FRANK BAACKES, Vice President and General Sales Agent
American Steel & Wire Company
Chicago New York Denver San Francisco
Send for copy of "American Fence News," profusely illustrated, devoted to the interests of farmers and showing how fence may be employed to enhance the earning power of a farm. Furnished free upon application.

ERICKSON'S PATENT EXTERMINATOR
A CARTRIDGE CHARGED WITH DEATH—Positively the most effective method known for exterminating burrowing pests. Better than poison, for it is absolutely safe and acts ONLY on pests that burrow. Tests made by the Department of Agriculture resulted inunqualified satisfaction. Awarded the Grand Prize A.-Y.-P. E., Seattle. Simple, safe, effective. Send for booklet. Sold by Dealers. If not, write to Hitt Fireworks Co., Seattle, Wash.
KILLS GOPHERS SQUIRRELS
For Sale By DUPONT POWDER CO., San Francisco, Salt Lake City, Portland, Seattle, Spokane, Denver and St. Louis



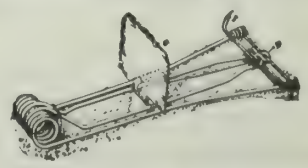
This is Second Hand Pipe
We can supply you with any size and quantity of **Standard Pipe or Casing**—all new threads and couplings—all stock guaranteed first class. **Write for Prices and Particulars.**

HONEY BEES  **HIVE MONEY**
PHOENIX TOOL & VALVE COMPANY, 245 Market St., San Francisco

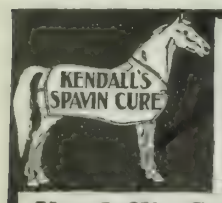
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FRESNO CALIFORNIA.

REDWOOD TANKS
Direct to consumer. can save you from 10% to 20%. A large stock on hand. Quick delivery. Egg cases, Eucalyptus Nursery Boxes. Fruit Boxes and Trays o all kinds.
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elephone 2957 Stockton, Cal.

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Small, simple, sure. At all dealers. If your dealer does not handle same, send 20 cents in stamps and mention your dealer's name and get sample by mail, postage paid, at special rates. Manufactured by
Z. A. MACABEE, Los Gatos, Cal.

PATENTS
Write for our Guide to Inventors, sent free on request, containing nearly 100 mechanical movements and full information about Patents, Caveats, Trademarks, and Infringements.
DEWEY, STRONG & CO.,
1105-6 Merchants Exchange Bldg., San Francisco. Established 1860.



Time Has Told

You don't need to experiment on a remedy for Spavin, Ringbone, Curb, Splint, Capped Hock, Swollen Joints, or any lameness of horse or man.

Kendall's Spavin Cure

has been the unfailing remedy for 40 years.

Silver Creek, N. Y., Apr. 8, 1909.

Dr. B. J. Kendall Co., Enosburg Falls, Vt.

I have used Kendall's Spavin Cure for the last 15 years, and it never has failed to do all that is claimed for it. Would not be without it. C. A. Dahlman.

$1 a bottle, 6 for $5. At all drug stores. Ask for free book, "Treatise on the Horse," or write to—

DR. B. J. KENDALL CO., ENOSBURG FALLS, VT.

HUB (BRAND) Axle Grease

COSTS LESS
USE LESS

The rub is in the hub.
But HUB saves the rub.

ALL DEALERS

The Brininstool Co.
Los Angeles, Cal.

In a BLUE PAIL Best for 16 Years

BE READY FOR EMERGENCIES.



H.H.H LINIMENT

SHOULD BE IN EVERY HOME AS A SAFE-GUARD AGAINST SORE THROAT, SWELLINGS, SPRAINS, RHEUMATISM, NEURALGIA, STIFF JOINTS, LAMENESS, STOMACH CRAMPS, DIARRHOEA, Etc.

50¢ AND $1 SIZES

THE STOCKMAN'S STAND-BY FOR SUCCESS IN VETERINARY USES

IT DOES THE WORK.

GET A RANCH FROM BATTLING NELSON ON EASY PAYMENTS

$350 $350 $350

$25 Cash and $5 each month buys one of those beautiful rich level 2½-acre Home Farms in the Livermore Valley. No better climate, no better land for a profitable poultry ranch. Only 32 miles from Oakland.

THIS LAND WILL DOUBLE IN PRICE WITHIN THE NEXT 3 YEARS.

BUY NOW AND MAKE THE PROFIT.

F. D. BURR CO.
968 BROADWAY, OAKLAND, CAL.

cooled to a temperature of 50 degrees Fahrenheit, with all deliveries made in paraffin-sealed bottles and not containing more than 100,000 bacteria per cubic centimetre.

Four milk dealers were arrested in San Francisco last week charged with violation of the law regarding standard of milk. In one case the inspector claimed that milk was found which contained fully 40 per cent water. Dr. McNutt has issued orders that any dealer carrying skimmed milk, even though it be marked, is to be arrested by the inspectors.

In the Superior Court of Stanislaus county last week, the Modesto creamery won its suit to restrain the Stanislaus Creamery Co. from using the word Modest on its butter labels.

SHEEP IN THE FOREST RESERVES.

(Continued From Page 169.)

the amount of our sheep grazing on these lands. I understand that all timber companies in the West rent the grazing of their lands to stockmen. It is the only practical and successful insurance they have. It is needless to say forest fires on these lands are rare.

The Forest Service itself is becoming somewhat acquainted with conditions in the West, and some of the forest officers, especially those in Oregon and Washington. Mr. C. S. Chapman, District Forester, in charge of this district has expressed an opinion that grazing to some extent was a good thing, but did not favor overgrazing.

I take the liberty of reading a short extract from a letter written by Mr. Chapman.

"I find that it will be impossible to draw any general or specific conclusions as to relative frequency and damage of fires in regions heavily or lightly grazed, or not grazed at all.

"It is extremely difficult to judge as to the effects of regulated grazing upon the spread of fire for two reasons: First, our grazing forests are crowded and have for many years to a greater or less extent been overgrazed, prior to the creation of the forest reserves. There is little information available as to the frequency, intensity or extent of fires before the ranges were fully stocked, so comparison is out of the question. Second, the territory not now grazed, that west of the mountains, is so entirely different from east of the mountain conditions, that a comparison would in reality mean absolutely nothing."

"It would of course be reasonable to suppose that on grazed areas fires are less likely to become started, and if they do, it is easier to extinguish them.

"Unquestionably, driveways serve as most excellent fire lines. If these can be so located as to separate a forest into a number of blocks, a fire starting in one could not pass into another. This is an important way of deriving benefit in fire protection through grazing. In open woods where there is little down timber there is likewise no doubt but that the consumption of the forage crop assists in case of fire protection.

"Where sheep are driven over an area after a heavy seed year, and tramp this seed into the ground, it unquestionably increases the chance of germination and is beneficial. But to what extent sheep should thereafter, when the seedlings are young and tender, be driven over the area has yet to be worked out. I think we can sum up the probable benefits of sheep grazing as they affect fire protection as follows:

"1. Sheep driveways if properly located act as most effective fire lines.

"2. In open pine forests, with little down timber, the consumption of the forage crop lessens the chances of fires becoming started and makes fires which do start easier to control.

"3. The presence of herders and camp tenders in the mountains insures more prompt discovery of fires."

Mr. Thomas MacKenzie, Chief of Grazing of this district, cites an instance last summer on the Colville National Forest in the State of Washington. There were two similar areas in this forest not far from each other, both having about equal timber, grass and underbrush thereon and the general lay of the swamps, hills and streams being similar. On one of these was regularly grazed a band of sheep; the other had not been grazed. Forest fires started last summer on both. On the one where sheep were grazed it was easily checked and controlled and no damage was done to the timber. The fire on the other they were not able to get under control and it destroyed about 14 miles square of excellent timber. The Colville Supervisor believes in sheep grazing to protect his forest.

"I am happy to note that some of the fair-minded foresters who have had occasion to observe actual Western conditions taken from experience, realize the importance of live stock grazing as forest fire prevention.

"Best of all, history, actual application and observation during the past 25 years proves the statement that live stock grazing is the most practical and successful forest fire insurance.

"A few days ago I wrote a hundred letters to the leading, most prominent, experienced, capable, fair and honest stockmen who have directly seen and observed personally Western forests with sheep grazing and without grazing and noticed the fires which have occurred on these forests for the past fifteen to thirty years. The majority have replied, and they unanimously bear me out and substantiate my statements."

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Poultry Department.

Conducted by M. Russell James.

FOWL TUBERCULOSIS.

C. L. A., of Dixon, Cal., writes: "As I am a subscriber of the Pacific Rural Press and also have a small number of poultry—about 80 head all told, one-half Barred Rocks and the rest White Leghorns—and being up against a hard proposition, I write you for a little information. About two weeks ago a young Leghorn hen dropped dead on the dropping board at night; today another dropped dead in the run. I cut both open and examined them. Their bodies were full of blood that had escaped from some ruptured part. Their livers were enlarged and full of lumps about the size of BB shot. These lumps were white and round, and when cut looked like tubercular matter. Their intestines also had nondular lumps projecting through the sides and scattered along the length of the intestines. When cut in half, these lumps, white in color, showed divisions like an orange cut crosswise. The inside was a cheesy mass. Another hen looked dumpish and I killed her. She was in the same condition as the above, but had not come to the ruptured point. I judge I have not enough experience in poultry sickness, because I did not notice anything unusual about the action of the hens before they died. The chickens are only penned at night, in open-front houses, 9 by 16 feet, with straw litter for scratching in rainy weather. They are distributed in five of those pens. I feed wheat and oats, equal parts, for scratch food in the morning; run out all day; a mash of oats, ground barley, bran, and 15% meat scraps at 4 p.m. Plenty of bran, charcoal, grit, and shell before them all the time. Can you tell me what is the matter?"

Our subscriber's flock is undoubtedly infected with tuberculosis, but to make sure of the point, we would advise that he send one of the ailing birds to the Agricultural College at Berkeley for examination.

Tuberculosis is one of the most destructive diseases among fowls, for it is highly infectious and there is no known cure for it. It is so slow and insidious in its working, and its symptoms are so difficult to detect, that the poultryman fails to realize the danger till too late. Almost to the last the afflicted bird will appear in good health, the comb red, but rather pinkish, and the appetite good. Usually, by loss of weight, the disease may be detected in handling the fowl, but sometimes even this test fails. So gradually do the fowls drop off that the fatality fails to excite the poultryman's alarm, and he is apt to consider some simple individual ailment the cause. This disease is spreading among the flocks of the Coast, and our agricultural departments as well as our poultrymen should be awake to the fact.

Our inquirer's flock is evidently kept under the best of conditions, but in some way the stock has become infected by tubercle bacilli. Professor Dryden says: "We have had several positive cases of the infection being transmitted by sputa from consumptive poultrymen to fowls under their care, and we have found more tuberculosis among barnyard fowls than among all others combined. In eating the undigested grain in the manure from consumptive animals, the fowls become infected, notwithstanding the mooted question of the transmissibility of the organisms from mammals to fowls; for there is but one tubercle bacilli, and all the variations have come through their environment in the host that nourished them. Whether all the different types originally came from a human, bovine, or avian source is not known, and never will be known; but the transmissibility of any of these three forms is possible in either direction. The poultryman is admonished never to expectorate where his fowls may pick it up, and to keep his fowls from feeding upon manure piles. Aside from the danger of tuberculosis, fowl fed with manure cannot produce as choice flesh and eggs as when they are fed clean food."

We would advise our inquirer to go over his flock thoroughly, and all fowls showing any symptoms of off condition, such as emaciation, pale combs, lameness, etc., to remove and keep by themselves—or, better still, destroy them and burn their bodies. Disinfect the quarters and yards of the fowls thoroughly. Professor Dryden says: "When a yard or run is supposed to be infected, a good application of quicklime is perhaps the most effective in destroying the bacilli, and is more easily applied than other disinfectants. Place fresh lime in a box and sprinkle sufficient water upon it to break it into a flowery powder, which scatter over the ground, the coops, floors, and dropping boards until they are thoroughly whitened. Dry earth should be sprinkled over the lime to keep it from burning the fowls' feet. Coops, water fountains, and feeding troughs may be sprayed or washed with a solution of formaldehyde, one pint to twenty gallons of water. These disinfectants are equally good in case of other bacterial diseases." We would further advise our inquirer not to breed from this stock, and, in raising his young stock, to have their quarters far away from the runs of his old stock and on fresh ground.

Perhaps this is a good place to call attention to the fact that all diseases of fowls come from two sources: Improper housing, under which head come quarters that are drafty and damp, or tight and unventilated, or overcrowded or filthy, which give rise to colds and the long line of diseases into which colds may run. The other source is unwholesome food or food eaten from filthy, infected ground, litter or troughs. Guard your fowls from these two sources of disease, and you will have no disease proper among your stock.

Poultry Notes.

The Dirty Puddles.—With the continuous wet weather there will be plenty of these in the poultry-yard. In rendering them harmless to the fowls we have found nothing so effective as coal oil. We sprinkle the sloppy surface of the ground with a brush wet in coal oil or distillate, and pour a little of the oil in each of the bigger puddles. Don't imagine that with a plentiful supply of clean water the fowls will not drink the filthy seepage and standing water. However, the oil stops them. Whenever they again start to sip from the puddles, replenish the oil. By following this plan with the yards, and keeping the houses sweet by cleaning out the damp droppings each day, and sprinkling air-slacked lime under the perches and in the damp corners, the poultry-keeper may prevent an outbreak of chickenpox, canker, or diphtheria, not to mention worms.

The Southern California Poultry Shows.—From all reports these were brought off in a very satisfactory and creditable manner. The show at Los Angeles combined size and quality in its exhibits. It was a big show and competition was strenuous in all the popular classes. The work of conducting the show was also strenuous, and sent Secretary Memmler to a sanitarium to recuperate. Director Mumford stepped into the breach but was soon floored and was compelled to seek a hospital for repairs. Director Davis then took hold of affairs, and, so far as we have learned, was able to hold out to the end. The fact is that it was a large show and the management did not spare themselves in their efforts to make it the best ever, and to give complete satisfaction to the exhibitors and visitors. An old exhibitor from this end of the State, Miss Carrington, writes: "They sent a signed statement as to my winnings, giving leg-band numbers. This is the first comparison show that has done it, and it is what I have always wanted."

January is rather late for a poultry show in California, and not many of our local fanciers who are in the business commercially sent their birds, as it was time to get them into the breeding pens. All the same, this end of the State was heard from. The Carrington birds from Hayward covered themselves and their breeder with glory. The White Leghorns were a strong class, both in numbers and quality, but the Carrington Leghorns won second, third, and fourth cock; first and fourth hen; fourth cockerel; first pullet; first pen. Miss Carrington also won the cup for the best pair of White Leghorns.

Twin Oaks Farm, Livermore, came to the front in great style. On White Orpingtons, Mr. Bissell won first cock, first and third hen, first cockerel, second pullet, second pen, and all awards in Jubilee Orpingtons. Furthermore, he brought home the cup given for the best display from northern California.

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SULLIVANS' BUFF ORPINGTONS—1000 birds to select from. Trios, $7.50 and up. Eggs for hatching, $2 and $3. Special selection. Prices on application. Mr. and Mrs. W. S. SULLIVAN, 25 Market St., Agnew, Santa Clara Co., Cal.

MAMMOTH WHITE HOLLAND TURKEYS—Eggs for hatching, $5 per 13 eggs; fine large vigorous stock, not related; no stock for sale. Mrs. A. R. Sutherland, Santa Barbara, Cal., R. F. D., No. 2.

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WHITE WYANDOTTES—221 egg strain. Owner first-prize cockerel, Oakland and Petaluma 1909. Eggs $2 per 15. H. B. WINTRINGHAM, Middletown, Lake Co., Cal.

CHICKS, 10c.—Shipped anywhere; 30 varieties; thoroughbred chickens and eggs; free circular. Ingleside Hatchery, 807 Mt. Vernon Ave., San Francisco, Cal.

INDIAN RUNNER DUCKS—Eggs for hatching, $1 per setting; $2 for 30; for 50 or more, 5c each. F. L. HUNT, Lincoln Ave., Napa, Cal.

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WHITE LEGHORNS—Chicks, eggs, cockerels. Fine stock. Reasonable. O. B. Morris, Lodi, Cal.

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HATCHING EGGS—White Leghorns. Circular 164. A. H. Gregory, Fruitvale, Cal.

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The Home Circle.

Make Good.

If you start to do a thing,
Make good;
If it be to dance or sing,
Make good.
If it be to write a famous book
Or be a noted cook,
Do your best by hook or crook—
Make good.
If you have a goal in view,
Make good;
It is simply up to you,
Make good;
Talk is cheap, so cut it out,
If you win the victor's shout,
You must watch what you're about—
Make good.
If you make a little bluff,
Make good;
Ante up the promised stuff—
Make good;
Failure everywhere is rife,
Be a live one in the strife,
Do the best you can in life—
Make good.

You Can.

You can climb to the top of the loftiest hill,
If you work.
You can make yourself whatsoever you will,
If you work.
A faith you must have, rooted deep in your soul,
A purpose unshaken, a firm self control:
Strive on; without ceasing; you'll reach to the goal,
If you work.
—Cincinnati Enquirer.

The Child, a Habit Forming Animal.

After eighteen, says the late Prof. Wm. James of Harvard, the eminent psychologist, the brain begins to set like a plaster. No absolutely new and uncolored ideas are received by the brain after this. All ideas are modified by the body of ideas which receives them. The personal habits are nearly all formed at eighteen. Personal cleanliness, bathing, manner of dress, table manners, habits of speech, the walk, gestures, and postures are nearly always fastened on for "good and all" by eighteen. Not that there is any magic about the age eighteen; for some it is seventeen, for others nineteen or twenty; but quite close to these years, for most people, the tissues of the body and brain begin to harden; the paths of nervous discharge along the muscles have nearly all been fixed. As Kipling would say, "the ship has found herself," and the habits of a lifetime have settled down to mark their permanent grooves in the nervous structure.

Youth is the Golden Age for implanting life's best habits. Habits are both good and bad, useful and harmful. It is the business of society, of parents, of schools, to see to it that the profitable habits are started during this golden age, and that the unprofitable ones are not allowed to form. Brain cells are plastic and yield persistent impressions from ten to twenty. They are of course plastic much earlier than this, but less liable to persist in error. Before ten in most children the personality submits more to the control of superior personalities as parents and teachers. Between ten and twenty—the dangerous, swiftly changing adolescent period—the youth assumes new dignities and new emotions. Youth and manhood meet in tumultuous struggle, and manhood emerges from the storm and stress, wrecked or triumphant.

If there are any good habits that should be fixed for life, pleads Professor James, let all the forces of human society concentrate on their formation during early youth. It is not sufficient to drive out bad habits; good ones must be implanted in their place.

Habits favorable to the growing organisms are, regular bathing, a reasonable degree of personal neatness, such as combing the hair, wearing clean linen; pleasant home evenings, instead of pleasant street evenings; erect carriage, clear enunciation, and good English, memorizing short selections of literature.

Habits unfavorable to the growing organism are smoking, drinking, and all forms of nerve deadening, slouchy carriage and dress, avoidance of healthy play and sports; buying things instead of making things. In the boy's habits lies his destiny, for they will rise up and think for him in the emergencies of life.

Professor Bain lays down two rules for habit forming that have become classic among the psychologists and should be household words in every home. They are:

1. In acquisition of a new habit or the leaving off of an old one, launch yourself with as strong and decided a start as possible.

2. Never suffer an exception to occur until the new habit is established.

Japanese Ways.

Two earnest Japanese students were asked recently to dine in an American home, says the Christian Endeavor Herald, and in this contact with them their ideas, standards, and customs were brought out in most enlightening fashion.

Said Mr. Tanabe, by way of explanation: "We never shake hands in Japan. When we meet friend we stand far from him and bow low. We show him much respect. It is same as if we say, or assume, 'My hand was dirty; yours very clean.' We come not near guest. We thus honor him very highly.

"If I had a wife she would call me 'Mr. Tanabe' when we were alone; but in presence of guest she say just 'Tanabe,' because if she say 'Mr.' it would be same as honoring herself with title. That very bad taste in presence of guest.

"Oh, I see many things—many. I see mothers iron white dress with what you call ruffle, one, two, three, maybe, while daughter rest. I suppose she is 'pursuing,' as you say."

"Yes, the higher education, Mr. Tanabe."

"I think it very strange American mothers like not to pursue rest.

"Japanese mothers better to be rested than have daughters so very great scholars. See?"

Toasted Bread.

The bread should be stale, cut in thin slices, and dried thoroughly before browning it. The object of the toasting is, primarily, to take out all the moisture, for health's sake; secondarily, to brown it for the palate's sake.

When well dried it can be the more thoroughly moistened with the saliva, and thus more easily digested.

It is a mistake to take new bread and expose it to a hot fire, where it will become browned, if not blackened, on the outside, while the inside remains a doughy mass. Butter spread on such toast becomes an indigestible oil, which adds just so much more to the already indigestible mass.

Bread toasted as it should be is not only very palatable, but also very healthful. It is sometimes spoiled after being rightly prepared. It must not be laid one slice above another, for it steams in this position, and a clamminess results. It must be moistened at once with a little hot water or milk, then buttered; or, if preferred, it can be simply buttered when it can be thoroughly acted upon by the saliva and other juices necessary to digestion.

Well Protection to Prevent Typhoid Fever.

The menace of typhoid fever in country districts—a menace arising from polluted drinking water—is thoroughly considered in a report by Myron L. Fuller, of the U. S. Geological Survey, in which the various sources of pollution are indicated and suggestions are given for means of protection.

Typhoid-fever rates are usually greater in the country than in cities, despite the prevailing belief that farms, isolated as they are from areas of congested population, are ideally situated for obtaining pure and wholesome water.

Wells Unprotected.—Failure to protect adequately the wells in farming districts is given in the Survey's report as the most common reason for their pollution, and ignorance of the manner in which ground-water circulates is the cause of the faulty protection. Chemical analysis is not rated high by Mr. Fuller as a means of detecting polluted water, for he asserts that a careful common-sense inspection of the district is usually much more to the point.

Radius of Danger Zone.—Sources of pollution in the vicinity of a well or spring should be noted wherever possible, and drinking water should not be drawn except at a safe distance from them. The distance required for absolute safety varies greatly with the character of the rock. For wells sunk in sandstone, slate, and shale, 100 feet may be sufficient; where the surface stratum is composed of fine sand, 200 feet should be allowed; and where it is limestone or granite much greater distances will be necessary. Water may run polluted in limestone for miles, so that wells in regions where limestone makes up the greater part of the surface rock should be carefully examined after rains for mud and floating matter, for these are pretty sure indications of pollution.

Suggestions for Protection.—For protecting wells, springs, and cisterns, Mr. Fuller advocates, first of all, a watertight lining to keep out surface water. Wells and springs should always be covered and protected from animals, dust, and falling leaves. Watering troughs should always be located a safe distance away, though the custom prevails in country districts of having well and trough side by side.

Minus People.

Some weeks ago two little girls of six and seven years old heard a party of older people discussing skeletons. The six-year-old lass listened intently to the conversation, when the older girl, with an air of superior knowledge, said abruptly:

"You don't know what a skeleton is, and I do."

"So do I!" sharply replied the younger. "I do know! I know for certain, I do!"

"Well, now, what is it?" the elder wanted to know.

"Why it's bones with the people off, that's what it is!"—Metropolitan.

Consistent to the Last.

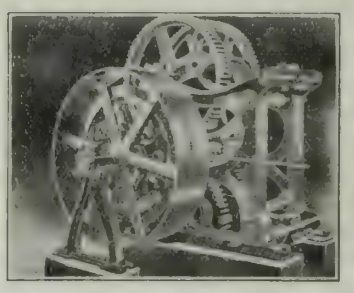
McRooney—How long was Pat sick, Mrs. Clancy.

Mrs. Clancy—Only two days, Mr. McRooney.

McRooney—Sure, Pat was always a hustler!—Puck.

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OUR YOUNG FOLKS' DEPARTMENT.

Conducted by M. RUSSELL JAMES.

Things of Dearest Worth.

These are the things I prize
  And hold of dearest worth:
Light of the sapphire skies,
  Peace of the silent hills,
Shelter of forests, comfort of the grass,
  Music of birds, murmur of little rills;
    And after showers,
    The smell of flowers
  And of the good brown earth;
And best of all, along the way,
  Friendship and mirth.

—Henry Van Dyke.

A Boy's First Setting Hen.

I am thinking to-night of the time when a boy I set my first hen, and oh, with what joy, after three weeks of waiting, I looked in the nest and saw cuddled there 'neath the mother hen's breast eight cute little chicks like round balls of fur—some white and some black, and some "mixed," as it were.

The old biddie looked at me, then at her chicks, as much as to say, "You must play me no tricks and take my wee chicks just out of the eggs, because they're not strong and can't stand on their legs. I have set here three weeks—three long weeks they've been, so leave the chicks here with the old mother hen. Let them stay a while longer, and stouter they'll be than if taken away from their warm nest and me. Leave them here until morning; don't get in a sweat to take them out doors where they are sure to get wet. I'll keep them all warm and take care that they come to no harm."

Thus spoke the old hen in her own clucking way, and so just to please her I let the chicks stay with her in the nest in which they were born until bright and early the following morn, when as soon as it was light I got up and dressed and went out to the barn where the hen had her nest. I fixed up a coop out of barrels and slats, and made a tight door to keep out the cats. This I set in the yard 'neath an old apple tree, and put the chicks in it and watched them with glee as they scampered about, hunting bugs, worms and seeds, and everything else upon which a chick feeds. The old hen would cluck to them when too far they'd roam, and tell them they'd better stay closer to home. I petted them, nursed them, gave them water and food, and in a few weeks had a nice healthy brood of chicks that to me were the cause of much pride, and made me the envy of the boys far and wide.

I have set many hens in the years that have rolled, have raised many chicks, and some good ones, I'm told, since the time long ago when I set my first hen; and, oh, how I've longed for the pleasure again, for no hen that e'er set has caused me such joy as that old biddy did when I was a boy.—Selected.

A Boy the World's Champion Corn Raiser.

Jerry Moore, a 15-year-old boy of Columbia, S. C., has achieved the distinction of growing more than 228 bushels of corn to the acre. Never in the history of agriculture has such a yield of corn been produced before.

In the National Grain Contest in Ohio, this boy and another 15-year-old boy, Stephen Henry of Melrose, Iowa, won first prizes offered by the Secretary of Agriculture for best production per acre of corn, and won them over the grown-up farmers of the country. As awards they each received a blue ribbon and an automobile.

Our Young Folk's Letters.

As we suggested, these letters proved good reading for old folks as well as young ones, and are pronounced unusually interesting for their kind. They had seemed that way to us, yet we were not certain but that we were a little partial to *our* young folks. We want you RURAL PRESS young folks, who have shown such commendable promptness and interest in writing, to keep right on; and we want you who haven't got here yet to begin. Let us hear from all of you. In this way we can get acquainted with each other, and we may all have a good time. Here is a bright, breezy letter from a real boy:

Tuolumne, Cal., Feb. 11, 1911.

To the PACIFIC RURAL PRESS:

Dear Manager: I noticed in your paper a young folks' department which interested me, and I hope my letter will be among the first to reach you. My grandfather, J. F. Ralph, has taken the PACIFIC RURAL PRESS nearly ever since it was started. All of us, from the oldest to the youngest, have always been interested in it. My grandfather died last August at the age of eighty years, but my father, Walter Ralph, still takes it, and will continue to.

I am eleven years old, and live on a large farm called Appleton Home. We have a large orchard. My father's big red apples took a blue ribbon at Watsonville last fall. We raise all kinds of berries, and us children pick and sell them and get half the money. We raise chickens and pigs and horses and cows. I like horses and chickens best. Our chickens lay considerable eggs. I forgot to say that my father raises hay also.

We live about a mile from Tuolumne, but I walk to school. There are six in our school aand I am in the third room and fifth grade. My brother and I do the chores every night. My brother is three years younger than I am. I can drive horses and hitch them up, too. The games I like to play best are marbles, ball, tops, football and snow ball. I do not like to chop wood nor clean chicken houses. When I am a man I should like to be a carpenter or a farmer.

We have a picnic once in a while up here. There are many wildflowers around here, and many singing birds around my place. They live in the large oaks in our yard. This is the first letter I have ever written to a paper. I hope to see my letter printed soon. Yours truly,

ROSS RALPH.

Table Manners in Kansas.

At the Kansas Agricultural College—by means of formal and informal lunch and dinner parties under an instructor's supervision—the whole senior class will study how to eat according to the laws of etiquette. A rather pleasant study, by the way, if the college cooks will do their best. Already have these seniors made out a list of nine "dont's" for their own use and that of younger students, which assures one of their firm determination to be veritable Chesterfields at table. Thus:

Don't balance peas on your knife.

Don't eat potatoes with a spoon.

Don't eat pie so ravenously that it will get in your ears.

Don't tie your napkin around your neck as if you were getting a shave.

Don't dip your soup into your vest-pocket.

Don't make the extraction of soup from a spoon sound like escaping steam.

Don't leave your spoon in your coffee and run the risk of knocking your eye out.

Don't butter your bread with your thumb.

Hereafter when anyone scoffingly inquires, "What's the matter with Kansas?" the question can have no possible reference to her table manners.—Chicago Inter-Ocean.

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What God Gives a Boy.

A body to keep clean and healthy, as a dwelling for his mind and a temple for his soul.

A pair of hands to use for himself and others, but never against others for himself.

A pair of feet to do errands of love, and kindness, and charity, and business, but not to loiter in places of mischief, or temptation, or sin.

A pair of lips to speak true, kind, brave words.

A pair of ears to hear music of bird and tree, and human voice, but not to give heed to what the serpent says, or to what dishonors God or his mother.

A pair of eyes to see the beautiful, the good, and the true—God's finger-print in flower and snowflake.—Boston Herald.

THE MARKETS.

San Francisco, March 1, 1911.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

While no further decline has occurred, the market has a decided tendency downward. It is impossible to realize present quotations, and though holders so far are not inclined to shade prices, buyers are taking no interest whatever. The Northern markets remain dull, with increasing pressure to sell in the country.

California Club	$1.37½@1.40
Sonora	1.60 @1.65
White Australian	1.55 @1.60
Northern Club	1.47½@1.52½
Northern Bluestem	1.30 @1.55
Russian Red	1.42½@1.50

BARLEY.

There is a steady movement from interior points to the Port Costa warehouses, and a fair export movement from that point, though the local market is not especially active. Prices are steadily held, however, with occasional sales at top quotations, and conditions are fairly favorable for the disposal of the remaining stock.

Brewing and Shipping	1.17½@1.25
Choice Feed, per ctl	1.12½@1.15
Common Feed	1.07½@1.10

OATS.

This grain remains very quiet all around, with very little demand for most varieties. Supplies of red and black are quite large, and red is moving at slightly lower prices. No gray oats are offered, and good white oats are very scarce.

Red Feed	$1.20 @1.25
Red Seed	1.32½@1.42½
Gray	Nominal
White	Nominal
Black Feed	1.10 @1.20
Black Seed	1.45 @1.50

CORN.

Considerable Eastern corn is still coming in, most of it sold to arrive. Spot offerings of good corn are very light, and there is not much demand. Prices remain as before.

Eastern Yellow	$1.30 @1.35
Eastern White	1.31 @1.36
Egyptian White	1.55 @1.60
Brown	1.50 @1.60

RYE.

Remains dull and nominal, though some small lots are offered at the former figures.

Rye, per ctl	$ 1.60

BEANS.

Values remain as last quoted on all descriptions, and general market conditions show little change. Business is not especially active in any line, but small shipments are going forward steadily, and in view of the small stocks in several lines the situation is favorable to continued firmness. Limas are going forward in large quantities by sea, the water rate at present being far below the rail charges. Shipments for the past month have been unusually heavy, and the warehouses in producing districts are being emptied at a rapid rate. It is now certain that all offerings will be cleaned up earlier than ever before, with no carryover. The price is firmly maintained, though no advance has occurred for some time. The New York Journal of Commerce says: "With the arrival of some 5000 sacks of California lima beans, together with receipts of about 22,000 bags in the last two weeks, the spot market has remained stationary, but quite firm, at $6.45 per cental for the best goods, the reason for this quotation being the desire on the part of some holders to realize profits. It is learned that the lot returned from London, consisting of 2500 bags of very old crop, was disposed of at a trifle under this price. In well posted circles it is judged that the slight reaction in the price of spot goods is temporary, and that eventually the market will be decidedly higher in parity with the Coast. The probabilities are for a 7c. market there before the new crop."

Bayos, per ctl	$4.75 @4.85
Blackeyes	5.40 @5.70
Cranberry Beans	4.00 @4.25
Garvanzos	2.85 @3.00
Horse Beans	2.25 @2.50
Small Whites	3.45 @3.60
Large Whites	3.45 @3.60
Limas	6.00 @6.10
Pea	4.25
Pink	5.60 @5.70
Red Kidneys	6.25

SEEDS.

Alfalfa is now the principal feature. Renewed demand is rapidly reducing the stock on hand, and there is more firmness to the market than for several months. Other lines, for the most part, are quiet, prices remaining as before.

Alfalfa	18@ 20c
Broomcorn Seed, per ton	$20.00@ 25.00
Brown Mustard, per lb	5½c
Canary	3½@ 3¾c
Flaxseed	5 @ 5½c
Hemp	3 @ 3½c
Millet	2¾@ 3¼c
Timothy	8 @ 9 c
Yellow Mustard	5¾c
Dried Peas, per ctl	3.75@ 4.00

FLOUR.

Local prices on patent grades are still held at the former figures. Local demand is fair, and most of the California mills are busy, with some export movement from this port, both for Panama and the Orient. The movement of Northern flour to the Orient continues as heavy as ever.

Cal. Family Extras	$5.40 @5.80
Bakers' Extras	5.40 @5.80
Superfine	4.20 @4.60
Oregon and Washington	4.60 @4.80

Hay and Feedstuffs.

HAY.

Shipments to San Francisco from the country continue extremely heavy for this time of year, and with very little demand the continued pressure to sell has brought a lower range of prices on practically every description. Alfalfa finds a rather better demand than last month, but it also is somewhat lower in sympathy with the general market condition. Outside conditions show little change. Many growers show increasing anxiety to sell, but country dealers, like those in the city, are buying very little. Weather conditions in some districts have not been altogether favorable to the new crop, but with a prospect of at least fair production and a considerable holdover from the past season, no reason is apparent for any material improvement in market conditions in the near future.

The Oregon market is in a bad way, with excessive stocks all over the Northwest, and a large carry-over is assured. Owing to the open winter there, very little feeding has been necessary.

Choice Wheat	$11.00@13.00
Good Wheat Hay	9.00@11.00
Other Grade Wheat	7.00@ 9.00
Wheat and Oats	7.00@10.50
Tame Oats	7.00@11.00
Wild Oats	6.50@ 8.50
Alfalfa	8.00@12.50
Stock Hay	5.50@ 6.50
Straw, per bale	35@ 55c

FEEDSTUFFS.

The demand continues moderate in all lines, and prices on several descriptions are easy. The production of bran, shorts, and middlings is comparatively large at present, and bran is again quoted lower, though all other descriptions are held at about previous figures.

Alfalfa Meal, per ton	$20.00
Bran, per ton	$24.50@25.00
Cocoanut Cake or Meal	26.00
Cracked Corn	32.00@33.00
Middlings	32.50@35.00
Mixed Feeds	28.00@31.00
Rolled Barley	24.50@25.00
Rolled Oats	29.00@31.00
Manhattan Egg Food, per ctl	15c
Shorts	25.50@28.00

Garden Truck.

VEGETABLES.

The high prices of onions have caused a very limited demand, buyers showing no interest whatever for the last week, and a sharp decline has resulted. Both Oregon and California stock is about 20c. lower. So far very little outside stock has been offered. Most southern California vegetables continue scarce, with only a few varieties arriving in any quantity, and very little really first-class stock is coming in.

Green peas are scarce and are held at stiff prices. Mexican tomatoes continue to arrive in small quantities, and bring full quotations, eggplant and cucumbers being also firmly maintained. Green peppers are a little easier, but still bring very fair prices. Mushrooms are unchanged, as the supply is still comparatively light, and there is a good local demand. Offerings of celery are fairly large, but mostly poor in quality, and only the better lots will bring full quotations. Quite a lot of rhubarb is arriving, both from the South and nearby points, and a slight drop in quotations has resulted. Asparagus is also lower on fairly large receipts, while lettuce of attractive appearance is firmly maintained. The celery shipping season in southern California is about over, the crop being smaller than for several years.

Onions: Yellow, sack	$ 2.25@ 2.40
Oregon	2.35@ 2.50
Garlic, per lb	4@ 5c
Green Peas, per lb	15@ 17c
Turnips, per sack	65c
Tomatoes, per crate	1.25@ 2.00
Eggplant, per lb	12½@ 15c
Cucumbers, per doz	1.00@ 1.25
Cabbage	60@ 65c
Green Peppers, per lb	9@ 12½
Carrots, per sack	65c
Celery, large, per crate	1.50@ 2.00
Mushrooms, per lb	35c
Rhubarb, per lb	5@ 8c
Lettuce, per crate	2.00@ 3.50
Cauliflower, per doz	50@ 75c
Asparagus, per lb	25@ 40c

POTATOES.

A few new potatoes are arriving, being sold up to 4½c. per pound. The firmness of old stock is as much a feature as ever, though the local demand is comparatively light. Sweet potatoes are closely cleaned up, and show a sharp advance.

Salinas Burbanks, per ctl	$ 2.20@ 2.35
River Whites, per ctl	1.65@ 1.85
Sweet Potatoes, per ctl	4.00
Oregon Burbanks	1.90@ 2.10
Early Rose	1.65@ 1.85

Dairy Produce.

POULTRY.

Nothing was held over from last week, and while arrivals of Eastern stock have been about up to the recent average, all offerings move off well at fairly good prices. Local stock is very scarce. Everything is held up to former quotations, and some lines, particularly large young stock, are higher. Dressed turkeys are dull, and live stock finds little demand.

Large Broilers	$ 4.00@ 4.50
Small Broilers	3.00@ 3.50
Fryers	5.50@ 6.50
Hens, extra	8.50@10.50
Hens, large	6.00@ 7.50
Small Hens	5.00@ 6.00
Old Roosters	4.50@ 5.50
Young Roosters	6.00@ 7.50
Young Roosters, full grown	8.50@10.50
Squabs	4.00@ 4.50
Geese, per pair	2.50@ 3.00
Ducks	8.00@10.00
Turkeys, per lb., live	18@ 20c

BUTTER.

Arrival have again increased somewhat, and all grades are somewhat lower, but firmly held at the present level. So far there has been no shipping business of any consequence, but as the local demand seems equal to the present supply, there is no further downward tendency. The following prices are quoted by the San Francisco Dairy Exchange:

California (extras), per lb	25 c
Firsts	23 c
Seconds	22½c

EGGS.

So far the movement into storage is not very large, but quite a lot of eggs have been shipped South. Arrivals have been quite large for the week, and all grades show some decline, being unusually low for this season. A further decline is considered not unlikely, though the market is described as firm, and most offerings are readily absorbed in the local trade.

California (extras) per doz	18 c
Firsts	18½c
Seconds	18 c

CHEESE.

All lines of new cheese are inclined to easiness, California flats being weak at a decline of about 2c., while Y. As are also slightly lower.

Fancy California Flats, per lb	13½c
Firsts	12½c
New Young Americas, fancy	16 c

Deciduous Fruits.

FRESH FRUITS.

The local trade in apples is quiet at the moment, a slack demand being attributed to bad weather. Strawberries arrive too seldom to be worth quoting. The only feature worth noting is the export demand, which continues as active as ever, and has already caused some depletion of storage stocks. Packers at Watsonville have received offers of $1.05 per box net for Newtowns to be shipped to London. Local prices are accordingly firm, and even ordinary stock is held at full quotations.

Apples, per box—	
Newtown	$ 1.35@ 1.65
Other varieties	.75@ 1.00
Fancy Red, 4-tier	1.25@ 1.50
Bellefleur	1.00@ 1.25

DRIED FRUITS.

The only change in prices for stock in first hands is a slight advance in evaporated apples, which have been in strong demand for export and are accordingly firm. Peaches are a little easier, but there seems to be nothing left in growers' hands. Otherwise there is very little new in the spot market. Growers have hardly anything left, and a moderate but steady demand is gradually cleaning up the holdings of packers, who maintain a firm attitude on most descriptions. Some packers are said to have announced prices to the trade on future figs, choice layer figs in 10-lb. boxes being quoted at 70c., and choice bulk stock at 4½c. per pound. These prices are a trifle higher than last year. The trade is buying freely and an advance is expected. According to a Kings county report, peaches and apricots will be short there this year. It is reported that the stock of prunes in growers' hands is practically exhausted, and that only about 25 cars are held by packers. A very poor lot was recently sold for shipment at 4½c., and all ordinary offerings bring full quotations.

According to Fresno reports, all raisins held on the Coast do not amount to over 10,000 tons, about a third of the stock at this time last year. The New York Journal of Commerce says:

"Quite an active demand for California prunes from East Side buyers is reported. That section of the trade ordinarily gives preference to Oregon prunes, but as that variety is scarce and high, the distributers are turning their attention to the California fruit and are said to be taking it quite freely, even at the high prices asked. There is an unusual inquiry from the Middle West. It is true that West Side jobbers and the trade they supply are loth to take anything more than is needed for immediate use, but they are buying steadily in small lots, and this in connection with the small offerings out of stocks held here and for shipment from the Coast, helps materially to maintain prices at their present high level. On the spot here supplies are light, and the total quantity in sight is said to be insufficient to cover the requirements of consumption up to October, when the new crop will be available.

"Peaches remain quiet here and little or no business for shipment from the Coast is being done. The lower freight rates from the Coast would make cost to buyers lower, but they seem to be in no hurry to avail themselves of them. Apricots are dull, but are sparingly offered.

"California seeded raisins are strong, but the movement on both spot and forward orders from the local trade is light.

? ? ? ? ? ?
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It is reported that some packers are seeking to secure through their New York brokers stocks with which to cover sales they had made for August-September delivery. There is little demand now for loose Muscatels or seedless varieties, but in view of the light offerings from both first and second hands the market has a strong tone."

Evaporated Apples, per lb..	9½@10 c
Figs, black	4½@ 5 c
Figs, white	5 @ 7½c
Apricots	12 @13 c
Moorpark, fancy	13½@14 c
Peaches	6½@ 7¼c
Prunes, 4-size basis	6½@ 7 c
Pears	8½@12 c
Raisins—	
Loose Muscatels, in sweatbox	2½@ 3 c
Thompson Seedless	4 c
Seedless Sultanas	3½@ 3¾c

Citrus Fruits.

At New York the auction market on February 27 was reported strong on navels and lemons. Forty-three cars of navels and five of lemons were sold. Prices ranged from $1.95 to $3. Bloods, half-boxes, brought $1.50; tangerines, half-boxes, sold for $1.60 to $2.10, and lemons brought from $2.90 to $3.30. While most of the sales were not high, yet there were practically none that were below the average of $2.25 per box.

On the same date at Cincinnati the market was strong on small sizes and weak on large-size navels. Florida Brights and Russet oranges sold for $1.40 to $2.25, while California navels brought from $1.70 to $2.35.

At Cleveland on the 27th, six cars of navels were hold and three of lemons. The navels brought from $1.95 to $2.45, and lemons sold for from $2.95 to $3.30.

The same date at Boston the market was reported strong and higher; navels brought from $1.90 to $3.05; lemons sold for an average of $3.70 per box. Bloods brought $1.60 per half-box.

At Philadelphia 10 cars were sold, navel oranges bringing about $2.20 per box on the average. Twenty-one cars of Floridas were sold ranging in prices from $1.25 to $3.50, averaging $2.05. Grapefruit sold at 80c. to $2.60, and lemons for $3.

On the same date at Los Angeles, nine cars of navels were sold at an average ranging from $1.10 to $1.62 per box, with discount on all second grades and small sizes of 25% per box.

From February 24 to 26, inclusive, 273 cars of oranges and 334 cars of lemons were shipped from southern California.

Arrivals of navel oranges at San Francisco for the last week have been large, on expectations of a good demand, but so far business has been only moderately active, and the market is rather easy, with some shading of prices early in the week. Quotations, however, have not been reduced. Tangerines are rather scarce and higher, while lemons, limes, and grapefruit are moving in about the usual way at prices which have prevailed for some time.

Navel oranges—	
Extra choice	$ 2.00@ 2.25
Choice	1.50@ 2.00
Valencias, choice to fancy.	Nominal
Choice	Nominal
Standard	Nominal
Tangerines	1.00@ 1.50
Choice Lemons	2.25@ 3.00
Fancy Lemons	3.00@ 3.50
Standard	1.25@ 1.50
Limes	5.50@ 6.00
Grape Fruit	2.50@ 3.00

Nuts, Honey, Hops, Etc.

NUTS.

Prices show no further change. The market now is altogether a jobbing proposition, as nothing of any consequence is left in the hands of growers, and few dealers have any large supplies to offer.

Almonds—	
Nonpareils	15½@16 c
I X L	14½@15 c
Ne Plus Ultra	13½@14 c
Drakes	11¼@11¾c
Languedoc	11 @11½c
Hardshells	8 @ 8½c
Walnuts—Softshell, No. 1	15 c
Standard	14½c
Softshell, No. 2	11 c
Budded	17½c

HONEY.

Good white stock, both comb and extracted, is in demand, but the market is quiet, as there is little of this quality to be had. Other grades are not wanted in any quantity.

Comb—White Sage	14 @15 c
Extracted—Water White	Nominal.
Light Amber	7 @ 8 c
Amber	5 @ 6 c
Sacramento River Comb	12 @12½c

BEESWAX.

Remains without feature, both demand and supply being limited at present. Prices are unchanged.

Light	27½@30 c
Dark	23 @26 c

HOPS.

There is some inquiry, but so far the volume of business in new crop is limited, as few buyers are willing to pay the prices asked. The general situation is favorable, however, and growers are holding for stiff prices.

Hops, 1910 crop	18 @22 c
1911 Crop	15 @16½c

Live Stock.

DRESSED MEAT.

Beef Steers, per lb	9 @ 9½c
Cows	8 @ 8½c
Heifers	8 @ 8½c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9 c
Lambs	12 @13 c
Hogs, dressed	12 @13½c

LIVE STOCK.

With the decline in feed prices, and an abundance of green feed in most localities, offerings are not coming out as freely as for some time past, and prices, both for dressed meats and live stock, show a general advance. Hogs are firm, but not in much demand at the moment.

Gross weight:	
Steers: No. 1	5½@ 6 c
No. 2	5 @ 5½c
Cows and Heifers: No. 1	4½@ 5 c
No. 2	4 @ 4½c
Bulls and Stags	2½@ 4 c
Calves: Light	6 @ 6½c
Medium	5½@ 6 c
Heavy	5 @ 5½c
Hogs: Grain-fed, heavy	8 c
150 to 250 lbs	8¼@ 8¾c
100 to 150 lbs	8 @ 8¼c
Common Hogs, per lb	5 @ 6½c
Small prime wethers	5¼@ 5½c
Large prime wethers	5¼@ 5½c
Ewes	4½@ 5 c
Lambs	6¼@ 7 c

WOOL.

The spring clip will soon start in some parts of the State, but until there is something to work on, buyers are unwilling to announce new prices. Old clips are nominally valued as before, but there is no movement of any consequence at present.

Fall Clip—	
Mountain Free	8 @10 c
Valley Fall and Lamb	6 @ 9 c
Northern	6 @ 9 c
Southern Spring	10 @11 c
Middle Counties	12 @13 c
Northern	15 @16 c

HIDES.

Prices have shown little change for some time past. Business is still quiet, as tanners do not care to buy more of the present offerings than are immediately needed, but there is a prospect of a slight improvement as the spring hides come in.

Wet Salt—	
Heavy Steers, over 56 lbs.	10 c
Medium	9 c
Light Steers, under 48 lbs.	8½c
Heavy Cows, over 50 lbs.	8½c
Light Cows, 30 to 50 lbs.	8½c
Kip	10 c
Veal	14 c
Calf	15 c
Dry—	
Dry Hides	17 c
Dry Bulls	15 c
Dry Kip, 10 to 15	16½c

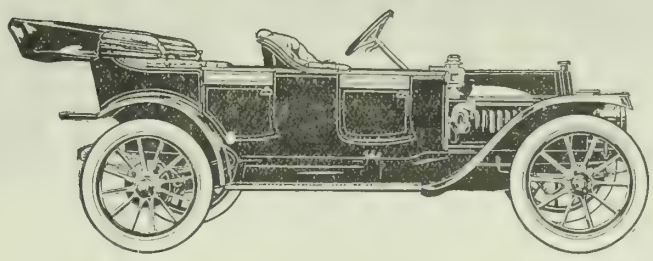
HORSES.

Desirable Drafters, 1700 lbs. up.	$275@300
Light Drafters, 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	200@250
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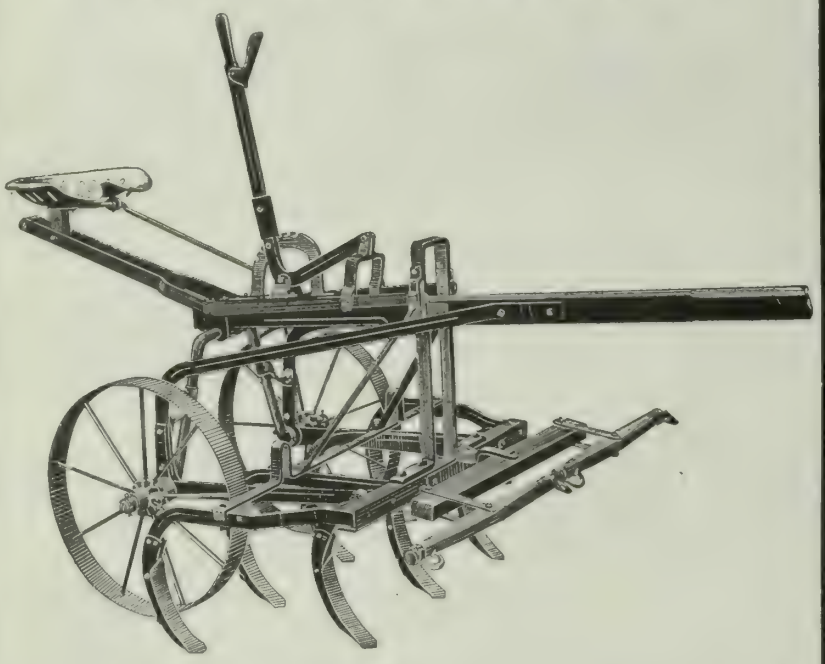
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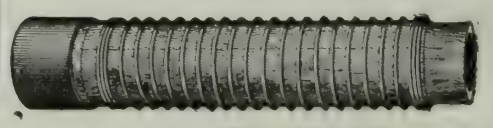
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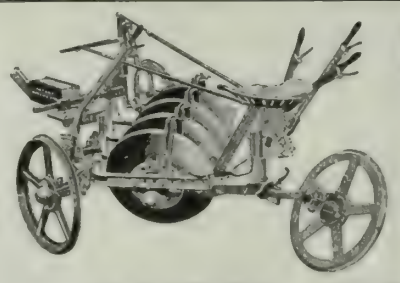
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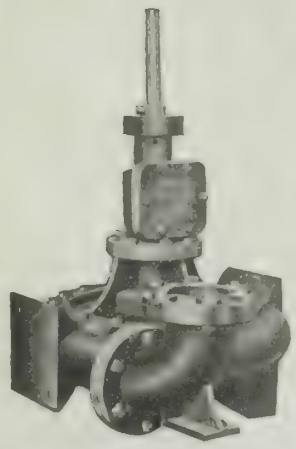


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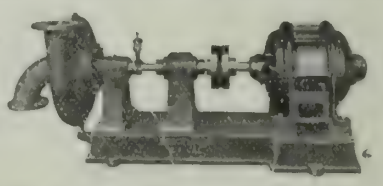


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THE PACIFIC RURAL PRESS

Vol. LXXXI. No. 10. SAN FRANCISCO, SATURDAY, MARCH 11, 1911. Forty-first Year.

The Hog Industry and Its Outlook.

[If there is a camino real to good money in California agriculture which is firmer and easier grade than Swine Boulevard, we do not know it. Naturally, too, everybody else is finding it out and is rushing to the popular highway through Alfalfa Avenue, Barley Alley, Sorghum Street, Maize Lane, Milky Way, and other good lines of approach. The idea strikes every one in the most impressionable part of him, to wit, in the pocket, and it is not surprising that he takes notice. When a man pays as much for a rasher of bacon or ham as for an armful of ice cream, he is apt to exclaim—hog or what? And so there has arisen a most unruly interest in pork production. We call it unruly because it is attacking so many who really do not know a hog from a halibut, so far as growing it goes, and who only have the powerful impression that there is much money in pork production, and they propose to have some of it. We have had these people tenderly in mind for months—ever since, in fact, the pig mounted the aeroplane—and we have tried to give them plain points upon what it is necessary to know and to do if they can reasonably expect the hog to do as well for them as they desire. We have had a number of pages of good hog breeding, growing and feeding, representing the latest policies and methods befitting California conditions, because we so earnestly desire that if any reader of ours put time and money into hogs he should get them out again, and considerably more with it. If he "just nachully goes into hogs," he is quite liable to go out by the back door, in spite of the good prices prevailing; but if he enters intelligently and gets wise on the essentials of the health, life and activity of the hog and then does what should be done for the animal, in all its requirements, he may be expected to emerge by the front door and to step into his automobile besides. This being our earnest desire for all who patronize our pages, we are glad to lead them farther, through the rich experience and wide observation of Mr. S. B. Wright of Santa Rosa, one of our best known swine growers, as he presented his conclusions at a recent meeting of the California Live Stock Breeders' Association which was held in this city.—EDITOR.]



Worth, Perhaps, Five Times Their Weight in Fruit.



White Hogs Which Suit Some Parts of California.

Feeding Conditions Favorable.—This coast is well adapted to the production of hogs. The climate is favorable and our feed is equal to any. Those who have alfalfa are in a position to raise hogs at small expense, but young pigs need some kind of grain ration for three or four months while running on alfalfa. Middlings are especially nice for young pigs, but this grain ration is so high lately that some other and cheaper grain ration should be used. Ground barley is an excellent grain for young hogs or old, but in feeding it to young pigs the husk should be removed. As it is best to soak the barley some time before feeding, there is not much trouble in skimming off most of the husks, and a common seed screen will take out most of the husks anyway. Barley softens so nicely with either milk or water when allowed to sour a little that it really is a very excellent ration. Ground wheat is good—some shorts and a little oil cake meal being added—and Egyptian corn or Indian corn are good, but in any event the grain seems to work to a better advantage when ground. Also ground speltz makes a fine ration. It is not necessary to cook any of the grain if ground and then soaked until a little sour.

The idea that we can not produce as fine pork here as in the corn belt is nonsense. There is not so much difference in the fattening value of barley, corn or wheat. If milk can be used with these grains, both the milk and the grain become twice as valuable as either if fed alone, provided they are used in the proportion of about one-third in weight of grain to two-thirds in weight of milk. The ration is relished better and the hogs gain faster if the grain and milk be soured together.

Our dairymen commit almost unpardonable waste in their manner of feeding milk to hogs. Instead of feeding one-third in weight of grain to two-thirds in weight of milk, or about that, many do not feed any grain and others do not feed half enough grain. It has been demonstrated that when milk and grain are fed together in the right proportions each becomes twice as valuable for hogs as if fed alone. Moreover, our dairymen buy middlings at $32 to $36 per ton in preference to ground barley at $25 to $26 per ton, and the latter is more valuable pound for pound in making meat than middlings and it is worth more for feeding the milk cow, too.

All Rests on the Youngster.—If young pigs are to make the best gains in weight and develop into the best animals, give them all they can eat of the most palatable ration—always some grain—and let them have all the exercise they will take. This means that they should not be confined to a close pen. With wire netting so cheap and handy as fence material small paddocks can easily be made, and young hogs do very much better when kept only a few in a place.

Young hogs will not make a satisfactory gain or growth on grain alone. They will need milk or green grass or clover or roots in addition to the grain, and indeed, any hog will do better if given some succulent ration with the grain.

Now comes the growing of the pig before it is born. Right here many people differ, but really it seems that there ought not to be much difference of opinion under similar conditions and if the animals are nearly alike. An aged sow that has made her full growth requires less care as to feed and other things than does the gilt that has been bred and is herself immature. The old sow would require an ordinary ration to bring forth a good litter—possibly getting too fat with very nice care—while the gilt, being required to continue her own growth and at the same time supply nutriment to her undeveloped young, would need heavy feeding and plenty of exercise. Given this exercise, and the gilt should have all she can eat.

The profit in handling hogs should be made when they are young. There is no doubt that the

(*Continued on Page 202.*)

Pacific Rural Press

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FRANK HONEYWELL - - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Mar. 7, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	—	—	33.29	66	36
Red Bluff	5.71	21.59	18.51	64	40
Sacramento	3.96	20.77	14.64	56	40
San Francisco	4.09	23.81	17.26	58	42
San Jose	5.70	22.36	10.39	58	40
Fresno	1.79	8.80	6.86	66	44
Independence	.08	4.92	8.51	52	24
San Luis Obispo	10.92	29.92	14.96	62	44
Los Angeles	3.06	13.71	11.74	64	48
San Diego	.40	10.72	7.59	68	46

Snow on ground at Summit 285 inches.

The Week.

The weather has ceased to be a joke. The clouds probably began too late to have their frequent fun with the California legislature over the movement of the State capital to a greater distance above sea level, nor is there any particular irrigation legislation pending which heavy rains can dissolve, as they have done in some earlier years. We therefore have to count the inches as a simple agricultural phenomenon, and there are getting to be too many of them for some of our producing interests. Fortunately, however, no wide injury has yet been inflicted, and on the whole the thorough wetting of the State to bedrock will be of great advantage for more than one year, and the present condition is one which has been devoutly hoped for. Work is backward and some of it will not be caught up and there will be some land out of commission, but the general benefits of a generous rainfall will, of course, accrue to the State as a whole.

There is naturally much talk going upon the concentration of the fruit shipping interests of California under the leadership of an expert Eastern fruit merchant, Mr. Di Giorgio, as stated in last week's PACIFIC RURAL PRESS. He is nominally an Italian sort of a man, and perhaps some of the shivers which we have seen traversing the usually placid faces of California fruit growers are due to the apprehension that the Italians are intending to capture our fruit industry for the sake of wrecking it. So much is current about the plotting of those of foreign birth to destroy our domestic product in the interest of importations from Italy that possibly such a notion is excusable. But as we read the record of Mr. Di Giorgio he is about as thoroughly Americanized as can be and is in the fruit capturing business because he thinks money can be made in it by organizing and pushing, and this would not be the destruction of our production, but rather the promotion of it and extension of the sale of the products thereof. In fact, it seems rather rational to think that it is perhaps a good point to keep the energetic Italians busy selling our domestic fruit and they may have less need to bring in foreign fruit to enter into competition with it. There has been lots of money made by successful fruit shippers—probably considerably more than by the growers—and growers have never had reason to think that such shippers have distributed more money to them simply because they were of the same nationality as the growers. Why should we expect either less or more in that line from Mr. Di Giorgio? Those who are putting money in with him to buy out the old line of California fruit shippers are Americans, but there is no reason to expect that they like less to make money because of that fact. In short, we cannot see that it makes any difference whether the old firms sell out or not, except that the new handlers may be able to use more capital and push fruit farther into consumption because of a broader view of the opportunity for it. And if we set a very energetic and successful Italian to fight the domestic fruit against Italians controlling importations, why is not that all right—so long as we get the smarter Italians on our side, as we really seem to be doing? We are, in fact, tempted to pat our new ruler in the fruit trade on the back and irreverently exclaim: "Go to it, George; save us from the dragon."

Probably there is some feeling against the Italians such as there used to be against the Chinese because they packed up all the money they made in this country and sent it to their native land. There seems to be some ground for such a charge because of the announcement that $26,000,000 was sent back to Italy in 1910 by Italians living in this country, according to statistics compiled by the postoffice authorities in New York city. This is an increase of $8,000,000 over 1909. This is not a desirable thing, and it is probably a temporary affair. Such a course might be expected from any patriotic people during the first generation away from home and while parents and brothers and sisters live to enjoy the achievements of their family representatives in a new country. We expect there will be mighty few second-generation Americo-Italians buying European money orders. They will be too busy supporting their own families and building up their own fortunes to indulge much in that sort of generosity. We have to acknowledge that our inclination to approve the Italians is due to our observation of them in California, where they have established enterprises in city and country and have built up and supported families and have shown as warm patriotism for the land of their adoption as have any other foreign-born class of our population.

And while we are talking about foreigners, it is timely to remark that all the great funk against a new treaty with Japan which did not specifically exclude immigrants was unnecessary and simply served to display a little unnecessary race prejudice. For there was ample assurance given that immigration of common laborers would not be allowed, and in fact has been progressively discouraged for some time. Official figures show that during the last three years there has been a decrease of 11,152 Japanese laborers in the population of the United States. The distinction between laborers and non-laborers is made from data gathered in Japan at the time passports are issued. The accuracy of these figures is attested by the Commissioner of Immigration in his annual report. Now it seems to us we can stop fretting about being overrun by Japanese laborers. They will probably soon begin to become visibly fewer, as the Chinese did after the exclusion act. Meantime we shall have to make the best we can of those we have, for it will take some time to get enough white laborers for California, although the supply is increasing.

And there is another numerical matter which should be mentioned for the comfort of Westerners. There was a report sent out from Washington last month that the reports of the national population sent out from the census office made the glad total one or two per cent too large and that we would therefore have to cut off a million or two in our national glorification. And now comes the authoritative statement that the reporters balled the thing all up, and that the actual statement of the report was precisely the opposite. What Mr. Durand said was that "taking the country as a whole, it is probable that the population is slightly understated by the census bureau." In other words, if there was any appreciable error by the bureau, it was in the direction of conservatism, rather than of exaggeration of the population of the United States. This means, of course, that we may claim a million or two more than the figures. Fourth of July orators please take notice.

One of the best things for the sound financing of California agriculture has just been done by the legislature, and that is the official experting of irrigation enterprises which need outside capital. It is an undertaking—which Mr. Alden Anderson took up with his characteristic energy some months ago—to give the bonds of irrigation districts some standing, if they deserve it. In the past all kinds of experiences resulted from lack of knowledge of the enterprises, and buying bonds was a gamble which, as is the way of gambling, brought trouble upon all concerned. The law which has just been passed at Sacramento constitutes the Attorney-General, the State Engineer and the Superintendent of Banks a commission to pass on the desirability of bonds issued by irrigation districts, and makes such bonds legal investments for trust funds and for the funds of insurance companies, banks and trust companies, as well as for the State school funds. The three State officials named are to ascertain all the facts concerning the value of an irrigation district's property when it proposes to issue bonds and are to report on the feasibility and approximate cost of its project. Such understanding of enterprises will make irrigation bonds a popular investment not only for large operators, but for small investors also, and will facilitate the understanding of all reasonable enterprises, which will be of great advantage to land owners and to the State. This ought to have been done twenty years ago.

It is all a part of the general advancement of agricultural securities in public esteem and confidence, and one who can look to the time when everything in the city was better than anything in the country as security for loans or investments. Now nearly all farm produce is good security and the way is open to its availability in that way. How strikingly the fact was shown the other day in Los Angeles. "Honey is one of the easiest things in the State to borrow money on," said J. M. Elliott, president of the First National Bank, in an address at the closing session of the California State Bee Keepers' Association Convention. "The banks will loan from 60 to 80 per cent of the full value of honey," he continued, "knowing it is salable at a good figure." Twenty-five years ago the honey producer would have been at the mercy of the commission merchant, or if he had asked for help from financial institutions would have been referred to a pawn shop. Surely the agricultural world does move.

It is also notable that it probably will never cost as much again to get wheat and flour to consumers as it did in the old days. The Panama Canal will cut the voyage in two; shipment in

bulk will be possible, and we shall have the Asiatic market added to the European as an outlet. The statement comes this week that grain men in all parts of the Northwest are much interested in the heavy shipments of flour that are being made to Oriental ports. The business has assumed a volume almost equalling that preceding the Russo-Japanese war. Since the season opened, the exports from the Pacific Northwest have been 1,374,007 barrels. The shipments of flour to Hongkong and Shanghai, particularly to the latter port, are also said to be largely due to the short crop of wheat in North China and Manchuria. The prevalance of plague is also partly responsible for shutting off the supply of the Shanghai mills. The famine in China has caused a stronger demand for flour than has been known in years, and a favorable rate of exchange has been beneficial to the importers of both China and Japan. There has also arisen a trans-Pacific freight war between steamship companies, and the statement is made that "the hardest fight will probably be made on flour, which, it is predicted, may go as low as the dollar mark." Possibly that is about all that flour should pay. We surely seem to be likely to get closer to the freight we ought to pay, now that the Pacific ocean is being more adequately provided with ships. All this makes the rehabilitation of the cereal industries of California more rational and promising.

We had almost forgotten our agricultural fashion article this week. Fortunately it comes in at the last moment by telegraph. Mrs. Belmont has opened her school for farmerettes, of which we spoke last week. Twenty girls applied for admission. The telegraph says: "The farm clothes are a very important feature of Mrs. Belmont's farm, and she designed them herself. Each pupil is to wear a wide brimmed slouch hat, blue blouse, full, but chic, with comfortable sleeves, not too much puffed at the shoulders to be absolutely out of style, but nevertheless qualifying with modish suggestiveness. The skirts are near-harem and as well adapted to bedding down cows as to picking of bugs from potato vines." We are not sure that we understand it all, but presume our women readers will. But to launch such an enterprise in New York State on March 1! It ought to have been in the California climate, surely.

Queries and Replies.

Olives From Cuttings.

To the Editor: I have two choice olive trees on my place, but do not know what varieties they are. I am anxious to get trees from these old ones and do not know how to go about it. Can I grow the young trees by using cuttings or slips from these old trees? If so, when is the proper time to select the cuttings, and how should they be planted.—Subscriber, San Joaquin county.

Take cuttings of old wood, one-half or three-quarters of an inch in diameter, about ten inches long, and plant them about three-quarters of their length in a sandy loam soil in a row so water can be run alongside as may be necessary to keep the soil moist but not too wet. Such dormant cuttings can be put in during the present month, when the soil begins to warm up with the spring sunshine. If you have good luck with them they can be put in the places where you desire them to grow in the spring of 1912. Olives, like other evergreen trees, should be transplanted in the spring when there is heat enough to induce them to take hold at once in their new places, and not during the winter when dormant deciduous trees are best transplanted.

Cherry Grafts and Citrus Balls.

To the Editor: I have grafted a lot of seedling cherries with the "Paul" scions, leaving two or three buds on each piece of grafted wood. In planting these out, do I want to put the union under ground (they are grafted at the crown of the root) and will I have to loosen the cloth a little later when they start to grow? How will I get the head for the tree? Should I let only one shoot form, and when it is as high as I want it, cut it off as I would a tree gotten from a nursery? I have some orange and lemon trees which were sent me with their roots balled up with dirt and sacks. As we are still having frosts I have not wanted to set them out. Would it not be better to let them stay as they are and keep the sacks wet (they have a sack box over them) than to put them out while the frosts last? —Planter, Ukiah.

If you have used waxed cloth in your grafting, it will be necessary to loosen it after the tree gets a good start. Common unwaxed cloth could be trusted to decay soon enough, probably, but it should be looked at to see that it is not binding. The union should not be placed much below the ground surface, although it can be safely covered, and the future stem may look the better for it. One shoot could be allowed to grow from each graft, choosing the best ones and pinching the others so that they will stop extension and hold leaves during the first season. These can be cleanly removed at the first winter pruning at the time you head back the main shoot to the proper height. Your citrus trees will not be injured unless mold should set in from the wet sacks. We should get them into the ground as soon as the soil comes into good condition, and cover the top for a time after they are planted to protect them against frosts. This would be better than to hold them too long in the balls, but do not plant in cold, wet soil; hold them longer as they are.

Bees and Ants.

To the Editor: I wish to keep about four colonies of bees. If I built a shed boarded on three sides, could I leave the bees in it all winter, using ordinary hives? Or would it be better to place them under shade trees during the good weather and move them to some cellar for the winter? If I could build some cheap, permanent place for them, I would prefer it. Some suggestions as to size of shed, material, and direction it should face would be much appreciated. How shall I keep ants out?—Subscriber, Lincoln.

Some shelter from the hottest sunshine and from driving rains is all that you need in California valleys and foothills. You do not need to do any cellaring at all. You can make a shed-roof on posts with a board or canvas side to put up during rains, or make the roof wider and have no sides, or cover each hive with a cover like a fruit-drying tray; or you can let them stand out in the rain as most people do. To escape ants you must kill them; either by pouring carbon bisulphid into their holes in the ground or using ordinary ant poison in a box, with holes right for ants but too small for bees.

Storing Cut Alfalfa Hay.

To the Editor: We are planning on cutting our next season's crop of alfalfa with a feed cutter and storing it in a barn for winter feeding. The barn has a good roof, but the sides are not air-tight. Will it be satisfactory to cure the hay and cut it, and put it into the barn as the crops come along, and will the hay lose any of its feed-value in being treated and stored in this way?—Dairyman, Los Angeles county.

There has not been very much experience with storing cut alfalfa hay, and we cannot give you any very definite assurance about it, except that a number of people are now taking it up and are disposed to consider it quite an advantage. Mr. L. P. Denny of Tulare county planned to do it last summer, and perhaps he can now give us the benefit of his experience.

The hay must, of course, be thoroughly cured, because of the great danger of heating in a tight mass. No value will be lost unless fermentation takes place, and the perfect tightness of the sides is not essential, except where water is likely to gain entrance from the rain and, so far as that could reach, spoiling and molding might be expected to occur.

Forage Plants in the Foothills.

To the Editor: We are interested in stock raising. It is necessary to control an immense quantity of feed and this is done by grazing on rented land, although we have 3000 acres of foothill land of our own. We hope to be able to irrigate some land this spring and would appreciate what you may be able to tell us regarding the best forage crops, for sheep and hogs, especially. Kaffir corn, stock peas, rape, sugar-beets, and artichokes are the varieties about which we especially desire information.—Farmer, Smartsville, Yuba county.

Where you have irrigation water available in the foothills you can get a very satisfactory growth of red clover. We have seen it doing very well on sloping land in your county where water was allowed to spill over from a ditch on the ridge to moisten the slope below. Winter rye and other hardy stock feeds could also be grown in the winter-time on the protected slopes with the rainfall. Some such plants are not good summer growers owing to the drought. Rape is a good winter grower by rainfall, but not so satisfactory as vetches and kale. Sugar beets are not so good for stock purposes as stock beets, which give you much more growth for the same labor and are more easily gathered because they grow a good part out of the ground. They will stand considerable freezing and may be sown at different times throughout the year, whenever the land is moist, either by irrigation or rainfall. Artichokes are of doubtful value. We have never found anyone who continued to grow them long. Of course, on good, deep land, with irrigation, nothing can be better than alfalfa as supplementary to hill range during the summer season.

Sorghum Feeding.

To the Editor: Can I allow milk cows to pasture on growing Kaffir and Egyptian corn during the summer? Which one is the best for pasture and milk? Do they do well mixed?—R. M., Napa.

There is no difference between Kaffir corn and Egyptian corn so far as feeding goes. They are both sorghums. There is a danger in pasturing on young sorghums, because stock is often killed from overeating it, and they are quite apt to do this when they come upon it from dry feed. If you cut and wilt the young sorghum, or if it is fed sparingly with hay, etc., it becomes innocent of injury. After the sorghum has obtained considerable growth, it also loses its dangerous character.

Irrigating Walnuts.

To the Editor: Will you kindly inform me through your paper as to the best method to irrigate a tract of 25 acres of sandy sediment soil, nearly level, preparatory to planting walnuts. A lateral ditch runs through the center of the tract, leaving twelve acres on each side of the ditch with a gentle slope from the ditch. Would you advise the furrow or check system?—E. T. P., Oakland.

By all means use the furrow system of irrigation unless your land should be so light that the water would sink in the furrows and distribution would be very unequal without covering the whole surface as is done by filling checks. When the land cannot be covered well by the furrow system, checking is resorted to, but not otherwise.

Horticulture.

DUST vs. LIQUID SPRAYING.

Written for the PACIFIC RURAL PRESS
By Professor H. J. QUAYLE of the University of California.

Spraying as ordinarily considered means the application of a liquid, more or less finely divided, to the surface of living plants. The active principle of the spray may be in a liquid, or in a solid material, more or less soluble, but water is invariably used as a diluent or carrier. Sometimes the solid materials are applied as a dust or powder, and the term spraying has come to be expanded to cover dust and liquid, or dry and wet spraying.

The Purpose of the Writing.—This article is intended simply as a brief review of what has been published on the dust as compared with the liquid applications. A great mass of literature has appeared on the liquid sprays, and these are much more widely used and are universally considered to be more efficient than the dust sprays. But for certain uses some materials can be applied as effectively, and more economically, as a powder than as a liquid. This is particularly true of sulphur as a remedy for red spiders and other mites, and for such fungous diseases as the oidium of the vine. But even here obstinate cases of red spider are not controlled by sulphur as applied dry, but can be successfully treated with a liquid application of the same material. This has been demonstrated by Mr. W. H. Volck, and is recorded in Bulletin No. 154 of the California Experiment Station.

The Liquid Approved.—Where careful experiments have been carried on to test the relative merits of the liquid and dust applications, the evidence seems to be strongly in favor of applying the spray as a liquid. Such demonstrations have been made by the Experiment Stations of Delaware and Illinois. But the dust method has become popular in recent years with a few California growers. So long as these growers get the results, there is no occasion to use the liquid sprays, because the cost and ease of application are in favor of the dust method.

To Determine the Matter.—In order to determine the relative merits of the two methods it is necessary to have some trees treated with the liquid, others with the dust, and others left untreated as checks. All of these trees must be under the same general conditions. An entire orchard treated for the codling moth with powdered arsenite of lead, if it is situated in the immune belt of the Pajaro valley, proves nothing. The apples would be practically free from worms if no application at all had been made. In the interior valleys dry sulphur is usually successful against the red spider, but not enough evidence has thus far been adduced to show that the peach worm, peach blight, and curl leaf are usually controlled by dry applications of lime-sulphur, bluestone, and arsenite of lime. Extensive experiments have not been carried on under Californian conditions to test the relative merits of the dust and liquid sprays, and it is hoped that opportunity may be afforded the Experiment Station for taking up this line of work.

In Delaware.—The Delaware station has published three bulletins on this subject, Nos. 69, 72, and 76. The following is a part of the summary given in the last report:

"This year's work has shown that the foliage and fruit can be kept in a healthy condition by the dust spray when late applications are given, but that there will be a little more wormy fruit and more dropped fruit than when a liquid spray is used. The dust spray in these experiments gave better results than are usually obtained by fruit growers with the liquid spray. That the dust spray has a place in Delaware orcharding there is no doubt.

"If a fruit grower has fairly level land, a good water supply, and a reliable liquid spraying outfit, he had better continue to use liquid Bordeaux with paris green for poison. If the fruit grower wishes to spray his orchards rapidly, yet thoroughly, he may adopt the dust method, or, in large orchards, a combination of both dust and liquid.

"The writer does not advocate the use of the dry Bordeaux mixture sold in the market. That which was used was not fine enough, and, more than that, one does not know how much copper it contains."

In Illinois.—In bulletin No. 106 of the Illinois Experiment Station, Mr. Crandall, the author, gives the following conclusions:

"The introduction of dry Bordeaux mixture applied with arsenites as a dust spray was prompted by a desire to decrease the cost and labor of spraying. It does both of these things, but its value can not rest upon cost and ease of application. The final test of its value is, and must be, efficiency in preventing injury from fungi and in killing insects.

"The experiments testing the relative efficiency of the wet and dry sprays have extended over three seasons; they have included an aggregate of 424 trees, 147 of which were sprayed with liquid, 167 with dust, and 110 as control trees which received no spray. The number of apples produced by these trees totaled 372,726. These fruits were examined individually and records made of blemishes.

"The experiments have been reasonably extensive, they have been carefully executed, and the conclusions drawn are fully warranted by the results obtained. With regard to the effects upon foliage the results were identical in all orchards and in all seasons. Trees sprayed with liquid Bordeaux and paris green retained their foliage in a healthy working condition throughout the season. Dust-sprayed and check trees may be placed together, because the behavior of foliage was the same in both cases. Leaves began falling in July, and in early September these trees were practically denuded.

"Differences in fruit were as marked as were differences in foliage. Liquid-sprayed trees gave smooth fruit of good size. Dust-sprayed and check trees gave small, ill-formed fruit, badly marked by scab and of very little value even as evaporation stock.

"Dust spray is 52 per cent cheaper than liquid spray and it is easier to transport about the orchard. It has no other advantages. The results of the experiments are sufficiently decisive to warrant conclusion that dust spray is absolutely ineffective as a preventive of injury from prevailing orchard fungi, and that it is considerably less efficient as an insect remedy than is the liquid method of applying arsenites."

In Louisiana.—In circular No. 33 of the State Crop Pest Commission of Louisiana, Wilmore Newell gives an account of experiments with powdered arsenate of lead as a practical boll weevil poison. In fact, this seems to be the most successful artificial remedy yet tried against the boll weevil. The success of powdered arsenate of lead is due, first, to the fact that it contains no soluble arsenic, and hence does not injure the plants; and, second, to the powerful current or blast which is necessary to force the poison between the small leaves which make up the terminal buds.

Comments.—The results recorded above were under Eastern conditions. One of the chief objections to the dust spray is the difficulty of getting the material to adhere to the foliage. This is best accomplished by making the application in the early morning while the dew is still present. Eastern conditions provide for more dew than is the case here, particularly in the interior valleys in midsummer, so that there appears little reason to hope that better conditions for dust spraying prevail here than in the more humid Eastern States.

Mr. Judd's Position.—The following extracts are from an article in The Cultivator for May 5, 1910, by Mr. A. N. Judd of Watsonville:

"In April of each year when the trees are at least half in bloom and the terminal buds are bursting, spray with the following: Dry slaked lime, 40 pounds; paris green, 2 pounds; arsenate of lead, 5 pounds; sal Bordeaux, 1 pound, sublimed sulphur, 3 pounds. This must be thorough mixed and applied with first-class dry-spraying machines.

"Insecticide mixed this way will not burn the foliage and has a far greater influence for good. The beneficial action is noticeable during the whole season.

"If the above directions are followed for three years you can then spray once every two years and have no anthracnose, no powdery mildew, no worms, and have a good crop of clean fruit every year.

Mr. Dargitz' Account.—In the PACIFIC RURAL PRESS for December 11, 1909, in reference to spraying for almonds, Mr. Dargitz of Acampo says the following:

"In the writer's judgment you can just as well use your materials dry as wet. I have used the dry or dust spray exclusively for three years and am quite well satisfied with the results. The great difference is on the commercial side of the expense account. The method we use is as follows: In December we spray with lime-sulphur and powdered bluestone (sal Bordeaux) thus: 40 pounds lime, 5 pounds sulphur and 2 pounds bluestone. This makes a very good treatment for two acres. When the trees are in full bloom we spray again with the same mixture and add to it two pounds of paris green or two pounds of arsenite of lime. If there is evidence of the peach moth larvae in the buds later we spray again the last of May so as to catch the second brood, using half the amount of sal Bordeaux. In applying the dust spray we use a power machine which is quite inexpensive, mounted on a wagon and driven by a two-horse-power engine, the whole outfit weighing about 1000 pounds, drawn by two horses and operated by two men, which readily treat 40 acres a day. The amount of materials seem small to be effective, but being applied as a mixture instead of a chemical solution, as in the wet spray, it is every bit active."

[Professor Quayle's review of the subject is for the benefit of new readers of the RURAL PRESS who have recently asked what is meant by dust spray and for old readers with short memories. It gives us a chance to repeat our question: "Who still uses and approves the dust spray and why."—EDITOR.]

BUD SELECTION, PEDIGREE STOCK, ETC.

Although we count ourselves for the most part orthodox, we must confess that we do enjoy a rank roaring of heterodoxy once in a while—in horticultural lines at least. Just now when everything is going so swimmingly in support of the idea of getting buds from the most perfect-fruited trees, when the ordinary run of hit-or-miss nurserymen are to be set to breaking stone, and when a man in Washington has claimed bud-selection as a recent discovery of his own and established a registry association business—just when the high tide is on for the purists—we are wicked enough to enjoy this disgraceful opposition which Mr. J. A. Burton of Mitchell, Indiana, sets up against the whole proposition in the Northwest Horticulturist. He seems also to be a discoverer in his way, and he has discovered many things which are not so. Thus he displays himself:

"I have worked much along that line myself. About thirteen years ago I called the attention of the Indiana Horticultural Society to the possibilities of the improvement of the apple by scientific methods. It was proposed to do this, first by judicious cropping, second by producing thoroughbreds by in-and-in breeding and by crops of these to produce just what we wanted; thirdly, by selecting scions from choice trees and choice twigs on these trees. The third method was expected to be by far the most successful, for each selection would be a positive advance along the line desired, and we would have an improvement sure and certain for each step. This proposition took definite form in 1899. The society bought an orchard site, and the writer was placed in charge. A great many selected seeds were planted, crops made by hand pollination, and inbreeding commenced.

"Before commencing the great improvement, it was concluded to try a few experiments to find out whether the observed variations in a variety were real, or only due to environment. The Rambos in my orchard were rather small and of comparatively poor quality. In father's orchard they were large and the best in quality I have ever seen. My land was richer than his. I grafted scions from both orchards into the same tree in the experiment. When they came into bearing, there was no difference. In my orchard the Ben Davis were very light in color; in his, a deep red. I grafted scions from his trees into one

of mine; when they bore they were light colored, too.

"Samuel Wright, a millionaire of Paris Croping, Indiana, told me I ought to have some of his Genets in the experimental orchard; that they were a small green apple of very superior flavor; that they were entirely different from Rall's Genet. I did not see the apple, but when I got it to bear in the experiment orchard, it was as truly a Rall's as ever grew.

"It had been suggested that one reason for seeming deterioration of orchards was because nurserymen propagated from nursery stock. That trees thus propagated from non-bearing trees lost the inclination to bear. So I procured scions of several varieties that had been thus propagated for more than forty years; these I grafted onto the same tree with grafts from a good bearing tree. Both came into bearing the same year, and there was no observable difference. I made the same test with same results with water sprouts, and good bearing wood with same results. I have one Grimes that, since it commenced to bear, always has borne a good crop. On this account thousands of trees have propagated from it. In the same orchard are two other Grimes that never bore one-fourth a crop till twenty years old. Grafts from these three trees on the same stock show no difference.

"I know some trees always furnish the premium apples. I have one Grimes in particular that always furnishes fancy apples. I have furnished scions from it to several Eastern experiment stations. It is topworked on Walbridge stock. Have several more worked on Walbridge, and all bear superior apples; Walbridge makes a very ugly, unsound stock. The union seems to be bad, and of course the circulation is bad. Interrupted circulation often results in enlarged fruit; instance, the dwarf pears. These particular Grimes split off one-quarter. Since that the apples are still larger; I suppose because the circulation is more interrupted.

"You doubtless observe by the above statements that I have no heart to seek to improve the apple by bud selection. Think of it a moment yourself. We have multiplied millions of Winesap trees, all parts of the original tree. For all practical purposes these millions produce apples virtually alike."

Citrus Fruits.

CALIFORNIA AND FLORIDA ORANGES.

There seems to have been unusual interference between the fruit of the two orange States in the Eastern markets this year, and Florida Fruit and Produce News has been printing a lot of remarks upon the situation from various persons at the East and South, and they all give California much credit for style, beauty and keeping quality of fruit which have proved to much commercial advantage to our growers. One writer says: "If we could publish to the world that our oranges would keep indefinitely, we would advance the cause of Florida orange men a long way toward the goal that some of them are conscientiously trying to attain. When we have proven to ourselves that Florida oranges are good keepers, when rightly handled, we could proceed to demonstrate the fact to the rest of the world. Is it our own fault that dealers all over the country are afraid of Florida fruit on account of its lack of keeping qualities? The writer knows that many dealers only buy enough Florida oranges at a time to tide them over for a few days, and some of them turn down our oranges wholly when Californians become fit to eat, as they know the navels will keep. It does not matter what the consumer wants to eat, he must buy what the dealer has in stock. If the consumer asks for Floridas the dealers say, "No, I have not any on hand. It is too risky to stock up on Florida oranges, as they decay so quickly."

The Seasonal Characters.—Another observer writes: "There occurs to me two reasons why the Florida orange has been turned down in favor of California and Porto Rica oranges. In the first place, the crop throughout the State was from three to four weeks late this year, attributable to the severe cold of last winter, the trees being late in blooming. This cold winter was followed by a severe spring and early summer drouth, so that the fruit did not get the right start or encouragement until very late, and attained no growth until the summer rains began to fall, which kept the fruit growing, but made it very green and acid until very late. Here we usually begin shipping November 10th, but this year could do but little until the latter part of the month. On the other hand, the California navels were unusually early and sweeter than common for that time of the year, and as they were bright, clean and attractive to the eye, in consequence were called for by the consumer. The trade was, of course, disposed to satisfy their demands."

The Contrast in Style.—Another writer speaks of the conditions at the market end: "I go about New York city a good deal, and I see very little Florida fruit offered for sale, except in the regular channels. The push-cart man and the ordinary fruit vendors seem to steer clear of Florida fruit. This is, no doubt, due to the fact that Florida fruit makes a very bad showing on a fruit stand or push-cart, while the California fruit can be made attractive, and draws the attention of the people. What the citrus industry needs now more than anything else is a thorough conviction that, in order to sell fruit at a profit it must be bright and clean. When the consumer can get a California navel, which is almost as attractive to him as a bouquet of American beauties, is it any wonder that he turns away from the smutball with disgust? The whitefly must be exterminated and the trees must be sprayed for bright fruit. Otherwise, the grower might just as well dig out his trees and put the land to sweet potatoes."

THE LEMON NOT EASY

Speaking of the lemon, Mr. G. Harold Powell recently said: "It is the most difficult fruit in California to produce and market. There is a great deal of attention being given to improving the methods of handling the lemon in the fields and packing houses. The United States Department of Agriculture and the University of California have co-operated with the industry for several years and are helping to solve some of the difficulties that the growers and shippers have not been able to meet alone.

"There are many problems still to be worked out, soil difficulties to be investigated and insect and fungous pests to conquer. The largest average yield attained in the State as a whole hardly exceeded one-third of a carload, or less than 9000 pounds of fruit per acre for the 18,000 acres of bearing groves. There are some of these groves that produce a carload or more per acre, just as there are unusual surgeons, lawyers and business men who stand head and shoulders above the average man in the same profession. The increase in the difficulties of production and the decrease in productiveness of many of the bearing groves have caused some uneasiness as to the future of the industry."

The Vineyard.

WINE GRAPES IN CALIFORNIA.

To the Editor: After three years of serious depression, the market for California wines is once more resuming a normal tone. Up to the panic of 1907 sales of California wines were rapidly increasing. Vineyard planting, particularly in the interior valleys, had been undertaken on a foolishly optimistic and poorly planned basis, most of the planting being of inferior varieties.

Following the panic, when hundreds of thousands of wine drinkers, not of the millionaire or club class, but of the recent arrivals from southern Europe, whose daily ration is a half gallon per day, were unable to continue to buy wines. Immigration ceased, and a return tide of thousands of families returned to southern Europe. Shipments of California wines to Eastern points fell off nearly 40%. The stock of the largest concern handling California wines ceased paying dividends, and became for the time being almost worthless. A huge surplus of wines accumulated in dealers' hands. The result was cut prices. Nobody in the business made any money except the few firms handling high quality bottled wines. This is such a small fraction of the whole that it cuts very little figure, except in its suggestion that it sometimes pays to stick to quality rather than to quantiy.

Thanks to the fact that last fall the crop of wine grapes was less than an average crop, and also to the fact that some of the surplus wines that have been clogging the market have found a sale in European countries, but principally owing to better financial conditions all over the United States, there is no longer a surplus of wines on hand. The dry wines of the last vintage have been practically all sold at from 12 to 14c. per gallon.

An interesting feature of the dry wine situation is that the attempts at making merchantable dry wine in the hot interior valleys have about stopped, at least for the present. The interior grapes are well suited to the manufacture of sweet wines, but no one has succeeded, even with expensive refrigerating machinery, in making much of a commercial success of interior clarets. They can be made, but owing to the difference in taste and flavor, they sell at a discount. Some heavy losses have been incurred in the attempts at this line of production.

This leaves a better field for the dry-wine grapes of the coast counties. We look for good average conditions for years to come. Owing to the rapid spread of phylloxera in the coast counties, production can increase but very little during the next five years. In Contra Costa county hundreds of acres have been pulled out this season. These were vineyards on ordinary stock, not on resistant. In the fertile valley at the base of Mount Diablo, their place will be largely occupied by walnut groves, that district having proved to be one of the finest walnut sections to be found anywhere in the world. In Sonoma county, while much replanting of vines is going on, it is not keeping pace with the destruction by disease.

Planting on resistant stock costs money. Unless the grower can receive an average of $14 per ton or more, there is little encouragement to replant. It begins to look as if the next ten years would see once more a period of remnuerative prices. A few far-sighted people, in spite of the temporary depression, have gone steadily ahead with planting, selecting good varieties, such as Petit Syrah, Mondeuse, Carignane, Cabernet, Green Hungarian, Gutedel, Semillon, Sauvignon Blanc, and Sauvignon Vert, and their new vineyards will come into bearing just about the time of revival of prices.

A boom in planting would be exceedingly unfortunate. But there is a field once more for discriminate, intelligent vineyard planting, by real vineyardists who know how to plant and care for vines. It is a great satisfaction to see some of the clouds that have darkened the skies for the grape grower for three long years, disappearang. It has been a hard struggle for people of small capital to tide over the period of depression. With reasonable prices for grapes this fall, and a constantly improving market for good wines, the grape grower will no longer have cause to pity himself and wish that he were in some other line of production.

Everything has its ups and downs, but no one feels happier than one who has been in one of the "down" businesses when things change, and "up" substitutes itself for "down."

FRANK T. SWETT.

Sylviculture.

THAT ATRIPLEX HEDGE.

To the Editor: At your request I have written to your subscriber at Loomis concerning the atriplex cuttings which he desired.

The statement by Dr. H. M. Hall in the PACIFIC RURAL PRESS of December 24 is entirely correct. When I first came to Santa Barbara in 1892, there was only one hedge made of it, at the old Brown place on State street below Gutierez, and I thought at first that it was the European Atriplex halimus, which I had seen used for such purpose on the Riveria.

It was only some time after that, when I settled in Santa Barbara, that I found by the gardener who had planted the hedge that the cuttings were

from native plants. Who was the first to have the idea I never was able to find out.

From the description by Mr. J. J. Thornber of the Arizona Experiment Station, A. lentiformis promises to be a much finer thing, on account of its inflorescences. I am now raising a good stock of it and hope to see it in bloom this year. DR F. FRANCESCHI.

Santa Barbara.

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INSTRUCTION IN AGRICULTURAL ENGINEERING.

The Experiment Station Record, the official publication of the U. S. Department of Agriculture, gives the following interesting statement:

Half a century ago engineering attracted little attention. Then only a small number of men followed this vocation, and there were few institutions which gave instruction in the subject. It was not until after the Civil War that men began to recognize the value of technical training and to question the wisdom of compelling all college students to spend so large a part of their time in a study of dead languages and a dead past. Then followed the passage of the Morrill Act, providing for colleges of agriculture and mechanic arts throughout the Union.

These institutions have been a great factor in the development of engineering education. In 1909 there were, according to the report of the Commissioner of Education, a total of 31,748 engineering students in all the universities, colleges, and technical schools of the United States. Of this total number, 17,892 were in the land grant colleges. These and other data show that the land-grant colleges are training more than 56 per cent of all the engineering students of the Nation. A hasty glance through the list of courses of these institutions shows that nearly all of these students are classified under civil, mechanical, electrical, and mining, with a scattering pertaining to sanitary, structural, and other branches of engineering.

The main activities of the land-grant colleges are concentrated upon the training of civil, mechanical, electrical, and mining engineers, in competition with a large number of State universities and technical schools. In their efforts to train civil engineers for railway corporations, mechanical engineers for manufacturers, and hydro-electrical engineers for water companies, these institutions are neglecting to train men for the engineering work of the farm and the country. The movement in that direction dates back but a few years, and as yet only one of the 67 institutions, the Iowa State College, offers a degree in agricultural engineering. Departments of agricultural engineering and of farm mechanics have now been provided in about a dozen of the agricultural colleges, and the men in charge of these departments are illustrating by their work the importance of this subject as a branch of agricultural education. As yet, however, much remains to be done in the way of adequate provision for this subject in a broader realization of its importance.

Agricultural engineering as a teaching subject may be divided into six branches, three of which relate to the farm and three to agricultural communities. These are (1) farm machinery and farm motors, (2) farm structures, including rural architecture, (3) rural water supplies and sanitation, (4) public roads, (5) drainage, and (6) irrigation. One or more of these divisions is now taught in most of the land-grant colleges, but with a few exceptions they are mainly side issues to what is considered the more important work of training men to become professional engineers. The institutions of this class located in the West give instruction in irrigation as a part of the civil engineering course; those of the Mississippi valley offer courses in farm machinery and farm motors, while the subject of roads and pavements is included in a large number of engineering courses, but chiefly from the standpoint of the municipal engineer. Rural water supplies, farm sanitation, and farm struc-

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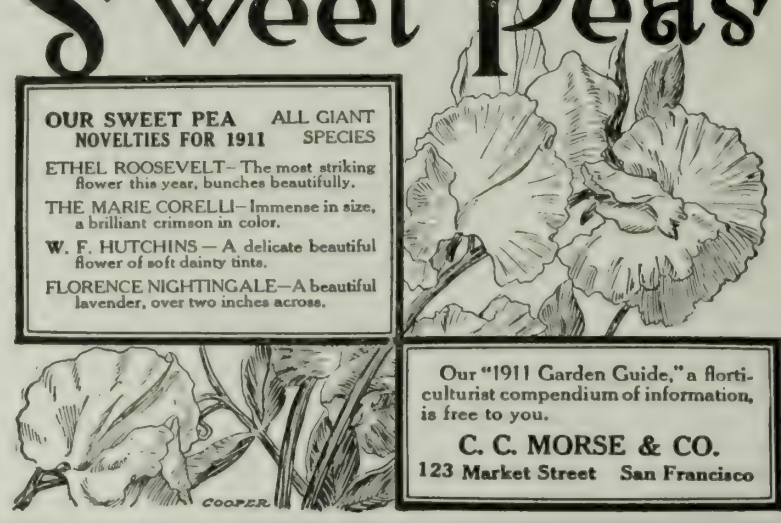
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Write for special price list on all varieties of Peaches, Plums, Cherries, Pears, Almonds, Nectarines, Apples, etc. **Trees True to Name.** Strong, healthy and vigorous. Immediate deliveries.

CAMPIN & MOFFET, Props.,
Ceres, California.

CHICO NURSERY COMPANY
GROWERS OF HIGH GRADE NURSERY STOCK

Prompt attention given to orders sent in by mail. Write us for prices on Apples, Peaches, Pears, Cherries, Plums, Prunes, Apricots, Almonds, Eng. Walnuts, Blk. Walnuts, Figs, Grape Vines and Berries. Ornamental Trees, Flowering Shrubs and Roses. Catalog free.

CHICO NURSERY COMPANY, Chico, Cal.

tures are for the most part overlooked.

An engineering course combining the course of farm machinery and farm motors as now given in the University of Nebraska and the Iowa Agricultural College, of irrigation as now given in the University of California and the Agricultural College of Colorado, of rural architecture and cement work as given in the University of Wisconsin, and of highway engineering as taught in the University of Kentucky, is in large degree lacking. That there is an urgent need for better and more general training for the engineering work of the farm and the country is evidenced by the large interests represented, and the relation of the subject to the health and comfort of country living and the business side of farming.

THE WHOLESOMENESS OF THE HARE.

To the Editor: I have read with interest, in your issue of March 4, the article entitled "The Wholesomeness of the Hare," by "Erstwhile City Dweller," from Fresno, and heartily concur with the opinion of the writer as to the unfitness of the so-called "hare" for human food. From my own personal examinations and observation, I do not believe one of a hundred of the grown animals are entirely free from the boils or blisters so common to the animal. Even when the boils do not show externally, a close examination will almost always disclose the germs in their earlier stages.

Stockton. C. A. STOWE.

ANOTHER NEGATIVE VIEW.

To the Editor: In you issue of March 4 you ask opinions about rabbits as a food. I have lived in places where thousands of rabbits were killed and all that could be sold were marketed. The number marketed was not regulated by the percentage of healthy ones, but by the amount the market could handle, and, to my knowledge, no care was ever exercised in "culling out." The "boils" so "disgusting" to the "Erstwhile City Dweller" would disgust any one. They are from the size of a hazel nut to a hen's egg and usually along the meaty part of the back or on the shoulder or thigh, and are filled with a pus seemingly composed of seeds resembling sago, and are fed from tubes or glands, not visible to the unsuspecting when tapped and drained. About 90 per cent are so afflicted in summer and from 60 to 75 per cent in winter. This is in accordance with my judgment.

Chico. A. FARMER.

A QUESTION FOR THE NATURALIST.

To the Editor: Regarding the wholesomeness of hare, do not be alarmed. The rabbits of California have no disease. The so-called boils are not boils, but water pouches. Rabbits, like the camel, store water and can go a long time without drink. Those that eat chickens ought to be able to eat rabbit. The rabbit is clean both by nature and choice, while the chicken is directly the opposite.

Metz, Cal. H. E. THAYER.

ROLLED BARLEY FOR COWS.

To the Editor: Will rolled barley hurt milk cows, say two light feeds a day? Will it not do about as much good as the same amount of bran? ENQUIRER.

Fresno.

It will surely not hurt them and otherwise will be good if not used in excess to encourage fattening. Bran is a better feed for milk because it has a higher protein content.

The cannery owned by the California Fruit Canners' Association at Hanford is undergoing repairs and improvements, which will give it a third larger capacity than last season.

THE LIVERMORE HORSE SHOW.

The annual horse show held at Livermore March 4 was a successful one in spite of bad weather and newspaper reports to the effect that it was to be postponed. The reception committee, accompanied by the Livermore band in resplendent new uniforms, met all incoming trains. This, followed by an excellent noon meal at one of the leading hotels, put the visitor in the proper state of mind to enjoy the rest of the show.

Promptly at 1:30 the parade, headed by Grand Marshal David McDonald, passed up the main street to the grand stand at the town flag pole. After short speeches of welcome by President H. M. Christensen and James W. Clarke, the veteran announcer, "Bill" McDonald, gave the pedigree of the various entries. The entries were practically all local and reflected great credit on the Livermore valley as the home of finely bred horses.

Those deserving special mention are the trotting horses from the farm of D. H. McNally, H. M. Christensen's roadsters and three very fine Trappiste colts. Draft stallions were entered by Livermore Belgian Horse Co., Altamont Horse Co., Santa Rita Percheron Horse Co., Denver Importing Horse Co., and others. The Denver Importing Horse Co. was the only outside exhibitor to make entries. Mr. E. A. Mapes, representing this company, entered Jules de Zulta, a very fine imported Belgian draft stallion.

SOME STYLE TO "CALIFORNIA VEGETABLES."

Mr. R. L. Adams, who has charge of the agricultural experiment station of the Spreckels Sugar Company in Monterey county, writes in this kindly, appreciative way:

"Permit me to congratulate you on the interesting readableness of your book 'California Vegetables.' I enjoy its text as much for the pleasant, smooth flow of eloquence as for the instructions which the book contains. May the appreciation of your readers serve to partially compensate you for the labor of getting out your books, so that we shall have other good ones from your pen."

PUBLISHER'S DEPARTMENT.

Attention is called to the advertisement of the Nevada Gypsum Co. More of this rejuvenator of soils should be used on California land, especially on adobe and alkali soils. It is especially recommended to be used for alfalfa and all leguminous crops. Write to the above firm for quotations.

As many farmers are now running their automobiles, the advertisement of the Goodyear Rubber Co. will be of interest. In connection with tires, the fact that Ceylon is becoming a great rubber producing section may cause the lowering of the cost. Formerly all Para rubber came from South America, but some years ago seeds of the Hevea tree were taken from Brazil and planted in Ceylon. In 1908 the shipments from that country were 2000 tons; in 1910, rubber production had increased to 8000 tons, and this year's crop is estimated at 14,000 tons.

Success demands ideas; advertising creates ideas.

If you are thinking of buying chickens, or eggs for hatching, consult the advertisements in our Poultry Department. Advertisers in these columns have been well pleased with results, and we would suggest to stock raisers generally that it will pay them to use our Breeders' Directory to sell off surplus cattle and hogs.

GERMAIN'S SEEDS ERMINATE

You can buy no better seed than that sold by us, and we are always glad to assist you in selection. Among other extra fine varieties that we recommend are the following

Three 1911 Specialties

CASAD'S Improved Muskmelon

A distinctly new sort that has been firmly established. Slightly netted rind, buff yellow flesh, luscious and smooth, approaching a pineapple flavor. Send for a packet 25 cents.

GIANT Stringless Green Pod Beans

This is a big favorite in the East and has proven a success here. It often produces pods six inches in length, tender and absolutely stringless. Very early. Packet 10 cents. Pound 35c postpaid.

GERMAIN'S Winter Queen Tomato

It is the earliest producer of all, and shows a wonderful resistance to frost. Compact bush, fruit smooth, even sized and finely colored, firm flesh. Packet 10 cents. Ounce 50 cents.

You should have our 1911 Catalogue—Please Mark Letter Dept.

Germain SEED & PLANT CO.
Established 1871.
326-328-330 SO. MAIN ST.
LOS ANGELES, CALIFORNIA

EUCALYPTUS TREES
BY THE MILLIONS

for November and Spring planting. Trees planted in November will stand the summer heat and produce a larger per cent of live trees Our 21 years of experience places us in the front ranks of successful growers, which should mean something toward your success. Write us for information.

COVINA NURSERIES,
312 Byrne Bldg., corner Third and Broadway,
Los Angeles, Cal.

Best Nursery Stock

IF YOU WANT THE BEST NURSERY STOCK, PUT UP IN THE BEST MANNER AND AT A FAIR PRICE, SEND US A LIST OF YOUR WANTS AND WE WILL GLADLY QUOTE YOU.

EUCALYPTUS IN ANY QUANTITY, AS WELL AS A FIRST-CLASS LINE OF GENERAL NURSERY STOCK.

MARSHALL NURSERIES, Box 652, FRESNO, CAL.

REDUCED PRICES ON EUCALYPTUS TREES

We offer a large stock of the tree that made San Jose famous the tree of the sudden saw log the tree that will yield you an income as long as time shall last. The genuine Blue Eucalyptus, also the red gums Rostrata and Tereticornis.

Roses, Roses—all the leading kinds Acacias, Silk Oaks Peppers, Draccenas Hedge Plants Fruit Trees Black Walnut Seedlings cheap

Giant Himalaya, Loganberry Superlative and Yellow Antwerp Raspberries

The "San Francisco," a veritable giant among strawberries.

Prices right. Lists mailed free. Correspondence and inspection invited. Wolesale and retail. Write and see if we are not a LIVE WIRE

HARDING NURSERY COMPANY
Corner Chase and Alum Rock Ave., San Jose, California

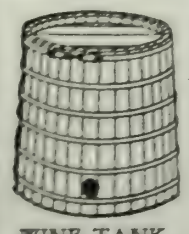
EUCALYPTUS IN VARIETY

WATCH THIS SPACE FOR SLAUGHTERING PRICES. WILL DISCOUNT ANY QUOTATION FOR TREES OF OUR QUALITY. Plant the Petaluma Blue Gum of sterling value that has made the Eucalyptus famous over the Coast. Am prepared to ship on slight by carload.

Address, W. A. T. STRATTON, Petaluma, Cal.

RED GUM OFFER EXTRAORDINARY!!

100,000 Twice Transplanted, 1-2 Feet High, at Very Attractive Prices.
No "replanting" if such stock is used.
Also good stock smaller plants. General Nursery Stock.
LEONARD COATES NURSERY CO., Inc., Morganhill, California.



WINE TANK.

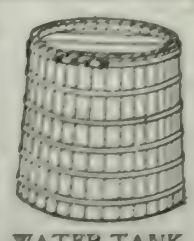
Tanks Tanks

WINDELER'S PLANING MILL AND COOPERAGE

GEO. WINDELER, Prop.

Water Tanks, Wine Tanks, made from carefully selected stock by careful and experienced workmen. "Tanks that are well made last a long time." It will pay you to get my prices before buying.

GEO. WINDELER,
144-154 Berry St. San Francisco, Cal.



WATER TANK.

BLACKBERRIES

There is big money in growing Giant Himalaya Blackberries.

For early, plant Early Crandall.

We still have Grapevines, Rhubarb, Dewberries, etc.

Strawberry Plants All Sold.

Address for Prices

G. H. HOPKINS & SON,
Burbank, Cal.

Genuine Florida Sour Orange Seed-Bed Trees

Extra fine one-year stock—the best to be had. Be sure you are getting the genuine article. If you will send your orders in now, we are prepared to fill them, be they large or small; but order early, as the supply is limited.

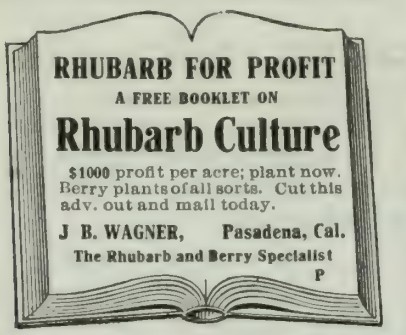
Three thousand fine large two-year **Valencias.** Get our prices.

SOUTHLAND NURSESIES,
F. H. DISBROW, Proprietor,
R. D. 1, Pasadena, Cal.
Phones: Main 949—Home 2520.

TILTON APRICOT

and its introducer has it for sale, along with **Early Royal** and the **Routier Peach** 'Cots, also the best varieties of **Freestone and Cling Peaches.**

J. W. BAIRSTOW
Hanford, Cal.



FEIJOA SELLOWIANA

The wonderful new flowering and fruiting plant 25 cents to $2.

AVOCADO OR ALLIGATOR PEAR

50 cents and $1

and many rare plants.

COOLIDGE'S RARE PLANT NURSERY
PASADENA, CAL.

TREES

A fine stock of French and Imperial prunes apples, plums, peaches and general fruit stocks also palms, roses and other ornamental plants Send for price list.

PLEASANT VIEW NURSERY
A. F. Scheidecker, Prop.
SEBASTOPOL, CAL.

APPLE TREES

12,000 Winesap, Rome Beauty, Jonathan, etc.

Cherries, Calimyrna Figs

PLUMS—Satsuma, Hale, Kelsey, etc. Luther Burbank's new "DUARTE"—two weeks earlier than Satsuma.

Pioneer Nursery Co., Dept. P, **Monrovia, Cal.**

To Exterminate
GROUND SQUIRRELS, GOPHERS, also BORERS, ROOT APHIS, etc. on Fruit Trees.

Carbon Bisulphide

Is the only effective remedy.
For sale by dealers and manufacturers.

WHEELER, REYNOLDS & STAUFFER
OFFICE 624 California St., San Francisco

EUCALYPTUS

All varieties and sizes; extra hardy stock. "The finest trees I ever saw," is the verdict of all who see them. Write today for free booklet P on their culture, etc. Questions gladly answered.

LLOYD R. TAYLOR, Modesto, Cal.

Fruit Marketing.

INCREASED EXPORTS OF CALIFORNIA CURED FRUITS.

Mr. George Robertson reports to the Fresno Republican that he has just received advance proofs from Washington, and they show a wonderful and very encouraging increase in the export of California raisins, amounting to nearly double the quantity of the previous year. Other cured fruits also show very satisfactory gains, as follows:

Raisins exported during the calendar year ended December 31st:

Year.	Pounds.
1905	3,978,645
1906	9,749,690
1907	4,720,606
1908	7,084,178
1909	8,363,845
1910	15,547,074

The imports of foreign raisins continue to show a considerable falling off, the figures being:

Year.	Pounds.
1905	11,511,347
1906	4,537,648
1907	9,927,771
1908	4,875,693
1909	5,219,649
1910	3,022,918

Thus, while the imports are the lowest on record, the exports are nearly double what they have ever been before.

The exports of most other fruits also show a very satisfactory increase:

DRIED APRICOTS.

Year.	Pounds.
1905	13,616,010
1906	3,268,457
1907	1,540,471
1908	14,463,948
1909	13,644,135
1910	18,366,055

DRIED PEACHES.

1905	700,902
1906	1,819,863
1907	1,354,317
1908	1,296,095
1909	2,843,968
1910	4,946,406

DRIED PRUNES.

1905	34,820,748
1906	31,777,704
1907	37,674,800
1908	18,087,319
1909	83,128,101
1910	64,470,370

ORANGES.

	Boxes.
1908	714,365
1909	952,869
1910	962,229

The quantity of fruit exported depends to a certain extent on the size of the crop; for example, the prune crop for 1910 is estimated at about 74,000,000 lbs., compared with 150,000,000 the previous year, which was one of the largest on record. The apricot crop also varies greatly.

ORGANIZATION AND APPLE SELLING.

Mr. Charles Blom, of Sonoma Road, between the Napa and Sonoma valleys, writes to the Napa Register as follows: "I paid 25 cents for nine Oregon apples in Napa on the 11th of February. The early part of this winter I paid 50 cents for a box of the same variety (Spitzenbers) in Napa. They were just as highly colored, better flavored, but not quite as large as the Oregon apples. The size could have been brought about by pruning and fertilizing. I noticed in several orchards this winter that the ground was literally covered with decaying Spitzenburgs.

Why is it that Oregon is now famous

$250 REWARD IN GOLD COIN

The above reward is offered for competent proof that Ortho Lime-Sulphur Solution is even equalled or matched by the average output of any other lime-sulphur plant in the United States or Canada in the following points, to wit:

First, the container;
Second, the average strength;
Thirdly, the uniformity.





Ortho Lime-Sulphur Solution is sold in 55 gallon galvanized steel drums; tests always approximately 36 degrees Beaume, about 15 to 20 per cent stronger than any other average solution. The best is never too good. The first cost is no greater than that of the weakly made. The Ortho Way is the best.

CALIFORNIA SPRAY-CHEMICAL CO.
WATSONVILLE, CAL.



HIGH GRADE FERTILIZER

For Orchards, Vineyards, Gardens, Lawns

GUARANTEED ANALYSIS shows a fine compound of sheep manure and commercial plant foods. Write for free booklet "A Recipe for Making Gold." It gives details and instructions for using.

FANCHER CREEK NURSERIES, Fresno, Cal.
GEO. C. ROEDING, Pres. and Mgr.

Special Prices on all the Leading Varieties of

Almonds, Peaches, Plums, Apricots and Cherries

All trees strong and thrifty.
Guaranteed true to name.

ACAMPO NURSERY COMPANY, : Acampo, Cal.

PEACH TREES

True to Name. Strong and Vigorous

Including Muirs, Lovells, Albertas, Tuscan, and Phillip Cling and all leading varieties. Also a full line of Pears, Plums, Prunes, Cherries, Apples, Apricots, Almonds, Walnuts and Chestnuts. A full stock of Thrifty Vines. Write for prices on amount you need.

OAKDALE NURSERY, W. F. Wheeler, Prop., OAKDALE, CAL.

150,000 2-year old Sweet Stock

Not dug-over culls, but splendidly rooted, strictly first class 2-year-olds. A bargain stock for those who want the best in this variety. I offer a good size at lowest quotations.

ONE YEAR SWEET STOCK. ONE YEAR SOUR STOCK.
Navels, Valencias, Lemons.

CHAS. S. McMILLAN, 300 South Marengo Avenue, Alhambra, California
Citrus Trees Exclusively

Villa Anna Nursery

Spineless Cactus as food for farm animals and poultry a special culture.

ASK FOR FREE INFORMATION.

Santa Rosa, California.

Mr. FARMER

Give Your Soil Food

Soil becomes worn out and run down the same as human beings. Send today for our FREE Booklet

"THE FARMER'S FRIEND"

It explains how to build up the productiveness of your land. State nature of soil and what you grow and we will tell you, free of charge, the class of fertilizer needed. Write today.

PACIFIC GUANO AND FERTILIZER CO.

310 Sansome St., San Francisco. 503 Central Bldg., Los Angeles.

LARGE, FINE, 1911 CATALOG OF

SEEDS,

Plants, Bulbs, Poultry Supplies, etc., now ready for mailing. Send for one—worth having—free and postpaid. Send addresses of five or ten others, and we will send you for your trouble, postpaid, a five cent packet of our best seeds, your selection, for each five names you send.

West Coast Seed House

111, 113, 115 Winston St.,

LOS ANGELES, CAL.

Ruehl-Wheeler Nursery

FRUIT, ORNAMENTAL AND CITRUS TREES

OFFICE AND SALES YARD:

121 W. San Fernando St.
BOX 826

NURSERIES:

East San Jose and Edenvale,

SAN JOSE, CAL.

Citrus Trees

(Exclusively)

Buy now, and it pays to buy the best.

We offer a complete, clean, vigorous stock, which we think are as good as can be grown.

POLLARD BROS.,
Corner Mission St. and Los Robles Ave., South Pasadena, Cal.

BULBS

For fall and winter planting; also Flower Seeds for fall sowing.
NEW CATALOGUE just out; send for a copy. **Now is the time to sow Payne's Royal Exhibition Pansy Seed,** the best strain on the Pacific Coast. **Giant Perfection Stocks** and **Christmas Flowering Sweet Peas.**

THEODORE PAYNE
Seedsman and Nurseryman,
845 S. Main St., Los Angeles, Cal.

the world over for its apples? In 1902 little was known of the Oregon apple. The unorganized growers that season got but 85 cents per box for their apples. In 1903 the organized growers received $2 per box for their apples. Since that time prices have improved. Some seasons they have sold for $2.60 per box. Such results could be brought about in no other way than by co-operation. A car of apples may have been started for a certain place, and before it reaches its destination it is discovered that the market is weak. The car is shipped to some other market. It sometimes happens that a car that was started for Denver, Colo., finally fetches up in London or Paris.

"Wherever we go during the fruit season we see fruit rotting on the ground. No profitable market for it. Were all of Napa county's farmers unionized, all would be changed for the better. There would be buildings for him to store his fruit, experts to pack and grade, and cold-storage rooms to store it when necessary. According to consular reports, there has not been such a poor grape season in Europe for over 100 years, Portugal being the only country having a grape crop worth mentioning. Has this state of affairs helped our unorganized grape growers a particle? I think not. Not one in a dozen, perhaps, know that there was such a shortage in Europe.

"Oh, say, Mr. Grower, with the nice little bunch of apple trees, the fruit of which you let drop and go to waste this fall, the next time that you go to town invest in a few Oregon apples and then figure out what those apples of yours would have sold for had you a place to store them and experts to properly handle and market them for you."

WHAT CAME OF THE PEARS.

It seems that the editor of the Denver Field and Farm, one day last fall, paid $3.50 for a box of Bartlett pears grown by E. J. Hughes of Cashmere, Washington. He wrote the grower to ascertain the price he had received for the fruit, and this is his reply: "The pears you bought were part of a shipment I sold to a speculator here for $1.25 per box net. The speculator consigned, or rather shipped, the pears through the Northwest Fruit Exchange of Portland, receiving $1.75 per box. The exchange charge for commission is 10 cents, so the pears were sold for $1.85. f. o. b. Cashmere. The express charges and icing, I am informed, is 60 cents per box, so that the pears were sold for $2.45. The merchants through whose hands the pears passed added $1.05, making the pears cost you $3.50. You can see that I received a little over one-third of the price. I could have shipped these pears through the Exchange and would then have received $1.75, but at that time I preferred to take no risk and sold for cash. I presume that the pears were sold to a commission house and then resold to the retailer. That $1.05 was not an exrobitant profit for the two dealers to make. The pears passed through too many hands. Could some system of marketing be devised whereby the fruit could be delivered to the retailer direct from the grower, the consuming public could buy their fruit at a much less price. My pears made me a profit of $600 the acre at $1.25 per box."

Surely $600 per acre is good enough; therefore, if the retail price can be reduced to a reasonable advance upon the rate the grower gets, the consumer can afford to buy and eat more fruit. That is the end eminently to me desired.

Blake, Moffitt & Towne

Dealers in **PAPER**

1400 FOURTH ST., SAN FRANCISCO
Blake, Moffitt & Towne, Los Angeles
Blake, McFall & Co. Portland, Oregon

PURE ANIMAL MATTER AMMONIATES

GOLD BEAR TRADE MARK FERTILIZERS

FOR CALIFORNIA SOILS

TANKAGE

The Citrus Fruit Growers of California use thousands of tons of Tankage annually

Tankage is the best form of Organic Nitrogen.
HUMUS-FORMING. ALL AVAILABLE.

We are the largest Pacific Coast producers of High-Grade Tankages in perfect mechanical condition and of

"GOLD BEAR" FERTILIZERS

Will ship direct to you no agent near you

WRITE FOR FREE PAMPHLET

WESTERN MEAT COMPANY

Fertilizer Department, SAN FRANCISCO, CAL.

REX YOUR TREES WITH THE FAMOUS REX SPRAYS

Our Standard Rex Lime & Sulphur Solution is being used by the principal fruit growers in every State in the Union. See that Rex is on your barrel, and not some imitation that is untried.

Rex Arsenate of Lead is made under the latest scientific formulas; applicable to all climates and conditions in the United States. Remember, that which is good for one district is not necessarily good for another, and if you want something that is good for all places, please ask your dealer or correspond with the

CALIFORNIA REX SPRAY COMPANY, Benicia, California.

KIRKMAN NURSERIES

TREES THAT GROW AND BEAR TRUE TO NAME

We are wholesale growers of deciduous and citrus fruit trees, grape vines and eucalyptus trees.

Our stock this season includes 650,000 DECIDUOUS FRUIT TREES alone. A large lot of these are on Eastern seedling root, which has proven to be almost proof against root knot.

Get the best stock available and at the most reasonable cost from a man who selects the buds and scions of the best strains.

Deliveries made from our sales yards at Fresno, Madera, Merced, Turlock, Banning and Chico.

ADDRESS MAIN OFFICE, FRESNO, CAL.



LARGEST CITRUS NURSERIES IN THE WORLD

Parties contemplating the planting of citrus groves this coming spring will do well to send for our prices soon, as there will evidently a a shortage of strictly first class stock. Write today for particulars, or, better still, pay us a visit so that we may be able to show you just what we have.

Our finely illustrated booklet, "Citrus Fruits," covering the industry from the seed to the market, mailed to any address on receipt of 25c in stamps.

SAN DIMAS CITRUS NURSERIES
SAM DIMAS, CALIFORNIA

Plant Now

8 CALIFORNIA CRACKER JACK SWEET PEAS FOR 25 CENTS

Each Color in Separate Packet.
Dorothy Eckford, pure white.
Hon. Mrs. E. Kenyon, pale yellow.
King Edward VII, deep rich red.
Lady Grisel Hamilton, lavender.
Aurora, orange, striped white.
Gladys Unwin, pure pink.
Helen Pierce, mottled blue and white.
Helen Lewis, orange pink.

Sweet Peas free by mail.

FREE—Our new Seed Book for 1911—describing many new and rare creations in flowers and vegetables.

H. M. SANBORN CO.
517 14th St., Oakland, Cal.

AGRICULTURAL LIME

Is needed for heavy and light soils to
Furnish the fibre for plants,
Provide stocky, vigorous growth,
Set free plant foods,
Make adobe less retentive,
Permit better soil aeration, drainage and moisture retention,
Neutralize soil acidity,
Close sand soils, etc., etc.

100 pounds of unhydrated (unslaked) lime is equal to 140 pounds water slaked or 170 pounds air slaked lime. The unhydrated is three-fourths the weight and one-third the volume of the hydrated. The saving in first cost, freight and hauling more than offsets the small cost of slaking in the field, and insures a very high grade of lime.

We are offering 100 tons of best sugar mill hydrated lime at $5.00 per ton f. o. b. Spreckels, in carload lots for immediate acceptance.

SPRECKELS SUGAR COMPANY
Spreckles, California.

SEED CATALOG
READY TO MAIL

The leading Seed Catalog of the West—Lilly's Catalog. Your 1911 crop depends on GOOD seed—send for this Catalog and get the best. Write now to the CHAS. H. LILLY CO., Seattle, Wn.

LILLY'S CATALOG Lilly SEEDS 1911

THE BEST MAYETTE WALNUT

The "San Jose" Mayette Walnut has established itself to be the best Mayette yet introduced. It is an early bearer, fills well and bears well, and is blight-proof, frost-proof and proof against sun-burn. When grafted on California Black Walnut it is a rapid grower. Price reasonable.

H. F. BERNARD,
83 So. San Pedro St., San Jose, Cal.

EUCALYPTUS

Best varieties, large well rooted plants. Some balled for distant shipment at trifling extra cost. Large lots grown by contract Circular Free.

RIVERSIDE NURSERY
320 River street, Santa Cruz, Cal.
HENRY SHAW

AGRICULTURAL REVIEW.

WITH THE FRUIT MEN.

Peter Pedersen of Oakdale, Stanislaus county, has just completed planting 20 acres to add to his 40-acre almond grove. There are quite a number of almonds grown around Oakdale and the acreage is being increased this year.

Alden Anderson, at one time head of the fruit distributors and recently a candidate for Governor of California, left last week with his family for an extended trip to Europe. It is stated that Mr. Anderson carries with him a special commission from Washington to visit the agricultural districts of that country and make a study of the irrigation and reclamation systems in effect there.

The Winters Orchard Company is a new concern recently organized to do a fruit-packing business, also to handle stock and poultry foods.

Crop report No. 1, sent out by the California Almond Growers' Exchange, states that the recent rains hit the trees of the Ne Plus and IXL varieties at the time they were in blossom, and as a result the crop the coming season will be short.

A big legal fight was begun by the railroads before the new U. S. Court of Commerce this week at Los Angeles. The case recently decided by the Interstate Commerce Commission, which sustained the growers in resisting the attempt by the railroads to raise the rate on lemons from $1 to $1.15, was appealed to the Federal courts, but was transferred to the newly created Court of Commerce. The case will be watched with great interest.

A dispatch from Oroville states that during the past year 75,000 orange and olive trees were set out in that locality. Owing to many tracts being subdivided it is thought that larger acreage will be set out the coming year.

Mrs. L. E. Powell is changing her ranch near Healdsburg from peaches to prunes. This season she will set out 500 and next season 1000 prune trees.

G. Harold Powell, the manager of the Citrus Protective League, estimates the world's production of citrus fruits for 1911 at 165,000 carloads. California will contribute more than 40,000 carloads of oranges and 7000 of lemons; Florida, 10,000 carloads of oranges and grapefruit; Spain, 40,000 carloads of oranges; Italy, 60,000 carloads of lemons and 10,000 of oranges; Jamaica, Portó Rico and Japan will ship 100 cars of oranges each, and several thousand cars of oranges, grapefruit and lemons will be exported from Jaffa, Syria, Cuba, the Bahamas and Portugal.

A shipment of several dozen acacia trees was destroyed by the horticultural authorities at Porterville last week. The trees were said to be infected with red scale.

The Stockton Record states that Homer L. Grey has a ranch on the lower Sacramento road near there on which is growing a new variety of vines which he calls Grey's winter grapes. Mr. Grey thinks these vines originally came from Spain a great many years ago, but were allowed to grow wild. About four years ago he purchased the place to get these vines and is now propagating them and has about 600 started from the cuttings of the original plants. These grapes have wonderful keeping qualities and are very late bearers.

Conrad C. Boyson of Two Rock, Sonoma county, will plant 30 acres to Gravenstein apples this season.

W. J. Moore of Richmond purchased an 80-acre tract of land in Pleasant valley near Oroville last week, and will plant it out to olives.

According to the reports of County Horticultural Commissioner G. H. Hecke of Yolo county, there have been shipped into the Capay valley 15,000 fruit trees already this season. The trees under inspection proved to be good stock with the exception of a few that were affected with crown gall and root knot.

A circular sent out by the Fresno Home Packing Co. states there are but few raisins left in the growers' hands, the amount being estimated at less than 5000 tons. The last sales reported were at 3¼ cents. The prediction is now made that the 1911 crop will not be sold for less than 4 cents. The balance of the 1910 crop will probably sell for better than 5 cents by the packers.

The last carload of almonds for the season was shipped by the Sutter Almond Growers' Association last week.

The Orchardale fruit ranch near San Fernando was sold last week to the Golden Gate Fruit Company, of Alameda and New York, for a consideration of $135,000. The ranch contains 414 acres, mostly set out to peaches and apricots, and the new owners will erect a plant on the place to use the fruit in the manufacture of cordials and fruit beverages.

At the meeting to complete the organization of the Apple Growers' Union, held at Sebastopol last week, the following officers were elected: President, J. W. Turner; vice president, E. E. Morford; secretary, E. C. Merritt; manager, C. E. Hotle.

The Harry Cook ranch, near Santa Paula, was sold recently for $11,000. Mr. Reynolds, the new owner, will set out 40,000 seedling trees and also plant 25 acres to lemons.

March 15 will be pay day at Lodi, when the George West & Son Company will make the final payment to growers, amounting to $30,000, for wine grapes received last fall.

A Modesto paper states that George C. Fetterman will set out 640 acres near Planada to oranges and figs, making it the largest fig orchard in that part of the San Joaquin valley.

AGRICULTURAL NEWS ITEMS.

Reports from wheat growers of the west side of Stanislaus county state that the grain prospect in that section is not encouraging. Because of the delayed rains much of the seed rotted in the ground. On the east side of the river reports are that the grain prospects are as good as can be expected, though the acreage is not over 75 per cent of the average. The loss in barley acreage, however, has been partly made up by the increase in wheat sown.

The Tulare Canning Company has contracted with farmers in that vicinity to plant 200 acres to tomatoes for canning purposes.

The monthly reports show that during January corn exceeded wheat in quantity of exports for the first time. Of the total domestic exports of wheat for the month of January almost 75 per cent of this cereal was shipped from Puget Sound points.

Grain men are interested in the tremendous volume of shipments of grain and flour from the Pacific Northwest to China and Japan. Since the season opened, 1,374,000 barrels of flour have been shipped to these countries. It is stated that a short crop of wheat in northern China and Manchuria is the cause of the heavy export.

The first cantaloupes of the season were received at Los Angeles last week from Mexico. They sold for $5 each.

Nearly 40,000 pounds of alfalfa seed has been sold to ranchers around Merced this spring. Enough to seed 2000 acres.

MISCELLANEOUS NOTES.

It is stated that the eucalyptus enterprise of the American Hardware Timber

TREES

Roses, Vines Plants

Now Is The Time To Plant

And we have the stock in all varieties for every purpose.

Apples	Apricots
Peaches	Pears
Plums	Prunes
Limes	Lemons
Oranges	Guavas
Pomelos	Loquats
Figs	Olives
Pecans	Almonds
Chestnuts	Walnuts

Rhubarb

Don't take chances. Buy reliable trees— True to name.

WE HAVE 1600 ACRES DEVOTED TO THE BUSINESS

ESTABLISHED 1886

Every fruit grower should have a copy of

"California Horticulture."

It gives best methods and suggestions on soil preparation, planting, cultivating, irrigating and pruning. Beautifully illustrated—120 pages. Prices 25 cents postpaid.

Annual Illustrated Price Catalogue FREE

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Geo. C. Roeding Pres. & Mgr.
Box 18 Fresno, California, U.S.A.

Apricot Trees at Reduced Prices

Mr. J. W. Bairstow wishes to inform all fruit growers that he has yet a few of the following kinds of Apricots to sell at Rock Bottom Prices, compared to what they have been selling for.

TILTON APRICOTS, ROUTIER PEACH COTS AND E. ROYAL COTS.

4-6 feet, $14 per 100; in lots of 500 to 1000 at $12 per 100.
3-4 feet, $12 per 100; in lots of 500 to 1000 at $10 per 100.

All stock true to name and grown on land that we have known for 19 years.

HANFORD NURSERY, Hanford, Kings County, California
J. W. BAIRSTOW, Prop.

Company in the eastern part of Solano county is to be pushed this year under the direction of J. S. Glide. One hundred and twenty thousand eucalyptus seedlings have been shipped there from Los Angeles to be planted out. It is stated that after this shipment is set out another load of 500,000 trees will be forwarded there for planting.

D. R. Hunter of Corcoran, who has about 14,000 white leghorn chickens, of which about 5000 are laying hens, is at present averaging about 2200 eggs daily. Mr. Hunter takes advantage of the natural gas wells in his locality to run his incubators.

Another big rabbit drive was held last week near Yuba City. Over 800 rabbits were destroyed. The bunnies have become so numerous in that section that a determined effort is being made to rid the fields of the pests.

The first artesian well in the Merced colony was struck on the farm of Francis Vassar last week, at a depth of 180 feet. The well is 12 inches and the water is flowing from it. This means much to the district, as irrigation will be made easy.

FOR SALE.

6000 well rooted Rupestris St. George stock. CAREY, Auburn, Cal.

SHIPPING CRATES AND FEED HOPPERS

We can sell them cheaper than you can make them. Write for prices.

D. J. GREEN,
109 Third St., Petaluma, Cal.

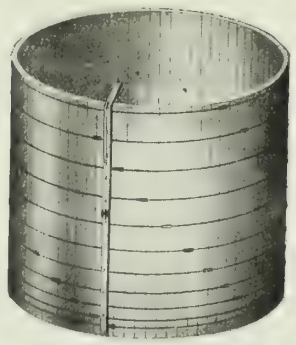
BARTLETTS, GRAVENSTEINS, PRUNES

1500 Bartletts on Quince, 2000 Gravensteins, 1000 Silver Prunes, 1000 French Prunes, Cherries, Late Apples, Resistant Cuttings, Resistant Rooted Vines, Grafted Resistant Cuttings. Order quickly. Prices low.

A. J. GALLOWAY, Healdsburg, Cal.

A NEW ROTARY FRUIT TABLE.

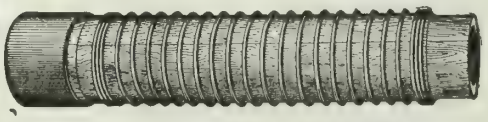
J. M. Posey of Lodi is the inventor of a rotary fruit packing table which was in successful operation last season, and the following description of it may be of interest to RURAL PRESS readers. This table is especially suitable for the packing of table grapes, cherries and other fruits where a carefully selected and uniform pack of fruits is desired. Mr. Posey made his first table last September, using it successfully all season, and claims that by the use of this rotary grader a more select and uniform pack of grapes or other fruit is assured and does away in many cases with the necessity of having as many expert packers as before. One man under the old method will on an average run of grapes cull and pack 25 crates per day, or four men per day for 100 crates. By the use of this rotary table three men are used who cull or select the grapes and place them on the rotary table, placing the select cluster grapes on the inner circle of the table and the ordinary bunches on the outer circle. The packer stands in the center of the table with two crates placed before him and selects the bunches as needed, and by moving the table, which revolves, has always before him in easy reach just the size and kind of bunch needed to make a uniform and choice pack. By the use of this rotary table a better average pack is assured, as good packers are hard to get and most anyone can be used for culling. The pickers can be used mornings as cullers until the grapes are dry enough for picking, and if they should select a poor bunch the packer sees it without any handling and rejects or uses it as he sees fit. This makes a double culling or selecting possible with less handling, which is always injurious, as it has a tendency to rub off the bloom, losing attractiveness that is desired by all buyers. Mr. Posey does not claim that the use of the rotary grader is a big labor saver, but says that four men will pack as many crates per day as four men would under the old way, but will do the work so much better and more thorough that its use ought to and will become general throughout the table grape sections. In one packing house last season that used the rotary table they used only seven skilled packers, as against 30 skilled ones in other seasons, the balance of help being made up of unskilled graders, who are easily obtainable. When the grapes are running poor, nine graders can work around one table and one packer can take care of the graded fruit.



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TANKS FOR WATER, OIL, WINE, MINING AND CYANIDING.

WOOD PIPE FOR IRRIGATION, CITY SYSTEMS, MINING, POWER PLANTS.

Machine Banded Pipe 2 in. to 24 in. made up ready to lay.
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Send for Printed Matter. New Pipe Catalogue in Preparation.

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WRITE FOR PRICES.

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231 BERRY STREET (Near Fourth) SAN FRANCISCO, CAL.

EUCALYPTUS TREES GENERAL NURSERY STOCK

4,000,000 Eucalyptus Trees. Large Stock of Fruit Trees
ORANGE COUNTY NURSERY & LAND CO., FULLERTON, CAL.

Warranted to Give Satisfaction.

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Caustic Balsam



Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O

LIVE OAK STOCK FARM

Six Miles N. W. from Petaluma, on the Petaluma and Sebastopol Road.

FRANK A. MECHAM, Prop.
Importer and Breeder of

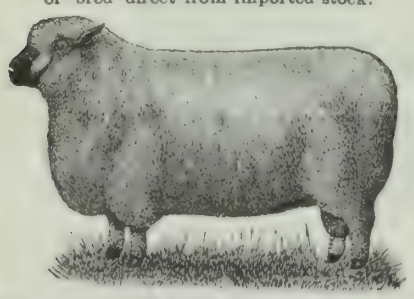
Red Polled Cattle

Color Deep Red. Both Sexes for Sale.

Address all communications PETALUMA SONOMA CO., CAL.



FRANK A. MECHAM
Importer and Breeder of Shropshire Sheep
They were all imported from England or bred direct from imported stock.



We have also bred American Merinos—Hornless Sheep—for 30 years. They are a large sheep without wrinkles. Rams will produce 20 to 25 pounds of long, white wool yearly. Sheep of both sexes for sale.



FRANK A. MECHAM, Importer and Breeder
Shipping Points: PETALUMA and SANTA ROSA, SONOMA CO. CAL.

TULARE LAKE STOCK FARM.
REGISTERED
Jacks and Jennets For Sale.
We breed the Best. Don't write—come and See. We can show you.
JAS. W. McCORD,
Hanford, Cal.

Live Stock and Dairy.

VALUE OF LIVE STOCK.

The February issue of the Crop Reporter, issued by the Bureau of Statistics under the authority of the Secretary of Agriculture, gives the following figures of the farm value of live stock in the United States covering several decades. These figures are interesting, as they show the effect of "good times" as applied to prices of stock. Notice the values for the decade of the '90s:

Kind of Animals.	Av. Jan. 1, 1900-1909.	Av. Jan. 1, 1890-1899.	Av. Jan. 1, 1880-1889.	Av. Jan. 1, 1870-1879.
Horses	$71.99	$48.24	$67.78	$62.07
Mules	84.98	58.79	76.63	75.65
Milch cows.	30.12	23.35	26.65	27.27
Other cattle	18.09	16.53	19.77	17.54
Sheep	3.13	2.23	2.21	2.32
Swine	6.46	4.81	5.18	4.76

AYRSHIRE RECORDS.

The following cows and heifers have just qualified for admission to the Advanced Register of the Ayrshire Breeders' Association. This is just as they run and not a selected lot, and shows the average of the breed, submitted to the test. Nearly all that were tested qualified.

The dairy ability of a breed should not be judged alone by what a single cow, or several cows can do at the pail, but what is the average production of the breed. Then, too, it is the long test that is valuable in showing what may be expected from a dairy herd, for the cows must be fed and cared for the whole year so that while a week's test or a month's test may be of interest, it does not in any way determine whether or not the cow is a paying proposition.

AVERAGE YEARLY PRODUCTION

	Lbs. milk.	Lbs. fat.	Lbs. butter.
Two-year-old class ...	8,551	380	431
Three-year-old class..	10,050	406	474
Four-year-old class...	8,623	313	365
Mature cow class.....	10,778	427	484
Average of the whole, cows and heifers...	9,500	381	438

WEIGHT OF HOGS.

The average weight of hogs marketed in recent years is much lighter than in former years; in the decade 1870-1879 the average weight of hogs killed during the winter months in Western packing centers was about 275 lbs.; in the decade 1880-1889, about 257 lbs.; in the decade 1890-1899, about 239 lbs.; and in the past decade, 1909-1909, about 219 lbs. In other words, hogs marketed between 30 and 40 years ago averaged one-fourth heavier than those marketed in recent years.—U. S. Crop Reporter.

DAIRY NOTES.

Henry Timm, of Dixon, has purchased all of the cows belonging to the Clark dairy, west of Davis, and added them to his already large herd to produce milk for his cretified-milk trade. The milk from the Clark dairy has heretofore been going to the State Farm creamery at Davis.

The Hood Farms reports than another Jersey cow, Sophie the 19th, has entered the 1000-lb. list, after completing a year's test. The test of this cow commenced Jan. 1, 1910, and during the year she produced 14,373 pounds and 3 ounces of milk, testing on the average 5.986%, or equivalent to 1011 pounds 5 ounces of butter 83X fat. The cost of feed for this cow during the year at Lowell, Mass., is



LACK OF RAIN DOESN'T WORRY THESE FARMERS

Last year several hundred farmers decided that they had worried just about long enough over lack of water. So they bought I H C Gasoline Engines and installed irrigation systems of their own.

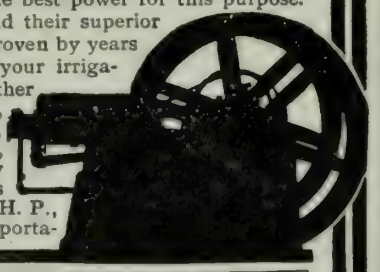
Now they have the most practical kind of crop insurance and they are independent of the irrigating companies.

Nearly every farm has a creek, slough, pond, or some other source of water supply that can be turned into a valuable asset by the installation of an

I H C Gasoline Engine

Why not put yourself in a position to have water where and when you want it—irrigate your entire farm if need be?

I H C Engines are admittedly the best power for this purpose. They require but little attention and their superior efficiency and economy have been proven by years of service. In addition to running your irrigating system they will do a host of other things such as running a cider press, alfalfa cutter, feed grinder, saw, washing machine, cream separator, etc., better and cheaper than any other power. There are all styles and sizes to choose from, 1 to 45 H. P., horizontal or vertical—stationary, portable or traction.



Call on the I H C local dealer and let him show you the one best adapted to your needs; if you prefer, write direct for the I H C Engine catalogue.

I H C Service Bureau

What is it? A clearing house of agricultural data.
What does it do? Helps farmers to help themselves.
How can it be used? By sending your farm problems and puzzling questions to the Bureau.
We are co-operating with the highest agricultural authorities and every source of information will be made available to help solve your difficulties. We shall be pleased to have an opportunity to assist you. Write the I H C Service Bureau

WESTERN BRANCH HOUSES: Denver, Col.; Helena, Mont.; Portland, Ore.; Spokane, Wash.; Salt Lake City, Utah.; San Francisco, Cal.
INTERNATIONAL HARVESTER COMPANY OF AMERICA Chicago U S A
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FOR SALE
100 SHORT-HORN BULLS

KING EDWARD'S GET
Won 32 Prizes
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IN SINGLE OR CARLOAD LOTS

These Bulls are range bred and sired by calves of King Edward, Hillcrest Hero, and other prize bulls. For further particulars write to

THORNTON S. GLIDE
Davis, - - - - Cal.

ARGO FLOOR OIL

Pratt's Animal and Poultry Regulators The best on the market

C & S AXLE GREASE—30 years of satisfaction.
H & L AXLE GREASE—for 60 years in constant use.
THE ONLY PERFECT LUBRICANTS
Use only one-fourth of what you would use of any other.
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San Francisco Manufacturers
AGENTS WEATHERPROOF COMPO ROOFING

ARGO COAL OIL

ASK YOUR DEALER FOR
EL DORADO COCOANUT OIL CAKE
FOR
CHICKENS AND MILK COWS
Cheapest Food in the Market to-day. If your dealer doesn't carry it,
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PATENTS

Write for our Guide to Inventors, sent free on request, containing nearly 100 mechanical movements and full information about Patents, Caveats, Trademarks, and Infringements.

DEWEY, STRONG & CO.,
1105-6 Merchants Exchange Bldg., San Francisco. Established 1860.

REDWOOD TANKS

Direct to consumer. can save you from 10% to 20%. A large stock on hand. Quick delivery. Egg cases, Eucalyptus Nursery Boxes. Fruit Boxes and Trays o all kinds.

R. F WILSON
Telephone 2957 Stockton, Cal.

stated to be $154.42. The milk, if sold at 10c. per quart, would be valued at $718.65, showing a profit of $564.23.

The annual stockholders meeting of the Western Yolo Creamery was held at Winters recently. The report of business transacted during the year showed that a small profit had been made, but that the lack of cream was the greatest drawbackback to the creamery. Farmers in that locality seem to be unwilling to put out more alfalfa unless irrigation water is made more dependable.

William Freshour, of Ripon, Stanislaus county, has equipped his dairy with a complete separator which is run with a 2-horsepower engine. Mr. Freshour has his creamery floors cemented and has other modern conveniences. He ships about 80 pounds of sweet cream daily to Stockton.

One thousand dollars has already been subscribed toward the establishment of a co-operative creamery at Hughson, Stanislaus county. The prospects are that the ranchers in that vicinity will quickly subscribe the balance of the money necessary and that the creamery plant will be established in a short time.

The Stanislaus Creamery Co., of Modesto, is to open a receiving station at Fresno. The Turlock district is also being looked into with a view to opening a station there.

LIVE STOCK NOTES.

A trainload of fat cattle were shipped from Gazelle recently to Seattle, by A. C. Mitchell, who purchased the stock in Scott valley. There were 15 carloads in the train, and the steers were all in fine condition. During February 125 carloads of cattle were shipped from Gazelle, most of them going North.

Hal Groshong, of Nevada, and a brother living at Fitch Mountain, have purchased the Gilger ranch, near Cloverdale, Sonoma county, and will engage in stock raising.

The first shipment of cattle for several years from the Palo Verde valley in southeastern California was sent out recently by Neff Bros. The shipment consisted of three carloads and went to the Los Angeles markets.

A 5000-acre tract of land in the coast section of Sonoma and Mendocino counties recently changed hands. The ranch is to be used as a hunting preserve and for stock raising.

Dr. H. J. Macomber, of San Benito county, recently imported from Kentucky the noted Short-horn bull Signet.

G. F. Everett has kept a herd of 100 Angora goats in the Coachella valley during the past year. The goats have been pastured upon Bermuda grass and weeds, and Mr. Everett claims that they made him a profit of approximately $5 per head for the year, made up as follows: Two cuttings of wool, $2; offspring, $3 for meat, hides $1 each. It is claimed that one acre of Bermuda grass will pasture 20 goats, and that they can be pastured in the bush and mesquite lands in the valley the greater part of the year.

E. H. Hamlin, of Placer, one of the pioneers of the State, says that the snow on the mountains has been heavier than any time since 1857. Many horses and cattle have been killed in Placer and Sierra counties by the weight of snow destroying the barns. Mr. Hamlin also states that hundreds of sheep in Nevada have been killed by reason of the severe winter.

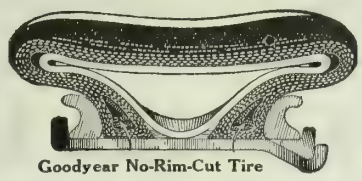
What is said to be the highest price ever paid for beef in Monterey county was received by Ed Bordeau of Alisal, last week, when he sold a fine bullock weighing 2150 pounds for 11¼c. per pound.

Ask for Our Tire Book
Cut Tire Bills in Two

Probably 100,000 motor car owners now use Goodyear No-Rim-Cut tires—10% oversize.

The control of this tire jumped our tire sales last year to $8,500,000. And 64 leading motor car makers have contracted for these tires this year. They now outsell our clincher tires almost six to one.

If you are a tire user you should know these tires. They cut tire bills in two. Ask us to mail our Tire Book.



Goodyear No-Rim-Cut Tire

The No-Rim-Cut tire—like the clincher tire—fits any standard rim for quick-detachable tires. Also demountable rims.

In changing from clinchers, you simply slip each removable rim flange to the other side. Then the tire comes against a rounded edge, as shown in the picture above.

We have run these tires flat in a hundred tests—as far as 20 miles—without a single instance of rim cutting.



Ordinary Clincher Tire

With the ordinary tire—the clincher tire—these removable rim flanges must be set to curve inward—to grasp hold of the hooked tire base. That is how the tire is held on.

The picture shows how the thin edge of the flange then digs into the tire. That is the cause of rim cutting. That is what ruins a tire beyond repair if you run it not fully inflated.

More damage is done by rim cutting than any other single cause. To avoid it means an average saving of 25 per cent on tires. We do avoid it utterly in Goodyear No-Rim-Cut tires.

The Secret

The reason lies in 126 braided piano wires which we vulcanize into our tire base. That makes the tire base unstretchable. Nothing can force it off of the rim until you unlock and remove the rim flange.

When the tire is inflated these braided wires contract. The tire is then held to the rim by a pressure of 134 pounds to the inch.

That's why No-Rim-Cut tires are not hooked to the rim. That's why the rim flanges can be turned outward. Not even tire bolts are needed.

We control this feature by patent. All other methods for making an unstretchable tire base have been found deficient. Single wires or twisted wires won't do. The braided wires which contract under air pressure are essential to a safe hookless tire.

GOODYEAR
No-Rim-Cut Tires

Tires 10% Oversize

When the rim flanges curve outward, the extra flare lets us make these tires 10 per cent oversize. And we do it without any extra charge.

This adds 10 per cent to the carrying capacity—10 per cent to the air cushion It takes care of the extras—the top, glass front, gas tank, extra tire, etc. It avoids the overloading which is almost universal without the oversize tire.

This 10 per cent oversize, with the average car, adds 25 per cent to the tire mileage. These two features together—No Rim Cut and oversize—are saving thousands of motorists about half on their tire bills. Nothing else invented in late years saves so much on upkeep.

Yet these patented tires—which used to cost one-fifth extra—now cost the same as other standard tires.

Our Tire Book explains things fully. It tells all we have learned about making tires in 12 years spent in tire making. It tells how you can reduce your tire bills to a trifling sum.

It is time that every motorist knew these facts. Please write us to mail the book.

THE GOODYEAR TIRE & RUBBER COMPANY 111th Street, AKRON, OHIO

Branches and Agencies in All the Principal Cities

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HORSES AND CATTLE.

JOHN LYNCH, breeder of Registered Short-horns; milk strain. High class stock. First-class dairy breeding. Smooth cattle. Best pedigree. P. O. Box 321 Petaluma, Cal.

BULLS AND COWS FOR SALE—Short-horned Durhams. Address E. S. Driver, Antelope, Cal.

POLLED JERSEY CATTLE—Some on Pacific coast. Chas. S. Hatfield, Secretary, Springfield, Ohio.

N. H. LOCKE CO., Lockeford, Cal. Jerseys. Service Bulls and Bull Calves for sale.

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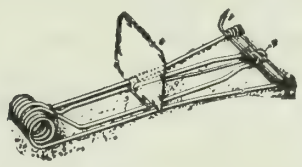
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THE HOG INDUSTRY AND ITS OUTLOOK.

(*Continued From Page 189.*)

equivalent of 2½ or 3 pounds of dry grain will produce a pound of meat on hogs up to 150 and even to 200 pounds in some instances when these weights are attained at 5 or 5½ months. As the animals get beyond this age and these weights the expense of making a pound of meat increases very fast and soon it will require the equivalent of five pounds of dry grain or more to produce a pound of meat. Note that the age of the animal is an important factor in this business, all of which leads to the conclusion that the grain should be harvested and ground and that the young animals should run in green feed while being fed this grain or have some substitute for green feed.

BREEDING.—Also we should bear in mind that the brood sow should be in good condition when she farrows and that she should be fed all she will eat when the pigs begin to drain her system. Do not be in too big a hurry to wean the pigs.

I want large boars and large sows to breed from. Because a boar weighs 800 pounds when fat is no reason for discarding him. Let the boar remain at 600 to 650 pounds or some less and if used on a small sow breed in a crate where the boar's weight will be kept off the young sow. Such boars, if healthy, produce better and stronger pigs than immature males will sire.

Those who expect to need boars ought to buy them young. It is better for the man who raises market hogs to buy his boars young, as they are not expensive then and he gets the best of the selections and the pig can be grown where it is to be used. But this pig should not be used much until he is nine months old and he should then weigh 180 to 300 pounds, depending upon condition. He should at all times have plenty of exercise and plenty to eat. With this exercise and if running near the sows he will not get too fat.

Few people on this coast feed and develop the boar right. If we are to have 200 pound hogs at five months old the sires and dams must be crowded along very fast and only the largest and best individuals selected as breeders. I have had several boars that weighed 200 pounds when five months old. My present herd boar weighed that much at five months. I had two pigs that weighed 201 and 202 pounds respectively when five months old and they were just in nice condition.

IMPORTANCE OF BLOOD AND BRAINS.—I exhibited in 1905 a Berkshire gilt that had weighed 238 pounds when 158 days old (eight days over five months), and when 238 days old this same gilt weighed 410 pounds and for the last eleven days of the feeding period she gained 43 pounds. This animal was never in a pen, she had all the middlings she could eat, some milk and about two ears of corn after the middlings and all the grass and clover she would eat while running on a two-acre lot. Now, while these gains are mighty good for young hogs, and probably very near the top for such animals, still other people have done equally as well, and no doubt some have done better. The point to impress upon producers is that hogs large enough for any market can be made by the time the animals are eight months old and that the great profit in hog raising is to be made before the animal is nine months old.

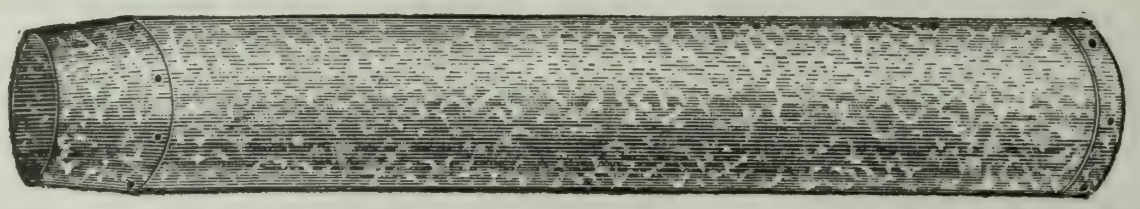
Such results can not be had from common hogs nor from hogs that are naturally small at maturity, nor with careless handling.

LOCAL DEMAND AND SUPPLY.—As it is claimed that more than eleven million dollars worth of pork and pork products are annually shipped into California it seems that a vast field for marketing our hogs is open right at home; but meat inspection should be free to every one. At present I think inspection is free only to the man who slaughters for export. That is, the present law practically amounts to that, and it shuts out the producer who would slaughter his own ranch animals and sell them direct to the consumer.

With the new method of eliminating hog cholera by the use of serum the prospect for a large increase in hog production seems certain, and with the increase in the number of hogs no doubt the price will decline, but until the price of grain is much cheaper no serious decline in hogs need be expected. More meat will be used if the prices decline, and if the hog remains around five or six cents per pound people will produce them. The rancher has about learned, however, that the man who expects him to raise hogs and sell them for 2½ cents per pound on foot is an unreasonable fellow and deserves to do without hog meat.

In conclusion, let me advise the beginner in hog raising to buy about half the sows he thinks of getting and to buy good ones. Moreover, he should plan to have an abundance of feed before getting the hogs. One may buy the grain ration necessary if alfalfa, carrots, mangels and pumpkins or squash or milk be provided on the farm. For quick money and lots of it nothing is much surer than a fine brood sow and at this time she is cheap at one hundred dollars.

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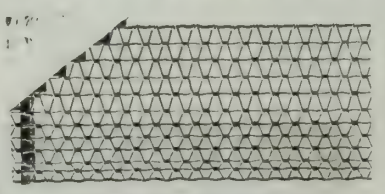
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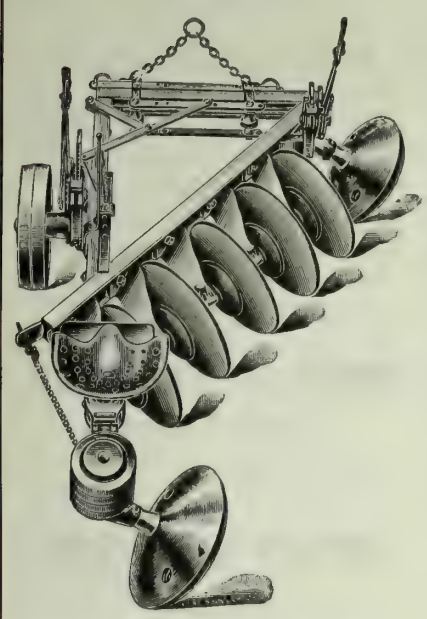
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For STRENGTH, DURABILITY and EFFICIENCY this plow has no equal.

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Proven to be the most successful Brooder Stove on the market. Awarded gold medal for most meritorius California invention at California State Fair, Sacramento, September, 1910. Burns distillate; perfectly simple and easy to manage. **Write for details.**

H. F. ARENBERG, Petaluma, Cal.



Egg City Hatchery

Orders booked for spring delivery of baby chicks. Our specialties are Rhode Island Reds and S. C. White Leghorns.

W. L. SALES,

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FOR SALE—10 acres of choice land, all planted with thrifty two-year-old orchard of Muir and Lovell peaches, located ¾ mile from Ceres, good roads, good grammar and high school and other advantages. Price very reasonable. Box 97, R. F. D. No. 1, Ceres, Cal.

POSITION WANTED—By creamery and dairyman; has had over 20 years' experience in butter and cheesemaking; able to turn out first-class goods; would accept position to take charge of dairy ranch. Address Box 35, Pacific Rural Press.

Poultry Department.

Conducted by M. Russell James.

Question Department.

Home-made Brooders.—"Subscriber," of Camthers, Cal., asks: "Will you describe in the Rural Press how to construct a good home-made brooder?"

This inquirer does not state whether he wishes a heated brooder or one of the fireless sort. We give below, in answer to the following question, the plans of simple brooders with or without heat. If subscriber wishes something better in the heated brooder line, he can let us know, and we will give plans for one of the best hot-air brooders.

"Reader," of Fresno, Cal., writes: "I would like to know how to make a fireless brooder of, say, 25 or 50-chick capacity. Also, what mixture of feed to give chicks. I am an interested reader of the Pacific Rural Press and think it a fine farm paper."

The fireless brooders are all constructed on the same principle, and have been used more or less ever since chicks have been orphaned. In the early days a jug of hot water was added while the chicks were small. A tight, ventilated box with a hover inside is all there is to it. Use a box about 2 feet square and 12 inches deep. Saw the box apart some 4 inches from the top, and hinge this portion to the bottom part like the lid of a trunk. Make three or four 1-inch, auger-holes in the opposite ends of the lid portion for ventilation; in the middle of the box portion, at the lower part of the front, make an opening about 3 by 4 inches, for the chicks to go in and out. For a hover make a frame about 1 inch smaller than the inside measurement of the box; cover this with a piece of felt or old blanket, letting it sag slightly in the middle, that it may rest on the backs of the chicks, and having it large enough so that it will hang down all around the edges, and slit this portion into strips, so that the chicks may have easy ingress. Tack cleats on the ends of the box portion for the hover frame to rest on. At first the hover should be suspended about 3 inches from the floor of the box, and should be gradually raised as the chicks grow. The bottom of the box should be kept well littered with clean dry chaff or cut hay. When very cold this litter may be drawn in front of the opening, but in no case must this opening be closed or the chicks will "sweat." A brooder this size will answer for 50 chicks the first week and 25 afterward. Keep it in a dry, sunny room, which, in cold, rainy weather, should be warmed. Air and dry the brooder every day.

Fireless Brooder Used at the Oregon Experiment Station.—Material, a dry-goods box, a little burlap or flannel, and a gallon vinegar jug. The box may be 3 or 4 feet long, 2½ feet deep and 2½ feet wide, set on edge. The hover should be about 2 feet square, high enough to put the jug under it. Strips of burlap or flannel about 4 inches wide are tacked on the under side of the hover top, which is made of plain matched boards. These strips hang down all over the chicks, not merely around the edges of the hover. The jug is filled with hot water and placed underneath the hover, in the center. Felt or cloth should be wrapped about the jug. During the first week the jug should be refilled with hot water night and morning. In warm weather the jug may be dispensed with when the chicks are two weeks old. Later the hover may be removed and the box used for brooding the chicks till taught to perch. This brooder will take care of 50 chicks easily.

A Heated Hover.—Professor Brigham, in "Progressive Poultry Culture," gives the following method of constructing a brooder with a warm hover: Take a substantial box some 2 feet square; set it up on edge, and cut a round hole in the top of sufficient size to hold an ordinary water pail, letting the bottom down to about 3 inches above the floor of the box. Wooden pails should be used, as they hold and diffuse the heat better than metal pails. A board cover is made to fit closely over the pail, and in cold weather a blanket may be thrown over the pail and the box excepting the ventilating spaces and chick door, which must always be unobstructed. Several half-inch holes should be cut in the upper sides of the box for ventilation, and a little door cut in one side for the chicks to go in and out. If necessary, a larger box may be used and two pails set into the top.

The subject of chick feeding was taken up in the Rural Press of last week.

Care of the Brooder Lamps.—"Keep your lamps trimmed and burning," and more—keep them well trimmed and clean, and filled with the best grade of oil. There is absolutely no danger of fires from the incubator and brooder lamps if one has first-class machines in good order and uses the best oil and takes proper care of the lamps. In fact, they are far safer than the lamps used in the house, for they are better made and held firmly in place. When the brooder-house burns or the chicks become smoked and suffocated, be sure it is due to poor equipment, poor oil, or poor care or to all three combined. Clean and fill the lamps just before dark every evening without fail. Do not fill the lamps too full. The oil expands by the heat, and when the lamp is brimming full, it is forced out over the top of the lamp and up into the burner—always a dangerous condition. Be sure that the wick is trimmed even, with slightly rounded corners. A flame running up at one or both corners causes an uneven temperature and foul air in the incubator chamber or brooder, and is dangerous, besides. With each hatch supply new wicks that fit properly in the burners.

SQUABS PAY! DEMAND UNLIMITED! Pure Belgian Carneau, $15 a dozen and up; Homers, $1.50 a pair. Address W. A. BOLTON, Healdsburg, Cal.

F. BALDWIN'S WHITE LEGHORNS



Winners from Seattle down; 33 out of a possible 35 prizes in 3 shows this season. **Bred as layers first.** Stock, any age, for sale at reasonable prices. Eggs $8 and $12 per 100 Settings $2 up. Send for **new free folder** and prices.

1st Pullet, A. Y. P. Ex. **49 Washington Ave , San Jose, Cal.**

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WAYSIDE POULTRY YARDS, Petaluma, Cal.—HATCHING EGGS from S. C. White Leghorns, Buff Orpingtons, Rhode Island Reds, Light Brahmas and Houdans, $6 per 100. EXHIBITION MATINGS of White Leghorns and Black Bantams, $5 per 15; $7.50 per 30. Address Carl Gregory, Manager.

OAKLAND POULTRY YARDS, 149D, California St.—Established 40 years. Standard bred poultry. White Orpingtons, R. I. Reds, Brd. Rocks, White Leghorns. Agency Norwich Automatic Feeder and Automatic Water Fountain; the best device every offered to the poultry raiser. Send for circulars.

PIONEER POULTRY YARDS—Standard bred Light and Dark Brahmas, Buff Cochins, R. I. Reds, Houdans, Black Minorcas, Cornish Fowls, Brown Leghorns, Bronze turkeys, peacocks, guineas and Rouen ducks. Address W. A. FRENCH, 545 W. Park St., Stockton, Cal.

S. C. B. MINORCA EGGS for hatching at $6 per 100; can fill large orders; 12 yards large beautiful hens, excellent layers; a few young roosters left at $3 each. Black Beauty Poultry Yards, Dixon, Cal.

MAMMOTH WHITE HOLLAND TURKEYS—Eggs for hatching, $5 per 13 eggs; fine large vigorous stock, not related; no stock for sale. Mrs. A. R. Sutherland, Santa Barbara, Cal., R. F. D., No. 2.

DAY-OLD CHICKS—R. I. Reds, S. C. White Leghorns and Barred Rocks; also eggs for hatching; good laying strain. Fairmount Hatchery, Box 29 B, R. F. D., Santa Cruz, Cal.

WHITE WYANDOTTES—221 egg strain. Owner first-prize cockerel, Oakland and Petaluma 1909. Eggs $2 per 15. H. B. WINTRINGHAM, Middletown, Lake Co., Cal.

CHICKS, 10c.—Shipped anywhere; 30 varieties; thoroughbred chickens and eggs; free circular. Ingleside Hatchery, 807 Mt. Vernon Ave., San Francisco, Cal.

INDIAN RUNNER DUCKS—Eggs for hatching, $1 per setting; $2 for 30; for 50 or more, 5c each. F. L. HUNT, Lincoln Ave., Napa, Cal.

PETALUMA INCUBATOR CO., Petaluma, Cal.—You will be pleased with our new Free CATALOGUE. Send for it.

FREE BOOK—"Poultry Feeding for Profit," on application to Coulson Co. Petaluma, Cal., Box P.

CARRINGTON WHITE LEGHORNS—Send for circular. Address C. B. CARRINGTON, Hayward, Cal.

WHITE LEGHORNS—Chicks, eggs, cockerels. Fine stock. Reasonable. O. B. Morris, Lodi, Cal.

BRONZE Turkeys and Eggs. Ed Hart, Clements, Cal. Large size, good plumage, early maturity.

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ORPINGTONS—White, Buff, stock, eggs. Ellen Jacque, 3117 School St., Fruitvale.

HATCHING EGGS—White Leghorns. Circular 164. A. H. Gregory, Fruitvale, Cal.

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THOROUGHBRED BUFF LEGHORNS

Proven winter layers; 600 hens selected by Hogan system, in breeding yards.

Chicks, $10 per 100. Orders taken only for May and June delivery.

Eggs for hatching, $5 per $100; $1 per setting.

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SANITARY FIRELESS BROODER

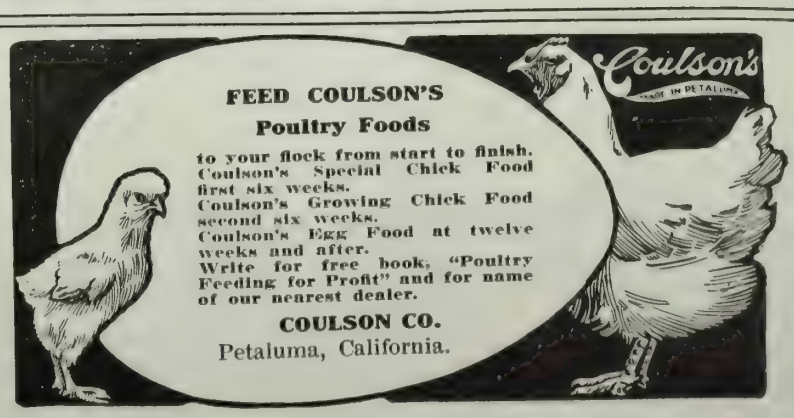


The most perfect brooder made. Perfectly sanitary, perfect ventilation, no corners to crowd into. No sweating, no smothering, no oil to buy, no lamps to fill, no risk of loss by fire. No night work—just perfect. Our guarantee with every brooder. Price 75 to 100 capacity, $6.00. We pay the freight. Send for circular.

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Poultry Foods

to your flock from start to finish.
Coulson's Special Chick Food first six weeks.
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Write for free book, "Poultry Feeding for Profit" and for name of our nearest dealer.

COULSON CO.

Petaluma, California.

The Home Circle.

The Change.

Before she went to boardin' school she
uster romp an' play,
She drove the cows up from the field an'
helped take in the hay;
But she don't do that any more, because
of this, you see—
She went away as Mary Jane an' come
back as Jeanne Marie.

She uster wear made over clothes, an
always with a smile,
But now her dresses every one must be
the latest style.
She don't ride bareback any more, nor
climb the apple tree—
She went away as Mary Jane, but came
back Jeanne Marie.

Her hair is all in crinkles now—she calls
'em Marshal waves;
She's up in all the etiquette, real stylish
she behaves.
Her ma and me are mighty proud of all
she's learned, but gee!
We sometimes wish for Mary Jane in-
stead o' Jeanne Marie.

—Mrs. Elsie Duncan.

Planting Aunt Ruth's Farm.

One winter evening Aunt Ruth was called upon for a new game.

"I think I will plant my farm," she responded.

"This is the wrong season," said Carl.

"It is the finest time for planting this kind of a farm," said Aunt Ruth, smilingly. My fields are all named alphabetically. What should you advise me to plant on my A land? Anybody may answer."

"Apples!" cried Carl.

"You don't plant apples," said Bertha.

"They plant the seeds. Don't they, Aunt Ruth?"

"Yes, and this is a brand-new farm. I want it well stocked. Apples will be all right."

"Plant some asparagus," said Alice.

"And apricots," added Norton.

"I was just going to say that," said Bertha.

"Now I can't think of anything else."

"Artichokes!" cried Carl.

"I think I'll plant some anise," said Aunt Ruth, at that moment.

"Oh, do!" replied Alice. "Anise candy is so nice!"

"Well, what shall I have in my B field?"

"Beans and beets," answered Bertha.

"Brussels sprouts," said carl.

"And balm, for balm tea," added Aunt Ruth. "There isn't much in B. We'll bagin on the C land."

Cabbages, celery, corn!" cried Alice.

"Oh, stop! You're getting them all! Cucumbers, cress, carrot, caraway—" and Carl paused for breath.

"Chicory, cauliflower, catnip," raced Alice, "and coriander, and—"

"Chervill," put in Carl.

"What's chervil?" queried Norton.

"Oh, something to use in soups and salads," answered Carl.

"Clover!" cried Alice.

"Don't believe there's another one," said Bertha.

"Currants," said Aunt Ruth, quietly.

They all laughed, while their aunt said she thought her C field was full enough and asked for the D's.

"Dandelion," began Carl.

"Dewberries," responded Bertha.

"Dill," said Alice.

D's seemed to be scarce, so Aunt Ruth proceeded. They went on until the S field was reached.

"Squashes. Do have plenty of squashes, so for once I can have all the squash pie I want!" cried Norton.

"Sage," added Bertha.

"Summer savory," said Alice.

Nobody spoke for a moment. Then Carl hastened to say. "I thought I'd wait and see if you'd think of it, but it left for me to propose a big, big strawberry bed!"

"Oh," they cried, "the idea of our forgetting strawberries. '

"There are some other beds—upstairs—that I think you have forgotten," said Mrs. Chapin, smilingly.

So, amid much laughing chatter, the remainder of the farm planting was postponed until another evening.—Youth's Companion.

For the Ill Child.

A mother who had a sick child "all run down," tells how she was cured. Food, fresh air, and attention to the child's needs was all that was necessary. She says:

Feed her all the fresh new milk she will drink, fresh eggs as often as she wants them at regular meals, fruit half way between meals. Do not urge her to eat. When she wants solid food let it be plain and taken at the regular meals. Do not feed her graham for a while, as it does not agree with some children.

Send her to bed not later than 7 o'clock and have her sleep alone. This is important.

Keep her out in the fresh air as much as you can. Have her wear a coat and warm cap or hood, and nothing around her neck.

If she is attending school, take her out. Give her mind a rest, and above all things keep her happy. Do not tell her she is poor and pale. Notice each improvement and she will soon be well.

Our little girl was kept on the milk, eggs, and fruit diet for three months. In just one week she was hungry, something she had not been before in months.

On Time.

Lord Nelson's reply to the Prime Minister, when asked when he would be ready to take command of the fleet, declared "Now," and immediately set out to join the fleet. "All my life I have made it a practice to be every ready for any emergency, and to be always 15 minutes ahead of time."

Our own Washington was another great man who always insisted on promptness, and at one time, when his guests whom he had invited to dinner at a certain hour did not appear, he started in to eat without them.

These men would do anything in order to be on time. Come what may, they had to be there, and they always were. If they gave their word or made an appointment they were always there.

These are the kind of men whom men can trust, who can be relied upon, and these are the men who achieve fame.—Ex.

Not for Him.

"What did ye say the doctor's name was?"

"Dr. Kilpatrick," was the reply.

"That settles it," replied the sick man. "That doctor will not get a chance to operate on me."

"Why not?" asked the nurse. "He is a good doctor."

"Maybe so, but not for me. You see, my name is Patrick."—Battle Creek Enquirer.

Mutual.

"Bridget," said Mrs. Grouchey, "I don't like the looks of that man who called to see you last night."

"Well, well," said Bridget, "ain't it funny, ma'am? He said the same about you."—Catholic Standard and Times.

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AGENTS
Winters, Yolo Co., Cal.

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$25 Cash and $5 each month buys one of those beautiful rich level 2½-acre Home Farms in the Livermore Valley. No better climate, no better land for a profitable poultry ranch. Only 32 miles from Oakland.

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Merced County
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We will sell you irrigated land in our **Merced Colony** adjoining the city limits of Merced on a crop payment plan. Make one payment in cash, then the balance of the purchase price from one-third the crop each year. We have confidence in the productivity of our land or we could not make this proposition. If you have equal confidence in yourself, write us today for particulars.

10 and 20 acre tracts. $100 to $125 per acre.

(Send this to us)

Co-operative Land & Trust Co.
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(Please send me literature on your Merced Colony)
NAME .....
ADDRESS .....

MR. RANCHER OR SPECULATOR HERE IS YOUR OPPORTUNITY TO SECURE 320 ACRES AT A BARGAIN.

THE BEST PIECE OF LAND IN ALAMEDA COUNTY FOR THE MONEY

320 acres rich level land within 3 miles of Livermore and 35 miles of Oakland, adapted to the raising of hay, grain, grapes and alfalfa.

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$85 Per Acre $85 Per Acre $85 Per Acre

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OUR YOUNG FOLKS' DEPARTMENT.

Conducted by M. RUSSELL JAMES.

The Coming of Spring.

Written for the Young Folks' Department
By FAY MILLER.

The wind has roughly blown its breath
  Against the trees that tower high,
As if to disprove winter's death;
  Yet, winter, though must die.

The clouds have hung their giant walls
  In heaviness upon the sky,
But now and then a sunbeam falls
  Upon the field near by.

Already fields are sprinkled light
  With green that thickens every day,
The grain will sparkle with delight
  When spring shall hold her sway.

The redwoods hold their spires aloft,
  And brave the wind that fiercely blows;
Each rustling elm bough whispers soft
  The secret that it knows.

Wee warblers' notes shall fill the air;
  Sweet songs which love to charm the ear
Shall sound from branches everywhere,
  All meet for kings to hear.

Wild flowers the fields shall decorate;
  The trees shall wear bright leaves of green,
And all who view this fair estate
  Behold a charming scene.

The busy honey bee shall hum,
  As to the hive his store he brings;
The butterfly shall go and come
  With gorgeous, glittering wings.

The sun shall shine through cloudless skies,
  Aud flush the blooming world below;
See how each plant and flower relies
  On his bright, loving glow!

The rivulet shall ripple by,
  All undisturbed by flood and showers,
The woods around shall cease to sigh,
  And welcome all the flowers.

The wind may roughly blow its breath
  Against the trees which tower high,
And try to disprove winter's death,
  Yet, winter, thou must die.

[The above poem, written by a fifteen-year-old boy at the Chico Forestry Station, would not discredit one of the major poets. In fact, our young friend has given a fresh and original touch to a rather hackneyed subject; and this goes to prove that in the wholesome country among the charms of nature, the inspiration of beautiful thoughts comes to childhood and youth.]

The Letter of a Brave Little Girl.

Kellogg, Cal., Feb. 24, 1911.

Dear Editor: My father takes the PACIFIC RURAL PRESS. We all read it and like it very much. The other night as I was reading it, I came across the page where it said, "Learn this Lesson." I read it, and I am going to try and write you an interesting letter so I may get that hatching of eggs of pure-bred White Leghorns. I am going to raise chickens and am going to start right. We live in a beautiful valley called Knight's valley. We live at the foot of Mount St. Helena. The climate is nice, and I think I could succeed in raising chickens.

I am thirteen years old and am still going to school. My father has a ranch and a good many cows. I milk five or six cows. I told father I could do better raising chickens, and he said "All right." I have only a few chickens now. I am going to get father to build me some coops to put hens in when they've got little chicks. I am going to have the coops made with wire screens in front so that the chicks can have plenty of fresh air. When they get older I will put them in the big chicken house so they can roost. Father has a separator, and I'll have skim-milk and bran mixed together, and I will feed them wheat, too.

If I succeed in making money this year, I shall try an incubator next year, so that I can raise chickens by the wholesale and make money and beat father with his cows. We are a big family of eleven and we need a lot of money, so if this letter is interesting enough to win the prize, maybe I can make some money. Yours truly, EMMA TAMAGNI.

We are proud to make the acquaintance of this little girl. She is one of the real heroines of life and can discount all the papier-mache heroines of fiction. At an age when most other girls are thinking only of their own affairs and pleasures, she is helping bear the family burdens, and planning to make a share of that "lot of money" so needful in such a large family—and to "beat father with his cows."

We shall be glad to assist you, little Emma, in making a success with your chickens, and for your benefit and that of others of our young folks who are getting busy with poultry this season, we will give a short lesson each week on setting the hens and caring for the chicks, as it is better for young folks to begin with hens. Now is the season when the old hen is getting broody and anxious to raise a family, and it is also the proper time to hatch for winter layers.

We should like to hear from all our young folks who are getting busy with poultry this spring, both those who have already written and those who have not; also that they inform us on which line they are working, for market eggs alone or for birds fit to appear in the poultry shows. Prizes of hatching eggs from pure-bred stock would be of little value to those not interested in poultry, and we will find something else for that class.

In this connection we are happy to assure our young folks that their interests in regard to exhibiting birds at the poultry shows is being pushed vigorously. We make the following excerpt from a letter just received from the field editor of Poultrycraft, Mr. G. Irwin Royce, whose item about the boy who captured two prizes at the last Oakland show was copied in the RURAL PRESS of February 18th:

"I am pleased with the proposition as you view it, and will take up this branch of the work and do all I can to help along the kids. I am in favor of giving a nice trophy of some sort at every show to encourage the boys and girls, give the girls an equal chance and make fanciers out of them. The old folks will be interested in whatever the children like, as a rule. So this will serve a double purpose, by getting the future greats interested in the fancy and indirectly bringing in more of the grown-up children through the small fry. We will go at it and make the thing a feature. The children only need their cause advocated as a right."

Mr. Royce is one who makes a thing move when he takes hold of it, so our young folks may feel assured if they raise some fine stock that they shall have every encouragement to exhibit it and a chance to win the blue ribbons away from the old fanciers, like the boys did from the old farmer in the corn competition that came off in Ohio last January.

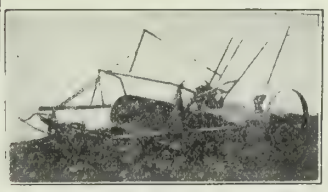
Health demands the drinking of plenty of pure water. A physician at a famous health resort is quoted as saying that most people who come there are broken down because they rest too little and drink too little water.

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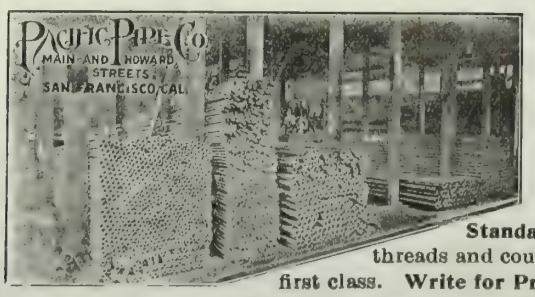
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HONEY BEES

HIVE MONEY
PHOENIX TOOL & VALVE COMPANY, 245 Market St., San Francisco

THE MARKETS.

San Francisco, March 8, 1911.

(Unless otherwise noted, quotations rep present prices paid to the growers.)

Cereals.

WHEAT.

Prices have been a little lower, but a reaction has started within the last few days and the market is now fairly firm at the quoted values. The local market is not particularly active, but there is a strong feeling in the North, where milling interests are again buying freely. Export business has also picked up, with heavy buying for Japan.

California Club	$1.37½@1.40
Sonora	1.60 @1.65
White Australian	1.55 @1.60
Northern Club	1.47½@1.52½
Northern Bluestem	1.50 @1.55
Russian Red	1.42½@1.50

BARLEY.

With a good crop in prospect, futures are rather easy, but the spot market remains fairly strong. The better grades find an active demand for shipment. There is no great activity in common feed in the local trade, but values are firm, nothing being obtainable under $1.10.

Brewing and Shipping	1.17½@1.25
Choice Feed, per ctl	1.12½@1.15
Common Feed	1.10

OATS.

Prices show no further change, but there is more firmness than for some time past. The price on feed oats is low as compared with other grain, and a marked improvement in demand is noted. Supplies of such grades are fairly large, but full quotations are obtained without trouble.

Red Feed	$1.20 @1.25
Red Seed	1.32½@1.42½
Gray	Nominal
White	Nominal
Black Feed	1.10 @1.20
Black Seed	1.45 @1.50

CORN.

There is some demand, but trading is not active, and arrivals are not large. Prices are comparatively low on bulk shipments to arrive, but nothing can be obtained in a jobbing way below the prices quoted.

Eastern Yellow	$1.30 @1.35
Eastern White	1.31 @1.36
Egyptian White	1.55 @1.60
Brown	1.50 @1.60

RYE.

No change in price. There is no movement of any consequence.

Rye, per ctl	$ 1.60

BEANS.

Prices stand as before on all lines except pinks, the market being without much feature at present. Trading has been rather quiet for some time, but more inquiry is noted this week, and quite a large movement is expected during March, as business usually picks up at this time. Pink beans are a shade lower, but all other descriptions are steady to firm, and a further advance is expected in limas. The movement of lima beans from southern California points was interrupted for a time by damage to the wharf at Hueneme, but there is some movement by rail, and sea shipments will soon be resumed. The Association is still in the market, quoting the same price as before, though the stock on hand is smaller than for several years at this time. Benj. Moritz, the New York agent of the Association, is starting on a Western trip. According to recent advices from New York, the spot market there has stiffened up somewhat, all bids under $6 being turned down. This places the spot market about on a parity with Coast values.

Bayos, per ctl	$4.75 @4.85
Blackeyes	5.40 @5.70
Cranberry Beans	4.00 @4.25
Garvanzos	2.85 @3.00
Horse Beans	2.25 @2.50
Small Whites	3.45 @3.60
Large Whites	3.45 @3.60
Limas	6.00 @6.10
Pea	4.25
Pink	5.50 @5.60
Red Kidneys	6.25

SEEDS.

There has been no change in prices. The heavy storm of the last week has interrupted trading to a considerable extent, but an immediate resumption of activity in the leading lines is expected.

Alfalfa	18@ 20c
Broomcorn Seed, per ton	$20.00@ 25.00
Brown Mustard, per lb	5½c
Canary	3½@ 3¾c
Flaxseed	5 @ 5½c
Hemp	3 @ 3½c
Millet	2¾@ 3¼c
Timothy	8 @ 9 c
Yellow Mustard	5¾c
Dried Peas, per ctl	3.75@ 4.00

FLOUR.

Prices are so far maintained on local patents, though there has been a sharp decline in Northern grades for the domestic trade, the Portland prices being lower than for several years. This is due to the extremely heavy movement of export grades, with no corresponding demand for patents.

Cal. Family Extras	$5.40 @5.80
Bakers' Extras	5.40 @5.80
Superfine	4.50 @4.70
Oregon and Washington	4.30 @4.60

Hay and Feedstuffs.

HAY.

Conditions have been unfavorable to a continuation of the heavy shipments of the last few weeks, and the amount received this week was comparatively small. There is accordingly a little less depression in the local market, but dealers and consumers are still very well supplied, and it has been impossible to bring about any real improvement in values. Notwithstanding the extreme dullness in San Francisco and vicinity, there is a very fair movement at some country points, though prices are low nearly everywhere. The storm has brought out a little better demand in the country, especially for alfalfa, which is still moving quite freely. The shipping demand for alfalfa seems to be at an end for the present. Local dealers look for a quick resumption of heavy arrivals, which would prevent any advance in prices, owing to the fact that there is still a great deal of hay stored in the country, and the new crop is not far off. Considerable damage has been done to the crop in some places, but it is not thought that it is extensive enough to cause any shortage.

Choice Wheat	$11.00@13.00
Good Wheat Hay	9.00@11.00
Other Grade Wheat	7.00@ 9.00
Wheat and Oats	7.00@10.50
Tame Oats	7.00@11.00
Wild Oats	6.50@ 8.50
Alfalfa	8.00@12.50
Stock Hay	5.50@ 6.50
Straw, per bale	35@ 55c

FEEDSTUFFS.

The recent heavy storm has caused a revival of demand for most descriptions, as it has been impossible to take advantage of the green feed, and another week of activity is expected. This condition has brought a stronger feeling in several lines, but prices have not advanced. Bran is firm at the moment, but the production in some parts of the Coast is very heavy, and a further weakening is likely within the next few weeks.

Alfalfa Meal, per ton	$20.00
Bran, per ton	$24.50@25.00
Cocoanut Cake or Meal	26.00
Cracked Corn	32.00@33.00
Middlings	32.50@35.00
Mixed Feeds	28.00@31.00
Rolled Barley	24.50@25.00
Rolled Oats	29.00@31.00
Manhattan Egg Food, per ctl	15c
Shorts	25.50@28.00

Garden Truck.

VEGETABLES.

Local onions have been about cleaned up, and are no longer quotable, Oregon stock being the only thing in the market at present. The price remains about as before. Arrivals of most descriptions of vegetables are still rather light, but larger than for some time past, and in view of the curtailment of demand on account of the stormy weather, supplies in several lines have been excessive. Local garden truck, especially cabbage, is plentiful and cheap. Mushrooms are freely offered at easier prices. Rhubarb has been scarce for a day or two, and is a little higher, but asparagus is beginning to come in larger quantities, and it is not likely that the present high figures can be maintained much longer. Green peas are still obtainable only from the South, but increased supplies and a light demand have caused lower prices. Lettuce and celery are also offered more freely, and the extreme prices of the last few weeks are no longer held. Mexican tomatoes are also lower, with larger supplies, while cucumbers have advanced sharply. Green peppers are a little higher. Considerable asparagus is being shipped East from the delta district, and the canneries will start work on this article before long. A large acreage of tomatoes is being put in around Healdsburg, where growers are getting offers of $6.75 to $7 per ton, compared with $6 last year.

Onions—Oregon, sack	$ 2.35@ 2.50
Garlic, per lb	4@ 5c
Green Peas, per lb	10@ 15c
Turnips, per sack	60@ 75c
Tomatoes, per crate	1.25@ 1.50
Eggplant, per lb	12½@ 15c
Cucumbers, per doz	1.25@ 2.00
Cabbage	40@ 60c
Green Peppers, per lb	12½@ 20c
Carrots, per sack	65@ 75c
Celery, large, per crate	1.75@ 2.00
Mushrooms, per lb	15@ 35c
Rhubarb, per lb	7@ 10c
Lettuce, per crate	1.75@ 2.25
Cauliflower, per doz	50@ 60c
Asparagus, per lb	15@ 30c

POTATOES.

New potatoes have not yet become much of a feature in the market. Old stock of all descriptions is quiet, but closely held at full prices. The best Oregon stock is a little higher. Sweet potatoes are offered in small quantities at another sharp advance.

Salinas Burbanks, per ctl	$ 2.20@ 2.35
River Whites, per ctl	1.65@ 1.85
Sweet Potatoes, per ctl	5.50@ 6.00
Oregon Burbanks	1.90@ 2.20
Early Rose	1.65@ 1.85

Dairy Produce.

POULTRY.

Practically nothing of any description is coming in from local points, and California stock is accordingly nominal, but the market for Eastern chickens is in better condition than for some time past. A little stock was carried over from last week, but new arrivals have been light, and with a brisk demand higher prices are obtained for most of the leading descriptions.

Large Broilers	$ 4.50@ 5.50
Small Broilers	3.50@ 4.50
Fryers	6.00@ 7.00
Hens, extra	8.50@11.00
Hens, large	7.00@ 7.50
Small Hens	5.50@ 6.00
Old Roosters	4.50@ 5.50
Young Roosters	7.00@ 8.00
Young Roosters, full grown	8.50@10.50
Squabs	4.00@ 4.50
Geese, per pair	2.50@ 3.00
Ducks	8.00@10.00
Turkeys, per lb., live	18@ 20c

BUTTER.

Some fluctuation has been noted during the week, owing to irregularity in arrivals. The storm held up shipments from the principal producing districts, and the resulting shortage has caused a sharp advance, though the market is only steady at present figures. The following prices are quoted by the San Francisco Dairy Exchange:

California (extras), per lb	29 c
Firsts	25 c
Seconds	22½c

EGGS.

Arrivals have been somewhat interrupted, and the market is firm at the moment though at extremely low prices. Dealers are still amply supplied, and a further increase in arrivals is expected. The demand is large for current consumption, but the heavy production has again forced down the price.

California (extras) per doz	17½c
Firsts	17 c
Seconds	16½c

CHEESE.

Offerings are larger than the market will readily absorb, and a further decline is noted in both flats and Y. A.s.

Fancy California Flats, per lb	12½c
Firsts	11 c
New Young Americas, fancy	15½c

? ? ? ? ? ?

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Deciduous Fruits.

FRESH FRUITS.

Continued stormy weather tends to limit the demand for apples locally, but there is a steady demand for choice stock of all descriptions for export and Eastern shipment, and the movement in that direction keeps prices very firm. Several lines of fancy stock have again advanced, and ordinary apples for the local trade are also bringing better prices than usual. There is nothing but apples in the market, no strawberries having arrived for several days.

Apples, per box—	
Newtown	$ 1.40@ 1.75
Other varieties	.90@ 1.25
Fancy Red, 4-tier	1.25@ 1.75
Bellefleur	1.00@ 1.25

DRIED FRUITS.

Values on stock in growers' hands are steady to firm, and on most lines little more than nominal. The only change is in prunes, which have been marked up a little, owing to the scarcity of stock. Packers are about cleaned out, and it is generally understood that there are not over 25 cars left in the State. Stocks of evaporated apples have been materially reduced, and the remainder are firmly held, though there has been no further advance. Figs are entirely out of first hands, and offerings of apricots are limited to a few small lots. There is still some stock of peaches on hand, but Coast prices are steadily maintained. In regard to raisins, there have been no new developments in the last couple of weeks, the comparatively light stocks in growers' hands being firmly held, while packers are getting a fair demand for shipment. The movement of all dried fruits to the East has been somewhat stimulated by a reduction in the water freight rate. The New York Journal of Commerce says:

"Apricots are sparingly offered from all quarters, though it is suspected that some of the Western jobbers have more than they need for their own trade and will be heard from later as sellers at concessionary prices. Meanwhile the market is dull and prices are nominal.

"Peaches are dull, both on the spot and for forward shipment, and while prices show no appreciable change, the undertone of the market is easy.

"Stocks of California prunes are getting into very small compass. The spot supply is said to be far below normal for this season, and in the more popular intermediate sizes a pronounced scarcity exists. Offerings from the Coast are extremely light, and at least one of the large packers has notified his agents here that he has notning more to sell. It is said now to be impossible to find sellers on less than a 7¼c f. o. b. bag basis for 40s, but it is still possible to buy 30s on a 7c. f. o. b. basis. Trade in prunes on the spot is fair, but on the jobbing order. The extreme scarcity of Oregons has diverted the attention of buyers of that grade to the sweeter California fruit, and the introduction of the latter into that class of trade which has heretofore preferred the Northwestern prunes is making comparatively rapid progress. Since it has become a question of buying California stock or going without, East Side dealers and consumers are giving more attention to the California fruit, and their purchases, added to those of the trade regularly consuming these, are reducing spot stocks and adding to the firm tone of the market.

"California loose muscatel raisins are in a strong position. Offerings of spot goods at inside prices are light. Seedless varieties are very scarce here and in Cal-

ifornia, but at the higher prices demanded buyers are inclined to hold off, and the market has a quiet appearance. The demand for seeded California raisins is light, but the tone is firm, though prices are on a lower parity than those for loose stock. However, the tone of the market is firm and sellers are not trying to force sales."

Evaporated Apples, per lb..	9½@10 c
Figs, black	4½@ 5 c
Figs, white	5 @ 7½c
Apricots	12 @13 c
Moorpark, fancy	13½@14 c
Peaches	6½@ 7¼c
Prunes, 4-size basis	7 @ 7¼c
Pears	8½@12 c
Raisins—	
Loose Muscatels, in sweatbox	2½@ 3 c
Thompson Seedless	4 c
Seedless Sultanas	3½@ 3¾c

Citrus Fruits.

Prices on citrus fruits in Eastern auction markets are holding up well, especially so considering the heavy shipments and the cold weather of the East. At New York on March 6, 43 cars of navels were sold at auction, and the prices ranged from $3 down to $2.15. Lemons brought from $3.20 down to $2.90. At Boston on the same date, navel oranges sold for $3 for extra fancy, while other grades brought as low as $2.35. Lemons sold for $2.85 to $3.65. At St. Louis the market was reported as very strong, prices ranging from $2.20 to $2.55 for navels, and from $3.15 to $3.40 for lemons. At Pittsburg and Cleveland prices were well maintained, the average being about the same as at the above cities.

Twenty-six cars of Florida oranges sold at Philadelphia Monday. Prices ranged from $1.35 to $3.50, averaging $2 per box.

Total shipments of oranges from California this season to March 7 were 12,206 cars, and of lemons 1593 cars.

Last week 278 cars of oranges were sent out from the Redlands district. This is more than double the number for the corresponding week last year. Already over 2000 cars have been sent out from that district this season. Average prices received are a little lower than last year.

Business at San Francisco has been confined to narrow limits most of the week, and all varieties of domestic fruit are in ample supply. Ordinary navel oranges are offered in excess of demands, and the price is shaded, but there is a little stronger feeling in regard to extra stock. Tangerines also are a little firmer. Choice and fancy lemons have taken a drop, but Mexican limes of desirable quality are scarce and firm.

Navel oranges—	
Extra choice	$ 2.00@ 2.25
Choice	1.25@ 2.00
Valencias, choice to fancy	Nominal
Choice	Nominal
Standard	Nominal
Tangerines	1.00@ 1.75
Choice Lemons	2.00@ 2.50
Fancy Lemons	2.75@ 3.00
Standard	1.25@ 1.50
Limes	6.50@ 7.00
Grapefruit	2.00@ 2.75

Nuts, Honey, Hops, Etc.

NUTS.

There is nothing doing in this line except in a small jobbing way, as everything has been taken out of growers' hands and no large quantities are offered anywhere.

Almonds—	
Nonpareils	15½@16 c
I X L	14½@15 c
Ne Plus Ultra	13½@14 c
Drakes	11¼@11¾c
Languedoc	11 @11½c
Hardshells	8 @ 8½c
Walnuts—Softshell, No. 1	15 c
Standard	14½c
Softshell, No. 2	11 c
Budded	17½c

HONEY.

All the better descriptions are nominal, with little or none to be had, while other grades are dull with little demand. Prices remain about the same as before on such stock as is offered.

Comb—White Sage	Nominal.
Extracted—Water White	Nominal.
Light Amber	7 @ 8 c
Amber	5 @ 6 c
Sacramento River Comb	12 @12½c

BEESWAX.

Receives little attention at present, but the supply is not large, and prices are firmly maintained.

Light	27½@30 c
Dark	23 @26 c

HOPS.

There has been considerable activity of old crop stock in the Mendocino and Sonoma districts in the last few days, and most of the 1910 hops have been disposed of at about the prices quoted. These are a little below the former figures, but high prices are expected on the coming crop.

Hops, 1910 crop	17½@20 c
1911 Crop	15 @16½c

Live Stock.

DRESSED MEAT.

Beef Steers, per lb	9 @10 c
Cows	8 @ 9 c
Heifers	8 @ 9 c
Mutton: Wethers	10 @10½c
Ewes	8½@ 9 c
Lambs	12 @13 c
Hogs, dressed	12 @13½c

LIVE STOCK.

Continued light offerings of live stock are keeping the market firm, and have caused some further advance in prices. All descriptions of cattle are higher, and hogs are fairly firm, though the demand for the latter is comparatively light at the moment. Ewes are easier. Dressed beef and wethers show a slight advance.

Gross weight:	
Steers: No. 1	5¾@ 6¼c
No. 2	5¾@ 6 c
Cows and Heifers: No. 1	5 @ 5¼c
No. 2	4¾@ 5 c
Bulls and Stags	2½@ 4 c
Calves: Light	6½@ 7 c
Medium	6 @ 6½c
Heavy	5½@ 6 c
Hogs: Grain-fed, heavy	8 c
150 to 250 lbs	8¼@ 8½c
100 to 150 lbs	8¼@ 8½c
Common Hogs, per lb	5 @ 6½c
Small prime wethers	5¼@ 5½c
Large prime wethers	5¼@ 5½c
Ewes	4½@ 4¾c
Lambs	6½@ 7 c

WOOL.

So far there have been no new developments in the local market, but prices are expected on the spring clip in a short time. There is no trading of any consequence at present.

Fall Clip—	
Mountain Free	8 @10 c
Valley Fall and Lamb	6 @ 9 c
Northern	6 @ 9 c
Southern Spring	10 @11 c
Middle Counties	12 @13 c
Northern	15 @16 c

HIDES.

A few slight advances in price are noted, due mainly to the improved quality of offerings. Buyers are taking a little more interest, but the market is by no means active.

Heavy Steers, over 56 lbs.	10 c
Medium	9 c
Light Steers, under 48 lbs.	8½c
Heavy Cows, over 50 lbs.	8½c
Light Cows, 30 to 50 lbs.	8½c
Kip	10 @10½c
Veal	14 c
Calf	15 c
Dry—	
Dry Hides	17 @18 c
Dry Bulls	15 @16 c
Dry Kip, 10 to 15	17 c
Dry Veal, 5 to 10	16½c
Dry Calf, 7 down	22 c
Fall Lambs	24 @40 c
Sheep Skins—	
Long Wools	$1.00@ 1.25
Medium Wool, 6 to 9 mos.	60@ 90c
Short Wool, 3 to 6 mos.	40@ 60c
Spring Lambs	25@ 50c

HORSES.

Desirable Drafters, 1700 lbs. up.	$275@300
Light Drafters 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs.	200@250
Wagon Horses, 1250 to 1350 lbs.	175@200
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	135@150
Young	200
Old Mares	100@150

MULES.

1200 lbs	$250@300
1100 lbs	200@225
1000 lbs	150@175
900 lbs	125@150

If a man can write a better book, preach a better sermon, or make a better mousetrap than his neighbor, though he builds his house in the woods, the world will make a beaten path to his door.—Ralph Waldo Emerson.

HENRY WHEATLEY, Napa, Cal. Breeder and Importer of Shires and Percherons.

Benjamin Franklin

was the Discoverer of the Qualities of Gypsum as a Fertilizer.

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Gysum will invigorate an exhausted soil.

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Gypsum is found by Alfalfa Growers to be a rich fertilizer.

Gypsum is used to preserve the ammonia compounds in barnyard manures.

Professor Hilgard, in a letter relating to the uses of Gypsum, says:

"In cases of alkali soils, Gypsum can be unqualifiedly recommended; in ordinary cases it can be positively recommended as a paying fertilizer for all leguminous crops, and in cases of soils exhausted of potash. It can be recommended for the improvement of heavy clay soils and hardpan, which are hereby softened and made more tillable."

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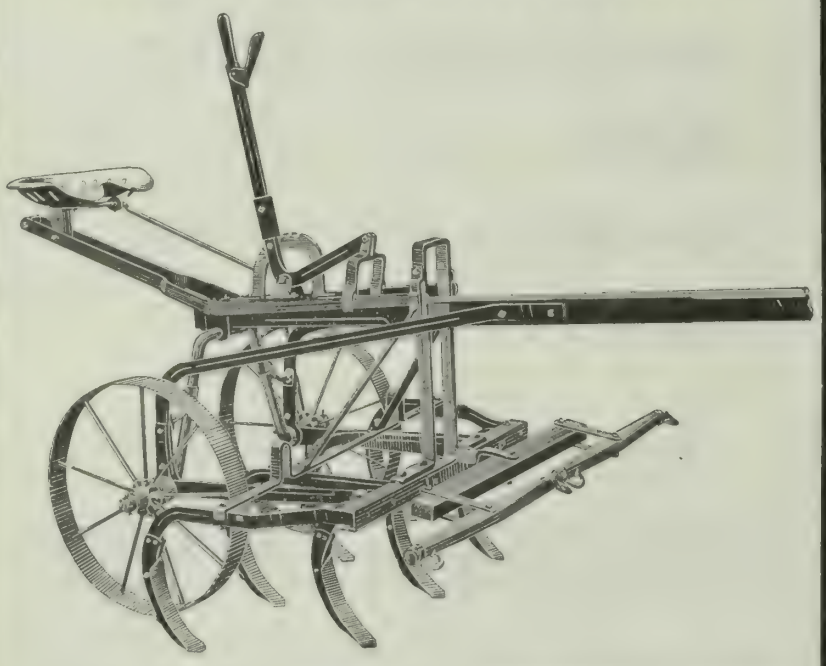
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Our space won't permit an extended description, but the **man who knows will note** that among some of **the desirable features are: THE FRAME IS LOW; EXTENDS OUT BEYOND AND IN FRONT OF WHEELS AND DRIVER; THE ADJUSTING LEVER IS CONVENIENTLY PLACED, AND THE DRAFT IS APPLIED DIRECT.**

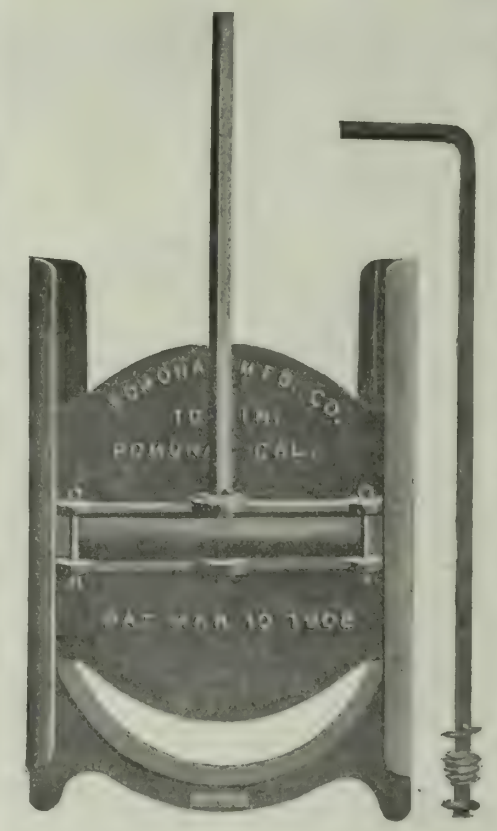
These features, combined with the fact that the driver's weight equalizes weight of frame, insuring ease of handling and a perfect balance in every position; that there is no weight on horses' necks, and that the size can be easily changed from seven to nine teeth, make it **a very superior implement.**

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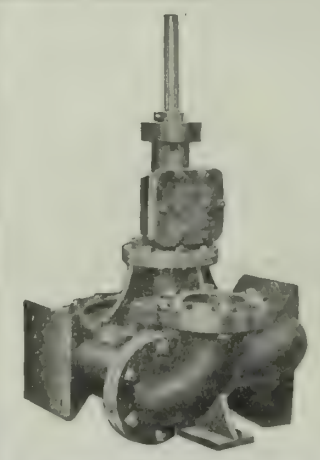
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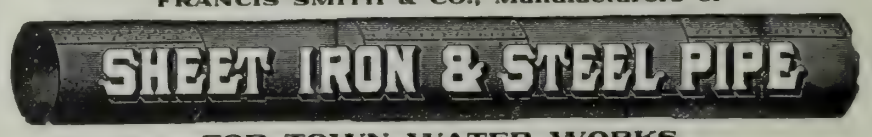
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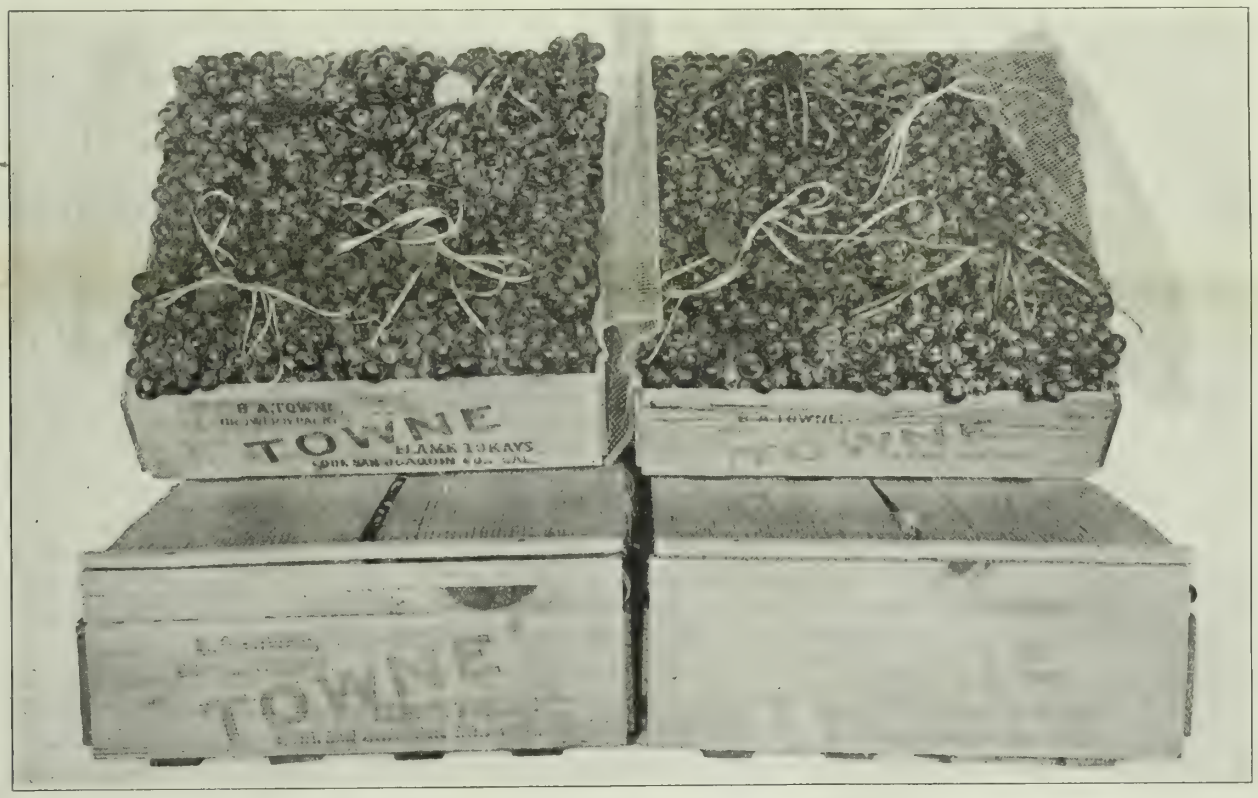
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THE PACIFIC RURAL PRESS

Vol. LXXXI. No. 11. SAN FRANCISCO, SATURDAY, MARCH 18, 1911. Forty-first Year.

Tokay Triumphs and Troubles.

[As indicating certain phases of the table grape problem in California we instance some requirements of success with the Flame Tokay. This grape, which has been popular ever since California grapes began to move overland to Eastern markets, has within the last decade accumulated such public favor that indiscriminate planting, without regard to the natural conditions which seem to determine color and quality and without due intention to practice cultural methods which determine size, form and carrying power, has been very largely undertaken. Just as in earlier years hundreds of acres of French prunes were planted on interior valley wheat lands, because of the prevalent notion that the prune tree could go unpruned and needed no attention to soil moisture, or other conditions of thrift and productiveness, so in more recent years Tokay grapes were spread in all sorts of unsuitable places. Just as it was thought that prune growing consisted in planting trees and raking up dried fruit from the ground surface, so it was held that Tokay grape growing was simply a matter of sticking in cuttings and chucking grapes into shipping boxes. Hundreds, perhaps thousands, of prune trees, planted with such a conception of prune growing, no longer cumber the earth, and it is only reasonable to believe that a similar area of table grapes will disappear. It is clear enough now that table grapes will not pay unless they are up to a certain standard of goodness which the shipping trade demands, and it is clear also that good grapes can not be profitable unless they the handled aright from vineyard to market.



A Fine Pack of Flame Tokays From the Lodi District.

Simply to suggest this truth and not to repeat the detailed exposition of its features, which have been fully set forth from time to time in our columns, we give as well as the camera can catch them, the characteristics of a good box of Tokay grapes as packed in the vineyard of Mr. B. A. Towne in the Lodi district of San Joaquin county. We naturally take a particular interest in the work of Mr. Towne, for he is a long-standing subscriber of the Pacific Rural Press and has practiced for son e time what we have often preached to our patrons, viz.: the advantage of preserving the weekly issues and binding them each half year into a volume, all the contents of which become available for reference by means of the carefully prepared index which is printed upon the last page of the last issues of June and December of each year. This may seem to be somewhat apart from grape growing, but it is not, for everyone who has such volumes has the essential facts about growing Tokay grapes as they must be grown to be profitable.

There is, of course, a vast difference between reading about growing grapes and doing it successfully, and Mr. Towne has that difference embodied in his practices. One who recently visited his place assures us that it is a beauty and illustrative of what is best in home making on a shipping grape basis. His grape package, as shown by the photograph, has evidently solidity and strength and manifests attention to the requirements of its full content by the careful cleating under the cover so that the enclosed baskets are held firmly with just the right pressure upon the fruit. By looking closely one can see that each basket has a stem-end visible, so that the proper removal of the fruit by the purchaser is clearly indicated. To each of these stem-ends is tied, by a delicate strand of "baby ribbon," a facsimile of the medal which was awarded to Mr. Towne for his grapes at the St. Louis Exposition. It seems to us that not only this award, but the vindication which the package gives to Mr. Towne's regular work, may be fairly counted a Tokay triumph.

Some Tokay troubles have been roughly indicated. A more specific statement of their nature and causes was pointedly made at the last California Fruit Growers' Convention at Stockton, by Mr. Frank T. Swett of Martinez, who has studied the situation not only from the point of view of a general experience in California viticulture, but through experience in the table grape districts of the interior valley. We take the following from Mr. Swett's statement.—Editor.]

No Hope for Low-Grade Tokays.—There are too many low-grade Tokay grapes produced. Most of this grade are sold at a loss. Owing to rapid increase in acreage, there is very little, if any, profit in growing Tokays of only average quality. There is no overproduction of strictly high-grade Tokays of high color, size of berry, and attractive appearance and taste, properly handled and properly packed. Vineyards producing low-grade Tokays should be grafted over or dug out. A good alfalfa field is worth from $50 to $100 an acre more than a poor vineyard. If you are thinking of planting Tokays on land which can produce only an average or middling grade of Tokay: don't!

High Value Imperative.—In districts devoted almost entirely to grape culture labor conditions are rapidly becoming intolerably expensive. In such districts the planting of suitable fruits and other crops which are harvested in June, July and August should be encouraged so as to secure a resident population of skilled fruit laborers. In spite of better methods of marketing and of some progress in standardizing, if the Tokay crop of 1911 is a full crop per acre, the total output, owing to increasing acreage, will glut existing markets, resulting in heavy losses to at least five per cent of the growers.

How to Avert Losses.—A very heavy load of grapes on a vine means poor color, deficient sugar and poor carrying and keeping qualities. If your vines set more fruit than they can properly mature, pull off a third of it. You will make more clear money out of what is left.

On soils where Tokays grow in large compact clusters, late in ripening and green in the centers, it pays to use scissors and thin out the berries during June, when they are the size of buckshot

(*Continued on Page 213.*)

Pacific Rural Press

667 HOWARD ST., SAN FRANCISCO.

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Mar. 14, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.14	25.37	34.91	64	40
Red Bluff	.20	22.41	19.41	74	42
Sacramento	.29	21.06	15.39	68	44
San Francisco	.48	24.29	18.09	71	46
San Jose	.38	22.74	10.60	70	40
Fresno	1.32	10.12	7.28	72	42
Independence	.56	5.48	7.11	64	30
San Luis Obispo	2.46	32.38	15.83	80	48
Los Angeles	2.35	16.07	12.49	84	46
San Diego	.40	11.12	8.01	76	46

The Week.

The north winds have been drinking up surplus surface moisture rapidly this week, and it behooves everyone to be ready to seize the land with plows, disks, cultivators and harrows just as soon as it comes into working condition. It is dangerous to let it dry hard and hope for showers to mellow it for later working. We have had a number of years when hope deferred made the heart sick and induced paralysis later in the season. The land is deeply wet, which makes a waiting game somewhat less dangerous, perhaps, and yet a waiting game is usually a losing game. Look to it then; harrow the crusted grain; disk the crusted alfalfa if the plants are old enough to be well established; disk or harrow the land previously plowed which is to be used for summer crops, or plow at once and harrow, if land for May planting is still unbroken. All that we have printed from time to time about springtime practices in dry farming should now be applied. The old gambling on spring showers should be abandoned. We take that our fruit growing readers are already too wise to let the orchard and vineyard lie beyond good working condition, hoping for later returns of such condition, but they have a duty in brother-keeping to discharge. Yell over the fence to the tenderfoot to get busy, turn under the weeds and mellow the surface as fast as he can and not lease his premises for a brickyard.

We hope our grain growers will get particularly busy on better spring work along this line, because we must have as much wheat as possible this year if we are going to start in on the cereal game as we suggested last week. The reduced freight rates, which we indicated as coming, have arrived. Just after our last issue went to press, rates were cut in two by the Portland and Asiatic Steamship Company for the transportation of wheat from Portland to the far East and a reduction of about 35 per cent was made for carrying flour from Portland to the various ports beyond the Pacific. The new tariff is $1.50 on wheat and $2 a ton on flour. Formerly there was a charge of $3 a ton for the transportation of each of these cereals. It is announced that the new tariff will remain in force throughout March and April. If the northern lines are still quoting low rates after the expiration of April, it is understood that the same policy will be followed by other lines of steamers. This, in view of the needs in China, is likely to reduce the Pacific Coast visible supply to a minimum, and we ought to be shippers and not buyers of wheat this year.

And then if we do not assert ourselves pretty strongly in wheat very soon we may have hereafter to hold our peace. According to Consular reports just out, China may not only refuse our flour, but may take a whack at our markets with an export surplus. These reports indicate that in the event of short crops in China or excessively high prices for rice, there may be from time to time openings for American flour, but these can only be spasmodic at best. China admits flour without duties and forbids flour exports without special permission, but the report anticipates a change in this regulation in the near future, which will give to the native mills the stimulus of a foreign export trade. Of course this is all propheey and may not be inspired, but it indicates that we should get out of the buying of breadstuffs from outside States and countries because we can do this without reducing our output of other products. We do not wish to be buying China flour and lose the by-products which our meat and milk industries will continually need in increasing amounts. Therefore our grain growing and milling industries should be promoted.

What a strange reversal of judgment may be brought about by the real chemistry of things. The handing of a lemon may become the token of beneficent kindliness and not otherwise, as it seems to stand now in the public mind. We are told from Washington that Dr. Dunlap, of the bureau of chemistry, has discovered that sodium citrate, a product made from the acid of the lemon, when mixed with milk, prevents the coagulation of milk in the stomach and facilitates its assimilation. The use of this by-product of the lemon as a "protective colloid," the doctor says, is especially valuable in the case of infant feeding when there is an acid stomach. It really looks as though all the milk-shakes of the country might become active in pouring out "lactade" to the great advantage of the California lemon. We have long had a carefully concealed notion that the common idea of the danger in the mixture of milk and fruit juices was a prejudice, but have not had the courage of our convictions either to try or to commend it. We do so now boldly on the authority of the Washington chemist—with the suggestion, however, that some effective stomachache remedy be kept within easy reach.

Speaking about lemons reminds us that evidence accumulates that our position of last week was well taken that the name Giorgio is nothing to be frightened about. Another of the same patronymic has just entered the service of California. The announcement is made that, at the International Exposition of Industry and Labor, which will open in Turin, Italy, on April 29 in honor of the celebration of the fiftieth anniversary of a united Italy, California will be represented by Mr. R. Giorgio, who has just been selected for the work by the California Development Board. He will deliver daily lectures on California and the Panama-Pacific Exposition and distribute literature on California and the exposition. Mr. Giorgio is a graduate of the University of Rome and of Stanford University and teacher of modern languages. Passing events thus force us to the conviction, of which we had a glimmering impression last week, that while united Italy is a grand thing on the other side of the world a divided Italy may be better on this side—providing we get the better half to pushing our lemon business while the poorer half is knocking it.

Last harvest, it may be remembered, we had the protest of European grain farmers against aeroplanes on the ground that the wings or paddles thereof battered down the crops, although they might not come into actual physical contact therewith. The question arose naturally as to whether a farmer had any ownership in his own atmosphere or whether he was to have it knocked about by anyone who desired to invade his aerial property. The farmer has understood from the beginning that he had no remedy against storms, disturbance by angel's wings and other supernal things, but he doubts whether any mere man has a right to project into his share of the sky an automobilular cross between a windmill and a threshing machine—producing destructive disquiet, to say the least of it. The question now arises anew in this way: The lambing season is in full swing on Salisbury plain in Hampshire, England, and, owing to the frightening roar of the aeroplane engines—seven aeroplanes being stationed at Lark Hill Down, near Stonehenge—many of the ewes are giving birth to dead lambs and are themselves dying. The condition becomes national because four of the aeroplanes belong to the army. The flock owners have secured a member of parliament to roar for their rights in the House of Commons. We have the fortitude to think that it may be possible to get a decision that title to property and redress for trespass may go at least as far upward as it does sidewise and that a farmer's air might be subject to his orders up to a three-mile limit. Above that anyone may use it as he sees fit, just as the high seas are universal property.

When we had read the report thus far and decided upon the proper protection to agriculture, as just intimated, we discovered that the question is really more subtle and its solution correspondingly difficult. Referring to the ovine aspect of the aeroplane, a veteran shepherd said: A sheep is one of the timidest animals there is. These aeroplanes are like a terrible new kind of dog which they can't see. No sheep, to my knowledge, ever looked up in the air, and consequently when they hear the roaring they don't know which way to run. If they could only see something coming for them, they would not be so frightened, because they would then know which way to run." This is a very delicate piece of sheep psychology which we cannot expound, but the practical adjustment would not be difficult. Aviators should be required by parliament to put a blue dog in every sheep pasture before they cross the air above it.

There is a matter now pending before the legislature in which all who joy to dip into the springs of public prosperity should take active interest. The proposition to create a State conservation commission for the study of irrigation, water power, mines and mining, drainage, etc., and the preparation of legislation along these lines, has passed the assembly and has been favorably recommended to the senate. The number of commissioners has been reduced to three, and there should be public pressure exerted that one of them should be an acknowledged expert in irrigation and an expert whose quality and disinterestedness should be beyond all question. We believe that Governor Johnson is ready to recognize this fact on his own part, but he should be strengthened by the knowledge that such is also the public desire. There is opportunity then that those who have such convictions should make them known in whatever

way they deem best. It is doubtful if any question which would come before this commission, which seems destined to be created, begins to compare in importance to California with that of irrigation legislation. We have more land irrigated in California, more irrigated farms and more irrigators than in any other State of this country. In no State does irrigated land produce crops of a higher value, and in no State has water for irrigation sold at as high prices as in California. In spite of this, California is still among the few States that have not provided systems of public control of the acquirement and definition of water rights. Previous efforts to remedy this condition failed not only because they were opposed by the so-called "special interests," but also because they were misunderstood. If such a commission as is contemplated by the bill now before the legislature is appointed, any legislation that is recommended will probably have the support of the State administration. There should be, therefore, a man on the commission who is thoroughly familiar with both the kind of irrigation legislation California needs and the efforts that have already been made to get it. Governor Johnson unquestionably will appoint on this commission the very best men he can find, but possibly he has not had time to acquaint himself fully with the pre-eminent importance of some phases of irrigation rights and laws.

Queries and Replies.

Olive Growing.

To the Editor: I am not sure that it is in your line to furnish the information I seek, but, if it is, I would have you state how I can procure reliable data as to the profits in olive growing in this State, excluding consideration of that portion of the income resulting from advertising. For some reason we see comparatively little about the olive, and still less that would encourage one to put out an orchard, notwithstanding that we have some ideal conditions for its growth. Does this imply that other crops promise better returns, or is it because most of the orchards have been planted in less favorable localities?—Enquirer, Los Angeles county.

We do not consider it our province to advise people as to lines of investment. That is a business consideration which each must undertake for himself after securing information enough to influence his judgment. Professor Bailey of Cornell University is credited with impressing upon a graduate of that institution that he might "select a wife for a man, but never tell him what to plant."

Just at present olives are a productive fruit to plant, because the price is very high and the supply inadequate. At the same time there has been so much disappointment in the non-bearing of olive trees which grow thriftily that one is hardly safe in planting olives except in places where they have demonstrated their satisfactory bearing and in choosing actually the same varieties which are now bearing well under the local conditions. Lack of interest in the olive is largely due to disappointment in the bearing. When olive canners in Los Angeles are obliged to purchase olives over 500 miles away and to pay as much as $100 per ton for the fruit plus the cost of transportation, it is clear that more olives can be profitably grown, but whether the tree will actually produce them in certain localities is a matter which must be determined before it can be said whether the plant will be profitable or not.

Creamery Wastes for Irrigation.

To the Editor: Will you tell us whether the waste water from a creamery, pumped into a ditch and used for irrigating sandy loam orchard land, or nursery stock, would be in any way injurious to the land or the trees? The water contains enough milk to color it somewhat, also a little salt from the wash water from the churn, and a little solution of soap powder, the salt and soap not in quantities sufficient to be perceptible. The sewage is fermented when it is pumped on the land, though it passes through a septic tank previously. The sewage is not used alone for irrigating, but other water is put in with it at time of irrigating, diluting the sewage. What we wish to know is whether there is anything in sewage, thus used, that would injure land or trees. Some claim it would be beneficial.—Irrigator, Stanislaus county.

Whether the water would be desirable or injurious in irrigation would depend entirely upon the amounts of salt and alkaline washing materials which it carries. This would be governed, of course, by the amount of fresh water used for dilution in the irrigation ditch. There are two ways to determine the question. One would be to make an analysis of a sample of the water taken when it contains the largest amount of these materials after the dilution with ditch water.

Another and thoroughly practicable way would be to plant some corn, squashes, barley, and other plants, so that they would be freely irrigated by the water during one growing season. This would be rather better than an analysis, because everybody could see whether the plants grew well or not, and would be apt to be better convinced by what they see than by an opinion which a chemist might give on the basis of an analysis. No generalization as to the condition of such waste waters would be of any particular use. The question would still return to the condition of the water which you were actually using in your own case. The use of this water on a sandy loam would obviously be less injurious than upon a heavy retentive soil. Our opinion is that the water would not be injurious, but that does not prove anything.

Train a Tree in the Way It Should Go.

To the Editor: I know something about pruning fruit trees, but meet with one difficulty which I have not learned how to get around. In shortening back long, slim limbs the side shoots come out, and one soon has a lot of ugly, crooked limbs to look at. There are a number of orchards here being spoiled in that way. Will you please tell me how to avoid this.—Subscriber, Greenfield.

We know no way you can secure a low-heading, good-shaped tree without cutting back the branches. Afterward you can improve the form by selecting shoots which are going in directions which you prefer, or you can cut back the shoots afterward to a bud which will start in the direction which you desire. In this way the progressive shaping of the tree must be pursued. If you only have a few trees and can afford the time, you can, of course, bend and tie the branches as they grow, so that they will take directions which seem to you better, but this is not practicable in orcharding on a commercial scale. There is no disadvantage in crooked branches in a fruit tree, but they should crook in desirable directions, and that is where the art in pruning comes in.

Which Alfalfa?

To the Editor: I am going to sow 30 acres of alfalfa at Orland. Would you advise the use of Turkestan seed? With what success has it met in California or elsewhere? What seed would you advise using and how much?—Subscriber, Vernalis.

We are advising everybody to make his chief sowing of the common or Chile alfalfa, which has been grown so successfully for so many years. We also advise everyone who is sowing a considerable acreage to put in a piece of Turkestan and Arabian, each by itself, so that the behavior of the newer kinds can be locally compared. These varieties are promising and are making a longer growing season because they are active at winter temperatures which are too low for the common variety. They are also leafy and not so much objection is being realized to the Turkestan because of stemminess as was anticipated. We doubt, however, that any new kind is yet entitled to displace the old. The sowing averages 20 lbs. per acre.

Planting in Mud.

To the Editor: Please advise us why ground loses its vitality or its growing qualities when it is plowed or stirred when wet, and does this act in all kinds of soil in the same way? We are planting a fig and olive orchard at the present time, but through an error some were planted when the ground was extremely wet. The holes were dug before the rain and after a heavy rain they started to plant. After placing the trees in the holes, filled them half full with wet dirt, in fact so wet that it was actually slush. What would you advise under the circumstances and what can be done to counteract this? We have not finished filling in the holes since the planting was done, which was about a week ago.—Beginner, Fresno.

The soil loses its vitality after working when too wet, because it is thrown into bad mechanical (or physical) condition and therefore becomes difficult of root extension and of movement of moisture and air. How easily soil may be thrown into bad mechanical condition depends upon its character. A light sandy loam could be plowed and trees planted as you describe without serious injury perhaps, while such a treatment of a clay would bring a plant into the midst of a soil brick which would cause it to spindle and perhaps to fail outright. Your errant practice in planting may then be negligible or it may seriously interfere with the growth of the trees. The best treatment would consist in keeping the soil around the roots continually moist, yet not too wet. The upper part of the holes should be filled loosely and the ground kept from surface compacting. The maintenance of such a condition during the coming summer will probably allow the trees to overcome the mistake made at their planting, unless the soil should be a tough adobe or other soil which has a disposition to act like cement.

Eucalyptus in Mendocino.

To the Editor: Will you kindly inform me about the suitability of eucalyptus of the land and climate of the region directly east, seven or eight miles from Mendocino? Will seedlings live through the dry season of the first year without artificial watering, and will they stand frost? Have you records of the lowest, highest and average mean temperature of the locality and the amount of annual rainfall?—R. E. C., San Francisco.

Eucalyptus trees will accept almost any soil which will grow crops, and the growth will be proportionate to the amount of moisture available. They are, however, strictly limited by temperature and should not be planted where a temperature as low as 18 degrees above zero is to be expected, for this has killed old trees to the ground. Young trees are relatively more liable to injury. Seedlings will grow without irrigation if the soil is not too dry, and on soils reasonably retentive will live through if decently cultivated. We have no temperature records for the district which you mention. The rainfall is presumably large.

Horticulture.

SPRAYING IS NOT ALL OF IT.

We have had so many letters of late asking us "what kind of spray to use for fruit trees," or "what kind of spray to use on peach trees," that we are often tempted to answer: if you do not know what you are to spray for, do not spray at all. This, of course, would be a little ill-natured, and we have to beat around to find out whether the correspondent really has any reason for spraying, and just what it is. Possibly we can many of us be helped by reading a compilation which Mr. W. G. Hummel recently made for the Fresno Republican. Mr. Hummel, if we mistake not, is a Fresno high school principal who has taken a keen interest in making his work valuable agriculturally, and his constituents ought to appreciate that ambition. In a recent writing, he said:

A California Experiment Station circular informs us that the chief mistakes in applying remedies for insects are: (1) Applications when there is absolutely no need for treatment—when there is nothing to destroy or prevent. (2) Applications wrongly timed; either applied before there is any chance to produce good results, or after the injury has been done. As an example, cases of application of a winter wash to apple trees for the codling moth are noted. "The time might as well have been spent upon whitewashing the fence, so far as any effect upon the insect is concerned." (3) The wrong kind of application is chosen for a particular trouble, so that no results can follow. The use of paris green for sucking insects is one of the commonest of this kind of mistakes. (4) Applications are often for troubles that are incurable by any known method. (5) Expensive methods are employed when cheaper ones will accomplish the results as well, both as to material used and the labor employed. Under this head the use of many of the proprietary mixtures on the market must be condemned. "No more time should be spent upon a tree in applying summer sprays than is necessary to thoroughly wet it, and if it is allowed to drip, too much has been put on. For any but winter washes the truck or wagon need not stop at all while the spraying is being done, and those manipulating the nozzle should ride. The labor in spraying should be the least item, while now it is generally the largest." (6) The ingredients of remedies as purchased are frequently of poor quality. This may occur because of the dishonesty of a dealer, but more often, probably, because of the wish of the purchaser to secure a cheap article and his lack of care as to the quality. If the purchaser does not insist upon getting good chemicals, however, his money and labor are likely to be expended in vain.

It is true that mistakes of judgment will inevitably occur occasionally and will cause losses in this as in any other operation; but the mistakes enumerated might be avoided to a greater extent. Moreover, if the insect pests and diseases of plants are to be successfully fought, it must be remembered that spraying is not the only means of controlling them. Special methods of cultivation, soil treatment, sanitation, etc., are valuable aids and means in their control which should be practiced in those cases in which they have been shown to be especially applicable.

Nor should spraying be hailed as a sure method of making orchards and other fruit plantations fruitful, as has been the case in some instances. The tree or vine must grow and develop properly before it can bear fruit, and this growth depends upon food and proper conditions of soil and food even more than it does upon the accident of immunity from insects and fungi. Tillage, fertilizing, and pruning are all fundamental operations upon which permanent success in fruit growing must depend more than upon spraying. Spraying does not correct the faults of poor tillage, nor of insufficient plant food, nor of neglect in pruning, nor of unprofitable varieties. It is only one of the various elements which enter into successful fruit growing.

POISONED TWIGS FOR RABBITS.

Those who desire to try something else than has been proposed for killing rabbits in the orchard may be interested in prescriptions given by Mr. J. C. Cunningham of the Kansas Agricultural Station as follows:

Sulphate of strychnine, 1 part; borax, one-third part; white syrup, 1 part; water, 10 parts. Put the mixture into a jug or large bottle and shake well. Cut fresh twigs—apple water sprouts are best—and with a small brush paint them, especially over the terminal bud, with the above preparation. Scatter the twigs in the runways and about the trees where the rabbits feed. Stock or fowls will not molest this poison, and it is said that dogs may eat the dead rabbits and suffer no ill effects.

The Western Australia Department of Agriculture recommends a poison somewhat similar. Dissolve 1½ ounces strychnine in 1 quart of vinegar; dilute with 5 gallons of water; add 2 pounds of flour and 1 pound of sugar; stir well and apply to twigs as recommended above.

A jam made of fruit and sugar is readily eaten by the rabbits. Chop apples or melons into small cubes. Add sugar equal to one-half the weight of the fruit. Boil until the mass forms a thick jam. Add strychnine, either powdered or dissolved, at the rate of 1 ounce to 25 pounds of the jam, and mix thoroughly.

Citrus Fruits.

THE "WITHER-TIP" ON CALIFORNIA CITRUS TREES.

By Mr. E. O. Essig, Horticultural Commissioner of Ventura County, at the Fruit Growers' Convention at San Bernardino.

[The work of Mr. Essig shows clearly the advantage of having a thoroughly trained expert in injurious insects and plant diseases as a county horticultural commissioner. Such a man may be as good as any other in the executive phases of his office, and, beyond that, he can have real, first-hand knowledge of the faunal and fungal phenomena with which he has to deal. It is this knowledge which wins him the respect and confidence of the growers, who can lean upon him for information and guidance. All counties in which fruit-growing is an important industry will ere long have such a qualified officer in charge of the county horticulture. A fuller account of Mr. Essig's work with "wither-tip" may be found in the Pomona College Journal of Economic Botany, Vol. 1, No. 1, published at Claremont, California.—EDITOR.]

In California the diseases known as "wither-tip," "leaf spot," "tear stain," "lemon spot," etc., may be found in practically every citrus-growing section, but it is not contended that it has been doing damage in all. In Ventura county the writer has collected specimens of the leaf-spot in all parts, including those sections furthest away from the coast. The fungus seems to thrive best in the vicinity of Santa Paula, in spite of the fact that lemon groves are situated much nearer the coast and are subject to more cold and dampness at Oxnard than at this place. No serious attacks on the oranges trees have been noticed at Ventura, which is situated right on the sea border.

On the Leaves.—The presence of the fungus (Colletotricum gloeosporioides) which causes the disease is best told by its appearance on the leaves. The most common forms are leaf-spots which show up while the leaves are still clinging to the tree and appear to be healthy in every other way. The spot is usually light brown to nearly colorless, and is surrounded by a very characteristic brown ring which separates the dead from the living tissues of the leaf. Arising upon the dead discolored spot are numerous minute dark acervuli (fruiting bodies of the fungus). The spots may begin at any point of infection and spread so as to run into each other almost entirely destroying the texture of the leaf. They may start at the tip-end or at an edge and cut out deep margins. It appears that this condition is brought about by the fact that after the infection started the leaf was able to retain enough vigor to resist the attacks, so that the diseased areas only were killed, instead of the entire leaf succumbing and falling off as is usually the case.

This latter form is perhaps the most common indication of wither-tip on the lemon trees. The leaves first turn a sickly yellow color, gradually become brown and fall to the ground. Many may fall while still in the yellow state, while large numbers have been collected and the wither-tip obtained from them, which were still green when they fell. Not a few leaves may be found which begin to turn brown at the tip, the infection working backward to cover the entire surface before the stem is reached and severed.

On the sweet and navel orange trees the infestation is very marked and sudden. The leaves die, curl up, and turn a greenish-brown color, while still hanging to the twigs. Entire twigs may thus be affected, and the foliage does not fall until it is thoroughly dead and dry. One can always tell this stage by the dark color of the leaves.

In all cases of doubt as to whether wither-tip is in an orchard or not, it can be accurately demonstrated by placing the leaves or twigs supposed to be infected into a moist chamber, and within three or four days the cinnamon-brown acervuli will appear on all surfaces in great numbers.

On the Twigs.—The twigs on the Havana Sweet orange trees at Santa Paula often died back as far as did the leaves, but in most cases they first remain green but bare for some time after the leaves have been killed and dropped. A branch nearly four feet long was entirely killed on one tree before the leaves dropped. This condition is especially true of the smaller outside twigs on the orange trees. This dying is accompanied by the same unhealthy discoloration described in the leaves, the tissues dividing the dead from the healthy portions assuming the characteristic brown ring.

The twigs of the lemon trees do not succumb to the attacks of the disease as rapidly as do those of the orange. They remain bare for a long period, and, though green and healthy looking, do not bear leaves or fruit. So far as worth to the tree is concerned they might just as well be dead. In time they do turn brown and slowly die, from the tips back; the infection usually stops at a fork in the branch. The lemon trees showing the effects of the disease most are those which have the greatest number of fallen leaves and bare twigs.

On the Fruit.—The fruit-spot, commonly called lemon-spot, orange-spot, and pomelo-spot, or anthracnose, is the most easily recognized. On the lemon it usually develops in the packing-house and is first simply a dull green blotch, remaining so after the lemon has turned yellow in curing. Later the center of the spot, which may enlarge, becomes from a sickly yellow to a brown color, and is softer than the margins, which have retained the same firmness as the rest of the lemon. This stage develops the black or dark-brown acervuli, which appear in the center of the spot, giving it a dark color. The tissues begin to sink, forming a depression in the center of the spot. The fruit may keep in good condition when thus infected for a long time without any apparent progress in the work of the fungus, and again it may decay very rapidly. The green spot may not develop to form the fruiting stage until after the lemons have been placed upon the market, so may admit of the marketing of the fruit, but it places it in the lowest grade.

It will be interesting to note that many have considered this spot a result of sweating and not a fungus at all, but it is the wither-tip brought out, perhaps, in greater abunadnce, by sweating, than under normal conditions, which has given rise to this belief.

The so-called "red-spot" on the lemon has never been described outside of California. However, it has received considerable attention from Dr. Woods and Professor Rolfs, men who are the best authorities known on wither-tip. These men have all pronounced it as a result of this fungus.

On the orange the first symptoms appear as greenish or brownish irregular blotches, resembling greatly those described on the lemon. These spots grow rapidly while the fruit is still on the tree and may assume nearly half the size of the fruit. (This being due to the fact that many spots become confluent, thus forming a single large diseased area. The average size, however, is about that of a 25-cent piece.) With age the

center of the diseased area may become lighter before turning a dark brown or black with the appearing of the dark fruiting bodies. The area may be raised above the remaining surface of the orange or it may sink to form a depression.

Mr. Hume gives the following about the disease on the fruit of the pomelo: "Upon the fruit the disease is first manifested by the irregular brownish discoloration. This discolored area is irregularly defined around the margin. The diseased spot may be on any portion of the fruit and may vary from an inch or so in diameter to an area nearly equal to that of the outside of the fruit. As it progresses these spots gradually change in color, sometimes becoming grayish, sometimes somewhat lighter. Ultimately, however, the whole affected area becomes dirty black in color. If the point of infection is small at first, it gradually enlarges under favorable conditions so as to embrace the whole fruit. Sometimes the affected area remains constant in size for a considerable time, in which case in its older stage it varies from black at the center through various shades of brown, brownish yellow, to the normal yellowish color of the healthy rind at the margin."

Late Appearance on the Fruit.—Not all of the fallen fruit show the effects of wither-tip at the time it dropped, but if placed away in moist chambers soon develop the spots described above. The infections are quite general on much of the fruit that has not fallen, and the amount of injured fruit may reach to several hundred boxes, not counting what may develop after it has been picked and boxed for shipment.

The fact that the infection takes place before any evidence is displayed upon either tree or fruit makes the pest a serious menace if one has not been prepared to meet it in advance. All fruit which has become infected on the tree can not be treated in any wash that will prevent the coming out of the fruiting bodies. To demonstrate this, leaves infected in the orchard were soaked a short time in bordeaux mixture, such as is used for spraying citrus trees, and placed in the moist chambers. The acervuli appeared in great numbers through the residue of the bordeaux upon the leaf. All methods of control must be directed as preventive. This makes the results of the first unlooked-for attack very destructive to the orange grower. It is well to dip the fruit, however, to prevent infection in the box or in the packing-house.

It is the dropping of the young fruit that is considered the most serious work of the fungus in the lemon orchards. At times it seems as if a third of the young setting lemons were dropped by it. The brown mummies on the ground or still clinging to the trees are full of the wither-tip spores.

The first sign that we notice in connection with the wither-tip dropping of bloom is that a great number of unopened flower-buds have fallen from the tree. As this same effect may be the result of other causes, the mere fact that we find unopened flower-buds on the ground should not be considered as proving that we have a case of wither-tip bloom dropping. Upon closer examination, however, we find that where the bloom has dropped on account of being affected with the wither-tip fungus, there are little red markings upon it; and the buds or blossoms may be partially, or even entirely, covered by these red patches.

The wither-tip fungus which causes the dropping of the flower-buds lives over the winter in the leaves, or in the twigs of the tree, or on fallen fruit. From these sources some of the spores find their way to an open bud, where the fungus grows very rapidly and produces myriads of spores. Bees, flies, and other honey-loving insects, visit the affected blossoms, and coming into contact with the fresh spores, not only carry them on their bodies to almost every open blossom on the tree, but in crawling over the unopened buds they convey the spores to these as well. But worse still, the insects which have visited an infected tree carry the spores to other trees in the grove, and from these secondary infections numerous other infections occur in time; so that hundreds of trees that were free from the wither-tip fungus may become infected from one single tree with diseased blossoms.

Sometimes this fungus does not attack the bloom, but attacks the newly set fruit after the blooming period is over. Not infrequently one may see the ground under a citrus tree strewn with thousands of small fruits, every one attacked by wither-tip fungus.

Conditions Favorable to the Trouble.—Any climatic condition unfavorable to the growth of the tree is liable to bring on an attack of wither-tip, especially in a country which has been subject to this attack.

Frosts kill the twigs of the trees and afford excellent places for the fungus to germinate and produce spores.

Hard winds whip the trees so as to cause numerous abrasions and wounds, which afford excellent entrances to the spores of the wither-tip.

Perhaps no better condition is afforded for the infection of the plant tissues than that due to the attacks of insects. Scale pests constantly draw sap from the trees, and the slightest rain washes the spore down the limbs and into their punctures. It might be expected that this disease would be worse in dirty orchards than in those which are kept perfectly clean.

Gummosis has certainly had something to do with the production of the "red-spot" so often referred to. As has been stated, the two conditions have been associated together as arising from a common cause. The spot is probably caused by the weakening of the tree due to the gummosis rather than any other reason. It might naturally be expected to find the wither-tip upon any diseased trees which are suffering from gummosis, dieback, foot-rot, etc.

Poorly fed trees have been observed to succumb to this disease first—the leaves showing the spots, the twigs dying, and the fruit spotted before it appeared elsewhere. The cure is obvious.

Moisture is perhaps the most important factor in contributing to the growth of this disease. As will all of the fungi, a moist condition produces ready and rapid germination and excellent conditions for future growth. The early observations of the wither-tip were all connected with the belief that it could thrive only in a very moist climate. This belief caused some surprise to the Florida experts who thought that the climate in California was too dry.

The attack in Ventura county was preceded by an unusually heavy rain which brought on the attack almost immediately.

It will probably be found in any citrus-growing community which receives any rainfall at all, from the fact that it has been observed in Arizona, but only during the winter months.

In a wet country much trouble must be expected from this disease.

A systematic application of sprays should be continued throughout the year, in plots at least, so as to be sure of the advantages of the preventative work of fungicides.

Methods for Control.—The methods used in the control of this fungus parasite must necessarily be preventative. After the disease is once established in the tissues of the host, it can never be destroyed without destroying the host also, because it works within the tissues, and until the acervuli appear upon the surface to expose its conidia or spores for distribution, it is protected by the epidermal layers of the host.

In all the work that has been done with sprays in combating the wither-tip, the bordeaux mixture stands out as the most efficient. Mr. Culbertson states very clearly, from his experience at the Limoneira orchard, that the bordeaux mixture has given them very satisfactory results. His experience had been extensive. He has used may other sprays, but has discarded all for the bordeaux.

The Vineyard.

TOKAY TRIUMPHS AND TROUBLES.

(*Continued From Page 209.*)

or smaller. It figures out about 4 cents a crate on the final output. Most of the 4 cents you save when it comes to picking and packing. Thinned clusters ripen a week earlier, color better, have larger berries and sell for higher prices.

Dead-ax wagons, poor bolster springs, chuckholes, and careless handling of crates are bad for eggs, and almost as bad for grapes.

You can not cull grapes in the dark. A poorly lighted packing house is expensive. Put in overhead skylights so that your packers can see what they are doing.

On certain soils irrigation increases the size, appearance and selling price of Tokays. Most of the top-notch prices are paid for Tokays grown under proper and skillful irrigation.

Why There May Be Too Many Tokays.—Similar causes are in operation today which if unchecked will tend toward similar overproduction along other horticultural lines, to the injury of the grower already in the business, and to the detriment of the newcomer who bites off more than he can chew, advantageous only to the land promoter and to the transportation interests which take their enormous annual toll from the people of California.

The great Tokay boom of 1900 to 1910 has had its rise and its fall, leaving many important problems to be worked out by the survivors. Instead of a carefully considered planting of moderate acreages of new vineyards, in keeping with a gradual increase in markets, why did it take the form of a wild orgy of indiscriminate planting.

This was the theory: Because experienced growers under special conditions of soil and location had been able to market with success a million crates a year, therefore any number of million crates could be likewise sold at magnificent profits, even when grown and packed by Tom, Dick and Harry, by barbers, dentists, blacksmiths, and tenderfooted Eastern corn farmers, irrespective of soil, location, or anything else. "Easy money" is a tempting bait.

Race Suicide by Fruit Growers.—How do outsiders get into these periodical booms in horticultural specialties? Who induces them in, frequently to their financial disaster?

First, there is the contribution of the California fruit grower himself. Did you ever hear of a barber, or a brewer, or a blacksmith dropping in on his friend, the editor of the Punkville News, or the real estate broker of 23 Ananias avenue, and saying: "My business is the best in this town. Made $500 a month last year; tell all the promotion committees and chambers of commerce so that they can invite more barber shops or breweries or blacksmith shops to locate in Punkville." Do you hear the Southern Pacific folks inviting the Western Pacific to parallel their road? Do you hear the Bell Telephone Company inviting the Home Telephone Company to come along and share San Francisco with them?

But the cheerful fruit grower, happy if his returns have not been in red ink, greets the editor with the statement that "on 20 acres of raisins he took $3200," or that he "sold $15,000 from 22 acres of peaches," or that he "made 10 per cent interest on a valuation of $900 an acre on two acres of Tokays."

He forgets that those happy events of a lifetime, undated as to the year of occurrence, will be spread broadcast through the United States. They will be used for years to come to induce someone to forsake Dakota's grain fields in order to come and compete with Mr. Fruitgrower, under the impression that such things happen every day in this land of romance.

These foolish figures are only too effective when used by adroit promoters who know how to leave out the other side of the story.

A Safer Route.—How much better it would be to start people right by something along simpler and truer lines. There are splendid opportunities in California for farmers and dairymen in the growing of the unpoetical but safe and profitable staples, alfalfa and cereals, plus cows, horses, pigs and chickens. Our future wealth as a State is not entirely hinged on highly specialized horticulture, but in a larger measure upon safe, staple farming. Come to California and start out with safe and sure products. Don't buy an orchard or vineyard for "one-third down, balance to be paid for out of the profits," unless by training and experience you are a successful fruit grower. Remember that while the rewards are sometimes great, in some fruit lines the risks correspond. After the settler learns markets, conditions and details it may be time to consider horticulture and viticulture. While it is true that there is room for expansion under proper conditions, in certain horticultural lines, those

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lines are highly specialized, requiring experience, foresight, and a degree of skill frequently lacking in the new arrival.

The sober and perfectly good truths about California are glorious enough; we need no distortion, no false perspective. We have rich land, abundant irrigation water, a climate to go with them, and markets for all our staples. All we lack is good farmers to make the most of these opportunities. The less we have of rainbow-chasing literature the better the chances of getting the right class of farmers to come here, start right, succeed, and induce their friends to follow in their footsteps.

CALIFORNIA BEANS AS WORLD BEATERS.

Mr. Benj. Moritz, Eastern agent of the Lima Bean Growers' Association of California, left New York on Monday of this week for the Pacific Coast. He will be gone for about two months. On his way back to New York he will visit Mexico and make a tour of the Southern States in the interests of the association. Speaking of the enlarged consumption of limas, Mr. Moritz, in an interview with the New York Journal of Commerce before his departure, said:

"The consumption of lima beans has increased so much during the past few years, or rather since there has been an organization that is working in the interest of the lima bean industry, that we are now able to take care of even larger crops than we are producing. Another point: while we are dwelling upon the consumption of lima beans it may be interesting to know that the South is now an important factor. Such States as Texas, Florida and Alabama are now taking large quantities, whereas there were no carload buyers there at all. Then again, Canada has developed a number of carload buyers, and while the Lima Bean Growers' Association does not care to take all the credit attached to this accomplishment, nevertheless it placed brokers in these markets who have worked actively to such good purpose as is indicated by what I have said concerning the widening of the market for lima beans. In conclusion, I would say that the market is absolutely sound and lima bean buyers can safely cover their requirements for some time to come, especially if desirable stock is offered at any figure below that recently quoted by the association."

FIGHTING THE ENGLISH SPARROW.

We have often prescribed for the destruction of the English sparrow, but the birds are still multiplying in places which they choose to frequent. We give them another whack by the word of Director E. D. Ball of the Utah station:

Control of the English sparrow is a rather serious problem, and one which needs to be undertaken by a community or settlement to obtain the best results. If the trouble arises mainly through their propensity for roosting in trees, shrubbery or buildings in which they are not desired, it is oftentimes possible to break up this habit by driving them out of their roosting places any time after dark at night. A repetition of this for a few evenings in succession will cause them to abandon such localities for ones in which they are not disturbed. The writer has had good success with this simple device in preventing their roosting in the vines on the side of a house, where their chatterings were annoying.

Two general methods are available for reducing the numbers in a given locality. One is to destroy all nests and breeding places, and thus check their multiplica-

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tion. In isolated sections this method alone will give good results. Poisoning by the use of strychnine is, however, a somewhat quicker method of extermination where conditions are such as to allow of its use. In the winter time, in situations where grain food of all kinds is scarce, they may often be successfully poisoned by feeding them for a number of days in succession with good grain on the roof of some low, rather flat-topped building, or on some elevated platform away from the possibility of poisoning chickens and farm animals. Then, after the sparrows have become accustomed to finding food in this situation, a ration of poisoned grain can be served to them with disastrous effects. Probably the best method of preparing the grain is to dissolve an ounce of strychnine in about two quarts of boiling water and then stirring in about one-half bushel of wheat. Some add a pound or two of sugar or a small amount of molasses, coffee, and other substances to disguise the taste of the strychnine. Probably a better way is to mix a small amount of flour and sugar together and after the wheat has taken up all of the poisoned liquid, roll it in the flour and thus coat the outside.

There is no use in attempting poisoning the birds when there is any other source from which they may readily obtain grain food, as they are very wary and will not eat poisoned grain unless driven to it by hunger. Extreme caution should be taken in any case in the handling of the poisoned material, as fatal results to domestic stock or children might easily follow carelessness in this matter.

DANGER IN THE GROUND SQUIRREL.

"The Plague-Infected Squirrel," was the subject of a recent talk by Dr. Rupert Blue before the Commonwealth Club of this city: "San Francisco is in fine shape to meet an invasion of the plague, should one come," declared Dr. Blue, who, as the representative of the United States Marine Hospital and Health Service, was the man who cleaned out the plague-infected rats which were such a menace to San Francisco some years ago. "The number of rats in this city has been reduced to the minimum," said Dr. Blue, "and they are not increasing in number. The only danger to this city at this time lies with the infected squirrel, and the germ-covered fleas who inhabit him. A dead-line has been placed around the city, a mile wide, where no squirrel is allowed to live. But in the country there are some infected squirrels, and there is danger that huntsmen may bring these into the city.

"The co-operation of country boards of supervisors is needed to wipe out all danger of infection of human beings. The infected squirrel is to be found in ten counties. Out of 100,000 we have examined, about 400 have been found infected. While we talk to these boards they seem enthusiastic and promise co-operation, but when it comes to the appropriation of, say, $3000 a year for the extermination of the squirrel, nothing happens."

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Correspondence.

A CHAT ON MIXED FARMING.

To the Editor: The possibilities of an acre of ground are sometimes governed by conditions that are not always accorded to soil and climate, because other exigencies step in to change results. Raising peas for the cannery used to be very profitable around Hayward, but now it is hard to get Japanese labor to do the picking, and a white man can not be gotten to do such work. In Colorado when peas are destined for the cannery they are mowed like hay and carted to the canner on hay-racks; there they are weighed and paid for by the ton. The vines are then run through a machine that hulls them as clean as could be done by hand, when the refuse is put into a silo and kept for feeding sheep and cattle in the winter. This, it can readily be seen, is a great saving of hand labor and makes it possible for even the busiest farmer to raise peas for the cannery. Taking into consideration the fact that where early peas are raised on ground in this climate, something may follow them the same year, making two crops on the same land, it is a pity that these pea-threshing machines could not be installed in our California canneries. [This way of handling peas for canning is ahead of our knowledge.—Editor.]

Rhubarb.—On the subject of this and other items relative to intensified farming, the writer lately had the pleasure of a talk with Mrs. John T. Stanton, whose husband is gardening forty acres of land in the Castro valley, near Hayward. On the subject of rhubarb the lady said: "We have in about ten acres; it is a paying crop partly because it is a good seller and partly because there is not much work about it, and because the work that is to be done can all be done with horses, and the preparing for market means only cutting and putting in boxes. There is no crop the first year after planting, but the next year there is a good crop. We begin cutting in April, although some years it is ready earlier. Where the ground is rich, it lasts several years without replanting."

Tomatoes.—"We shall have twenty acres in tomatoes this year. We have the plants already growing in the hotbeds. We get them started and then we transplant them to cold-frames to harden them off and make them stocky; they are set out generally about the 15th of April, but of course that depends some on the weather, as it is not wise to trust them to the soil till the ground has become warm. When the season is favorable we can raise tomatoes after peas. We do not raise as many peas as we used to, on account of the scarcity of labor; it is hard to get Japs any more since the law has stepped in, and no more are coming; what there are here are dreadfully independent, too; they can't make as much picking peas as they can doing some other things, and they don't care for the pea-picking job.

Market Peas.—"It pays well to raise peas for the early market when the season is good and they can bet gotten early. This is not a particularly good year, though, because it was too dry to plow in the fall, and we could not get peas in early enough to catch the first price, as we generally do. A lot of the grain that we have in will have to be sown over, because wnen we did get it in, the rain was too steady, and instead of it sprouting, it rotted in the ground. To make the best of our ground, we need the rains so that we can get the land in good tilth before the heavy rains set in; then when the peas are planted they sprout at once and begin to grow so that the rains do no damage; in fact they grow all winter. When they get started early they are off in time to grow tomatoes on the same ground, and we get two crops. Tomatoes do not pay as well as they used to; formerly the canneries contracted for, say, half the crop at a certain price; then if the price went up, the grower got paid the extra price on the other half. One year we got $10 per ton for half our crop and it brought up the receipts materially. Now, however, they contract by the acre; this year at $7.50, and there can be no increase, no matter how the prices may go. Many of the growers are dropping tomatoes on that account. We used to raise as high as fifty acres. We can raise 15 tons to the acre, and if the year is especially good, 20 tons—by a good season is meant, of course, a late frost in the fall. Sometimes we pick till the last of December.

"Some years we raise corn after peas and get a good crop. The last picking of peas, we thresh out for seed, and the vines are then saved for feeding; we do not pick them, however; we just pull up the vines and thresh, as is done with wheat.

Onions.—"We had five acres in onions last year; we raised large ones. We plant the seed in hotbeds, and then transplant them to the field. Onions are a paying crop; but for the labor cost, garlic pays better, because it does not have to be transplanted. The garlic is planted by taking little beans and planting them in rows in the field, right where they are to grow. These beans are really sections of the garlic that peel off just like the sections of an orange. They are more expensive, of course, than onion seed, but then, labor is what brings up the price of a crop, and the garlic requires so much less labor that we prefer it to onions.

Cucumbers.—"Cucumbers are a paying crop. We raise them for the pickle factory; they buy three sizes, the tiny little ones, and then one that is about two inches long and one that is about three; the great big yellow ones they will not buy at all. The little ones pay the best, and by the time that one gets over the field it is time to go right over it again, so that we get five or six pickings.

"Most people claim that lima beans cannot be raised in this section; we tried two acres last year and they did fine, and we shall raise more this year. They bring a good price and diversify the crop. We think it wise to diversify all that we can, and it makes the help fit in better than where we raise fewer crops.

Beans.—"Another thing that pays us well is soy beans. We raise them mostly for feed; ground up, they are fine feed for cows, horses, and chickens. We are raising a lot this year, because we have a number of pigs; they are fine pig feed. We just mow the vines when the beans are ripe, and the pigs eat them, vines, beans and all; they fatten well on them and the meat is fine grained and sweet. [Are you sure these are soy beans, and not the Portuguese or horse-beans which have long been successfully grown in your district?—Editor.]

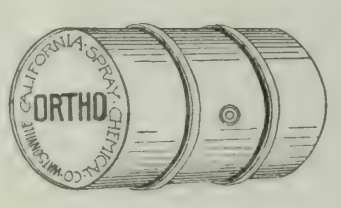
Poultry.—"We raise a few geese every year; they were my mother's; she kept Cochins to sit on the goose eggs. She had a little trick about it that makes me laugh every time I think of it. You know that a goose will go out in the water and go back to her nest with her feathers all wet; my mother used to dip her Cochin hens in the water and let them go back to the nest 'allee samee' geese, with their feathers wet. Of course, a Leghorn hen would not stand such treatment as that, but the Cochins don't seem to mind it a bit, and it is a lot better than sprinkling the eggs.

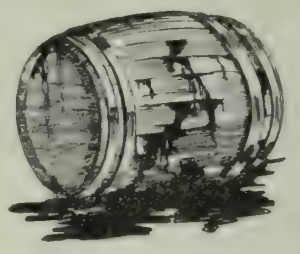
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Including Muirs, Lovells, Albertas, Tuscan, and Phillip Cling and all leading varieties. Also a full line of Pears, Plums, Prunes, Cherries, Apples, Apricots, Almonds, Walnuts and Chestnuts. A full stock of Thrifty Vines. Write for prices on amount you need.

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Navels, Valencias, Lemons.
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Citrus Trees Exclusively

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GROWERS OF HIGH GRADE NURSERY STOCK

Prompt attention given to orders sent in by mail. Write us for prices on Apples, Peaches, Pears, Cherries, Plums, Prunes, Apricots, Almonds, Eng. Walnuts, Blk. Walnuts, Figs, Grape Vines and Berries. Ornamental Trees, Flowering Shrubs and Roses. Catalog free.

CHICO NURSERY COMPANY, Chico, Cal.

I am selling 15 of them to a Jap to take to Japan. He found out that he could send a crate for $10; the crate will hold 20 Leghorns, but only 15 White Rocks. I am not supposed to know what he is to get for them, but I found out that they sell for $5 and $6 in Japan. I think that it would pay to raise them for the Japanese trade. I think that is pretty good money. They say that White Rocks are scarce in Japan. White Plymouth Rocks are good setters, but one of these Cochins can cover seven goose eggs. A goose is the cheapest thing to raise yet, if a person has grass, as grass and water is all they need. We do feed them a little grain, though, when we want the eggs for hatching. I do think that a Cochin chicken is the best chicken meat there is, without a single exception; it seems queer to me that there are not more of them raised.

MEDICINAL PLANTS.—"There is another thing that is raised on our place that very few people know can be raised in this State, and that is belladonna. One of the head men of the California University came out and examined the soil, and now we have leased to one of the professors of the University, on his own responsibility, a five-acre tract, and he is raising belladonna on it, to be sent to Johnson & Johnson of New Jersey. This drug is raised mostly in southern France, and it seems that this climate is almost identical with the climate there. In the East there is too much frost to raise belladonna profitably. The seed is sown in hotbeds, just like tomatoes, and then transplanted into the field. The seed is precious stuff and costs $20 per pound. The first cutting is made when it comes into bloom, which is about August, and it can be cut two or three times in the season. That raised some places tests only 60%; that raised here tests 87%, which is a fine quality. A bed lasts for three or four years, when it can be renovated by dividing the roots. It is cut like alfalfa, when it stands about three feet high; when it has sufficiently cured, it is baled in little bales, just like hay, with a hand-press, and shipped to New Jersey."

Right here the writer would like to ask, why wouldn't this raising of drugs be a paying occupation in this State—at least as a side line for people who have small farms and want to do intensified farming? I had the pleasure of visiting a little herb farm in Sherman, Tex., a few years ago, where a man was making $200 per year on two town lots, and he supplemented this with weeds that he mowed from the highway. On the subject he said to the writer: "There are lots of seeds growing on the highways and in the fence-corners which are considered a pest, yet they have a market value to the person who knows what to sell, and what is not wanted. My father was an herb grower before me, and I take to it by inheritance, by early training, and by preference. I grow hoarhound, fleabane, parsley, moneywort, peppermint, tansy, gypsum-weed, wild lettuce, and even the zenia. I made $20 off of two rows of zenias last year; the blossoms are cut when they are just full blown, and dried, when they are ready for shipment. Any of the wholesale drug houses that do their own manufacturing buy the drug plants, and there is good money in raising them. All that a person needs is a drying-room where they may be cured without getting wet." That was in Texas where it is liable to rain at any time. In this climate, where the summers are dry, they could, like fruit, be dried in the open air. The man said that he got his start of tansy by just getting people who had little in their gardens to divide the roots with him; when once planted it is always there. [Do not start with medicinal plants unless you can get a contract from a responsible buyer.—EDITOR.]

FLOWERS.—But to return to the words of Mrs. Stanton again, in which she spoke of the flowers that grow in her dooryard. "These flowers were my mother's. She was a great lover of flowers; when she lived in the city in rooms, her windows were always just one mass of blossoms; she couldn't live without them. She made a study of roses; she had the finest collection of roses that can be found anywhere; she knew all about them, their habits, and the different kinds of treatment that each one thrived under. All these roses she started from tiny slips. She used to put them in boxes of sand till they were rooted, when she would set them out where she wanted them to grow. She had her garden arranged so that the flowers that would bloom first were at the back, with the next in the beds to bloom in succession, so that every bed always had something in bloom.

"I have seen her out with a lantern working with her flowers as late as 10 o'clock at night; she had lost her husband and was in great grief, and with her flowers was the only place that she could find any surcease from sorrow.

"She belonged to the State Floral Society and one year she won the first prize at their show with her pansies. They were beautiful in the extreme, and of every color imaginable to a pansy; some were fluted and some were frilled; some were dark and some were yellow; some were white and some were a heavenly blue. My mother used to say that they almost talked to her, and that she believed flowers had souls. She said that the best time to start rose cuttings was in August, when they were dormant. She loved her flowers with all the wealth of a passion that would have glorified the life of a human."

As I drove on my homeward way, I pondered. What a pretty conceit and how kind the Providence that gave us flowers for our solace, and for our joy. And what a pretty end to the life of a mother, to go down the last part of the journey close to the soul of nature, so close that she could even hear the whisperings of the angels as they whispered to the flowers; and it minded me of the verse:

"I would sing to you of the violet blue,
That watches the loving sky,
But it droops its head when it hears the tread
Of an angel footstep nigh."

E. J. MELLETTE.

Hayward, Alameda county.

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109 Third St., Petaluma, Cal.

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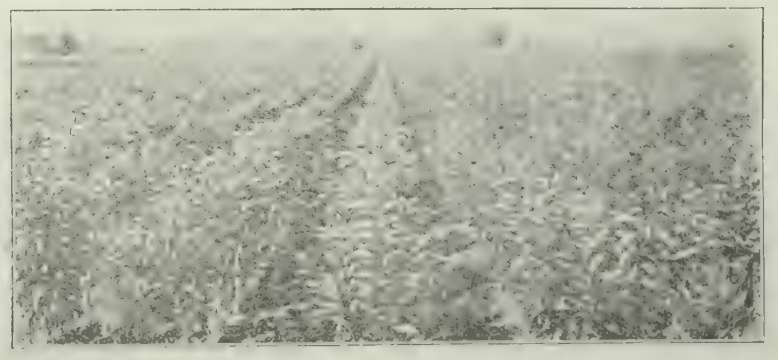
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SAN DIMAS, CALIFORNIA

AGRICULTURAL REVIEW.

WITH THE FRUIT MEN.

Mrs. M. Wagstaff, of Paradise, Butte county, is establishing a new industry which may be worked in many other parts of the State. She is preserving fruits for the market by the sun-cooking method with very good success. At the Portland fair her fruit won the gold medal, and she has now a contract with the Western Pacific Railway Co. to supply its dining-cars with her product.

A large number of deciduous fruit trees are being planted around Paradise, Butte county, this spring. Ray Hucka is setting out 500 pear and apple trees; W. T. Ogden is planting 2000 trees, mostly apple; J. H. Billie, 3000 apple and pear trees; Mr. Breese is setting out ten acres of apples, and W. Lewis is planting 10 acres of almonds. This is a fine apple section, producing fruit of extra fine flavor.

George Robertson, the Fresno statistician, furnishes the figures that show the imports of raisins into this country are falling off very fast and that the exports of California raisins are gaining rapidly. In 1884 this country received foreign raisins amounting to 53,000,000 pounds, and exported none. In 1907 we imported 9,927,771 pounds, and exported 4,720,606 pounds. During the last seven months we imported only 1,732,068 pounds, and exported 13,828,467 pounds. The low price of our own stock was doubtless responsible for a part of the large export, but the large foreign demand should have the effect of raising the prices at home.

All of last year's prunes in the Healdsburg section have been sold and shipped out.

A large new acreage will be set out to deciduous fruit trees in the Escondido valley, San Diego county, this spring. It is also expected that more than 10,000 citrus trees will be planted later in the season.

Though the recent heavy rains have kept back picking and packing of oranges in the Pomona district, yet the crop is being sent out as fast as possible, and satisfactory prices are being received.

The Interstate Commerce Commission at Washington last week modified its recent ruling on pre-cooling charges. By the order issued, the shippers, to be in a position to avail themselves of the reduction in the railroad pre-cooling charge on oranges from $30 to $7.50 per car made by the Commission, must not only pre-cool the fruit, but also must pre-ice it. By reason of the difficulty of obtaining ice and keeping it in southern California, the introduction of the pre-icing requirement is highly important.

The recent heavy rains played havoc with the almond crop around Lodi. Those varieties that were in bloom were the ones damaged.

Owing to the provision of the ordinance of Sutter county that no rooted grape-vines could be imported into that county, a consignment of Thompson's Seedless vines shipped there was destroyed by order of Horticultural Commissioner Stabler last week.

A tremendous amount of nursery stock has been received into Fresno county this season. During February there were received 225,000 apple seedlings from France, 600 plants from Japan, 60,000 deciduous trees, and 1000 citrus trees grown in other States and counties.

A big apple-selling agency is being developed by growers of the Pacific Northwest. As planned, a central selling agency is to have charge of the fruit after being picked and will endeavor to cover all markets. A selling charge of 10c. per box is to be made, and by a method of inspection a uniform pack and grade will be maintained.

It is stated that five firms at Fresno are now offering 3½c. for 1911 crop of Muscats and Thompson's Seedless raisins, and that they will accept contracts for one, two, or three years at that price.

The Fresno Republican states that practically all of the 1911 crop of figs in the San Joaquin valley has been contracted for at 3½c. per pound.

C. R. Mann, of the U. S. Department of Agriculture, has been assigned to the study of decay in oranges in southern California. So far this season the decay in citrus fruit sent East has been very heavy.

In the fruit districts around Renmark, Australia, the apricot, currant, and gordo yield is very heavy. Peaches are a light crop. Apricots are making one ton of dried fruit per acre.

The Sunnyside vineyard of 540 acres, near Fresno, was sold last week to H. W. Swift for $200,000. This property is very highly improved, having fine buildings, grounds, and avenues. It is stated that the whole acreage is to be subdivided into small tracts.

Owing to unfavorable weather conditions in Sicily, the lemon crop will be much smaller than usual. While lemon shipments will not be materially affected, the by-products of factories will be about 25% less than normal.

The hearing on appeal in the lemon rate case before the Commerce Court at Los Angeles has been finished. There will be a brief hearing at Chicago, March 31, to complete the case, before judgment is rendered. In this case the railroads are seeking to have the freight rate on lemons advanced from $1 to $1.15 on Eastern shipments.

The National Orange Show held at Sacramento last week was a success in every way. The attendance was large and the money received was more than enough to pay all expenses.

A big citrus packing-house is to be built at Worth, Tulare county, this season.

D. A. Record is planting a 15-acre tract to pear trees near San Jacinto, Riverside county.

AGRICULTURAL NEWS ITEMS.

About all of last season's hops grown in Sonoma and Mendocino counties have been sold. In Sacramento county only 1100 bales remain in growers' hands, and in California only 1500 bales are unsold.

At the National Agricultural Congress recently held at Council Bluffs, Iowa, the fruit display made by the Chico Farmers' Union won five gold medals, two blue ribbons, and gold cup.

Mrs. Mary S. Smith, owner of Meadow Farm, in Sutter county, is building a cannery on the place to handle the large crop of asparagus now ready to cut.

The San Joaquin Valley Sugar Co. is being organized to take over the sugar factory at Tulare, and the Corcoran Sugar Co. is another organization that will operate the sugar factory at Corcoran. Both the Tulare and Corcoran plants were built and operated by the Pacific Sugar Corporation, which failed.

Asparagus from the Bay sections is now coming into the San Francisco market, and it is now thought that the crop will be larger this year than the record-breaking one of last season. Canneries are preparing for a heavy pack and there will be plenty for the market besides.

MISCELLANEOUS.

The Jurupa Water Co. of Riverside has been incorporated for $50,000. The company will develop, distribute, and sell irrigating water.

A movement is on foot to extend the main canals from the Chandon and Cutts

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Calimyrna, the genuine Smyrna Fig of Commerce. The Mission or California Black Fig, the White Adriatic.

Special inducements on these trees in small or large quantities. Our trees are in A-1 condition, and can be shipped immediately on receipt of order.

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PRUNES

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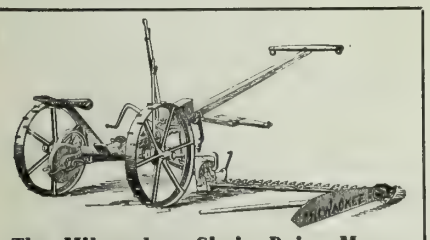
At the recent meeting in Fresno to further the organization of an irrigation district, the plans were modified so as to eliminate some land, but it is still proposed to take in about 1,000,000 acres along the San Joaquin river. It was decided to divide the territory into five subdivisions, with headquarters at Madera, Minturn, Mendota, Dos Palos, and Newman. Two canals are planned. One is to be known as the East Side canal, which will start at a point near old Millerton and run into Merced county. This canal will irrigate 483,840 acres in Madera county and 149,760 on the east side of the San Joaquin river in Merced county. The West Side canal will leave the river at Gravelly Ford and will run through Fresno, Merced, and Stanislaus counties and into San Joaquin county. This canal will irrigate 316,800 acres in Fresno county, 235,500 acres on the west side of the San Joaquin river in Merced county, and 86,400 acres in San Joaquin county

The Supervisors of Madera county have passed an ordinance requiring every land owner whose premises are infested with squirrels to exterminate them by poison or otherwise. Should land owners fail to do so, the poisoning of the squirrels will be given in charge of an inspector and the charge will be a lien against the property.

Foul brood in the apiaries of Fresno county is reported to be spreading.

Joseph Cameron is having 375 acres sown to alfalfa on the Tisdale ranch, near Gridley.

The heavy wind and rain storm that passed over California last week caused damage running into the millions of dollars. In the southern part the most damage was caused by the great rise in the San Gabriel river, which overflowed thousands of acres of good land and carried out many bridges. In Santa Barbara county the Santa Ynez river swept away many bridges and drowned much live stock. Around Santa Maria over 1000 acres of crop were destroyed. In Monterey county, between Salinas and Watsonville, thousands of acres were inundated and many homes wrecked. The damage to orchards will be very heavy. On the west side of the Santa Clara valley great damage was done by Los Gatos creek overflowing its banks and flooding the orchards near Campbell. In the southern part of Alameda county many bridges were washed out, some stock drowned, and land covered with water. At Colusa, owing to a break in the levee, many houses were inundated. Some of the streets had flowing water five feet deep for a time.. Through the central counties much less damage is reported. In the foothills, reports come of cattle and horses being drowned, but only in small bands, though the aggregate may be large.



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The Apiary

BEE-KEEPING DIFFICULTIES IN CALIFORNIA.

Mr. P. C. Chadwick of Redlands writes to Gleanings in Bee Culture about bee-keeping in some parts of this State.

I am of the opinion that production can be reduced by overstocking, much in the same way that a small pasture would fatten four head of stock, while ten head would merely keep alive.

My object is not to discourage people from casting their lot with us in this glorious climate, but rather to acquaint them with difficulties that must be surmounted, and at the same time give an idea of what those who have been in the bee business for years have accomplished and what they have faced in the way of seasons.

South of the Tehachapi mountains lies practically the entire sage of our State, notwithstanding Eastern people and many of our Westerners term every form of small growth on the vast slopes of the Rocky mountains "sage brush." There is no denying that the button (or black) sage is, of all honey plants, our chief surplus producer. Neither does it average a crop more often than every other year regardless of rainfall; for it seems necessary, from its semi-arid nature, to be dried out or rested before it comes back to its prime yielding condition. I have seen it return some surplus for three consecutive seasons; but the middle season was not what could be considered a crop, even after a sufficient rainfall.

I am now speaking of southern California, the sage field—not any particular place within that may have special products, like oranges, for instance. The portion of our territory covered principally by the sage is much more vast in extent than the few thousand acres of orange, lemon, or deciduous fruit, and shows no great results when the sage fails; therefore if the sage fails every other year, southern California outside of irrigated districts may well be counted an every-other-year producer, and this means the greater portion of our southland.

To quote another writer: "There were scores of bee-keepers who did not get a pound of honey, but it was not the fault of the season nor of the bees." The implication that it was the fault of the bee-keeper is most unfair; for most of us know that, regardless of the good condition of many well-kept apiaries during the entire season, no surplus was secured. I will admit that if every one knew the true condition in our sage ranges and the overstocked condition of the foothills on the outskirts of our orange groves, we would be in no danger of overstocking.

The misapprehension of many people owning bees (not bee-keepers) as to the distance locations should be apart, has much to do with overstocking. My apiary was at one time in as fine a location as could be found; but now, however, I am surrounded by an aggregate of 1200 colonies, any of which can overlap my range on one side or the other, and nearly half on both sides to a certain extent.

Here let me give you the report of our local weather observer on the annual amount of rainfall for 15 years beginning with 1895. Ten inches of rain is about as small an amount as can be figured on to produce a yield from the sage; and that must fall late in the season. For example, we had 10.22 inches in 1910, only about two inches of which fell after January 1, the result being that while the sage bloomed more or less profusely there was not sufficient moisture to produce nectar. In 1895 there was a fall of 7.51 inches; 1896, 12.85; 1897, 5.50; 1898, 4.82; 1899, 6.89; 1900, 12.21; 1901, 7; 1902, 12.75; 1903, 15.81; 1904, 8.59; 1905, 22.12; 1906, 16.22; 1907, 20.76; 1908, 14.56; 1909, 14.47; 1910, 10.22.

I have the records before me back to 1880, those from 1880 to 1895 being four inches less per annum than the average from 1895 to 1910. In 1882 the fall was only 2.94 inches. Think of going twelve months with less than three inches of rainfall, and three years with less than 15 inches, as was the case from 1880 to 1883.

Bee-keeping here is conducted, to a great extent, in as haphazard a style as farming was in the middle West 30 years ago, when, we are told, the farmer moved the barn instead of the manure. We have bee-keepers who know their business and know it well; then we have a class who give their bees little personal attention, know little of the business, and seem to care less, for they rent their holdings for a share, during the honey season, many renters simply knowing how to extract, and they usually do close work on that, after which the bees are left to shift until another season. Imagine the condition of some such apiaries, the danger of foul brood, and the general run-down and unkept condition.

I could not point you to a single bee-keeper who depends on his bees entirely for his support, though some have been in the business for twenty years.

If the East can send us up-to-date bee-keepers with capital to buy out these half-kept apiaries and help improve conditions we will give them the glad hand; but as for new locations, they are few and far between—at least, desirable ones; and what we have are being encroached upon each year by the barley-fields. More than one who thought himself secure a few years ago now finds he is surrounded by great grain-fields, and will soon have to pull up stakes for new pasture, and eventually only the most rugged of the foothills will be left for the support of our industry.

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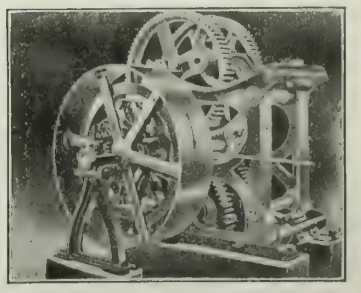
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Live Stock and Dairy.

A CHAT ABOUT COWS.

To the Editor: If the question is asked, "What is the best type of cow for present California conditions?" the answer is very easy. That type which returns her owner the most cash for the least outlay for feed and care is of course the "Ne plus ultra," desired by all cow-keepers, whether one or a hundred. Conditions change, and the cows should also change to at least partially keep up with these changes. If one could possibly find and read a copy of an old geography printed in the early part of the last century, one would learn that the only product of California then was the hides and tallow of the herds of long-horned cattle that roamed at that time in countless herds over the mountains and plains of what was then a strange country—and is yet to a newcomer, or those very appropriately named "tenderfeet." The cattle owner then desired a type of cow that would not only drop a strong calf every year, but that would faithfully defend it from bears and cougars, until it was able to defend itself. The only "tester" needed by the cow-keeper of those days was the big kettles to convert the carcases of his animals into tallow while the hides were drying in the sun, so that both products would be accepted by the "Boston men" whose ships had rounded the Horn laden with guns, ammunition, and other "Yankee notions" which were the only things needed by the "hidalgo" of those halcyon days.

Whether those were really halcyon days or not depends, perhaps, on how we look at it; but they are surely gone forever, with many other things which our ancestors thought so enjoyable. Yet there appears to be parts of this great State where cows are still kept solely to raise calves; and from the number of herds that still wear horns, there must be many owners who still think that these weapons of defense and offense—mostly offense—are just as much needed as they were in the primitive years. The type of cow needed in the future should be absolutely hornless, either by breeding or artificial removal.

When an old dairyman who has sold butter for many years, and seldom bought any, finds that the purchase of a two pound (?) square of creamery butter makes his big round dollar look like 30 cents, or worse, he becomes firm in the belief that the right type of cow for California conditions is one that will produce something besides beef, or calves to be grown into beef, which really amounts to the same thing. In short, she should be most emphatically a profitable producer of butter, and that very clearly means that she should be of the dairy type and conformation and belong to some one of the recognized dairy breeds—in fact, a "dairy cow."

Now, do not all jump up at once to ask what kind of a dairy cow, or what is the best breed of cows for the dairy. For, if you do, I shall very likely answer that there is no "best" breed; for if such a breed had ever been known in the past, all other breeds would by this time have been eliminated, and this one breed would be the only breed left. Instead of this, there are at least four well-known and acknowledged dairy breeds, namely, Ayrshire, Guernsey, Holstein, and Jersey, naming them alphabetically, as well as a few other breeds which claim some consideration along this line. For many years the owners of these breeds have striven for the first place, until at least one cow of each of these four breeds has an attested and proven record of just about half a ton of butter in a year. Some have even exceeded that amount, and while it is not necessary to give the exact figures, it would be a good thing for all who are interested in cows to carefully study this matter, and finally make up their minds whether such a cow as that would not be a pretty good type of cow for California, at the present prices for butter. Even at 30 cents per pound, it amounts to $300, and all who deal in this class of goods know that good butter is always worth that much, or more; and if you try to borrow $300 you will soon find that it is at least a good-sized "grub-stake."

But some may say, "These big records were not made in California." Is that any reason why they cannot be made here? This much the records do show, that in practically every case where big records have been made, the principal feed used was alfalfa, sometimes shipped thousands of miles.

We raise alfalfa here, and with our rainless summers make better hay from it than can be made elsewhere. This staple, fed to cows of the dairy type, has proven a money-maker wherever the two have been properly brought together. But there is a vast difference in the profit whether it is fed to cows yielding a thousand pounds of butter a year; or to those yielding about a hundred pounds, which is said to be the average, not only of this State, but of many others.

Now while all may not be able to become the lucky owners of these top notcher cows, there is a practical certainty of a grand improvement by breeding fair, healthy cows to sires of the dairy type and conformation, and raising the heifer calves as they should be raised, until cows are obtained whose yearly product of butter should be at least 300 pounds per annum. This much butter, and a calf, certainly beats keeping a cow a full year just to raise a calf; even at the present price of beef. It matters little what one of the dairy breeds the sire is, but always use one of the same breed you start out with. Do not jump around. Stick to the breed you have chosen. One human life is too short to start a new breed. This type of cow can certainly be raised here, and thus bred up to produce from 300 pounds of butter up; and properly cared for, will surely be as profitable as raising peaches at $10 per ton, or wine grapes at $6. Pulling teats may not be as genteel as picking peaches, grapes and oranges, but all Californians can not trot in the gen teel class.

N. S. FRENCH.

Oakdale, Cal.

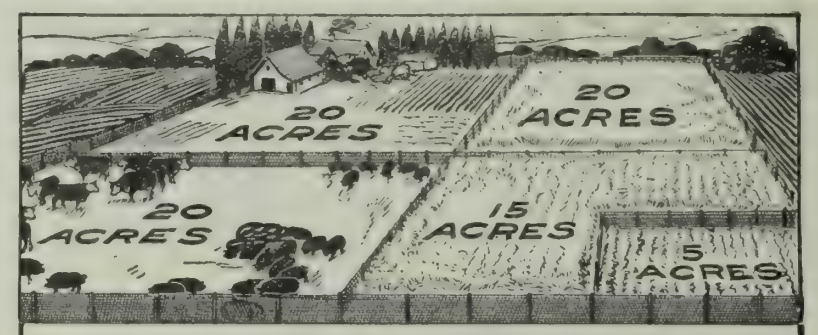
PIE MELONS AND PIGS.

To the Editor: I would like to get your opinion on feeding pie melons or citrons to brood sows. I have fourteen sows which were fed almost entirely on melons and milk, not much of the latter. Out of the fourteen, only three sows have saved any pigs; the rest lost all the young they had. The young pigs seemed to be strong and well grown but came too soon, just as they were beginning to make hair; they were nearly all alive, but only lived an hour or so. Four or five sows that for the last three weeks have had no melons, nothing but green grass and a little whole barley each day, are saving their pigs all right.

Some of our neighbors claim that the citrons were the cause of all the trouble. All of our hogs are healthy and in good condition. A SUBSCRIBER.

Monmouth, Fresno county.

We cannot definitely answer this question. Our opinion is that pie melons are poor feed and pigs which are not given anything better ought to cut up in almost any way. "Green grass and a little whole



One Animal and Three Hogs to an Acre

THIS is a fair estimate of the average feeding ability of the soil. On a farm of 80 acres the highest limit of efficiency is 20-acre fields. Large fields diminish the earning power because two small fields alternated will furnish much more support for stock than the same average in one big field. The fence is the important factor; and with the liberal use of gates, unlimited extension and alternation is simple.

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149 CALIFORNIA STREET, SAN FRANCISCO.

barley" is much better feed than pie melons. However, we desire to enforce the referendum on the subject. What have our readers concluded from actual experience? We do not know of systematic experimentation on the subject.

NEW RATIONS FOR HORSES.

If we remember correctly, the street-car horses of Chicago were first to come upon the platform of modern scientific feeding, considerably in advance of dairy cattle, which are now most active hustlers after balanced rations. And now there are coming new things for horses. In view of the increased cost of grain for horse feed, and as a substitute for oats, the Bureau of Animal Industry has developed a sort of equine breakfast food composed of cocoanut and peanut meal.

A bulletin just issued by the Department of Agriculture describes the result obtained by trying the mixture on the dog—in this case, ten Morgan yearlings and four work-horses on the Bureau's horse farm near Middlebury, Vt. That the dog was not altogether edified by the experiment is intimated in the statement of the bulletin that "none of the horses took to the cocoanut and peanut ration eagerly, and the work-horse team so fed was off food during the first three weeks."

At the conclusion of the test, however, all the horses were reported in good condition.

The saving in cost was $15.75 per ton of mixture, or the difference between $43.75, the cost per ton of whole oats, and $28, the price paid per ton for the nut-meal mixture.

NEW ALFALFA DISTRICTS.

The progressive stockraisers and farmers in San Benito and Monterey counties have given up depending on Jupiter Pluvius for their water. They realized that their new flocks and herds needed more green feed, and with that purpose in view have installed pumping plants and built diverting dams. With the large acreage being set out to alfalfa this will mean that these two counties will get back some of their lost prestige in the dairy business.

The canal recently built by the Paicines Rancho, diverting water out of the San Benito river, is now full of water and a large section hitherto given up to grain and pasture will now grow alfalfa.

In Monterey county hundreds of acres will soon be set out to alfalfa and dairies started. Among the stock raisers who are making preparations to put land under irrigation are Julius A. Trescony, David Jacks Co., O. H. Willoughby, A. C. Orcutt, W. H. Douglas and David Thompson.

COST OF RAISING A CALF.

Since farming is getting on a firmer business basis, the farmers are keeping tab on the costs so that they know what yields them the most profit. According to the New York Farmer, a stockman set aside a young calf and kept an accurate account of the expense of feeding for one year from birth. The amounts of feeds used in that time were 381 lbs. of whole milk, 2568 lbs. of skim milk, 1262 lbs. of silage, 219 lbs. of beet-pulp, 1254 lbs. of alfalfa hay, 1247 lbs. of grain, 147 lbs. of roots, and 50 lbs. of green corn. The grain ration consisted of three parts each of corn and oats, and one part of bran and oilmeal. At the end of the year the calf weighed 800 lbs. at a cost of $28.55 for feed. The calf was a Holstein, and the record beats that of the Hall Brothers, near Denver, Colo., who find that it costs $60 to bring a calf through the first year.

Stock raising is becoming quite a prominent industry in Siberia. The horses there average between 12 and 13 hands high and can draw a load of over 1000 pounds. They are usually driven three abreast and can cover 30 to 40 miles per day. The horses live much in the open throughout the year and in the win ter find their feed under the snow.

DAIRY NOTES.

The Corcoran creamery had its milk-evaporating plant begin operation last week. With the new equipment the plant can handle 5000 pounds of cream and 20,000 pounds of milk daily. The milk for evaporation is delivered at the creamery within three hours after milking, and is there prepared for market and shipped the same day.

From the statistical report we learn that Orange county in 1910 raised dairy products to the value of $138,985. The value of dairy cows in that county is $257,050. Value of all live stock is $1,663,124.

P. H. Davis, of San Anselmo, and two other dairymen of Marin county, have recently purchased land from the Sacramento Irrigation Co. on which they will establish dairies.

C. Rosenthal and associates are developing several hundred acres of land on the Kings river, near Hardwick. Already 50 acres have been seeded to alfalfa, and ground is now being prepared for a 240-acre field of Egyptian corn. Next year a large dairy is to be installed and a big poultry ranch will also be made on part of the company's holdings.

The annual report of the Porterville Co-operative Creamery, submitted to the stockholders last week, showed 145,393 pounds of butter had been sold for the year ending February 28, at an average monthly price of 34 cents. This was 2½ cents better than the preceding year. The regular 8 per cent dividend was declared and the balance of money earned is to be distributed to milk producers.

LIVE STOCK NOTES.

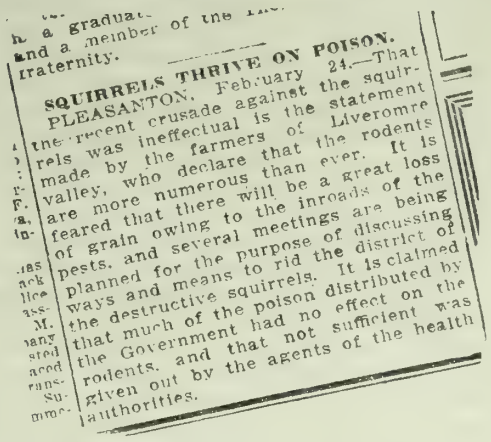
Gus Lindauer, of San Francisco, recently scoured the southern portion of Sonoma county and purchased ten head of fine, big draft horses. The ten horses averaged in price $280 each.

County Live Stock Inspector G. R. Rey was called to Hot Springs, Tulare county, last week to learn, if possible, the cause the death of a number of horses belonging to the forest rangers. It is thought that the horses died from eating poisonous plants not yet known to the rangers.

George A. Smith, of Corcoran, is having two concrete silos built on his place. The silos will be 20 feet in diameter and 40 feet high.

HALL'S SQUIRREL POISON

READ THIS


and a member of the
fraternity.

SQUIRRELS THRIVE ON POISON.

PLEASANTON, February 24.—That the recent crusade against the squirrels was ineffectual is the statement made by the farmers of Livermore valley, who declare that the rodents are more numerous than ever. It is feared that there will be a great loss of grain owing to the inroads of the pests, and several meetings are being planned for the purpose of discussing ways and means to rid the district of the destructive squirrels. It is claimed that much of the poison distributed by the Government had no effect on the rodents, and that not sufficient was given out by the agents of the health authorities.

Clipping from S. F. Chronicle, Feb. 25, 1910.

IS NOT THE ORDINARY KIND

This is a poison prepared by special machinery, with a hard, sweet coating, singularly attractive to the animal, and is

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The safest, Best BLISTER ever used. Takes the place of all Liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish.* Every bottle sold is warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.

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FOR SALE—Nine recently imported pure-bred Duroc-Jersey gilts, more or less heavy with pig; for sale at prices which will enable you to enter the pure-bred business with the breed of hogs most popular in the corn belt; satisfaction guaranteed or money back. W. A. FORBES, Box 746, Sacramento.

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TELLING THE AGE OF A HORSE.

The four ways of telling the age of a horse were described recently by Professor E. L. Potter of the animal husbandry department of the Oregon Agricultural College in a lecture to his students, which was, in substance, as follows:

There are four ways of telling the age of a horse: by the skin of the cheek, by the ribs, by the shrinking of the flesh of the tail, and by the teeth.

In a young horse the skin of the cheek is soft and elastic, and if raised up will immediately fly back in place. With an old horse, however, the skin is lifeless, and if it is raised up it will go back rather slowly.

The ribs of an old horse are apparently farther apart, and the space between them more distinct than in a young horse. First the space between the last two ribs becomes more distinct, then between the next two, and so on.

In an old horse the flesh of the tail shrinks, making the joints more distinct. This change begins at the end and works up year by year toward the body.

These three methods are not accurate, and merely enable one to tell an old horse from a young one. A skillful horseman can tell about as much regarding the age of a horse by his general appearance as by either of these methods.

The changes of the teeth are very much more reliable, however, and this method of judging is in almost universal use among good horsemen. It is not absolutely accurate, but is sufficiently so for practical purposes, except in unusual cases.

The horse has twelve incisors or front teeth, six above and six below. He has two sets of these, one temporary and one permanent. When a colt is two years old he has all his temporary teeth. These will be shorter, whiter, and more worn than the permanent teeth.

At two and a half years the central pair, both above and below, drop out, and permanent teeth take their place. By the time the horse is three years old these permanent teeth will be fully developed and "in wear," that is, the upper and lower teeth will meet. At three and a half years the lateral pair of teeth (one on each side of the central pair), both above and below, drop out, and by the age of four the permanent teeth are in wear.

At four and a half years the corner pair, both above and below, drop out, and by the age of five the permanent teeth are all in wear. At this age the horse is said to have a "full mouth."

The teeth at this age are much longer from side to side than from front to rear; also, on each one there is an elongated cup, or mark. This cup is a depression in the tooth and is lined with the same kind of hard enamel that covers the outside of the tooth. It is also filled with dirt and foreign material, which give it a black appearance. The lining of hard enamel will always distinguish the real cup from the artificial ones sometimes put in by jockeys.

At five there is a cup in each tooth. At six the cups in the central pair below have been worn away; at seven the cups in the lateral pair below are worn away; at eight, the corner pair; at nine, the central pair above; at ten, the lateral pair above; and at eleven, the corner pair above. The cups are then all gone, and the horse is said to have a "smooth mouth."

It must be remembered that the permanent teeth above and below came in at the same time, but that the cups above do not wear away until all the cups below are gone. It must be remembered, also, that the changes begin at the center and continue at the rate of one pair a year; that a horse at maturity, which is at five years, has everything—that is, all his permanent teeth and all the cups. If one remembers this much, he has the whole thing in a nutshell. If the signs for any particular year are forgotten, one can count backward or forward from five and get what is wanted.

After eleven years the signs are not definite,, but at about fifteen or sixteen the tops of the teeth become round instead of longer from side to side than from front to back. The tooth does not actually change, but the lower part of the tooth is a different shape from the top, and when the tooth wears down, the wearing surface gets to where the tooth is of a different shape than where wear first started.

At about twenty the surface of the tooth changes from round to triangular, with the longer dimension from front to rear. Also, when the horse gets old, the teeth have more slope when viewed from the side. The teeth of a five-year-old horse come almost straight together, while those of a twenty-year-old horse come together at a sharp angle.

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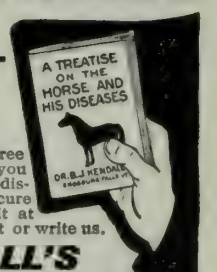
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"Your book is worth $5.00 if only used as an aid in locating lameness. Shoulder lameness is the most difficult for an inexperienced man to locate. It is easy, however, with the help of your book."



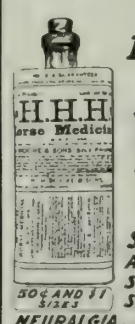
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FOR SALE—10 acres of choice land, all planted with thrifty two-year-old orchard of Muir and Lovell peaches, located ¾ mile from Ceres, good roads, good grammar and high school and other advantages. Price very reasonable. Box 97, R. F. D. No. 1, Ceres, Cal.

Poultry Department.

Conducted by M. Russell James.

NOTES AND COMMENTS FROM OUR READERS.

One of the substantial dairy farmers of Stanislaus county, Mr. J. H. Wilder, who is just waking up to the importance of poultry as a side line in his business, writes: "It is easy to see a marked interest in poultry in this section, and a foundation for the belief that we shall soon be a close second to Petaluma. We have made a new departure on our farm by installing a 1911 incubator of 244-egg capacity, which is filled with Buff Leghorn eggs and running like a clock at the exact degree. In going more extensively into poultry, I feel considerable interest in learning what net profit may be obtained per hen. Mr. Ellis, who lives east of Modesto, keeps 250 Buff Leghorn hens on his 20-acre farm, and sold $100 worth of eggs from them in December last. He refused an offer of $100 for 100 of his hens. Different persons around here with whom I have talked say that a hen is good for one dollar a year net, but that with proper care more than $500 may be netted from 500 hens. In the Oregon poultry contest, I see the boy who got the first prize netted $3.02 per hen, and the girl who got the second prize, $2.73. That is very much more than anyone with whom I have talked here claims has been made. I am glad to learn that with proper care so much more can be made."

Apropos of the above, we would say that the profits from a small bunch of hens is no criterion for poultry on a commercial scale. As a matter of fact, the returns from a dozen or so of hens kept about the home are nearly all profit, the care and cash outlay being so very small. Again, there is less mortality and more hen fruit from fowl kept in small flocks; but this is offset by the increased labor. On the colony plan, several hundred hens may be kept on the farm as a side line and without greatly interfering with the other branches of farm work, but if this number of fowls were yarded in small flocks it would require pretty much all one's time to properly care for them. In the flamboyant claims of the hen promoters we get but one side of the question—and a distorted view of that. For instance, a prince in that line advertises in almost every paper in the country that he "makes every one of his hens pay him a profit of $50 to $100 each." Even allowing for the exorbitant profit he makes by selling his "strain" to a gullible public, we opine that his alleged profits would shrink more than the boy's fish if the advertising which produces them (not the hen) were deducted therefrom. We understand that this party has spent $75,000 in advertising the past year.

In Petaluma, where this subject has been pretty thoroughly proved out through years of experience in commercial poultry-keeping by practical businessmen, one dollar profit per hen above feed is considered the fair average for large flocks kept under good conditions. And that is a good profit. If the farmer can make every one of his fowls net him that each year, it will beat any other product on the farm. Don't expect too much of the hen. Undue expectations are what cause failure, disappointment, and disgust in the poultry business.

From another dairy and alfalfa ranch near Modesto, Mrs. J. Pearson, who was formerly a large commercial poultry-raiser in Castro valley, sends in the following as her experience with poultry on a small scale in Stanislaus county:

"This county is going daft on chickens, and it certainly does seem that they do extra well here. Never a sick chicken, all the farmers keep fine stock, and do not hesitate to pay the price. I have my Plymouth Rocks and White Minorcas, fine healthy birds, and they never were in a house, but just in boxes holding about 10 to 12 fowls, one side open. This is what I intend to use here, as I cannot go into the business very extensively; just keep a few for family use and 'pin money.' My day for raising commercial poultry is past, and I must be content to do lighter work. I shall have plenty to take my time this spring when everything is growing, for we have lots of berries, strawberries, Logan, and blackberries; also grapes. Then there are my roses and violets. I am going to have melons and sweet potatoes, which grow at their best here. If I cannot do the planting, I am still able to do my part at eating them.

"About the brooders. I like the fireless brooders in this climate, and I think the chicks are stronger. But all fireless brooders should be in a house, and the house kept moderately warm, and not turn the little chicks out until the sun is well up, so they will not chill. After about two weeks I take out the cloth hovers, then in about ten days more have a box ready with low perches in it, and turn them into that. They will soon go on the perches to roost and will not crowd in the corners. The Sanitary Brooder is all right, as it is round and has no corners to pile up in."

Mr. F. A. Poland, of Mountain View, in sending us some more of his plans and experiences with the coop system he is trying out (which we will print later), has this to say:

"The poultry business is very interesting work as a whole—a great field for steady, quick returns. One cannot get much return from a prune tree for at least seven years, and even then one's work and troubles are not over. My pens thus far work all right—our pullets are not webfooted as yet. Reared in a fireless brooder, they have gained constitutions that surprise me. I have been careful not to force them, as I desire to have a lot of strong breeders. They were a wet lot during the downpour, but not one has shown any signs of a cold; all are lively and none hanging back at feeding time. I like the Leghorns. They are business and respond quickly to good care and treatment. The hardest part of the whole business is to kill—yes, to murder—them, like a savage—gnaw their bones and say, 'I like chickens!' Too sentimental? Maybe. What is happiness but a sentiment?"

Many of us poultry-raisers feel Mr. Poland's scruples about killing our fowls—it is somewhat like knifing a friend. Personally, I have come to look on the use of our domestic animals for food in this light: If they were not so used, life would be a greater hardship for them. Instance, the horse turned out to starve when its usefulness is over; the cat, the dog, subject to all kinds of inhumanities. If these creatures, like the superannuated rooster, were even good for boarding-house soup, their lot would be a happier one. The real kindness is to give our animals and fowls good care and treatment, and in killing them use as quick and painless methods as possible. All are agreed that even in our own case it is not length of days but the real enjoyment which we get out of life that counts, and in the end death comes to all, and often in more painful ways than to animals. The life of every healthy, well-cared-for animal or fowl is a happy one, even if brief, and herein lies our duty to our stock.

Poultry Notes.

Mustard an Egg-Getter.—Of old, we have heard of the tiny grain of mustard seed that sprang up and flourished until the fowls of the air found lodging among its branches. But now come tidings of greater wonder still performed by this same mustard among the fowls of the earth. An English poultryman whose chief delight lies in promoting the happiness and usefulness of his hens, has discovered that small portions of mustard mixed with their food will increase their laying capacity from 15 to 25 per cent.

The triumph is described by the London Globe, in part, as follows:

"The experiment began on October 1, 1909. At the end of six months the birds fed with ordinary food had laid 369 eggs, whereas the birds fed with the mustard addition to their food had laid 532 eggs. At the end of the year the birds fed on the ordinary food had laid 914 eggs, as against 1023 eggs laid by the mustard-fed birds."

Viewed from the present price of eggs in the States, the significance of such a discovery is great, indeed. The true fancier, however, will be more keenly interested in its scientific than in its financial aspects. As to the exact manner in which mustard heightens the hen's productivity, we are given no clew. Perhaps it adds zest to her appetite or aids her digestion, as in the case of human beings. It is said once to have been the custom among certain poets to write with their feet in hot mustard baths. Thus, according to the belief of those times, an excess of blood was kept from their brains, so that their rhymes and metaphors hatched more safely.

Whether hens are susceptible to the same influence as poets we know not, but it is certain that mustard is a most stimulating substance wherever placed, and there is no reason for doubting that it can stir and warm the ambition of the hen.—Atlanta (Ga.) Journal.

F. BALDWIN'S WHITE LEGHORNS



1st Pullet, A. Y. P. Ex.

Winners from Seattle down; 33 out of a possible 35 prizes in 3 shows this season. **Bred as layers first.** Stock, any age, for sale at reasonable prices. Eggs $6 and $10 per 100. Settings $2 up. Send for **new free folder** and prices.

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POULTRY.

WAYSIDE POULTRY YARDS, Petaluma, Cal.—HATCHING EGGS from S. C. White Leghorns, Buff Orpingtons, Rhode Island Reds, Light Brahmas and Houdans, $6 per 100. EXHIBITION MATINGS of White Leghorns and Black Bantams, $5 per 15; $7.50 per 30. Address Carl Gregory, Manager.

OAKLAND POULTRY YARDS, 149D, California St.—Established 40 years. Standard bred poultry. White Orpingtons, R. I. Reds, Brd. Rocks, White Leghorns. Agency Norwich Automatic Feeder and Automatic Water Fountain; the best devices ever offered to the poultry raiser. Send for circulars.

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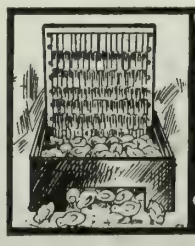
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Eggs for hatching, $5 per $100; $1 per setting.

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WARD'S ORIGINAL FIRELESS BROODERS

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INDIAN RUNNER DUCKS

FROM A. Y. P WINNERS.

Indian Runner Ducks lay eggs that sell as "firsts." They don't mind cold feet and they lay in winter. They eat cheap feed and lay upwards of 200 eggs a year. They mature at five months. They are well called "mortgage lifters."

Eggs for hatching. Ranch on Hayward Hill at the junction of the Livermore and Crow Canon Roads. Visitors welcome every day in the week.

MELLETTE & CO., Hayward, Cal., R 3

The Home Circle.

The Quarrel.

Now, Willie Johnson, yesterday,
He make a face at me, an' say
He's glad he ain't a little girl,
'Cause he don't have no hair to curl,
An' his face don't have to be clean—
An' so I tell him 'at he's mean,
An' I make faces at him, too,
An' stick my tongue out! Yes, I do!

Nen me an' Willie Johnson fight.
I know 'at girls must be po-lite
An' never get in fights—but he
Got in the fight; it wasn't me.
An' so I tored off Willie's hat
An' give him just a little pat
Up 'side the face, an' he just cry
An' run home like he's 'fraid he'll die!

So pretty soon his mama, she
Comed to our house—an' looked at me!—
Nen good right in where mama is
She took 'at tored-up hat o' his.
An' Missus Johnson she just told
My mama lots o' things, an' scold
About me, too—'cause I'm outside
An' hear—th' door is open wide.

Nen Willie comed out wif his pup
An' say "Hullo!" So we maked up,
Nen get to playin' an-mal show—
His pup is a wild li'n, an' so,
W'y, he's a-trainin' it, an' I'm
Th' aujence mos' near all th' time.

An' nen our mamas bofe comed out.
His mama she still scold about
Me slappin' him—an' they bofe say:
"Hereafter keep your child away!"
An' nen they see us playin' there,
An' they bofe say: "Well, I declare!"
—Wilbur D. Nesbit in Harper's.

Training in Housekeeping.

Housekeepers must be trained; there will then be fewer divorces. The temper disease comes from acute disorder. When the housekeeper does not know how or why, she thinks it is drudgery. It is just the point of view. Work becomes a joy and a pleasure when we have special education for it. The geologist breaks rock all day and is happy. The laborer breaks rock all day and is unhappy. The geologist has a wide view, the laborer a narrow one.

Housekeeping is a business—a profession, like any other business. More people engage in it than in any other occupation.

Ninety per cent of all that the people earn is spent for clothing, fuel, food, and shelter, and yet no training is given for this work. Bitter experience often teaches one how to be a good housekeeper. A woman has the care and nursing of the body at critical moments of childhood and sickness. She has the training of the mind in the most impressionable years of childhood, and she has much of the government and economics of the family home.

The duties of women are as sacred and important as any ordained for man, and yet it is only within the last ten years that any preparation has been accorded her.

At the Agricultural College every girl in my department has to come to the lectures given by physicians and nurses on the care, training, and feeding of little children, and every girl has to make a complete baby's outfit before she gets her degree.

We hope our girls will marry and that little children will come to them. Why should we not teach these things?

The study of food for little children is a very important thing. It is just as important to know how to dress with good taste, to know the difference between the sham and the real, and how to spend money wisely. I hope the day will come when every woman who is to be married will have to pass an examination in household science. Every man who is to be a doctor or a lawyer has to pass his examination before he begins his life work.—Mary F. Rausch, Colorado Agricultural College.

Washing Blankets and Other Articles.

Since the introduction of sulphur into the process of finishing and bleaching, many blankets are damaged from the want of knowing the best mode of treatment in washing them.

The first time blankets require washing, put them in cold water, allow them to remain in twelve hours, then rinse them in clear, cold water. By this process the sulphur will be removed and nothing will be required but tepid water, pure soap, and the labor of cleansing them to produce a perfectly clean and uninjured blanket. Avoid using any of the modern helps, such as washing fluids, pearline, soda, as these will leave the fabric looking muddy and blotched, besides giving it a worn-out appearance and very materially injuring the fabric. Dry quickly in the bright sunlight if possible, pin them every few inches along the drying line, and stretch and pull them into shape while they are wet, being careful not to ruffle the edges. If you cut them apart, work the edge in sparse buttonhole stitches in bright zephyr, or bind the edge with ribbon. Your initials worked in large-sized letters in one corner will beautify them very much.

Very few home laundresses are aware of the fact that blankets, when they have been washed and dried thoroughly, should be well beaten with an ordinary carpet beater. This has the effect of making the wool light and soft and giving the blanket a new and fresh appearance.

Simple Whooping-Cough Cure.

A lady from Pratt, Kan., sends the following treatment for whooping cough, to an exchange, and as the remedy seems so simple and sensible and has the further merit of doing no harm, that we give it for what it is worth:

My baby, 5 months old, had the whooping cough; was just commencing her third week, and was coughing very hard; in fact, for three nights she had hardly slept at all.

I had been giving her cough syrup all the time, but she continued to get worse, when I decided to try the old-fashioned remedy of equal parts of camphor, coal oil and turpentine, with enough olive oil (common lard will do) to keep it from blistering. I rubbed her well after her morning bath and again at night before putting her to bed, taking care to rub it in well, both in back and front, over the lungs, and also her throat.

I was surprised at the rapid improvement, and at the end of the fourth week she was not coughing at all, and has not coughed since.

I have heard many people say (one physician included) that whooping cough had to run its course of six weeks after the child whooped, but my baby had whooped a number of times, and was losing flesh, but she coughed less than four weeks and is perfectly well.

I hope any mother whose child has the whooping cough will give this simple remedy a trial. I continued the cough syrup, too, and used the liniment several days after she had entirely quit coughing.

Possession.

English Girl—You American girls have not such healthy complexions as we have. I cannot understand why our noblemen take a fancy to your white faces.

American Girl—It isn't our white faces that attract them, my dear; it's our greenbacks.

THE HAMLIN SCHOOL
2230 Pacific Ave., San Francisco
A Boarding and Day School for Girls

Accredited by the University of California, by Leland Stanford Junior University, and by Eastern colleges. Special courses in study are also offered.

Lessons in Drawing and Painting, Elocution, Vocal and Instrumental Music.

A course of lessons on Harmony is given each week by Prof. Wm. J. McCoy of the University of the Pacific, and is open to students outside the school.

Courses of lessons in Household Economics, with all the appliances for cooking, etc., are given each week by Miss Alice McLear, a graduate of the Drexel Institute, Philadalphia, and are open to students outside the school.

MILLS COLLEGE
Only Woman's College on Pacific Coast

Located near Oakland, within short distance of San Francisco and the great universities of the West. Full collegiate courses leading to degrees. Entrance and graduation requirements equivalent to those of Stanford and University of California. Students fitted to teach regular lines of academic work and Home Economics. Special advantages offered in music, art and library work. Well equipped science laboratories and gymnasium. Special attention to health of students and provision for outdoor life. Courses so arranged that new college students may enter both semesters, opening in August and January.

For catalogue and brochure of views, address President's Secretary, Mills College P. O., California.

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Lassen County

You cannot afford to buy land in the West without first looking up **Madeline Meadows** lands.

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$40.00 Per Acre

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Write or call for full detailed information.

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SAN FRANCISCO, CAL.

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700 acres of sandy loam, located on Putah Creek, near Winters, Solano county. Will rent as a whole or divide into seven tracts of 100 acres each, for ten years, at a cash rental of $10 per acre per year. Will put down good wells for irrigating purposes, with electric line on each piece. Alfalfa is at its best on this land. Write at once to

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AGENTS
Winters, Yolo Co., Cal.

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$25 Cash and $5 each month buys one of those beautiful rich level 2½-acre Home Farms in the Livermore Valley. No better climate, no better land for a profitable poultry ranch. Only 32 miles from Oakland.

THIS LAND WILL DOUBLE IN PRICE WITHIN THE NEXT 3 YEARS.

BUY NOW AND MAKE THE PROFIT.

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PRICE, $18 PER ACRE
EASY TERMS.

Write for full particulars to

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WINTERS
Yolo County, - Cal.

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Merced County
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We will sell you irrigated land in our **Merced Colony** adjoining the city limits of Merced on a crop payment plan. Make one payment in cash, then the balance of the purchase price from one-third the crop each year. We have confidence in the productivity of our land or we could not make this proposition. If you have equal confidence in yourself, write us today for particulars.

10 and 20 acre tracts. $100 to $125 per acre.

(Send this to us)

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NAME .....
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MR. RANCHER OR SPECULATOR HERE IS YOUR OPPORTUNITY TO SECURE 320 ACRES AT A BARGAIN.

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320 acres rich level land within 3 miles of Livermore and 35 miles of Oakland, adapted to the raising of hay, grain, grapes and alfalfa.

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All that its name implies. An up-to-date farmers organization extending over twenty-six States. California Divison now well established. Send for particulars State Secretary, Farmers Union, Box 68, Imperial, Cal.

OUR YOUNG FOLKS' DEPARTMENT.

Conducted by M. RUSSELL JAMES.

Tales.

Oh, if there were one who loved me—
A kindly and gray-haired sire—
To sit and rehearse old stories
Tonight by my cabin fire,

The winds as they chose might rattle
The boughs of the ancient trees;
In the tale of a stirring battle
My heart would forgot all these.

Or if by the embers dying
We'd talk of the past the while,
I should see bright spirits flying
From the Pyramids and the Nile.

—Alice Cary.

A Comanche Princess.

There are thrilling bits of history in the pioneer days of every State in the Union. Our young folks should become familiar with this history, both as a pleasure and duty. When they understand the cruel sufferings and bitter hardships which have consecrated every portion of this American soil, they can better appreciate the fair country that is their heritage.

Perhaps, of all the States, the great State of Texas has had the most varied, thrilling, and tragic hitsory. Embracing a territory greater than some of the kingdoms of the Old World, and at one time a republic itself, its white settlers had to struggle with Mexican domination as well as with the savages, and among the latter the Comanches, the most cruel, bloodthirsty, and astute of all the Indian tribes.

It was after the Texans had gained their independence from Mexico and had established the Republic of Texas that the following incident transpired. In the spring of 1843 the first president of the Republic, the famous Sam Houston, dispatched Col. Eldridge, Commissioner of Indian Affairs, and Thomas Torry, Indian Agent, to visit the several wild tribes on the frontier of Texas and induce them to make peace and conclude treaties with the republic. Incidentally, this affair of state had to do with the fortunes of two Indian children.

In the battle of Palm Creek on the upper waters of the Colorado, in 1840, two Indian children were taken captive. One was a body of eleven and the other a girl of scarcely eight years. The boy was adopted by Colonel Hockley, an officer high in the command of the army of the republic, and was called Bill Hockley after his patron. The girl was adopted by a family of equally high standing, and given the care and affection of an own daughter. She proved remarkably bright and tractable, and took readily to gentle ways. Soon she forgot her native tongue and learned to speak and read the English language, and to sing the little songs and hymns in Sunday-school with her white companions, and she also came to feel the same dread of the Indians as the white children. When it was decided to make treaties with the Indians, these two children were ordered to be returned to their own people.

Little Maria, as she had been christened, was at once heartbroken and terror-stricken when she learned her fate. She cried bitterly and begged not to be taken away. Her white friends were equally affected, but were compelled to bow to the law of nations. A gentle Indian pony and small side-saddle were provided and the weeping child was taken from her adopted home and friends.

The commission, of which the noted Texas general, H. P. Bee, was also a member, and the one who has related these touching incidents, met the first Indians upon arriving at a camp above where the city of Waco is now located. These were a mixed lot of tribes, Delawares, Wacoes, etc., but the children belonged to the Comanche tribe. These Indians were greatly amused at the changed appearance of one of their race and ridiculed the manner the little girl sat on her pony, and her shy and timid ways, all of which made her shrink the more from them and cling to her kind protectors. On the other hand, the next morning after the arrival at the camp, the boy, Bill Hockley, came out in full Indian costume, having exchanged his citizen clothes for buckskin jacket, pants, etc. He had been so much older than the little girl when captured and was also seemingly of a different nature. He at once resumed his Indian habits, and during the long trip Bill was noted as the keenest eye of the party and could distinguish objects at greater distance and quicker even than any Indian in camp.

The object of the expedition was to see the head chief of the Comanches, and as the search was to be made in the boundless prairies, it was no easy or certain task; yet they could always tell the distance from or proximity to the Comanches by the conduct of the little girl. When news would come that the Indians were near, the childish voice would not be heard caroling around the campfire, but when news arrived that they could not be found, her spirits would revive and her joy would show itself in gambols as merry as those of the innocent fawn that sports around its mother on the green bosom of the prairie.

The journey proceeded with its varied scenes of excitement, interest, and danger for four months, and at last the goal was reached and the party was in the Comanche camp, the village of Pay-ha-huco, the head chief of all the Comanches. Maria's time had come, but the little girl tried to avoid notice and kept as close as possible.

Her appearance, however, was the cause of great sensation, and a few days fixed the fact that she was the daughter of the former head chief of the nation, who died on the clear fork of Brazos from wounds received at the battle of Palm Creek in 1840.

Thus unknown to themselves, the expedition had been associating with a royal princess, Na-sa-co-oi-ash, the long lost and beloved child of the nation.

This great good luck of the little girl brought no assuagement of her grief. Her joy was gone. She spoke not a word of Comanche, and could not return the warm greetings she received.

(Concluded next week.)

Our Young Folks' Letters.

Marysville, Cal., Feb. 28, 1911.

Dear PACIFIC RURAL PRESS:

I was glad to see my letter printed. I was looking for the Young Folks' Department, and when I found it I was very glad to see the three letters. You made a mistake in my name, which is Wisdom, not Wilson. Will you please change it?

Today papa and I have been shelling corn with the corn-sheller. It is lots of fun. I do the putting in the corn and papa does the turning. We always cure our own meat for summer and it is nice. Today papa is breaking a horse for one of our neighbors.

Do I get the prize? Yours truly,

RUTH WISDOM.

(Note.—Next week we will announce which one of our letter writers gets the prize, and will express the setting of eggs to the fortunate one as soon as the winner is ready with a clucker to put them under. We shall also arrange for other prizes to be awarded. Our little friend Ruth might explain in one of her letters the method used in curing the meat that is "nice." Perhaps some of the grown-up farmers of the RURAL PRESS might like to try it.)

Kellogg, Cal., Feb. 26, 1911.

To the PACIFIC RURAL PRESS:

I read in your valuable paper that you want young folks to write an interesting letter. So I am going to do my best. I am eleven years old and am in the seventh grade at school. My teacher thinks that I'm about as smart as any. I am trying my best to get ahead and to be a teacher when I grow up. I have six brothers and two sisters. My oldest brother is fifteen, and my youngest brother one year old. We live in a nice place called Knight's Valley.

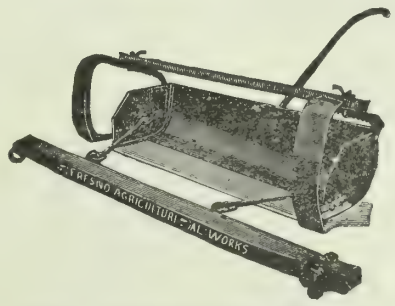
Papa has a dairy and it is named Knight's Valley Creamery. Papa has many red hogs and he thinks they are the best. We have a few goats. We have a little orchard and vineyard, and we raise our own fruit.

The State Training School is coming here so that we can learn something.

Yours sincerely,

CHARLIE TAMAGNI.

The Fresno Scraper



Send for Raisin Machinery Catalogue.

FRESNO AGRICULTURAL WORKS

FRESNO CALIFORNIA.



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MARKET STREET FERRY DEPOT,
THIRD AND TOWNSEND STREETS DEPOT,
BROADWAY AND 13th STREETS, OAKLAND

THE MARKETS.

San Francisco, March 15, 1911.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The feature of the market is a cut in freight rates to the Orient, which has greatly stimulated buying for Japanese interests at Northern ports. The Northern grain has not advanced, but the activity is causing a steadier feeling, and the local market is also steady. Local club has advanced, but offerings are of inferior quality, and remain lower than Northern Club.

California Club	$1.40	@1.42½
Sonora	1.60	@1.65
White Australian	1.55	@1.60
Northern Club	1.47½	@1.52½
Northern Bluestem	1.50	@1.55
Russian Red	1.42½	@1.50

BARLEY.

The spot grain remains fairly firm, prices standing at the former level. The local demand for feed is about as usual, and there is hardly as much shipping business as last month, but considerable grain is still being taken for export.

Brewing and Shipping	1.17½	@1.25
Choice Feed, per ctl	1.12½	@1.15
Common Feed		1.10

OATS.

There has been a fair amount of trading in the last week, but all grades are now rather quiet. Prices are steadily held at the former level.

Red Feed	$1.20	@1.25
Red Seed	1.32½	@1.42½
Gray	Nominal	
White	Nominal	
Black Feed	1.10	@1.20
Black Seed	1.45	@1.50

CORN.

Eastern corn is offered more freely, and local jobbing prices show some reduction. The local market is quiet, with little demand. There is no white Egyptian offering at present, while brown Egyptian remains unchanged.

Eastern Yellow	$1.25	@1.30
Eastern White	1.26	@1.31
Brown	1.50	@1.60

RYE.

The local movement is very light, and offerings are limited. Prices stand as last quoted.

Rye, per ctl	$ 1.60

BEANS.

In a general way, the market remains very quiet, though a little more movement is expected later in the month. Prices on several lines, however, show less firmness than for some time past, both large and small whites being lower, while bayos are easy. The only advance is on limas, which local dealers quote 10c. higher. This description has been the principal feature of the market for some time past. There has been quite a large movement to the Middle West of late, owing to the low freight rate, and shipments were heavy up to the first of the month. The stock left on hand at that time is estimated at about 210,000 bags, a very small quantity compared with the stock at that time last year, and of this only about 160,000 bags will be available for shipment. According to reports from New York, the strong situation on the Coast has caused a much better feeling in the spot market, and a strong demand has been met by an advance of spot prices.

Bayos, per ctl	$4.75	@4.85
Blackeyes	5.40	@5.70
Cranberry Beans	4.00	@4.25
Garvanzos	2.85	@3.00
Horse Beans	2.25	@2.50
Small Whites	3.40	@3.55
Large Whites	3.40	@3.55
Limas	6.10	@6.20
Pea		4.25
Pink	5.50	@5.60
Red Kidneys		6.25

SEEDS.

Canary and hemp are both a little higher. Flax is hardly worth quoting, being practically out of the market. Alfalfa still meets with a fair demand, prices remaining firm as last quoted, and there is some activity in other descriptions.

Alfalfa	18@	20c
Broomcorn Seed, per ton	$20.00@	25.00
Brown Mustard, per lb		5½c
Canary	3½@	4 c
Hemp	3½@	4 c
Millet	2¾@	3¼c
Timothy	8 @	9 c
Yellow Mustard		5¾c
Dried Peas, per ctl	3.75@	4.00

FLOUR.

The local market shows no further change, trade here being comparatively quiet. Northern business is principally for export, as Oriental interests are still buying very heavily on account of the low freight rate.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.30	@4.60

Hay and Feedstuffs.

HAY.

The country trade has been comparatively good for the last few weeks, though prices are still low in most localities. Alfalfa, however, is fairly firm at the present prices. Arrivals in the city market have been greatly reduced on account of the interruption of traffic by the storm, but larger shipments are expected next week. The demand in and around San Francisco remains very quiet, and while the small arrivals have found a market, it has been impossible to obtain any better prices. The improvement in the weather is expected to bring more activity to the city business. The crop outlook in many sections is said to be excellent, though in some places the heavy rain has been injurious. Dealers here predict a very heavy crop, and comparatively low prices through the summer.

Choice Wheat	$11.00@	13.00
Good Wheat Hay	9.00@	11.00
Other Grade Wheat	7.00@	9.00
Wheat and Oats	7.00@	10.50
Tame Oats	7.00@	11.00
Wild Oats	6.50@	8.50
Alfalfa	8.00@	12.50
Stock Hay	5.50@	6.50
Straw, per bale	35@	55c

FEEDSTUFFS.

The improvement in weather conditions has caused a marked reduction in the general demand for feed, and the leading lines are less active than for some time past. Bran is offered quite freely, and there is some weakness as to prices, though so far no decline has occurred. Most other lines are rather easy at former figures.

Alfalfa Meal, per ton	$20.00	
Bran, per ton	$24.50@	25.00
Cocoanut Cake or Meal	26.00	
Cracked Corn	32.00@	33.00
Middlings	32.50@	35.00
Mixed Feeds	28.00@	31.00
Rolled Barley	24.50@	25.00
Rolled Oats	29.00@	31.00
Manhattan Egg Food, per ctl	15c	
Shorts	25.50@	28.00

Garden Truck.

VEGETABLES.

Oregon onions were easy for a time, but now show more firmness, with a slight advance. The local demand is of about average proportions. A few Eastern onions have been marketed. Other vegetables are in good demand, but good weather has caused larger arrivals in some lines, and a number of quotations have been reduced. A few string beans and green peppers have arrived, and brought extreme prices, but they are not much of a feature. Some string beans, however, are being shipped from southern California, and arrivals will probably be larger from now on. Green peas are lower, with supplies rapidly increasing. Celery is easier, lettuce standing as before. Mushrooms have been rather cheap and are still offered freely. Rhubarb is arriving in fairly large quantities, and asparagus, which was held back by the storm, is also more plentiful, both lines being easy in expectation of still heavier receipts. A few Florida cucumbers have been sold at a premium, while southern eggplant is lower. Cabbage is cheap, with heavy offerings from nearby points.

Onions: Oregon, sack	$ 2.40@	2.50
Garlic, per lb	4@	5c
Green Peas, per lb	7@	12½
Turnips, per sack	60@	75c
Tomatoes, per crate	1.25@	1.50
Eggplant, per lb	10@	15c
Cucumbers, per doz	1.25@	2.00
Cabbage	40@	50c
Carrots, per sack	65@	75c
Celery, large, per crate	1.50@	2.00
Mushrooms, per box	25@	75c
Rhubarb, per lb	5@	7c
Lettuce, per crate	1.75@	2.25
Cauliflower, per doz	50@	60c
Asparagus, per lb	6@	11c

POTATOES.

Sweet potatoes are no longer quoted, being practically out of the market, while arrivals of new potatoes have not been sufficient to establish a market. Old stock is receiving a little more attention this week, but supplies of Oregon and Salinas stock are fairly large, and prices are easier, while good river stock is firm at a slight advance.

Salinas Burbanks, per ctl	$ 2.10@	2.25
River Whites, per ctl	1.70@	1.95
Oregon Burbanks	1.85@	2.05
Early Rose	1.65@	1.85

? ? ? ? ? ?

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Reference—Any Bank or Mercantile House

Dairy Produce.

POULTRY.

Hardly any local stock has been received, and the little that comes in is readily taken at good prices. Arrivals of Eastern stock have been larger than last week, but as the market was well cleaned up, everything finds a ready market. Hens are higher, and old roosters also bring a little better prices, while turkeys are altogether neglected and nominal.

Large Broilers	$ 4.50@	5.50
Small Broilers	3.50@	4.50
Fryers	6.00@	7.00
Hens, extra	8.50@	12.00
Hens, large	7.00@	8.00
Small Hens	6.00@	6.50
Old Roosters	5.00@	6.00
Young Roosters	7.00@	8.00
Young Roosters, full grown	8.50@	10.50
Squabs	4.00@	4.50
Geese, per pair	3.00@	3.50
Ducks	8.00@	10.00
Turkeys, live, per lb	Nominal	

BUTTER.

Arrivals this week have been considerably larger, and prices are lower on both firsts and extras. The proportion of extras in the receipts has been comparatively small, however, and with a good local demand the market is described as firm at quotations. The following prices are quoted by the San Francisco Dairy Exchange:

California (extras) per lb	27½c
Firsts	25½c
Seconds	22½c

EGGS.

Eggs are still fairly plentiful, but there is a large demand from the retail trade, and several large interests are putting eggs into storage, relieving the market of the surplus. There is, accordingly, a firm tone, and extras have advanced sharply, with a sympathetic advance in firsts.

California (extras) per doz	19½c
Firsts	18 c
Seconds	16½c

CHEESE.

Local flats are finding a little better demand, and both fancy and firsts are quoted a little higher. Y. A.'s are firm, but unchanged.

Fancy California Flats, per lb	13 c
Firsts	11½c
New Young Americas, fancy	15½c

Deciduous Fruits.

FRESH FRUITS.

There is not much feature to the market at present, as strawberries arrive too seldom to cut any figure in the market, and nothing else is offered except storage apples. The latter remain very firm at the old quotations, with high prices for Spitzenbergs, and there is still considerable shipping business in addition to a fair local demand. The local trade is somewhat more active than last week.

Apples, per box—		
Newtown	$ 1.40@	1.75
Other varieties	.90@	1.25
Fancy Red, 4-tier	1.25@	1.75
Bellefleur	1.00@	1.25
Spitzenbergs		2.50

DRIED FRUITS.

The export demand has cleaned up supplies of evaporated apples pretty closely, and the price has again advanced. The only other change is a sharp advance in prunes, which are almost out of the market. All the remaining stock is closely held, and amounts to only a few cars. Peaches are extremely firm, and find a much better demand all over the country, though the stock is probably larger than that of any other fruit. Apricots also find some demand, but growers are sold out, and the packers have very little to offer. Raisins are also very firm, and prices are a little higher in some quarters. According to a report from Fresno, packers are contracting for future raisins at 3 to 3½c. The same report says that the 1911 fig crop has been pretty well taken up at 3½c., and that offers are being made for peaches at 5½c. Offers of 8¼c. have been made for new apricots, and an offer of 5c. is expected for prunes, though no business has been done in this line so far. There is considerable talk of 3½c. being paid for spot raisins, but this cannot be confirmed. The New York Journal of Commerce says:

"Private advices state that not over 15 cars of the 1910 crop of California prunes remain in the hands of the principal holder, who is one of the largest of the Coast packers. What is held outside is said to be a negligible quantity. It is further reported that an 8c. f. o. b. four-size bag basis is now being demanded by the chief owners of what remains of the spot stock, and that on this basis only 30s and 40s, with a small percentage of 50s, are offered. The intermediate and small sizes seem to be virtually exhausted. On the spot here a good jobbing business is being done in California prunes, and as even the larger jobbers are in the market as buyers it is argued that spot supplies must be at a low ebb everywhere. Peaches are in increasing demand for shipment from the Coast, and with light offerings from that quarter the market has a firmer tone. Apricots also are in a firm position, which is strengthened by the relatively high market for evaporated apples. The market, however, is rather quiet, but as the season of largest consumption is near at hand, a strong feeling prevails and higher prices are looked for.

"A better demand is reported for pears. Stocks are small, both here and on the Coast, but the quality of the goods offered shows much variation and the range of prices is accordingly wide.

"Raisins are steady here, and Coast advices are strong, though the demand from the local trade for both immediate and deferred shipments seems to be light. East Side jobbers report a good demand for Thompson's Seedless for consumption, and as stocks here are getting light while little is offered for shipment from the Coast, the market for this grade is firm, with an upward tendency."

Evaporated Apples, per lb	10	@10½c
Figs, black	4½@	5 c
Figs, white	5 @	7½c
Apricots	12	@13 c
Moorpark, fancy	13½@	14 c
Peaches	6½@	7¼c
Prunes, 4-size basis	7½@	8 c
Pears	8½@	12 c
Raisins—		
Loose Muscatels, in sweatbox	2½@	3 c
Thompson Seedless		4 c
Seedless Sultanas	3½@	3¾c

Citrus Fruits.

At the Eastern auctions oranges brought better prices last week, and the sales on Monday, the 13th, indicated a still firmer market. At New York, on March 13, 30 cars of oranges were sold at prices averaging from $3.15 per box for extra fancy down to $2.05. Lemons brought from $2.80 to $3.45. Tangerines brought from $1.60 to $2.05 for half boxes.

On the same day, at the Boston auction,

19 cars were sold, prices being a shade better than at New York. The highest average was $3.25 for navels. Lemons sold for $3.30 down to $2.75.

The auctions at Pittsburg and Philadelphia, the same day, showed the markets to be about the same on an average as New York.

At Los Angeles, Monday, three cars of navels were sold at fair prices. Fancy and extra fancy brought $1.70 and $1.75, respectively. Orchard-run sold for $1.57½.

A dispatch from Florida states that the season is nearly over there. Less than 600 cars are left to be sent out. As a whole, the season for citrus growers in that State has been satisfactory.

There is a much stronger tone to the San Francisco market, the demand showing a quick response to the improvement in the weather. Arrivals this week have been moderate, and as dealers look for a continued active demand, they are holding fancy navels for a little higher price. Grapefruit is a little easier, with ample supplies, while limes and lemons remain at tne previous quotations.

Navel oranges—	
Extra choice	$ 2.00@ 2.50
Choice	1.75@ 2.00
Valencias, choice to fancy	Nominal
Choice	Nominal
Standard	Nominal
Tangerines	1.00@ 1.75
Choice Lemons	2.00@ 2.50
Fancy Lemons	2.75@ 3.00
Standard	1.25@ 1.50
Limes	6.50@ 7.00
Grapefruit	2.00@ 2.50

Nuts, Honey, Hops, Etc.

NUTS.

As far as growers are concerned, quotations are merely nominal, as there is nothing left in first hands. Almonds are extremely firm, with some dealers quoting a slight advance. Reports from the valley district indicate a heavy loss on account of the bad weather. Walnuts are without feature, being extremely scarce.

Almonds—	
Nonpareils	15½@16 c
I X L	14½@15 c
Ne Plus Ultra	13½@14 c
Drakes	11¼@11¾c
Languedoc	11 @11½c
Hardshells	8 @ 8½c
Walnuts—Softshell, No. 1	15 c
Standard	14½c
Softshell, No. 2	11 c
Budded	17½c

HONEY.

All grades are rather quiet at present, the more desirable grades being closely cleaned up, while other descriptions find little demand.

Comb—White Sage	Nominal.
Extracted—Water White	Nominal.
Light Amber	7 @ 8 c
Amber	5 @ 6 c
Sacramento River Comb	12 @12½c

BEESWAX.

There is some demand at present, but supplies seem to be ample, and prices remain as last quoted.

Light	27½@30 c
Dark	23 @26 c

HOPS.

It is reported that there are only about 3000 bales of old hops left on the Coast. While there were some sales at a lower figure, the price has again advanced, and all unsold stock is firmly held. The outlook is good for the new crop, but it has been impossible to get any further advance in prices.

Hops, 1910 crop	18 @22 c
1911 Crop	15 @16½c

Live Stock.

DRESSED MEAT.

Beef Steers, per lb	9½@10 c
Cows	8½@ 9 c
Heifers	8½@ 9 c
Mutton: Wethers	10 @10½c
Ewes	9 @ 9½c
Lambs	13 c
Hogs, dressed	12½@13½c

LIVE STOCK.

Most descriptions of dressed meat are quoted higher. Live stock shows very little change. Shipments from some quarters are a little larger since the change in the weather, but as green feed is plentiful and much of the stock poor at present, stockmen are inclined to hold off for the time being. It will probably be another month before any large shipping movement starts from California points.

Gross weight:

Steers: No. 1	5¾@ 6¼c
No. 2	5¾@ 6 c
Cows and Heifers: No. 1	5 @ 5¼c
No. 2	4¾@ 5 c
Bulls and Stags	2½@ 4 c
Calves: Light	6½@ 7 c
Medium	6 @ 6½c
Heavy	5½@ 6 c
Hogs: Grain-fed, heavy	8 c
150 to 250 lbs	8¼@ 8½c
100 to 150 lbs	8¼@ 8½c
Common Hogs, per lb	5 @ 6½c
Small prime wethers	5¼@ 5½c
Large prime wethers	5¼@ 5½c
Ewes	4 @ 4½c
Lambs	6½@ 7 c

WOOL.

Spring shearing is commencing in some districts, but prices have not yet been announced by buyers. The latter are taking no interest in old offerings at the moment, but there will probably be considerable business in both old and new clips during the next few weeks. The general market is said to be in very poor condition.

Fall Clip—	
Mountain Free	8 @10 c
Valley Fall and Lamb	6 @ 9 c
Northern	6 @ 9 c
Southern Spring	10 @11 c
Middle Counties	12 @13 c
Northern	15 @16 c

HIDES.

Prices show no further advance, but are firmly held, and the demand is now fairly active for all descriptions of hides, notwithstanding the fact that most offerings still consist of poor winter stock. Pelts are dull and weak, principally owing to tne poor market for pulled wool.

Heavy Steers, over 56 lbs.	10 c
Medium	9 c
Light Steers, under 48 lbs.	8½c
Heavy Cows, over 50 lbs.	8½c
Light Cows, 30 to 50 lbs.	8½c
Kip	10 @10½c
Veal	14 c
Calf	15 c
Dry—	
Dry Hides	17 @18 c
Dry Bulls	15 @16 c
Dry Kip, 10 to 15	17 c
Dry Veal, 5 to 10	16½c
Dry Calf, 7 down	22 c
Fall Lambs	24 @40 c
Sheep Skins—	
Long Wools	$1.00@ 1.25
Medium Wool, 6 to 9 mos.	60@ 90c
Short Wool, 3 to 6 mos	40@ 60c
Spring Lambs	25@ 50c

HORSES.

Desirable Drafters, 1700 lbs. up	$275@300
Light Drafters 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	200@250
Wagon Horses, 1250 to 1350 lbs.	175@200
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	135@150
Young	200
Old Mares	100@150

MULES.

1200 lbs	$250@300
1100 lbs	200@225
1000 lbs	150@175
900 lbs	125@150

PUBLISHER'S DEPARTMENT.

AN APPRECIATIVE READER.

"I am hungry for it; I am never tired of it; I want it, and more of it. I have dropped all the others but the clean PACIFIC RURAL PRESS." These were the words used by one of the prominent farmers of Yolo county when renewing his subscription this week—and, by the way, he ought to be something of a judge of its merits, as he has been a constant reader since the inception of the paper, over forty years ago.

Another subscriber, while in our office this week to have his last year's file of the RURAL PRESS bound, said: "Please rush the books to me at my farm in Kings county as soon as completed. I use the paper every day. In my work of laying out the different parts of my 1100-acre ranch, which I am developing, the PRESS is invaluable."

We wish every reader of this issue would glance over our advertising columns. At this season of the year the announcements of the nurserymen are often of great interest to planters. Then, too, the new advertisers in our stock department offer their surplus stock. From the number of these new announcements may be judged the great activity prevailing all over the State in stock lines.

W. A. Forbes, of Sacramento, who recently brought from the East the fine lot of Holsteins for the Diepenbrock dairy at Sacramento, offers his services to those who want good stock. Read his two advertisements in the stock department.

Once more we want to impress the fact upon our readers that the most important service you can render us is to mention the PACIFIC RURAL PRESS when writing to advertisers. In order that our advertising columns shall not contain fake announcements, we have sometimes to shut out good paying business. If readers will patronize our advertisers, and *let them know it*, we will be able to give a better and larger paper soon.

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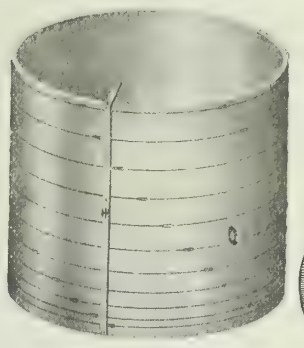


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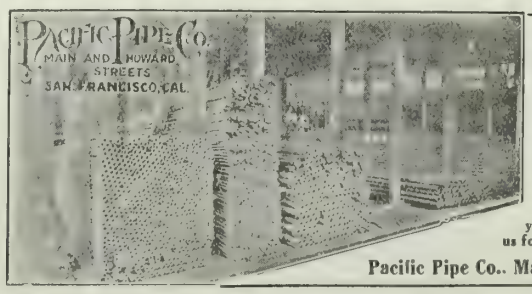
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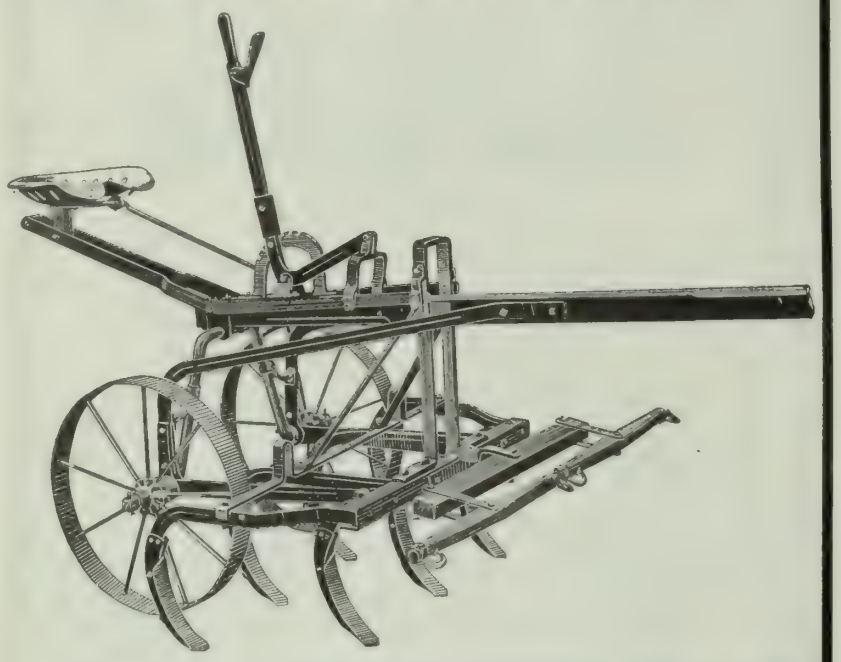
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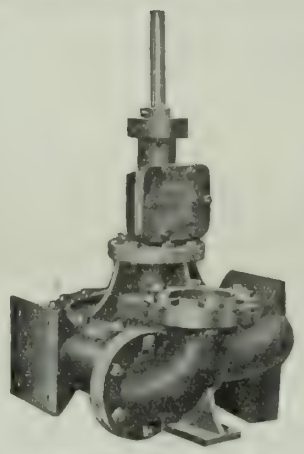
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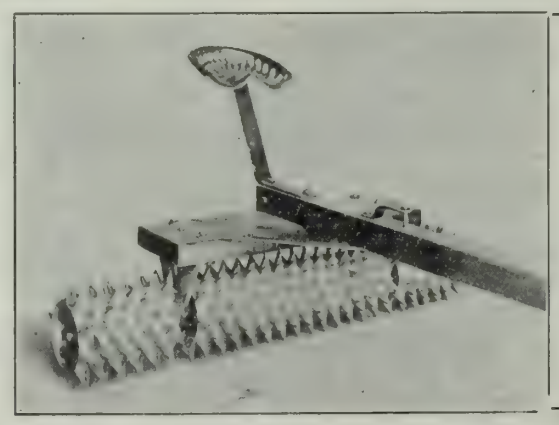
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THE PACIFIC RURAL PRESS

Vol. LXXXI. No. 12. SAN FRANCISCO, SATURDAY, MARCH 25, 1911. Forty-first Year.

Eat More Fruit.

[The outlook for California's largest producing industry requires not so much that the people of the world should eat fruit, but that they should eat more fruit. It is very fortunate that our effort to grow fruit in unprecedented quantity should coincide with a world's conviction that fruit should be a staple in the dietary rather than a luxury. And practice based upon that conviction becomes possible because various economic phenomena are co-operating to enable the world's population to meet a higher cost of living. In this buoyant condition, which lifts all supplies to a higher level of selling, it is a special advantage of fruits and fruit products to be increasing in volume and falling in price while other staples are shrinking in volume and advancing in price—with great relative advantage to the former. In a way, then, the higher cost of living catches some products going and other products coming, and it catches nothing coming so fully and fairly as it does fruit products. If, half a century ago, some far-seeing economic philosopher had laid out a scheme, bending all movements of mankind and of materials to the installation of fruits in prominent place in the dietary of the twentieth century, to the supply of the substances and to the purchasing ability to possess it, he could not have proceeded so directly and successfully toward that end as events have worked it out. He could not have done it because events have moved under the direction of creative science which has made new truth from the nothing of half a century ago. While nearly all lines of human effort and enterprise have moved swiftly and steadily in this direction, as we have suggested, it would be a burden upon the patience of the reader to undertake analysis and demonstration of the thesis. A single and doubtless a very potent influence is the conception of the desirability of fruit as food which mankind now cherishes more firmly and rationally than ever before, and we confine ourselves to that line at the present printing. We are glad to have a declaration of the desirability of fruit as food from a distinguished Englishman because such a one can not be imagined to have a producing interest to serve, as a Californian might. The English fruit gardens are a credit to horticulture, but the product is hardly enough to jam along the national medication, if it could all be had for that purpose. England is one of the greatest fruit buyers of the world and bids to be far greater as the declarations of Dr. Josiah Oldfield, Senior Medical officer of Lady Margaret Fruitarian Hospital of Bromley, Kent, sink into the national understanding. They also have a mission around the world which we desire to promote by their reproduction.—Editor.]

When we come to the food value of fruits we are face to face with the study of the world's history and the world's evolution, and the effective diet in an infinite number of countries and climates, and on an infinite number of races under the most varied conditions.

It is interesting to note that the word (fruit) is derived from the Latin fructus, which comes from the root to enjoy, and therefore fruit is by its very name a thing of enjoyment; and this, I think, appeals to us all, for from childhood up we have been accustomed to associate oranges and grapes and fruity plum pudding with seasons of joy and merriment.

Now the popular idea is that fruit has only to do with pleasure, and has nothing to do with nutriment, and it is this popular fallacy which I want to help explode.



California Will Contribute This Year 50,000 Carloads of These to the Health, Happiness and Efficiency of Mankind.

Many people have an idea that dessert is only an after-dinner dalliance, whereas, in effect, the best and hardest work can be done on a fruit meal.

Service of Fruit.—There are several ways in which fruit is important as food. First, by itself it is itself a food, and, if rightly selected, a complete and full nutriment—for every condition of the body in every climate and under every condition of work, and of constitution and of health and of digestion, can be obtained from a fruit dietary. Second, fruit is of essential value in assisting other foods to be digested. Third, fruit is of the utmost value in helping the body to eliminate waste matters, which produce debility and old age. Fourth, fruit is almost the only food possible in some forms of disease, and is largely curative as well as nutritive.

In the first place, fruit, when rightly selected, forms a complete nourishment for the body in a most assimilable form. The elements necessary for bodily sustenance have been classified by many authorities in various ways, but the one which is most generally accepted divides food into the following classes of matter: (1) The aqueous; (2) the saccharine; (3) the oleaginous; (4) the albuminous; (5) the saline.

Many beginners in chemistry take gooseberries, for example, and find they contain only 0.37 per cent of albuminous matter, and therefore they argue that if a man were a fruitarian he would have to eat 3 pounds of gooseberries per day to get the necessary amount of nitrogen for his daily sustenance. It would be just as wise to argue that if a man eats meat he would have to eat 20 pounds of beef per day to get the necessary amount of carbohydrates.

Aqueous Substances.—Water is an essential of life, and water should be of the purest character. There is no water more pure than that which has been distilled from dew, and trebly distilled from the clouds of heaven and stored within the dainty myriad tanks of an apple or a pear. There is here no fear of hard or chalky water or typhoid germs. Fresh fruit juice gives pure water at its best. Watermelon contains about 95 per cent water, blackberries and currants 82 to 87 per cent., plums, peaches, apples and pears 82 to 85 per cent, grapes and cherries (which people wrongly think are the most watery) from 78 to 80 per cent.

Saccharine Matters.—In fruits the saccharine matter is in the form of grape sugar or glucose, into which starch is converted by the saliva and pancreatic and intestinal juices. The most important point about this class of nutrient elements is that they do not pass into the excretion or put any strain on the excretory organs, but are oxidized and passed into carbonic acid and water as their ultimate products, and are therefore great heat factors, and not exhausting elements of excretion.

Dry fruits contain so much less water that, weight for weight, their sugar value is very high, e. g., namely dates and dried figs have 48 per cent, raisins 56 per cent.

Oleaginous Matters.—When I come to oils and fats I believe that I am dealing with one of the greatest of all secrets of health, vitality, and long life.

The fruit world is full of fat. The olive yards always form one of the foremost pictures in the sweet memory of the land of Canaan, and now the markets are full of olive oil, cocoanut butter, almond oil, walnut butter, almond butter, etc. The chestnut contains 1.3 per cent of fat, the wal- 31.6, the filbert 28.5, the almond 54, the pistachio 51, the cocoanut 35.9, the peanut 50 per cent, and the delightful little pine kernel is like a little cone of nutty fat.

Albuminous Matters.—Now it is here that so many people imagine that fruits are deficient in food value. Liebig laid so much stress on proteids

(*Continued on Page 234.*)

Pacific Rural Press

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PACIFIC RURAL PRESS CO. - - - PUBLISHERS

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B. J. WICKSON - - - - - - - Editor
FRANK HONEYWELL - - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Mar. 21, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.00	25.37	36.45	50	42
Red Bluff	.00	22.41	20.15	76	46
Sacramento	.00	21.06	16.04	74	46
San Francisco	.00	24.29	18.70	70	46
San Jose	.00	22.74	10.80	68	46
Fresno	.12	10.24	7.76	74	48
Independence	.00	5.48	7.59	68	36
San Luis Obispo	.12	32.50	16.78	76	50
Los Angeles	.01	16.08	13.13	82	50
San Diego	.10	11.22	8.39	76	54

The Week.

If this issue does not make the reader fruit-hungry, we can think of nothing likely to do it unless it be the fragrance of ripening fruit as one catches it in the lea of an orchard or through the charming decorations of a fruit fair. Such allurements as these are, of course, beyond the power of fruit, and we enter no competition with them as palate-persuaders. We try to offer the next best things, which are the materials of our trade, to wit: words—signs of ideas, as the grammarians assure us. The words which we choose in this issue, then, are signs of the idea that fruit is blessed to the best there is in the physical phase of humanity, and to higher phases, also, which rest, in certain ways, upon the physical. We say little, however, of the delights of eating fruit because that is involved in gastronomy, and, as men go, gastronomy is near to gluttony—although some one did say that gastronomy is as much one of the fine arts as sculpture. If we could be sure that readers would take it aright and follow us through an argument that fruit-eating is as much a fine art as sculpture, because it enabled a man to reduce his envelope to the lines of a Greek statue and to escape Falstaffian curves which grosser diets induce, we might undertake exhortation from that esthetic point of view. But we abandon discussion of the delights of eating fruit because it seems unnecessary. Every man seems to be born with a gustatory delight in fruit, and if there were no other argument for the Edenic origin of the race, this testimony in the very center of every individual of the race would support the fruit-growing industry of Adam as fundamental in the history of man. In the great moral advancement of mankind we have risen somewhat above original appetites and desires, and attach less importance to what a man likes and more to what we conceive to be good for a man. Therefore we present the argument for frugivorousness which the distinguished English physician has framed, rather than picture the face of a man plastered from chin to eyebrows with the pulp of a luscious orange or peach while from the corners of his mouth pour streams of luscious juices, as flowed the fragrant oil adown the beard of Aaron. In our higher esthetic and moral development, we say, this picture is so near to gluttony that it is not a moving spectacle. Therefore, we must approach the promotion of fruit-eating through an appeal to the reason, as this distinguished psychologist does so effectively, and follow up this appeal with the demonstration of the trade value of such an appeal as shown by Mr. Woodford in his account of the advertising experience of the citrus growers' organization which appears upon a succeeding page of this issue. Great is the California undertaking to lift mankind to a higher plane of health, happiness, and efficiency through the eating of fruit, which seems to be the best way to bring the human body, weary and worn by many generations among thorns, thistles, and perspiration, back to Eden and to the image of the Creator, and away from the effigy of a corn-fed Buddha to which too many have attained.

Thinking of the amount of hard work which the human race has gone through without the support of a fruit diet, reminds us that a number of things about labor are current this week which have relation to the agricultural situation. In the first place, the resolute effort of city women, of a reforming turn of mind, to put other women into field work on farms as a relief from sedentariness and spinsterhood, is naturally exciting country women. We had sense ourselves to see that it was killing a thousand years of progress in the advancement of women to do this, but this is a purely academic reflection. We were not bright enough to see that an effort to popularize field work for women would give the old man on every farm reinforcements for his side of the fireside argument that he did all the work and therefore should have all his own way. But those who have been so long carrying the other side of the argument see the bearings of it as sharply as they perceive a fly in the milk. There is a Nebraska judge who sees it also and knows how he can use it when women come into their right to vote. Judge Otto of Brule, Nebraska, recently had a chance to define the rights of husband and wife as to doing or not doing certain kinds of farm work, and he plumped down hard on men who wanted to send their wives into the field, the corral, and the cowshed. The result is that all through that section of Nebraska the women are organizing clubs and are determined that henceforth farm work shall be done by the men, else it will go undone. The women sign but one pledge, and that is they will not milk cows, feed cattle, work in the hay or corn fields. They lay the law down to their husbands, quoting from the decision of Judge Otto. Oh, a learned judge; most upright judge! If you stop going this side of the Supreme Court we shall miss our guess.

Of course, there is a temptation to make farm laborers of women where wages are so high as in this country, and, perhaps, a temptation to take the job among women who are field-working in their own countries for a pittance. It is interesting to note that higher wages were paid to American farm laborers during 1910 than at any time in the last forty-five years, according to statistics just made public by the Department of Agriculture. The average wage for the country was $27.50 per month during 1910, while twenty years ago it was only $18.93. With board, the average wage was $19.21. The highest was in Nevada, where the rate was $54, while in Montana and Washington it was $50. South Carolina paid the lowest rate, $16.50. In the New England and North Atlantic States the average was $33.19, with Massachusetts paying the highest, $37.20. With board the average was $21.60.

We give these figures not because of any particular bearing upon the game we now happen to be playing with the pen, but because of their importance to more serious discussions which our readers may desire to undertake. It is clear enough that values of farm products must not decline with a constantly increasing wage-rate. It is also clear enough that farmers must not be forced to lower prices because of admission, by reciprocity or otherwise, of food supplies produced with a lower wage-rate. Those are serious matters, and that they are appreciated is shown by the general agricultural uprising against Canadian reciprocity. But we are now thinking rather of the work of the agitators who are urging women away from indoor occupations which they understand into outdoor undertakings which they know nothing of, and in which they stand no chance whatever of success, as economic conditions now are. We are more impressed by such undertakings because women who enlist in them take the risk of losing their savings as well as their time. Take, for instance, the silk industry, for which California certainly has unique climatic adaptations. Undoubtedly our public-spirited women who are urging this undertaking do not know the competition which our women would enter. We learn from a recent consular report that in the production of raw silk, which occupies over 50 per cent of Japan's total export trade, female labor largely enters—the percentage of men being 34 and of women 66, or nearly twice as many women as men. The wages paid to males over 14 years of age ranged from 24 cents, the highest rate, to 15 cents. Males under 14 years of age received from 10 cents to 6 cents per day. Females over 14 years of age received from 17 cents, the highest, down to 10 cents per day. Females under 14 years of age received from 9 cents per day down to 5 cents per day. From this report it will be seen that the wages paid to factory operatives for 12 hours per day are very small indeed, and yet this is the condition with which our producers have to compete, and, besides, have the business to learn and all the mistakes to pay for. Such things do not seem to us very good, and yet printed and spoken exhortations to California women to go into silk culture continue. Meantime, food supplies are in demand in California, and those who can bring capital, knowledge, and industry enough to the production of common things are likely to secure fair reward. But no one of these three can be safely dispensed with. Even women cannot get along without them all.

We have not taken much interest in the proposed new eight-hour law for women in this State, since all hands agreed to allow women engaged in fruit handling to work as they liked, or as they could agree with their employers. With this concession, rural opposition to the bill was removed, and the bill passed both houses, and the Governor is struggling with it. Perhaps it is out of our line and we ought not to talk about it at all. But in the hearings before the Governor some very important claims are being made by manufacturers and storekeepers. One is that with an inflexible law for an eight-hour day the manufacturers of San Francisco would not be able to compete with those of the East, where wages were smaller, hours longer, and materials cheaper. San Francisco is handicapped already in manufacturing and commercial lines by exacting labor regulations, and is therefore not enabled to gain prestige in competition with other Coast cities in which they do not prevail. Perhaps in consistence this farther regulation should prevail and yet it seems to us that nearly all the arrangements are tyrannical. Regulations which guard health and comfort are humane, but those which arbitrarily prescribe what the laborer should do

with his own time are limitations of individual liberty and likely to be subversive of industry, thrift, and the independence which should be the inalienable right of every one. We seem to be between two ill-advised agitations: one that women should be pushed into work ill suited to them and repugnant to modern ideas of women's work; the other that women should be prevented from working as much as they like in lines which they choose for themselves. It looks as though a plague on both houses of reformers would promote the general welfare.

But we have almost forgotten our distinguished fruit-dealing friend Di Giorgio—for whom, then, a last word. He is proving just what we expected, a man with an enterprising desire to promote California products because he believes there is a good chance in them. He disclaims being a hungry monopolist or an all-around conspirator. According to the news dispatches he says this of himself: "The United Fruit Company has no connection whatever with this transaction. As is well known, I am an extensive dealer in fruits from all over the world, and handle large quantities of California fruit. This branch of my business is rapidly increasing, and my interest lies in advancing the interests of the California fruit-growers to the end that my facilities to obtain and theirs to market may be increased. No corporation whatever is interested in this transaction, and the articles are prompted by those who have a personal interest in interfering with my business." This seems to be a rational statement. So far as we can see we have as much reason to expect fair dealing from him as from any other. If he does not deal fair, the fruit-growers of California have the same remedy against him as they have against any other—the same remedy they have always had against everybody if they will put themselves into shape to use it. What that remedy is, will be cleary seen by those who read Mr. Woodford's article on a following page. We confess to much State pride in the accomplishment which he describes. Is it not fine to know that California fruit-growers have done something a world of fruit-growers have never done before? Is it not inspiring to read of the patience, the persistence, the commercial wisdom, the pushing enterprise which are involved in the history and achievements of this unique organization? Does it not demonstrate that commercial freedom is akin to all other and that who would be free himself must strike the blow? The work of the California Fruit Growers' Exchange teaches a world-lesson to producers.

Queries and Replies.

Summer Fallow and Summer Cropping.

To the Editor: I own some hill land which has been run down by continuous hay cropping. I am told that a portion must be summer-fallowed each year, but I wish to grow some summer crop on this fallow ground that will both enrich the soil and at the same time furnish good milk-producing feed for cows—thoroughly cultivating it between the rows. What crop would be best? I am told the common Kaffir or Egyptian corn are both soil enriching and milk producing, but some deny its milk-producing qualities. One farmer tells me red Egyptian corn is better for this than the white.—Reader, San Benito.

If you undertake to grow a summer crop on the summer-fallowed upland, you will destroy the chief advantage of summer fallowing, which is the storing of moisture for the following year's crop. A cultivated crop would waste less moisture than a broadcast crop, surely, but on uplands without irrigation it would grow out all the moisture available and not act in the line of a summer fallow.

Kaffir corn is not soil enriching. It has no such character. It probably depletes the soil just as much as an ordinary corn or hay crop. It is a good food to continue a milking period into the dry season, but you must be careful not to allow your cattle to get too much green sorghum, for it sometimes produces fatal results. Formerly the red Egyptian corn was supposed to be better than the white, but now it is difficult to find anything but the white, showing that people prefer to grow it. The red variety, however, is liable to less injury from birds, which is quite a consideration when you are growing it for seed. We do you know anything which you can grow during the summer without irrigation which would contribute to the fertility of your land. If you had water and could grow clover or some legume during the summer season, the desired effect on the soil would be secured.

Killing a Tree with Chemicals.

To the Editor: I wish to ask if a tree can be killed through the introduction of poison into its sap. If so, what drugs or poisons can be used for the purpose, and how deeply should a hole be bored into the tree?—W. D., San Jose.

Trees have been killed by putting in bluestone (sulphate of copper). Arsenic would probably be more active. But to work best the material should be dissolved and carried to the hole as a liquid under gravity pressure. If you wish to experiment try this: Take an ounce of white arsenic, dissolve as much as you can of it in a quart of hot water, and when somewhat cooled pour into a quart bottle. Fit one end of a short piece of hose to the neck of the bottle and fit the other end into a hole of the right size deeply bored into the trunk near the base. Invert the bottle and tie it to the trunk of the tree high enough to straighten the hose. In this way the chemical will be forced into the circulation of the tree. Dry stuff put into a hole in a tree seldom effects anything, because the hole dries and the stuff remains undissolved indefinitely. You can experiment along the line suggested if you like, but there are, of course, easier ways to kill a tree. It has been successfully done with an axe.

Forcing Young Trees.

To the Editor: I have a navel orange grove which is very uneven because of frost. Some trees are three years old and some were set last spring. Water conditions are all right and the trees are healthy, but I want a fertilizer that will hustle the small ones along. Will stable manure and fine-ground bone do the work. Please let me know what you think about it.—Planter, San Bernardino county.

Unquestionably stable manure and fine ground bone will accomplish the stimulation of young trees which you desire, providing moisture conditions are right. One has to be careful, however, in overstimulating any trees on land which is already fairly rich. It is not desirable to get too rank growth of a young tree. Therefore we should use these fertilizing materials in small quantities and increase on the basis of results which are to be seen in the trees themselves.

Weary Wood of the Rose.

To the Editor: I am sending you in this mail, under separate cover, clippings from two rose bushes which are not in a healthy condition. I have several which are evidently affected in the same way, and as I am a comparatively newcomer I do not recognize the various scales and blights to which plant growth is subject in California.—C. E. A., Reedley.

You have no pest. The bark is sunburned in places. There is some sign of roving insect visitation but no established enemy. The bushes should be regularly pruned for the growth of new wood and the elimination of old growth with bark trouble, which may weaken the start of newer wood above. For this purpose, cutting back to sound buds or breaks of new wood should be undertaken once or twice a year.

Moss on Fruit Trees.

To the Editor: Is the "Spanish moss" which grows on the trees in southern Texas a disadvantage to the growth of pecan trees? Is this "Spanish moss" of the same nature as the lichens we used to have on our fruit trees in California, and does it suck some of the moisture from the tree? Is there a spray that will kill it without injuring the pecans? Please answer through RURAL PRESS or otherwise.—C. J. Moore, Texas.

The lichens which we find on our fruit trees are not the same as the Spanish moss of the Gulf region, but that is simply a matter for lichenologists. The effect is the same, presumably. The growth of these parasites makes the bark brittle and has been demonstrated, to a certain extent, to be at enmity with the thrift of the tree, and our commercial orchardists make due effort to secure clean bark. Probably the spray which is generally used is distillate, 10 gallons; lye or caustic soda, 5 pounds; water, 200 gallons, because it has value for other purposes as well as killing the lichens. Simply for the cleaning of the bark, it is common to spray with ordinary concentrated lye—one pound to ten gallons of water while the tree is dormant.

Weir Measurement.

To the Editor: Will you please figure for me or give me the table for figuring the number of miner's inches flowing over a weir. I made a weir with an 18-inch wide outlet and the water measured 4¼ inches deep on peg 3 feet back, set dead level with bottom of outlet.—Reader, Oxnard.

If everything is made and set right, the stream which you describe is running 478 gallons per minute. The specifications for the building of a weir, and the table for ascertaining the amount of water flowing under different depths and widths of stream are given in detail in the PACIFIC RURAL PRESS of June 5, 1909; also in the fifth edition of "California Fruits and How to Grow Them."

Feeding Value of Spelt.

To the Editor: Will you be kind enough to send me an analysis of the food value of spelt? I do not find it in any list I have. It is a Russian variety of wheat, and yet, I am informed, it has about the same value as a stock food that barley has.—Farmer, Ceres.

We have no analysis of spelt at hand. It is presumably like that of barley, as you suggest, because the spelt has an adhering chaff as barley has. This fact makes it better for feeding than wheat, not in nutritive content, but because the chaff tends to distribute the starchy material, making it more easily digestible; just as barley and oats are better than ordinary wheat for stock feeding.

Alfalfa and Overflow.

To the Editor: I am desirous to know how long alfalfa can stand water without being drowned out. I have a piece of alfalfa on which the water will stand for considerable time in the winter time. Any information will be thankfully received.—Farmer, Paso Robles.

Alfalfa while dormant will endure submergence for several weeks. We do not know exactly how long, but evidently for a considerable period, providing temperatures are too low to invite growth. On the other hand, growing alfalfa is quickly and seriously injured by overflow.

Horticulture.

TIMELY ADVICE ON THE PEACH ROOT BORER.

[We are glad to find in the San Jose Mercury a clear and comprehensive discussion of the root borer of the peach tree, by Mr. Dudley Moulton, Deputy Horticultural Commissioner. This wretched insect has been chiefly domiciled in the Santa Clara valley for many years. We do not know how widely it has invaded orchards outside of that region. The reader will notice, of course, that it is not the small, flat-headed borer which is found in the trunk or main limbs where they have been sunburned, nor is it the twig borer which works first in the spring in the twigs and afterward at the stem ends of the peaches. How the root borer came to be so bad in the Santa Clara valley is explained by Mr. Moulton in a very interesting way. Growers of the trees which it infests should always be on the lookout for it in all parts of the State.—EDITOR.]

A Native Insect.—The California peach tree borer has been a menace to fruit growers in Santa Clara, San Mateo and Alameda counties from the very beginning of the fruit industry in these regions, and now the large acreage of apricots, peaches and prune offers the insects suitable food plants over a large area and under almost ideal conditions in which to live. The pest is becoming ever more serious, especially in the newer fruit sections, and there are constant inquiries directed toward better understanding of the insect itself and the best methods of controlling it. Orchardists seldom recognize the adult moth of the species, although the constant care and the disagreeable labor which accompanies digging the borers out has caused them to become intimately well acquainted with the larval stages.

The California peach tree borer derives its common name from its close relationship to the Eastern peach tree borer and from the fact that it is primarily a pest of peach and closely related trees. The Eastern borer has been known in the Eastern States for more than 200 years. The Western borer has been known only since our own fruit industry was started, and it is considered a pest only in limited areas around the southern arm of the San Francisco bay. Adult moths of the species have been collected by entomologists in northern California, Oregon, Washington, Nevada and Colorado, and the insect is thus seen to be a native of all of the Western Coast States.

At one time the lower foothill regions in the western part of the Santa Clara valley were covered with a dense growth of underbrush and the Western choke cherry, one of the native food plants of the species, was one of the common plants. This land was cleared and set into orchards and the cultivated varieties of peaches, apricots and prunes gradually displaced the other food plants of the insect and its own native habitat. It was natural for the insect, therefore, to adapt itself to these new and similar food plants and to extend its habitat into the orchards in the open and adjoining country.

How It Works.—The peach tree borer is eminently a root boring insect, and two factors, the root stocks upon which the trees are grafted and the nature of the soil, influence largely the amount of damage that borers will inflict. Peach and apricot stocks are most susceptible to attack; almond, cherry, apple and plums less so, and the wild plum, known as the Myrobalan or cherry plum (Prunus cerasifera) is almost entirely resistant. Myrobalan plum seedlings are imported in great quantites from Europe and are now being recognized as one of the best stocks upon which to graft the domestic plums. This stock is susceptible to severe attack only when a tree has been weakened by some other cause, such as lack of water, cultivation or when it has been partly killed by gophers or other rodents. Almond stocks are more or less resistant if they are planted in soils suitable to their growth. Borers seem to attack trees more readily when they are planted in soils of light sand or gravel texture. We do not think that newly hatched larvae can reach the lower crowns or roots any more easily in light than in heavier soils, but it appears rather that the trees themselves are not so strong and therefore not so resistant.

How It Lives.—The life cycle of the borer extends over a period of about twelve months. Larvae of all sizes may be found at almost any time during the year, because one brood overlaps the other, but there is a definite period during which adult moths are flying, oviposition is taking place and when the newly hatched larvae are entering the trees. These periods are important economically because they indicate when is the proper time to apply protective washes. Adult moths are steel blue in color, are very active and are often mistaken for wasps because of their similar appearance and their rapid and eratic movements during flight. The first individuals of the season appear during April, many more in May and June, and they are flying in maximum numbers during July and August. A few last individuals appear during September. They mate immediately after issuing from their cocoons and begin to oviposit a few hours later. The life of any individual moth averages only four or five days. Eggs are usually placed on the lower trunks of the trees between four and ten inches from the ground and they are easily found after they have once been seen. They are about one-thirty second of an inch long, are flattened and depressed on two sides, and at one end are deep chestnut to dark brown in color. The eggs hatch about two weeks after they have been placed.

Tunneling Into the Tree.—The minute larvae are extremely active, they crawl about freely and try at once to hide or get below the surface of the ground, where they are more or less protected. They burrow into the living bark within a couple of hours after hatching, and later we recognize them as the borers in our trees. The nature and seriousness of their injury is recognized by every practical orchardist. Larvae usually mature to moths about eleven months after they have hatched. The chrysalis stage, the changing from larva to the adult moth, occurs during the spring and summer months, and after the moths emerge the empty pupal cases are commonly seen projecting out from the cracked and wounded bark.

The Time to Strike the Pest.—The period when new larvae are entering the trees and the second period when they are mostly full grown are important to the orchardist because the too commonly practiced methods of control, "worming" and applying protective washes, are successful more or less as they are practiced at the proper time. Eggs are placed two or three days after the moth first emerges, which means that the period of oviposition is practically the same at that of the appearance of the moths. The eggs hatch after about two weeks and as the worms enter the trees immediately this occurs mostly (judging from our records of emergence of moths), from the middle of June to the middle of October and the period when they are entering in maximum numbers is from the middle of July to the middle of September. Protective washes should be applied just before this time, preferably during the month of May. All larvae are from one-half to nearly full grown and are more or less sluggish during the winter months, and this is preferably the period when worming should be done. Worming during the spring is also quite as effective, but when the larvae, becoming active in February and March, when the sap begins to flow up, can do much damage. Worming earlier in the winter would eliminate this later injury.

Only sharp tools should be used during the process of worming. The practice of using a combined knife, scraper and chisel, such an instrument as is sold for this particular purpose, is not advisable, because such tools are made of poorly tempered steel and cannot be kept sharpened. An ordinary ¾-inch wood chisel, a horseshoe knife and an individual scraper are now commonly considered the best tools. The bark is too often broken rather than cut when dull tools are used, and much damage accompanies such careless work. The bark around the wound should be cut clean, so that it can heal over.

Protective Washes.—A protective wash should be used after worming has been accomplished. Such a wash serves in two ways. Primarily it acts as a repellent and keeps moths from replacing their eggs on these treated surfaces. If the wash is applied after worming in the fall it deteriorates and cracks and falls away before the time when oviposition is occurring, and for this reason is not so effective. It is considered good practice to dig the borers in the winter, but the wash should be applied in April or May. The wash serves in a secondary way to render the labor of subsequent worming much more easy and rapid. The dirt and bark scalings fall from the tree more easily and the masses of frass, which indicate the presence of borers, are better defined.

A mixture of lime and crude oil has been successfully used, and its cheapness and the ease with which it is prepared render it most desirable. About 50 pounds of rock lime are placed in a barrel and slacked with 10 to 15 gallons of warm water, and while the lime is boiling six or eight gallons of heavy crude oil are poured slowly in. Enough water is then added to make the whole into a thick wash. This should be applied immediately and preferably with a heavy brush. The roots exposed after worming and the lower trunk up to about 18 inches above the ground should be thoroughly treated.

Pure heavy crude oil has been much used for borers, but this treatment is dangerous, especially on peach and apricot trees. A heavy residuum oil has resulted in less injury, but even this should not be generally recommended. The lime-oil mixture contains the necessary repellent qualities of the crude oil and the porousness of the lime which renders it safe. Carbon bisulphide has been recommended extensively, but its use is now generally discouraged. If the treatment should be followed by a rain or if the ground is especially damp the gas treated soil cannot be left around the trees without immediate injury. The carbon bisulphide method has been most successful when an orchardist has done his own work for several years and when he himself places the charge and realizes the danger. Hand cutting and removing the dead bark is not generally practiced with this treatment, and consequently the tree can never heal over the old wound. Common practice has demonstrated that it is necessary to dig the worms out by hand, preferably in the early winter or spring and that a protective wash is desirable, and the lime-oil wash applied in April and May has been as successful as any.

Citrus Fruits.

ORGANIZED FRUIT MARKETING.

By Mr. B. A. WOODFORD, General Manager California Fruit Growers' Exchange, at the Fruit Growers' Convention at San Bernardino.

Organized marketing as applied to soil products is a broad subject, and includes many forms of operation now in active practice, such as:

First—The great packing corporations which control the meat supplies of the country, the United Fruit Company which controls the banana business, and other like private organizations of large capital working exclusively for the holders of their stocks.

Second—Co-operative combinations of the producers themselves, usually organized with nominal capital stock and operated wholly in the interest of the membership of which they are composed, with no profits to anyone except to the producers themselves through the economies of handling their own business in large volume.

Third—To these two distinct and entirely opposite forms may be added a third type of organized marketing which is a combination of the two already described, being partly speculative and private, sometimes with considerable capital, and partly co-operative, sharing something of the benefits of large business with the producers who use them—how much depending usually upon the liberality of the speculative and private interest which is invariably in control.

My business experience having been entirely with the strictly co-operative citrus fruit organizations, I presume that the Program Committee assigned this subject to me with a view of having "Organized Fruit Marketing" treated from the

standpoint of its application to citrus fruits, and this paper is therefore prepared with that object in view.

Abroad.—The working together of various individuals in the sale of their products, particularly of those engaged in horticultural and agricultural pursuits, has been in practical operation in various forms for a great many years. The earliest successful co-operative efforts of this character are reported from Europe. Denmark, Sweden and Norway, France, Ireland, and other European countries, have taken the lead in these matters, particularly in the preparation and marketing of their butter, bacon, eggs, poultry, and other like products, in co-operative stores and in co-operative rural banking. These Old World co-operative selling and business organizations have long since passed the formative period, and the different lines of operation have become firmly established until there is now no further question of their value to the producers, or of their continuing to be a strong factor in the business life of the countries in which they exist.

At Home.—In the United States, combination and organization of capital has, particularly during the last thirty years, become the order of the day, and if the tillers of the soil are to hold their own as against the other highly organized industries and business of all kinds, they must work together. That the people themselves understand the necessity for such action on their part is shown in the various methods of co-operative handling and selling of their products that are now in successful operation. The fruit-growers of Colorado, Washington, and Oregon, and the entire Northwest, as well as the onion growers of Texas, the vegetable-growers of the Southern States, peach-growers of Georgia, cranberry-growers of Wisconsin, New Jersey, and New England, and many of the growers of other soil products have united in co-operative organizations for the purpose of marketing their crops and of securing a larger share of the earnings of their labor and capital.

California Efforts.—In California, co-operation is perhaps more needed and more easily applied locally, than elsewhere. While we are a long distance from the principal centers of consumption, thus greatly increasing the difficulty of transportation and sale of our products, our horticulturists have an advantage in operation for the most part in relatively small, concentrated areas in which the same article is largely grown. The citrus fruit-growers were the first in California to recognize the value of working together in marketing, and this, perhaps, was due to the fact that the orange and lemon orchards are kept alive during the long, dry summer season by irrigation, and those engaged in the business were forced by circumstances to join forces in the very difficult problem of bringing water for irrigation purposes long distances at great expense.

After their trees came into bearing in considerable quantity, the ready market for cash here at home that had existed for the fruit when the crop was small was found to be inadequate, and nearly twenty years ago, with an output of only 4000 cars annually, the growers were unable to dispose of the entire crop under old methods at fair prices. Through the experience gained in their co-operative water companies, they found it comparatively easy to unite in establishing a common packing-house in the various producing sections, which they themselves owned and controlled. These houses were conducted at actual cost of operation, the expenses being usually apportioned on a box basis. The purpose of the association was, primarily, to bring about uniformity in grading and packing, and to reduce the cost of preparing the fruit for sale. These economies were shared by the growers alone.

California Fruit Growers' Exchange.—In packing their fruits on a mutual basis the growers had, however, only solved in a small degree the real problem that confronted them, and, to get the full benefit of co-operation, it became necessary to extend these joint operations to the distribution and sale of the fruit. The result was the formation of the California Fruit Growers' Exchange, to which the grower entrusted the marketing of his fruit after it had been packed and placed in the car. More than 110 of these packing associations have joined together in this manner, and their business has increased from 20% of the entire crop twelve years ago, to 40% six years ago, and 60% today.

Distribution.—The problem of distribution is fully as important as the problem of sale. Our crops are now so large, and the necessity of keeping our oranges and lemons before the entire consuming public is so great, that not only must the fruit be put into every possible available market, but the distribution must be even and continuous. Any other practice invites disaster. With the 110 packing-houses operating through the Exchange, each conducting its own business independently of the other, or with the sixteen district exchanges of which the General Exchange is composed, each operating independently of the other, bare markets at one point and overstocked markets at the same time in another, would be the inevitable result. As it is now, with 60% of the business in harmonious action, and knowing by experience about what the policy of the non-Exchange shippers is, the distribution of its fruit by the Exchange is conducted on a basis that assures far greater consumption at better prices than formerly when its percentage of shipments was smaller. With an increased percentage of the crop in the Exchange, it will be possible to handle the distribution in a still more perfect manner, and better results will be obtained, with greater benefit to the growers.

Sale.—The organized selling force of the Exchange throughout the country is one of its strongest features. This force is composed almost wholly of salaried agents, each giving his undivided attention to selling Exchange oranges and lemons. This is in line with the policy of all up-to-date business enterprises, it being universally recognized that specialized service brings best results. Salaried salesmen in all important market centers is a distinctively Exchange feature in citrus-fruit marketing, and the Exchange has seventy-five principal offices of its own in the United States, Canada, and Europe, with over 200 salaried salesmen operating out of them, reporting sales and market conditions daily by wire.

The savings to the growers who sell their fruit through the Exchange at the actual cost of operation with no profit to any individuals except the salaries that they get, run into astonishing figures when based upon the entire output of the State. Twenty million boxes of oranges and lemons have been produced in California the present season. One cent per box on this output amounts to $200,000. A few cents per box saved out of packers' profits, added to a few cents per box saved out of sellers' profits, amounts to several millions of dollars annually.

Advertising.—Newspaper advertising has been the greatest single factor in bringing about increased consumption of our oranges and lemons. From the experience gained through an initial expenditure of $10,000 in the first year of advertising in Iowa, and materially increased expenditures each succeeding year, with an appropriation of $100,000 for an advertising campaign that covers nearly the entire United States and Canada the present season, the Exchange is now in a position to testify as to the complete success of its advertising methods. Three thousand newspapers scattered broadcast throughout the land are advertising regularly the superior merit of California citrus fruits and of California Fruit Growers' Exchange citrus fruits in particular. Such extensive publicity can only be obtained by the expenditure of a very large sum, but $100,000 means only four-fifths of a cent per box to Exchange growers on this year's shipments. As our crops increase, it will be necessary to extend this advertising in various other ways at greater cost, but with increasing shipments in the Exchange this is entirely practicable at only slight expense to any grower. We feel confident in predicting that there is no danger of overproduction of good fruit if the growers unite in the advertising, distribution, and sale of their oranges and lemons after they have grown them.

Purchasing Supplies.—Having largely solved the question of the advertising, distribution, and sale of their products to the best advantage under existing circumstances, Exchange growers have given their attention to economies in other directions. In obtaining their packing supplies, the savings that have been made through the operations of the Fruit Growers' Supply Company, which is owned by Exchange growers, are something over a half million dollars per year, as compared with conditions that formerly prevailed. The supply company is now giving its attention to the purchase of fertilizers and other orchard supplies, with a probable ultimate saving in sight which will equal or exceed what has already been done with reference to packing-house supplies.

Results.—In tariff and freight matters, while exceedingly valuable assistance in conducting these fights has been obtained from growers outside of the Exchange, more than 80% of the entire cost has been paid by Exchange growers. Through these efforts, the 1c. per pound duty on oranges imported into this country is still in effect; the lemon duty has been increased to 1½c. per pound; the freight rate on lemons has been reduced from $1.25 to $1 per hundred pounds; the freight rate on oranges has been reduced from $1.25 to $1.15 per hundred pounds; the regular refrigeration rate has been slightly reduced, saving the growers some $25,000 annually; and now at last the charge on fruit pre-cooled and pre-iced by the shipper has been reduced, which should ultimately result in an annual saving of a half-million dollars to the industry.

It might be of general interest to know that in the last six seasons the Exchange has sold for its growers 38,962,008 boxes of oranges and lemons, for which it received $69,873,137.45 net cash f. o. b. California, or an average of $1.79 per box for every box handled, with a loss of less than $6000 for failure to collect during the entire period.

The contrast is clearly drawn between conditions seventeen years ago when disaster resulted from individual action in marketing a crop of only 4000 cars, and fair prices this season, through co-operative marketing of 60% of a crop of 50,000 cars of citrus fruits.

Summary.—A summary of the benefits to the citrus-fruit industry through organized co-operative operations is about as follows:

1. The cost of packing as compared with seventeen years ago has been reduced to all growers more than 10c. per box; a saving of $2,000,000 annually on the present output.
2. The cost of selling has been reduced more than 5c. per box in the same period; a saving annually of more than $1,000,000.
3. The orange freight-rate has been reduced 7c. per box; a saving on the present output of more than $1,200,000 annually.
4. The lemon freight-rate has been reduced 21c. per box; a saving on the present output of more than $500,000 annually.
5. Through reduction of refrigeration cost the growers will finally save $500,000 annually by the recent decision of the Interstate Commerce Commission.
6. The cost of orchard supplies, particularly fertilizers, is being materially reduced through the operations of the Fruit Growers' Supply Company, with ultimate savings of $500,000 in sight.
7. Through extended advertising the consumption of citrus fruits has been increased to keep pace with production, thus avoiding disastrous results in years of large crops, insuring to the grower a fair price for his product, while the consumer is obtaining his oranges and lemons cheaper than ever before.

The Future.—The conclusions to be drawn as to future action are self-evident. The growers must be alive to their own interests at all times. They must absolutely control their own business and stand unitedly together in these great problems such as advertising, distribution, and marketing, as well as in many other ways. Various interests are opposed to their success, and are ever present with plausible arguments, all based on the perfectly natural desire for private gain on the part of those who make them. With a falling off of membership in the Exchange, disaster to the industry would be invited. While, on the other hand, with a constantly increasing percentage of the crop to handle, it will be possible for the Exchange to confidently plan for successful future operations with the maximum of benefit to the industry and to the State, as well as showing to the world what can be done by a united body of intelligent producers through persistent organized co-operative operations.

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Ortho Arsenate of Lead, the latest innovation in this branch of spray knowledge, is fully endorsed by the best authorities, and its greatest merit is this, that it can be used freely under all conditions, under all climates, and on all kinds of foliage. **In these respects it differs from all other brands upon the market, which cannot be so used.** It has been used all over the West with great satisfaction, and its use is constantly growing wider.

"Ortho 13" Arsenate of Lead is put up in superb steel containers containing 5, 10, 20, and 50 pounds net, of arsenate of lead. These kegs are air and water tight, and there is no danger of evaporation causing the material to become hard and unworkable. We make a liberal allowance for the return of the steel containers, and stand the freight, thus further reducing the cost of the material to the consumer.

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EAT MORE FRUIT.

(Continued From Page 229.)

and their constituent nitrogen that ever since people have been scared lest they should weaken and die, unless they took an ample supply of this element. I know few combinations in the whole range of foods more perfect than almond meal, or walnut meal and raisins. The prophet of old who did his forty days' walk on a handful of parched corn, and a barley loaf, and cake of figs and a cluster of raisins was a scientific dietist; and the Japanese, who followed those lines, proved themselves better commissariat officers than the Americans, who fed their soldiers in Cuba on the best Chicago "mysteries."

LASTLY, THE SALINES.—I can hardly overestimate the importance of the salines in the human economy. Nerves could not work, teeth could not grow, blood could not circulate, dialysis in digestion and absorption would be impossible without them, and where do you get the salines from? The world of fruits. Let me, therefore, be satisfied to say that in my opinion Englishmen could live in better health and with greater freedom from disease upon a properly selected fruitarian dietary than on a meat regime.

By the right use of a wisely-selected fruit diet a large number of diseases which are caused by excess of proteid waste (e. g., gout, headache, constipation, debility) can be cured. By the right use of fruit juices and fruit salines the deposits which are the causes of old age can be re-absorbed, and youth and activity be perpetuated much longer.

RAISIN DAY OF 1911.

The third annual "Raisin Day" campaign is now in full swing at Fresno. From this time until April 29 letters by the thousands are to be distributed by the Raisin Day Committee throughout the United States and Canada in an effort to impress the people in general with the value of raisins as a food. No channel of trade is to be slighted. The wholesale, jobbers, and retailers are all to be asked to participate in the campaign. The great railroad systems of the country and the proprietors of the leading hotels have all signified their intention of aiding in the work. As a consequence, the menus of the dining-cars and of the larger hostelries will contain raisin dishes in abundance during the week preceding "Raisin Day."

But the efforts of the committee to bring raisins before the public as a staple article of food will extend beyond the circles of trade. The co-operation of the press, the schools, and the churches of the country is being contributed for the campaign. The pupils of one of the principal cities in each of the States of the Union are to engage in raisin competitions with "raisins" as their subject. The committee has offered cash prizes for the winners, and communications telling of their intention to participate are already being received from the various schools through their superintendents.

The ladies of the churches have been requested to submit recipes of dishes containing raisins, the merits of which are to be decided by a committee appointed by the press of their respective localities. The winners will be given substantial cash prizes in exchange for copies of their recipes to be given over to the "Raisin Day" committee for publication.

Another feature of "Raisin Day" will be a raisin bread contest in which 30,000 bakers throughout the United States will be asked to participate. Prizes, probably in the shape of medals, will be provided for the bakers in each locality who can produce the best quality of bread containing raisins.

Indications are that the "Raisin Day" campaign for 1911 will be of far more interest and prove more beneficial to the raisin growers of California than have those of the past two years. It is estimated that a total of $10,000 will be expended by the committee for prizes and other features incidental to the campaign.

Apricot crop prospects around Hollister are very good.

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Agricultural Engineer.

SELECTING A CENTRIFUGAL PUMP.

Written for the PACIFIC RURAL PRESS
By Mr. C. R. SESSIONS.

The runner of a centrifugal pump has been likened to a cart wheel, which, when rotated, throws off from the tire any water which is on the hub or spokes. The faster the wheel is rotated and the wider the tire, the greater the amount of water thrown off. The shell or casing of the pump serves to lead the incoming water on to the hub, to gather it again after it has passed along the vanes and out of the rim of the runner, and to convey it out into the discharge-pipe or flume. When the runner or impeller is rotated fast enough, the water is thrown out into the passage in the shell and forced through the discharge opening with considerable pressure. The greater the diameter of the impeller and the faster it revolves, the greater is this pressure at the discharge of the pump.

The shell must be strong enough to stand the pressure of the water and the strain caused by the weight or vibration of connecting piping, etc. The larger the area of the water-passages, the less will be the loss of power caused by the friction of the water. Good practice has fairly well determined the best area for these water-passages for different sizes of pumps. A reputable manufacturer rates his pumps accordingly, and recommends a pump of a relatively low number of gallons per minute. The manufacturer or agent who can not meet competition squarely, resorts to overrating, forcing his pump and increasing its output, and selling it for a little less than the price of a pump a size larger and made by a reputable builder. Some manufacturers, when hard pressed, deliberately cast an 8-inch suction and discharge-opening on the regular 6-inch shell, for instance, and sell it for an 8-inch pump. Others have adopted this on all sizes and call the pump a No. 8. (No. 8, interpreted, means 6-inch.) There are times when, because first cost is the determining factor, it is best to buy a cheap but inefficient pump; but then the purchaser does better to get the well built pump and save the difference between the high-priced, overrated one and one conservatively rated, the capacity of which he can himself increase by simply speeding it up.

The runner, the most important part of a centrifugal pump, because it is in the shell and out of sight, is often overlooked, and its importance is not realized. It revolves so rapidly that if during one revolution there is any loss of power resulting from improper design of the vanes, the loss of power during an hour or a day is very great. It is difficult to design a good runner. There is no direct, sure method, and extended experience and good judgment are so necessary in doing this that unless a pump manufacturer employs a capable designer his pumps will be crude and inefficient, and good only for a poorer class of work.

The better modern pumps have runners of the enclosed type, while the older pumps had open runners. The enclosed runner is the open runner with sides on it (as if the cart wheel had disks attached to the spokes on the outside and extending from the tire nearly to the hub). An enclosed runner offers less resistance to the flow of the water through it and does not allow the water to leak from the pressure to the suction side, as does the oppen runner, especially when it has become a little worn. The open runner is cheaper to make and that is why it is used at all, except when the water to be pumped has in it tules, sticks, etc., which might stop up an enclosed runner.

Stock pumps have usually but one suction opening, and there is therefore nearly always a thrust tending to force the runner over toward the suction opening. A poor way to hold the runner in its place and keep it from rubbing against the shell is to use collars, on the shaft, running against the side of the main bearing of the pump. This causes heating and a waste of power. Sometimes a ball-thrust bearing is used here. The best way is to use a hydraulic balance whereby the runner automatically finds a position of equilibrium without the use of shaft collars and without the loss of power. There are several pumps built with a hydraulic balance. Because they are protected by patent rights, they cost more, but are to be recommended. The runner of a double-suction pump does not need to be balanced, but such pumps are expensive and usually are made only in the larger sizes (above 12-inch).

When a pump is to be run very fast, as, for instance, when a small pump is to be used to pump against a high head, the runner must be very well balanced, so that the wear in the bearings and stuffing-box will not be excessive. When the packing in the stuffing-box wears fast, it is a nuisance, because air is drawn in, power is wasted, and the pump may lose its priming. This balance is different from the thrust-balance, but is very important when the pump is directly connected to an electric motor and is running a thousand revolutions or more per minute.

The pump-shaft should be of such a diameter that it is stiff enough to resist without deflection the pull of the belt. The bearings should be large enough to run without undue wear and heating. A small shaft is cheap, as are also small bearings. A large, stiff shaft running in ring-oiling bearings is wanted when long life is sought. In the very best pumps the shaft is carried in ring-oiling bearings entirely outside the shell, double suctions and double stuffing-boxes being used.

The conditions under which a pump is to be operated govern the selection of the pump itself, and determine what valves, piping, etc., are to be gotten with the pump. A careful planning of the arrangement of this piping, etc., will always be repaid in time and money saved when the plant is set up.

(To be continued.)

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BERRY PLANTS

LOUIS F. SCRIBNER
PASADENA, CAL. R. F. D.

The Ornithologist.

PROTECTION FROM DESTRUCTIVE BIRDS AND BEASTS.

To the Editor: There seems to be some conflicting ideas in regard to birds and animals and the damage they do, and while Mr. Coates evidently thinks the birds are being exterminated at Morgan hill, there are, no doubt, people who live a few miles back in the hills who almost think the birds are going to exterminate them.

The finest-flavored fruits and vegetables are raised in little glens, nooks, and valleys adjacent to the large valleys and throughout the State represent a large aggregate. These are the sections where birds are a pest. The people who live there have no idea of exterminating either birds or animals, but wish simply to protect their crops by reducing the number to a reasonable limit and training those left to stay where they belong. No one loves birds better than they, but they love their fruit, berries, and vegetables better. The sweet songster perched in the foliage of a 50-cent berry bush may be very soothing, but when you know he is wetting his whistle on the immature berries of which you are not able to get a ripe sample, you reach for your gun.

Now the nurseryman would say, "Buy more berry plants so you will have enough," but the trouble is that, as the berries increase the birds will increase, too—and so fast that you will have to shoot a great many or you will never have any berries. To protect our home orchard and garden here in Napa county, we use 2000 rounds of .22-caliber ammunition per year just on birds, and we have no English sparrows.

There is a small brown bird with a black head that does ten times as much damage in Napa county as all the squirrels. Its appetite for green stuff is unlimited; it can be seen in flocks, not only in the garden, but all over the stock range. The harder it rains the harder the birds eat. In spite of constant watching, the birds destroy 90% of the lettuce plants in fall and winter. When the brooders are started it goes right in and robs the chicks, and yet we seldom hear it complained of, nor do we know its name. Orioles, grosbeaks, linnets, canaries are killed by the hundreds, while larks and bluejays, not being migratory, are soon trained to stay where they belong.

The farmer must protect himself from a great many of his self-appointed guardians who claim certain birds and animals are a benefit and, without proving their assertions, get protection laws passed. There are no laws needed to compel a farmer to raise chickens. Why? Because he knows they are beneficial; and the same would be true of larks, robins, quail, skunks, and even coyotes, if the benefit were shown. I have even lately seen the claim made that the skunk is of more value than the house cat.

Tree squirrels will go miles to a walnut orchard. The late law limited the number a person could kill to twelve in a season, and yet I have known people to kill more than that number per week for months in protecting their nuts. Now the limit is taken off. Was it because the squirrels ate walnuts? Oh, no; it was because they ate pine seeds in the forest.

Napa county has for a number of years had a bounty of $10 on coyotes; this has lately been raised to $20 with very beneficial results.

In some sections it had become impossible to raise pigs or turkeys owing to

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HENRY SHAW

coyotes, while they always bother sheep more or less. These matters should be left to the farmers themselves. If they want to raise fruits, berries, vegetables, cattle, and poultry, let them do so. If they prefer to raise birds, deer, and coyotes, let them go ahead—only, I hope they keep them at home.

The present investigation of the food consumed by different birds is a step in the right direction; but I hope it will not be concluded that because a bird eats thistle seed it is a benefit. The common star thistle is the best winter range feed we have. Any feed eaten by birds is apt to be spread all over, and more weeds must be exterminated; so their value in killing noxious plants is very small. Game laws will never successfully protect until the man who furnishes the feed and water, the crops to be trampled on, the fences to be broken and cattle frightened or perhaps shot, gets some protection.

Under present conditions, with steers at 12½c. per pound, the State should furnish its own range and feed for the deer or any other non-beneficial animals or birds.

The raising of deer or elk on a beef basis would be very profitable in many parts of California, but as non-salable game animals they will never become numerous. H. O., Jr.

St. Helena.

THE LARK GETS A LARRUP.

To the Editor: Referring to the article of March 4. "What the Meadow Lark Does," I will say that larks in the orchards of this locality are very numerous during the fruit season, particularly in those orchards located alongside of grain fields. The lark considerably damages peaches and prunes, making holes in the fruit, so that it becomes practically valueless. But those in my class of life, who have to work Mother Earth for a scant living, get the experience—and you know the rest. A man who is trying to keep out of the poorhouse in his old age cannot possibly develop much taste for classical music.

Mr. Campbell's article, to my notion, is good, but as a matter of fact, we don't all have the same taste. He failed to say that Mr. Finley perhaps has all the good things he wishes at his command, or perhaps he was looking for bouquets.

The experiences that the producer has with the lark and other songbirds may seem funny to some people, but to such men as Mr. Campbell and me it's no joke. E. P. Rose.

Gilroy.

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The Citrus Fruit Growers of California use thousands of tons of Tankage annually
Tankage is the best form of Organic Nitrogen.
HUMUS-FORMING. ALL AVAILABLE.
We are the largest Pacific Coast producers of High-Grade Tankages in perfect mechanical condition and of

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Will ship direct to you no agent near you
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REX YOUR TREES WITH THE FAMOUS REX SPRAYS

Our Standard Rex Lime & Sulphur Solution is being used by the principal fruit growers in every State in the Union. See that Rex is on your barrel, and not some imitation that is untried.

Rex Arsenate of Lead is made under the latest scientific formulas; applicable to all climates and conditions in the United States. Remember, that which is good for one district is not necessarily good for another, and if you want something that is good for all places, please ask your dealer or correspond with the

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TREES THAT GROW AND BEAR TRUE TO NAME

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Parties contemplating the planting of citrus groves this coming spring will do well to send for our prices soon, as there will evidently a a shortage of strictly first class stock. Write today for particulars, or, better still, pay us a visit so that we may be able to show you just what we have.

Our finely illustrated booklet, "Citrus Fruits," covering the industry from the seed to the market, mailed to any address on receipt of 25c in stamps.

SAN DIMAS CITRUS NURSERIES
SAN DIMAS, CALIFORNIA

AGRICULTURAL REVIEW.

With the Fruit Men.

The Colton Fruit Exchange building has been completed and is now occupied. All the latest machinery for handling fruit has been installed.

The reports from Fowler and Del Rey indicate that the recent heavy rains caused considerable damage to the peach trees in those sections. Owing to the water-logged condition of the ground, the blight has attained a strong hold on the trees and will injure the crop materially.

F. L. W. McDonald, of Watsonville, left last week for an extended trip to Europe, where he will make an investigation of marketing fruit, particularly apples.

It is stated that there are less than 30 cars of prunes on the Pacific Coast at this time. As a consequence prices are near the 9-cent basis.

On account of the small holdover, raisins of the 1911 crop are now selling at 3½ cents, and it is thought the price will be higher before the new crop is delivered.

The Vacaville Reporter states that the prospects at this time for a large fruit crop in that section are good. Apricots, cherries, peaches, and plums promise a good yield.

The first loquats of the season were shipped from Orange county last week, and sold for 15 cents per pound.

Joseph Di Giorgio, of New York, arrived in Sacramento last week and completed the purchase of interests in the Earl Fruit Co. and the Producers' Fruit Co. He denied having interests in any other company in this State. It is announced that the management of the Earl Fruit Co. will remain as before. W. E. Gerber will continue as president and C. B. Dewees as manager. Mr. Gerber stated that the California fruit industry will be benefited by the transfer of stock in the two fruit companies to Di Giorgio, as he has great Eastern marketing facilities and will now be directly interested in selling fruits from this State.

With good weather during April the fruit crop around Yuba City will be unusually large.

At the annual meeting of the Santa Paula Walnut Growers' Association, recently held, the following officers were elected: G. W. Faulkner, president; J. H. Orcutt, vice-president; C. Thorpe, secretary. This association markets the nuts from 674 acres, which last year sold for $75,000.

ite varieties.

W. M. Burton has sold, during the season, to citrus growers in Tulare county, 215,000 sour-root orange seed-bed stock.

Agricultural Notes.

Wild geese are reported in such large numbers in the Sacramento valley wheatfields that the farmers are employing herders to keep the birds from ruining their crops.

Contrary to expectations, the wheat crop on adobe land in Butte county has been helped instead of injured by the heavy rains. A big crop is now predicted from that section.

Owing to the late season, many acres in western Kings county will not be seeded to wheat or barley, but a very large area will be planted to Egyptian corn.

At a meeting of the Farmers' Union of Gridley recently, a commission-house man from Marysville stated that his firm would guarantee the growers to receive not less than $1 per crate for Rocky Ford melons the coming season.

The Murdock ranch in west Orange county has 35 acres planted to onions. Last year this ranch shipped 140 tons of onions.

The Sacramento Valley Sugar Co. commenced planting sugar-beet seed around Davis last week.

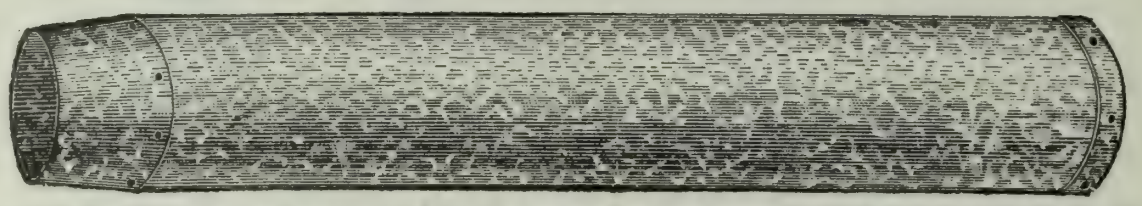
A large acreage is to be planted to alfalfa on the old McDonald place, near Cannon, Solano county.

The first alfalfa cutting of the season commenced in Tulare county this week.

The total amount of cotton raised in the Imperial valley in 1910 approximated 5800 bales. The work of ginning and baling has been completed, and interest now centers on the acreage to be planted in 1911. Already there is a larger acreage planted or ready to plant than was set out last year. However, owing to water troubles, many growers will not set out as large acreage as was expected.

The Farmers' Club completed its organization at Ukiah last week with the appointment of an executive committee, each member to act as permanent chair-

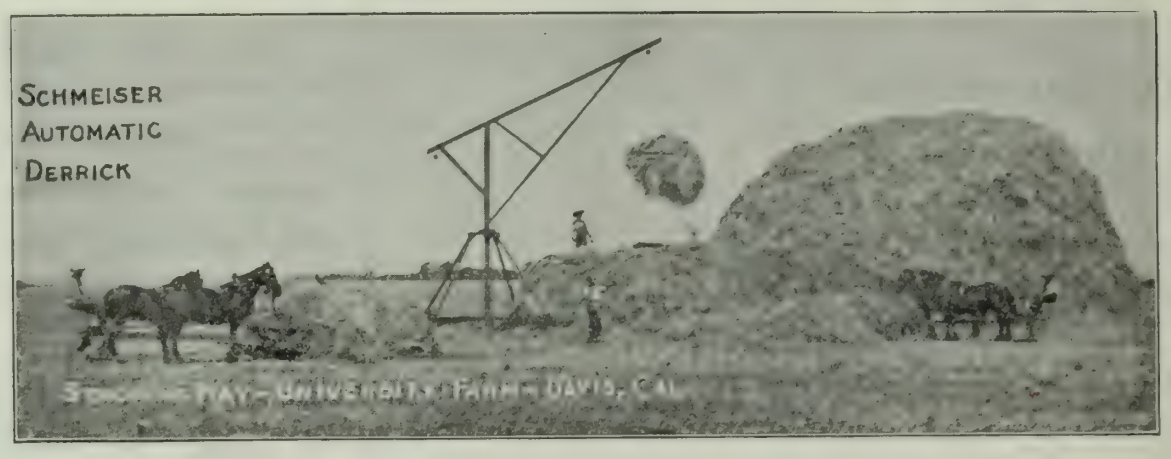
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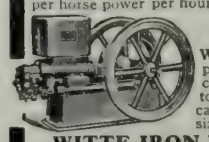
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Almonds, Peaches, Plums, Apricots and Cherries
All trees strong and thrifty.
Guaranteed true to name.
ACAMPO NURSERY COMPANY, : Acampo, Cal.

150,000 2-year old Sweet Stock
Not dug-over culls, but splendidly rooted, strictly first class 2-year-olds. A bargain stock for those who want the best in this variety. I offer a good size at lowest quotations.
ONE YEAR SWEET STOCK. ONE YEAR SOUR STOCK.
Navels, Valencias, Lemons.
CHAS. S. McMILLAN, 300 South Marengo Avenue, Alhambra, California
Citrus Trees Exclusively

Surplus Stock
250 French Prune on Peach, 4 to 6, 16 cents.
250 Phillips Cling, 4 to 6, 8 cents.
1000 Persimmons (all varieties), 4 to 6, 15 cents.
500 Cherries, Knight's Early Black, Royal Ann, Tartarian, 4 to 6, 15 cents.
Above all absolutely dormant and first class trees.
UNITED FRUIT CO.
NEWCASTLE, CAL.

WITTE ENGINES
GAS — GASOLINE — DISTILLATE
Cheapest of all powers. One cent average cost per horse power per hour. Nothing can equal.

FIVE YEAR GUARANTEE
We build all sizes. Hopper jacket or water tank cooling. Inducements to introduce in new localities. Write stating size and style wanted.
WITTE IRON WORKS CO.
1607 Oakland Ave., Kansas City, Mo.

man in charge of his department, as follows: Grain, Charles L. Crawford; hops, Frank Cunningham; fruit, W. L. Wilcox; dairy and stock, D. S. McKinley; poultry, S. J. Carroll.

Miscellaneous.

Max Hempel, of Manteca, has ten 500-egg incubators running which are hatching out about 6000 chicks each month. He ships them when a day old to all parts of the country.

Invitations were sent out last week by the Santa Clara Valley Poultry Association to all poultry associations of the State, inviting them to meet at San Jose on April 4, and form a State Association for the purpose of making a great poultry exhibit at the 1915 Panama-Pacific Exposition.

It is stated that the Cline Bull tract of land of 14,000 acres below Marysville, along the Feather river, has been sold to a syndicate which will subdivide and colonize it. The tract is mostly rich river-bottom land, and the sale is said to involve nearly a million and a half dollars.

The old Sebastopol Grange is to be reorganized on April 18. Mr. Branghter, of Santa Rosa, has the work in charge.

The U. S. Department of Agriculture has just issued a progress report of co-operative irrigation investigations in California covering the ten-year period 1900-1910 which is available for free distribution on application to U. S. Irrigation Investigations, Berkeley, Cal., or the Secretary of Agriculture, Washington, D. C.

The poultry raisers of the Livermore valley are talking of organizing an association to hold a poultry show there the coming fall.

A poultry exchange is to be established at Red Bluff. Last year Tehama county produced $250,000 worth of poultry and eggs.

The school board of Los Gatos has decided to change the summer vacation dates so that the school children may work at fruit gathering to the best advantage.

The Dr. C. Ed Smith ranch, near Poplar, Tulare county, consisting of 420 acres, was sold last week for $42,000. The land is all cultivated and part is set to alfalfa.

According to documents just filed, J. D. Stewart of Gold Run, with associates, is preparing to place large areas of land under irrigation in Placer county.

Charles Gloeckner is authority for the statement that there are now within less than a square mile of Hessel station, Sonoma county, fully 116,000 chickens.

A dispatch states that the great irrigation dam built by the Government near Orland is now ready to irrigate 14,000 acres of land. The great dam is 140 feet high and holds back a body of water 30 miles in circumference. All the canals and laterals are built, and the great project will be in use by the middle of April.

Farmers' Institutes will be held in Riverside county as follows: Hemet, April 10; Perris, April 11; Elsinore, April 12; Arlington, April 13, and Corona April 14.

CALIFORNIA HAD A SKUNK PARADISE.

To the Editor: Have just read your observations on skunk farming in yesterday's RURAL PRESS, and as you ask, "Who can help us on that proposition?" will just say that twenty years ago the whole Kern Island section of Kern county was a veritable skunks' paradise. I have run across a few good patches in Tulare and Kings counties, also in Texas, Indian Territory, and Missouri, but they are all a mighty poor stand compared to Kern county. Besides being far more numerous, the Kern county skunks were larger, cleaner, and finer looking. I have often thought that if the fur or oil were valuable, one could make a fortune harvesting those that were already grown. Those big fellows with the large white stripe were so "sassy" that they would often rush forward as if to attack, and then stop ten or twenty feet away. I have frequently slowed down my team or made a detour to avoid any unpleasantness.

They were so thick in those days that in hauling wood, posts, panels, etc., we often had to skip some piles till the next day. I have taken the ranch dog along and tried to "sic him on", but he would only lower his tail a little and wrinkle his eyebrows into an interrogation point, and apparently say: "I guess you're just a tenderfoot; I'm a native son, and I know those fellows." This all happened on the old "Mit" Crocker ranch near the Panama street school-house.

P. ALLING.

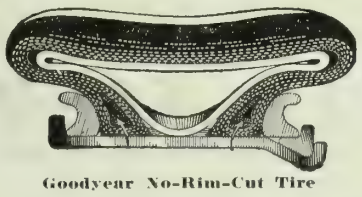
Lodi, March 5, 1911.

The Tires Men Used On 100,000 Cars

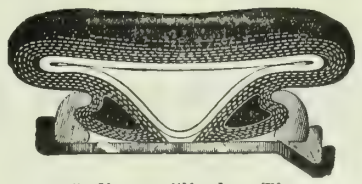
Goodyear No-Rim-Cut tires—10% oversize—are the final result of 12 years spent in tire making.

These patented tires are new, yet 500,000 have been used—enough to equip over 100,000 cars. Last year our tire sales trebled—jumped to $8,500,000. This year 64 leading motor car makers have contracted for these tires.

It is time you knew them. Ask us for the book. It tells how to cut tire bills in two.



Goodyear No-Rim-Cut Tire



Ordinary Clincher Tire

Compare these two tires. The pictures show them fitted on the same rim—the standard rim for quick-detachable tires. Also for demountable rims.

The only difference is that the removable rim flanges are reversed—that is, slipped to opposite sides.

With No-Rim-Cut tires the removable rim flanges are set to curve outward. The tire comes against a rounded edge. That's why it can't rim-cut. We have run these tires flat in a hundred tests—as far as 20 miles—without rim-cutting in the least.

With the ordinary tire—the clincher tire—these removable rim flanges are set to curve inward—just as they were on bicycle tires. There are hooks on these tires' bases, and the rim flanges must grasp them. That is how the tires are held on.

Note how the thin edge of the flange then digs into the tire. That is what causes rim cutting. That's why you dare not run a rod with a punctured tire. That's why a partly deflated tire is often ruined beyond repair.

To save this ruin means to save, on the average, 25 per cent on one's tire bills.

Vulcanized into the base of No-Rim-Cut tires are 126 braided piano wires. That makes the tire base unstretchable. Nothing can force it off the rim until you unlock and remove the flange.

When the tire is inflated these braided wires contract. The tire is then held to the rim by a pressure of 134 pounds to the inch.

So the hooks are not necessary. Not even the tire bolts are needed. The rim flanges don't need to hook into the tire.

We control this feature by patents. Others have tried a single wire—others twisted wires. But the braided wires which contract under air pressure are essential to a safe hookless tire.

The only desirable tire which can't rim cut is the Goodyear No-Rim-Cut tire.

10% Oversize

When the rim flanges turn outward the extra flare lets us make this tire 10 per cent oversize. And we do it without any extra charge.

That means 10 per cent more air—10 per cent more carrying capacity. It avoids overloading, which, with ordinary tires, is almost universal. It takes care of the top, glass front, gas tank, extra tires, etc.—the extra weight which most men add to their cars.

This 10 per cent oversize, with the usual car, adds 25 per cent to the tire mileage. With the No-Rim-Cut feature it will, on the average, save half on one's tire bills. That's why 500,000 have been sold already.

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No-Rim-Cut Tires

Our Tire Book tells scores of facts which every motorist should know. It tells all we have learned in 12 years of tire making. You will learn how to cut your upkeep cost to the minimum if you write us to send this book. Write now.

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Live Stock and Dairy.

PNEUMONIA IN SWINE.

To the Editor: The past year has brought to my attention very strongly the prevalence of pneumonia in the swine herds of California, and it is the aim of this article to point out a few of the simple preventatives against this dread disease.

Pneumonia is one of the diseases where "an ounce of prevention is worth a pound of cure." Once pneumonia gets a foothold in a hog, the chances are so strongly in favor of death that recovery may be considered out of the question. Should an animal so attacked recover, it will be weak constitutionally and set back further than it can ever regain.

Pneumonia may be said to confine itself, with few exceptions, to young pigs weighing 100 pounds or less. Its symptoms are at first sneezing and a mild cough. These quickly change to hard coughing and labored breathing, which as the disease progresses shows evidence of much pain. The appetite is lost and the eyes become gummed and inflamed. In some cases the pig lingers on for weeks, while in others death occurs almost immediately. Vomiting sometimes occurs.

The anatomy of the pig makes results from treatment almost impossible, and treatment may be said to be useless. External remedies, such as painting the outside of the chest cavity with iodine and oil, help, but not enough to make its use much of a success. Internal remedies such as calomel, ipecacuana, syrup of squills, quinine, and whisky also help, but their benefit is not certain.

Since remedies are not certain in the cure of pneumonia, it will be found that the prevention of the disease is the only real way to combat it. The main causes of the disease are exposure to draughts, sudden changes in temperature, damp beds, manure heaps as sleeping quarters, and exposure to the disease itself. Pigs in thin condition or weak constitutionally are more liable to contract the trouble than pigs in good flesh and healthy specimens. Good, dry, warm, comfortable sleeping houses, well ventilated and so arranged as to prevent crowding and piling up, will, I think, do more to prevent pneumonia than any other one thing. Some such preparation as advocated by the Government for the prevention of hog cholera will help keep the stock in a good healthy condition, the better to combat exposure.

It is the little attentions that keep the herd healthy and in a vigorous condition, and by using simple preventatives, remedies will be found unnecessary.

H. B. WINTRINGHAM.

Middletown, Lake county.

WORMS IN THE HORSE.

To the Editor: What would be the best remedy to administer when a two-year-old colt is infested with long, round worms? And what would the dose be for a full-grown horse? SUBSCRIBER.

Sunnyvale, Cal.

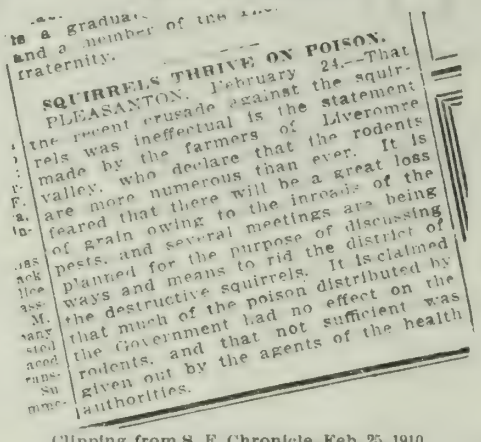
If the horse is passing long, round worms give twice daily, for three or four days, a drench composed of turpentine 1 oz. and linseed oil 3 oz., to be followed on the fourth day with a physic of Barbadoes aloes 1 oz. Worms usually infest horses not in good condition, and good feeding and tonic medicines to stimulate the appetite should follow the vermifuge treatment.

STOCK BEETS.

To the Editor: I have adobe soil with plenty of water for irrigation. The sur-

HALL'S SQUIRREL POISON

READ THIS


...and a member of the ... fraternity.

SQUIRRELS THRIVE ON POISON.

PLEASANTON, February 24.—That the recent crusade against the squirrels was ineffectual is the statement made by the farmers of Livermore valley, who declare that the rodents are more numerous than ever. It is feared that there will be a great loss of grain owing to the increase of the pests, and several meetings are being planned for the purpose of discussing ways and means to rid the district of the destructive squirrels. It is claimed that much of the poison distributed by the Government had no effect on the rodents, and that not sufficient was given out by the agents of the health authorities.

Clipping from S. F. Chronicle, Feb. 25, 1910.

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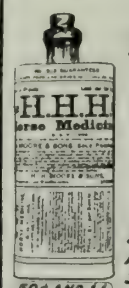
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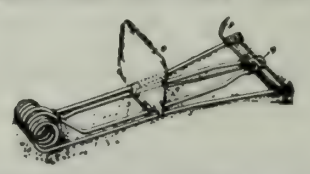
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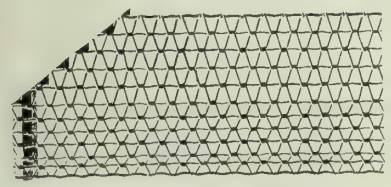
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Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address
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face water in summer is about seven feet from the surface. And I would like to know which in your opinion would be the more profitable crop to grow for hog feed, stock beets or mangels. Also, what varieties would be likely to succeed the best here. SUBSCRIBER.

Sunnyvale.

Mangels are stock beets; the long red mangel being chiefly grown. The shorter, more globular "tankards" are, however, satisfactory. All the popular kinds ought to do well with the conditions you describe. Consult the catalogues of seedsmen advertising in the PACIFIC RURAL PRESS.

LIVE STOCK NOTES.

A. G. Glenn, of the Glenmeade Stock Farm, near Winters, will leave shortly for the East to purchase blooded stock for his ranch.

Warren Hord, of San Francisco, recently purchased of the Glenmeade Stock Farm a Percheron stallion, two jacks, several mules, and a band of registered Shropshire sheep. All have been shipped to the Linden Stock Farm by Mr. Hord.

The J. H. Harlan Co., of Woodland, recently sold registered Short-horn bulls to the following parties: G. A. Ware, Williams; J. Caples, Jr., Elk Grove; H. Bowring, Woodland.

T. B. Gibson, of the Roselawn Stock Farm at Woodland, reports recent sales as being very good. Poland-China boars have been sold to Otis Wilbur, of Davis; T. H. Ramsey, at Red Bluff; Los Angeles County Farm; Norman Miller, Berkeley; Crank & Griffes, Woodland; I. L. Borden, San Francisco; Harry Cash, Montague; B. F. Clark, Turlock; Wm. Browning, Woodland; W. E. Ward, Bradley; M. Hickman, Cottonwood; G. J. Kerry, Kirksville; H. H. Gable, Woodland; L. A. Walton, Yuba. W. L. Wallace, of Capella, bought a boar and a Short-horn bull. M. Elburg, of Live Oak, also purchased a bull, three cows, one boar, and eight sows. Thos. Langenour, of Woodland, got two boars.

A work-horse show is to be held at Chico on April 29.

J. W. Bell, of Modesto, recently purchased the 2400-acre ranch of Dr. E. Northcott near Hopland, and will plant out part to alfalfa, and stock the range with cattle.

DAIRY NOTES.

The Los Angeles health department was recently voted $200 to defray the expense of a milk inspector, who will go to Tulare and San Luis Obispo counties and investigate the condition of the dairies in those sections which are furnishing milk to that city.

Lutz Bros. have secured control of the creamery at Sanger, and will place Ted Nix in charge. The new owners expect to have the creamery in successful daily operation soon.

The milk and cream industry in the Sarnia district of Ontario, Canada, has been greatly benefited by the change in the tariff law which passed in 1909. Prior to the lowering of the duty on Canadian milk, none was sent into the United States, while in 1910 more than 172,000 gallons were sent to Michigan which brought 70c. per gallon. The average paid for butter-fat was 27c. It cost the Michigan creameries an average of 4c. per pound of butter-fat for carriage and duty to bring the milk to the factory. It is thought that imports will be much heavier in 1911.

S. D. England and Carson Reid recently purchased the ice plant at Reedley and are arranging to start a creamery there which is to be ready to operate by July 15.

HORSES AND CATTLE.

W. A. FORBES, BOX 746, SACRAMENTO, has arranged with either of two Eastern judges to locate and deliver, on orders, live stock of any description. All cattle tuberculin tested; six mixed cars landed since the first of the year and buyers delighted; prices lower than those current on the same grade of stuff; carloads of Holsteins and Shropshire sheep a specialty; references and correspondence solicited.

FOR SALE—Nine recently imported pure-bred Duroc-Jersey gilts, more or less heavy with pig; for sale at prices which will enable you to enter the pure-bred business with the breed of hogs most popular in the corn belt; satisfaction guaranteed or money back. W. A. FORBES, Box 746, Sacramento.

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PURE-BRED SHORT-HORNS, Poland-China hogs, and Shropshire sheep. Roselawn Stock Farm, Woodland, Cal.

PAICINES RANCH CO., Paicines, San Benito county, Cal.—Young Percheron stallions for sale.

POLLED JERSEY CATTLE—Some on Pacific coast. Chas. S. Hatfield, Secretary, Springfield, Ohio.

HENRY WHEATLEY, Napa, Cal.—Breeder and importer of Shires and Percherons.

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DIXON, CAL.

MILK FEVER AND ITS TREATMENT.

To the Editor: Will you please tell me what causes milk fever in cows? Is there any method of caring for cows that will prevent it? Also, is there any good remedy for it when once the cows have the fever? If you will kindly answer these questions, you will be doing me a great favor. SUBSCRIBER.

Lodi.

We have previously discussed this disease and its treatment in detail, but possibly there are among our new subscribers others to whom the facts are unknown. We condense them from the writings of Dr. J. R. Mohler as published in a bulletin of the U. S. Department of Agriculture:

Milk fever is a disease of well-nourished, plethoric, heavy-milking cows; it occurs during the most active period of life (fourth to sixth calf), and is characterized by its sudden onset, and the complete paralysis of the animal with loss of sensation, and by following closely the act of calving, or parturition, terminating in a short time in recovery or death. One attack predisposes the animal to a recurrence of the trouble.

PREDISPOSITION AND CAUSE.—Experience shows one of the most prominent predisposing causes to be the great activity of the milk-secreting structure, namely, the udder. This organ is most active after the fourth, fifth, and sixth parturition, and this is the time of life when the vast majority of cases occur. The disease is almost unknown in heifers with the first calf, and decreases in frequency steadily after the most active milking period is past. Probably of equal importance with the activity of the udder in producing the disease is the existence of a plethoric condition of the system, the result of excessive feeding and lack of exercise before calving. Fatness is only of importance in the production of the disease in so far as it tends to increase glandular activity, particularly of the udder, and because of the higher state of plethora of the fat animal. The real cause of the disease, however, has not been fully demonstrated.

SYMPTOMS.—This disease in its typical and most common form is comparatively easy to diagnose, and one which almost every dairyman knows immediately before the arrival of the veterinarian. It usually comes on within two days after the birth of the calf and is practically never seen after the second week. In isolated instances it has been observed a few days before calving. At the commencement of the attack there is usually excitement: the cow is restless, treads with the hind feet, switches the tail, stares anxiously around the stall or walks about uneasily. She may bellow occasionally, show slight colicky symptoms, and make ineffectual attempts at relieving the bowels. These symptoms are rarely recognized by the owner, but they are followed within a few hours by beginning paralysis, indicated by a staggering gait, especially in the hind legs, and by weakening of the knees and fetlocks in front. The patient now becomes quieter, the gait more staggering and weak, and finally the animal goes down and is unable to rise. The paralysis by this time is general, the calf is unnoticed, and the cow lies perfectly quiet with the eyes partly closed and staring and showing a complete absence of winking when the eyeball is touched. She is absolutely unheedful of her surroundings, and flies may alight with impunity on all parts of the body without causing the slightest movement to dislodge them. While down the patient assumes a very characteristic position. The head is turned around to the side (usually the left) and rests on the chest, causing a peculiar arching of the neck. If the head is drawn out straight, it immediately flops around to the side again when the force is removed. The body usually rests slightly to one side, with the high legs extended forward and outward and the forelegs doubled up in their normal position.

TREATMENT.—In the administration of medicine by the mouth, and especially drenches, great care should be taken to prevent the fluids from getting into the larynx and from there into the lungs where they will set up traumatic pneumonia, which is almost invariably fatal. In case the throat is not paralyzed the drench may prove of value and should be given slowly and immediately stopped at the first sign of uneasiness or coughing on the part of the animal. While the patient lies on the side she must raise the weight of her body at each inspiration, which is very exhausting, and hypostatic congestion of the dependent lung is greatly favored. Consequently it is of importance that the cow should be kept propped up on the breastbone by means of bags of chaff or straw placed against her side. In the way of medicinal treatment, purgatives may be given in the first stage of the disease when the animal can swallow, with the precautions above mentioned. One pound of epsom salts and 2 ounces of creolin dissolved in a pint of water will prove beneficial. The rectum should be emptied and injections of 1 to 2 gallons of warm water given to stimulate intestinal movements. However, the normal movement of the bowels, once lost, is exceedingly hard to re-establish, and sometimes all efforts in that direction fail. The urine should be drawn with a catheter or by pressure on the bladder with the hand in the rectum, as the bladder is paralyzed and unable to empty itself.

(To Be Continued.)

CUTTING ALFALFA FOR STORAGE.

To the Editor: I have been cutting alfalfa into a barn for two seasons. It is absolutely necessary to have the sides and floor tight, and it is easier to feed it if it is in a loft. The hay is best stacked first, and must be thoroughly cured. I am surprised at your remarks regarding artichokes. They are surely good hog feed, and have been grown successfully in several places. Mr. Robbins of Los Alamos is very well pleased with them. A. BALFOUR.

San Francisco.

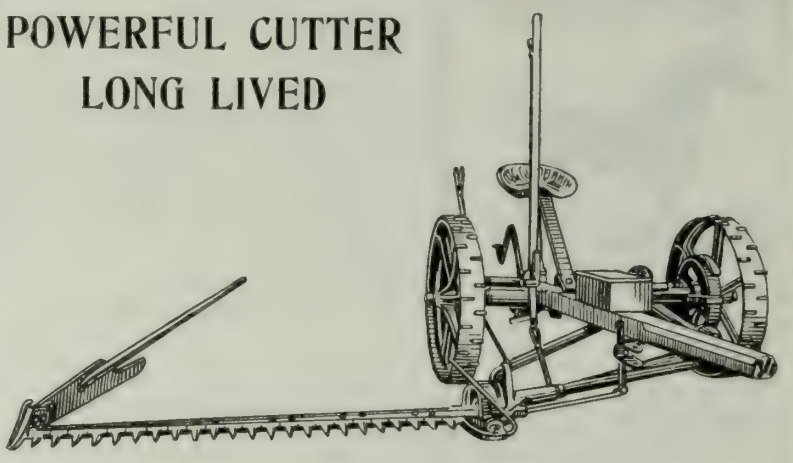
[We are glad to have these points. We would be delighted to have an account of Mr. Robbins' experience: how long he has grown artichokes and how he handles the crop—or does he leave that wholly to the hogs?—EDITOR.]

Rev. John E. Hummon, a Lutheran minister from Wisconsin, has closed a deal through which he acquires title to 3000 acres in the rich Cone tract, a few miles from Red Bluff. Mr. Hummon represents a number of members of the Lutheran church who will come to Tehama county this summer and make their homes on the land. At present they are residents of Wisconsin, Nebraska, Minnesota, and the Dakotas, and number about 900 people.

At the big Towne ranch near Pixley, Tulare county, last week, a stock sale was held, for the purpose of getting rid of some of the cattle and horses kept there, that more attention may be given to breeding hogs. A large acreage is being set out to alfalfa and hog-tight fences are being built.

JOHNSTON MOWER

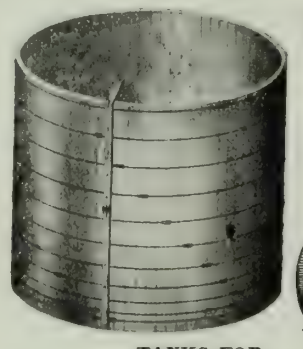
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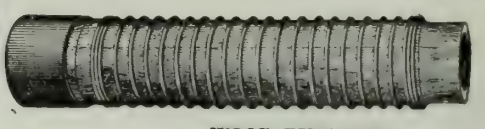
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HARES AND RABBITS.

To the Editor: "Erstwhile City Dweller" should stop and consider before making such a rank statement to the public about rabbits. In the beginning the writer mentions jackrabbits, later on he mentions hares, and toward the end he talks of all grown rabbits. As far as the talk goes on jackrabbits it is quite correct, as they should not be allowed to go into market for the reason that they are diseased at certain times of the year; and it would be almost impossible to prevent the diseased rabbits from going to market as long as they were marketed at all. Therefore, I say that they should not be sold in the market at any time of year.

But I will say that the Belgian hares and other grown rabbits of different varieties are the cleanest animal there is on the market today, and it is a very rare case to see any of them sick in any way. In fact, you never see a diseased rabbit where they are half way taken care of. Where other edible animals would get sick from neglect, the hares keep themselves in good condition. They will not eat everything that is thrown into them. They will pick out the very cleanest and choicest grains and greens and pile the rest up in a corner, or carry it to their box and make a nest out of it. You never need to clean the hares' box, as they will clean it themselves and keep it clean. Of course, you have to clean their coop or cage.

Some people have an idea that hares are a dirty animal. If anyone does, I would like for him to get a pair and try them out. I have some Belgian hares open to the public for inspection at any time, and as a special favor I would like to have "Erstwhile City Dweller" come and look the rabbits over, and I think when he gets through he would feel guilty of publishing an unexplained and incorrect item, and would be more careful when talking of rabbits.

WM. KEARNEY.

Livermore, Cal.

[Probably Mr. Kearney is the only reader who thought Belgians were involved in a discussion of the character of wild game. But as he thinks there might be such a connection, we gladly give him his fling.—EDITOR.]

Poultry Department.

Conducted by M. Russell James.

COLDS AND ROUP.

We have had a number of inquiries in regard to the handling of colds and roup among fowls. The weather this season seems particularly conducive to these afflictions where fowls are not properly protected by tight, dry poultry-houses sufficiently roomy, and well ventilated from the side away from prevailing winds.

At this season the poultryman should go into his poultry-house after the fowls have gone to roost, prepared with a sewing machine oil-can filled with coal-oil, a cup of coal-oil and sweet oil, half and half, a spoon, and a clean cloth. Setting his lantern in a corner, he should remain quiet a few minutes and listen for any choking, hiccoughing, or other evidences of colds among the birds. As soon as any such symptoms are discovered, he should cleanse out the afflicted bird's nostrils by injecting coil-oil into them with the machine can, then give a spoonful of the mixture, and wipe with the cloth the head and eyes of the fowl; at the same time it is an advantage to rub the legs with the oil. Often one such treatment will head off the cold. But where fowls are more seriously affected and appear droopy, they should be removed from the general flock to a warm, dry coop and treated once or twice a day till relieved; also they should be fed an appetizing, stimulating mash containing cooked lean meat and chopped raw onions and made hot with red-pepper pods. Where is a tendency to colds in the general flock, this stimulating mash should be fed and some mild disinfectant put into the drinking-water for the entire flock. This may be either a spoonful of Douglas mixture to each gallon of water or a piece of copperas the size of a small marble, or sufficient permanganate of potash to make the water pink.

Where the colds have been neglected till they have got into the roupy stage, or where they have been virulent from the start, the proper cure is the hatchet. Always in genuine roup there is the offensive and penetrating roupy odor, and when this is in evidence, the sooner the fowl is killed, its body burned, and the poultry quarters disinfected with fresh slacked lime, and the perches, nests, and vessels wiped with coal-oil, the better for that poultryman and his poultry. Sometimes the cold holds on, and a mild form of roup, known as chronic roup, develops; the fowl lives on indefinitely eats ravenously, and may even lay eggs. Such a fowl is a menace to the flock; in fact, it is a roup culture and spreads the disease in a more active form among the less hardy of the birds. In all poultry diseases where there is not an improvement in the fowl after a week or ten days of doctoring, the only safe course is the hatchet cure. Novices in the business disregard this advice, but no experienced poultryman dallies with disease.

In the treatment of swell-head, or where one wants to doctor for roup, the above is as good as any. Where it does not seem effective, change to permanganate of potash instead of coal-oil. Make the drinking-water a claret color and use a stronger solution for a dip. Open the fowl's beak and hold its head under the solution for a second, rinsing out the throat and nostrils thoroughly. Repeat this morning and evening until relieved. For diphtheria or croup peroxide of hydrogen is considered the best remedy. Dilute half with water and apply to the diseased surface as long as bubbles form. With an atomizer force a little into the nostrils. Powdered burnt alum blown into the throat and nostrils through a quill is another remedy. For canker, have the druggist prepare a solution of 4 grains of sulphocarbolate of zinc to 1 ounce of distilled water. Paint the canker spots with this, night and morning; also, use powdered sulphur and charcoal in the mash; a teaspoonful of each to every pint of mash.

DIGESTION EXPERIMENT WITH POULTRY.

An important bulletin has just been issued by the Maine Experiment Station on the above subject. There had been nothing definite ascertained (the "balanced ration" craze to the contrary notwithstanding) in regard to the digestibility of foods with poultry, and the nutrients they require were determined approximately as compared with the requirements of other animals. The work of the Maine Station the past year has been to obtain something definite in this direction as relating to fowls.

The digestibility of American feeding stuffs has been studied quite extensively with horses and hogs, but as yet only a few experiments in this country have been made with poultry. It is obvious that such studies are desirable on account of their practical importance and the growing demand for information in regard to the care and management of fowls which has come with the great increase in the poultry industry in recent years. A few years ago the great bulk of the eggs and poultry which supplied our markets was produced by farmers who let their hens run at large for the greater part of the year, picking up their feed in the fields and pastures, supplemented, perhaps, by a feed of corn at night. But today when great plants are established carrying thousand of birds, only the most careful and scientific methods of handling and feeding will make the business profitable. Several of the Experiment Stations have considered questions of poultry nutrition, and much valuable information has been gained through feeding experiments for growth, egg production, etc., but the absence of definite standards and coefficients of digestibility of different foods for this class of animal has been a serious drawback to the best work. The abundant data available for other classes of farm animals might possibly be used to good advantage with poultry, but the structure of the alimentary canal of birds is quite different from that of herbiverous animals; consequently the digestive capacity may be different.

CONCLUSIONS.

The results obtained indicate that the digestion coefficients of most nutrients for poultry are not materially different from other farm animals. Unlike ruminants, however, they digest very little crude fiber, hence a coarse fodder carrying much of this material is of but little value to them. The nutrients of wheat do not seem to be as well handled as most other concentrated grains, the ether extracts showing a particularly low coefficient. Likewise bran, one of the wheat offals, shows low digestibility in organic matter, ether extract, and nitrogen free extract. Its bulky and coarse condition has brought it into much favor to feed with more concentrated materials, and it often makes as much as 50 per cent of the mixtures used for mashes. The mixtures of equal parts cornmeal and fine-cut clover used in the experiments was sufficiently bulky to feed with concentrates, was more digestible, and at present prices more economical than bran; providing, of course, the poultryman produces his own clover, which he should do. An exclusive diet of wheat has a deranging effect upon the digestive system of the birds.

Next week we shall make some further extracts of results obtained and conclusions arrived at from the experiments.

Eggs and Dairy Products.—In the 20 years ending with 1900 the population of the United States increased by 50 per cent, but in the same time the production of eggs increased by 89 per cent. There was a still greater increase in the production of milk per capita. Meanwhile the United States has practically ceased to be an exporter either of eggs or dairy products. The increased production has been entirely absorbed in the home market.

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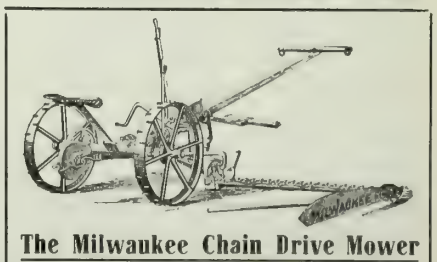
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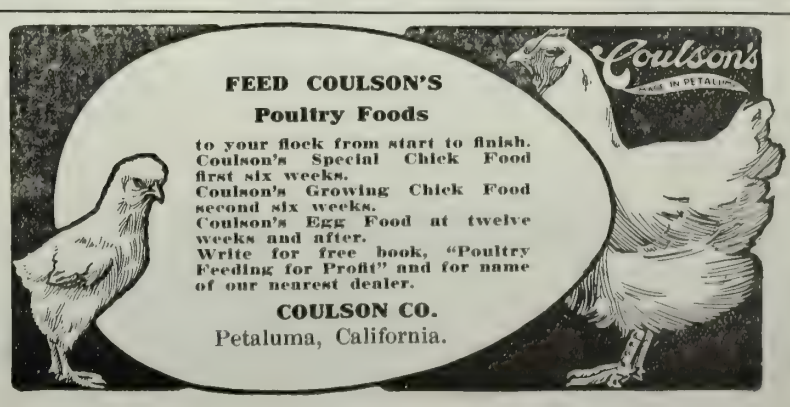


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The Home Circle.

How Long.

I once knew all the birds that came
  And nested in our orchard trees;
For every flower I had a name;
  My friends were woodchucks, toads, and bees.
I knew where thrived in yonder glen
  What plants would soothe a stone-bruised toe;
Oh, I was learnéd then—
  But that was very long ago.

I knew the spot upon the hill
  Where checkerberries could be found;
I knew the rushes near the mill
  Where pickerel lay that weighed a pound.
I knew the wood, the very tree,
  Where lived the poaching, saucy crow;
And all the woods and crows knew me.
  But that was very long ago.

And, pining for the joys of youth,
  I tread the old familiar spot,
Only to learn this solemn truth—
  I have forgotten, am forgot.
Yet here's this youngest at my knee,
  Knows all the things I used to know;
To think that I was once as wise as he—
  But that was very long ago.

I know it's folly to complain
  Of whatsoe'er the fates decree;
Yet were not wishes all in vain,
  I tell you what my wish should be—
I'd wish to be a boy again,
  Back to the things I used to know;
For I was, oh, so happy then—
  But that was very long ago.

—Eugene Field.

An Object Lesson in Love.

"Do you know of any reason," he said, "why we shouldn't get married?"

"None whatever," she replied, except—"

"Except what?"

"Well, we might not be suited to each other."

They were sitting under a large umbrella looking out at the sea—all alone. The waves washed rhythmically at their feet. He smiled confidently.

"Of course, dear," he said, "if we're going to look into all the reasons, why we never would get married. But if men and women always stopped to do that, nothing would ever be done. Is it well to depend upon reasons? Isn't the fact that we love each other enough?"

"No!"

Her eyes dilated with keen intelligence as she looked at him. She was an extremely pretty girl, but by no means a doll. College had put logical lines into her features.

"Not necessarily," she went on. "It is well, of course, to be blind instruments of impulse up to a certain point. But then, one must exercise one's common sense. Is married life the best for us both? Is it, in the long run, conducive to the best results? I should say this was doubtful."

"What makes you think so?"

"Well, my dear fellow, look about you at people who are married. Of course, many of them stick to it from force of habit. But would they really do it over again? And doesn't the romance fade away? Let us be practical."

"Never!" he exclaimed, in reply. "I don't believe it. And what is more, I think I can prove it otherwise."

"All right. If you can give me a single instance—"

She looked at him full in the face. She put her hand on his arm.

"Believe me, dearest," she said, "it is not because I don't love you. I only want to be sure we are right."

He met her gaze with a triumphant smile.

"I understand, sweetheart," he said. "Well, now, let me reassure you. I do know of a case, and so do you. It's right over there."

He waved his hand in the direction of a mass of rocks, down the beach, in the opposite direction from the hotel.

"Who's there?" she asked.

"That little lady whom we both like so much—Mrs. Spencer—and her husband. I saw them stroll out there a few minutes ago. They are sitting behind that rock. You know what an ideal couple they are, and they've been married ten years. Every one in the hotel has been remarking on their devotion. Don't you know how she has missed him during the week-days when he has been in town?"

"There may be nothing in it. Perhaps—"

"Exactly; but it is easy to find out."

She looked at him curiously. He had risen and was shaking the sand out of his coat.

"What do you propose to do?" she asked.

"Let us creep up behind that rock. It is a perfectly justifiable proceeding, considering that the happiness of two lives depends upon it. Let us hear what these two—husband and wife for ten years and outwardly happy—have to say to each other. Could there be any better test? If all the romance has indeed faded out of their lives, if they are in reality acting a part, then isn't it better to find it out now? What do you say?"

He held out his hand to help her up. She gave him hers.

"You are right," she exclaimed. "It is a splendid opportunity, and, as you say, perfectly justifiable."

Slowly and stealthily they crept up to the rocks where the married couple were concealed.

They sank down behind a rock not five feet away from their quarry, whose every word could be distinctly heard.

Mr. Spencer was smoking a cigar. The faint blue line of smoke rose above the rocks, until the afternoon breeze caught it and blew it away into thin air.

"The fact of the matter is," he was saying, "that we are diametrically opposed on every subject, and always have been. But certainly a woman ought to yield occasionally."

Mrs. Spencer apparently tossed her head.

"That's a particularly pleasant thing to say to me," she said, "when I've done nothing but yield all my life, when I might have been something if I hadn't been kept down by household work."

"Ha!" Mr. Spencer laughed derisively. "That's great!" he exclaimed. "I like that!" You a household drudge! Ha! What are you doing now but enjoying yourself, and me paying thirty a week for your board while I swelter in town?"

"Didn't my health demand it? And why did I need the change? Just because you, sir, made so many demands upon me."

Mr. Spencer's voice did not rise. It had evidently been trained through years of experience.

"That is a fine argument," he exclaimed, "when you play bridge I wouldn't dare say how many afternoons a week. And who does the worrying for the family but me? Who has to pay the bills? If you would only look at things from my standpoint occasionally, perhaps you would view things differently."

At this sally, Mrs. Spencer apparently raised her eyebrows significantly, and then smiled her most satirical smile.

"Oh, how I would like to have some of those people at the hotel who think you are such an angel just see you now," she

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replied. "You didn't talk this way before we were married. You were glad enough then to—"

They did not stop to hear any more. By mutual consent they crept back to their old trysting place. Silently he put up the umbrella, and silently they sank down. Then he turned to her.

"There you are," he said, at last. There's a before-and-after for us. Are you convinced?"

She looked at him solemnly.

"Are you?" she asked.

He put his hands out and took hers.

"Yes, sweetheart."

"Of what?"

He raised his head proudly.

"I'm convinced that man is an ass. He deserves to be unhappy. I would never make a mistake like that. Now, what do you think?"

She smiled scornfully.

"I was thinking the same about that woman," she cried. "What an awful hypocrite! And certainly she hasn't the remotest idea of how to manage him!"

He drew her over toward him and put his arms about her.

"Now I know it's all right," he said, "because we could never make a mistake like that."

And she raised her pretty face to his, calmly and confidently.

"Never!" she exclaimed.—Tom L. Masson.

OUR YOUNG FOLKS' DEPARTMENT.

Conducted by M. Russell James.

Duty.

What is our duty here? To tend
From good to better—thence to best;
Grateful to drink life's cup—then bend
Unmurmuring to our bed of rest;
To pluck the flowers that round us blow,
Scattering our fragrance as we go.
—J. Bowring.

A Comanche Princess.

(Concluded.)

The day of the grand council with the Comanches when the children were to be delivered over to their tribe, the commissioners dressed Maria in a flaming red calico dress, put strings of glass beads on her neck, brass rings on her arms, a wreath of prairie flowers on her head, tied a red ribbon about her smoothly plaited hair, and painted her face with vermillion until she looked like the real Indian princess that she was. It gave no pleasure, however, to poor Maria. She was a lamb dressed in flowers for the sacrifice.

Finally the time came when, in the full council, Colonel Eldridge stood holding the hands of the two children in front of the chief, and said to him that as an evidence of the desire of the Great White Father (Houston) to make peace and be friends with the great Comanche nation, he had sent these two children, captives in war, back to their people. After these words he attempted to place the hands of both into the extended hand of the chief. But at this moment the most distressing screams burst from Maria. She ran behind Colonel Eldridge and begged him for God's sake not to give her to those people; to have mercy and not to leave her. Then the poor child fell on her knees, and shrieked and clung to him with the madness of despair.

A deathlike silence prevailed in the council. The Indians stood by in stern stoicism; the voices of the white men were silent with emotion, and nothing but the cries of the poor lamb of sacrifice pierced the distance of the bloom-scented prairies.

As soon as possible her white friends attempted to quiet the child. Though the comforting words were spoken in English, they were evidently understood by all, for theirs was tne language of nature. Their efforts being useless, the chief spoke:

"This is the child of our long-mourned chief; she is of our blood; her aged grandmother stands ready to receive her, but she has forgotten her people. She does not want to come to us, and if the Great White Chief only sent her for us to see that she is fat and well taken care of, tell him I thank him, and she can go back."

This was an opportunity, and General Bee suggested to Colonel Eldridge to save the child. But though the latter's heart was bursting with grief and sympathy, his sense of duty told him his work was unfinished, and he replied to the chief:

"I have been ordered to give you this child. I have done so; my duty is fulfilled. But you see that she is no longer a Comanche. Child in years when taken from you by the stern hand of war, she has learned the language of another people. I implore you to give her to me, and let me take her to my home and care for her all the days of my life."

"No," said the chief, "if she is my child I will keep her!" and seizing her roughly by the hand, he swung her behind him into the arms of the old grandmoter, who bore her screaming from the tent.

And thus the princess was delivered to her people, but the last sound the party heard on leaving that Comanche camp was the wail of the poor, desolate child.

Years afterward General Bee received a message from Maria and sent her some presents by way of remembrance. She had become the main interpreter of her nation, and often met our people in council. So it ended well. She became an instrument of good, a sort of fairy princess in behalf of the white people, and fulfilled her destiny on the stage of action for which she was born.

The Prize Winner.

It has been difficult to say which was the most interesting letter among the letters of our young folks, but it has finally been decided that the prize should go to Emma Tamagni. Now, except in one point this little girl's letter was not more interesting that the others. We think our young friends will see the point at once and will be glad that the little girl, who is planning to start a poultry business to help out the family income, is to get tne eggs from pure-bred stock as a starter in that business, and will be interested in Emma's future letters telling of her trials and triumphs in the work.

The next awards for helpful and interesting letters to this department will be made the first week in June. There will be two prizes, and what they are will be announced later when this department is more completely organized and all of our young folks have come into the circle.

Letter from a True Native Daughter.

Roseville, Cal., March 4, 1911.

Dear Editor: In reading the Young Folks' Department, I noticed that you want us to write letters about the farm. I live on a farm and think it is the best of all places to live. Our farm is about one and a half miles from Roseville. My father also has another large farm one mile from here. We have 10 acres in almonds and 70 acres in grapes; we also raise apples, pears, peaches, figs, quinces, plums, cherries, prunes, apricots, oranges, lemons, and pomegranates. We have eight horses and one Jersey cow, three pigs, and about fifty chickens. Each year we raise enough vegetables for our own use.

I am ten years old and in the fifth grade at school. I help with the housework, and I can climb one of the large oaks in front of our house, and I can ride horseback, too. I am very fond of books and stories. I have three sisters and three brothers. When it is pleasant weather my brother and I walk to school. There were two large new schoolhouses built in Roseville last year.

There are all kinds of wildflowers around here—poppies, creamcups, bluebells, larkspurs, buttercups. In our rose garden there are twenty different kinds of roses. I think the rose the queen of flowers.

Roseville is the largest city in Placer county. The railroad built it up in three years. I think California the best place in the world to live. I would not live any place else. Yours truly,

Florence Shellhous.

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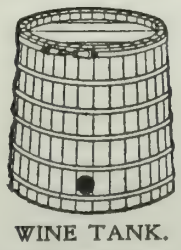
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THE MARKETS.

San Francisco, March 22, 1911.
Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The cut in Oriental freight rates will continue for some time, assuring a heavy movement from the north. There is accordingly a much stronger feeling there, and this market is firmer in sympathy, as most current business is on northern grain. California Club, however, is higher. The wheat crop outlook in the Sacramento valley is considered good.

California Club	$1.42½@1.45
Sonora	1.60 @1.65
White Australian	1.55 @1.60
Northern Club	1.47½@1.52½
Northern Bluestem	1.50 @1.55
Russian Red	1.42½@1.50

BARLEY.

The upward movement in the spot grain has been resumed, both shipping and choice feed being considerably higher. There is some foreign movement and the Eastern demand continues active, causing a rapid depletion of supplies on hand. Values are accordingly very firmly held, with a further advance in prospect.

Brewing and Shipping	$1.20 @1.25
Choice Feed, per ctl	1.17½@1.20
Common Feed	1.10

OATS.

Seed oats are no longer much of a feature, but there is considerable strength and firmness in feed, with an upward tendency in prices. The current demand is fairly active, and supplies have been greatly reduced.

Red Feed	$1.20 @1.25
Red Seed	1.32½@1.42½
Gray	Nominal
White	Nominal
Black Feed	1.10 @1.20
Black Seed	1.45 @1.50

CORN.

Prices show no quotable change, but there is more firmness in Eastern stock. Arrivals have been larger than for some time, but the demand is increasing. Considerable California corn is moving in the interior at about $1.30.

Eastern Yellow	$1.25 @1.30
Eastern White	1.26 @1.31
Brown	1.50 @1.60

RYE.

Offerings have been materially increased, and lower prices are quoted, but there is no movement of any consequence.

Rye, per ctl	$1.40 @1.50

BEANS.

A little more activity is noted, both in the local and shipping demand, but the movement is still comparatively slow. While prices on most lines are not quotably changed, there has been some fluctuation, and the market seems rather unsettled. The high prices here are causing the shipment of some stock from Japan, the crop in Corea having been large. The only notable changes this week are on limas and blackeyes, both lines being higher. The steady advance of limas does not seem to have had any appreciable effect on the consuming demand through the East, as there is a steady movement in that direction, and supplies there as well as on the Coast are light. Mr. Waterman, manager of the Lima Bean Growers' Association, while in New York recently stated that the Association is limiting its sales at present, in order to have some stock through the summer months. By the end of July he believes everything will be cleaned up. He anticipates a larger crop than last year, and expects to begin shipping about September 1. The new contracts will be out in June.

Bayos, per ctl	$4.75 @4.85
Blackeyes	5.70 @6.00
Cranberry Beans	4.00 @4.25
Garvanzos	2.85 @3.00
Horse Beans	2.25 @2.50
Small Whites	3.40 @3.55
Large Whites	3.40 @3.55
Limas	6.20 @6.30
Pea	4.25
Pink	5.50 @5.60
Red Kidneys	6.25

SEEDS.

There is still an active demand for several lines, and the market in general is steady to firm, quotations remaining as before.

Alfalfa	18@ 20c
Broomcorn Seed, per ton	**$20.00@ 25.00**
Brown Mustard, per lb	5½c
Canary	3½@ 4 c
Hemp	3½@ 4 c
Millet	2¾@ 3¼c
Timothy	8 @ 9 c
Yellow Mustard	5¾c
Dried Peas, per ctl	3.75@ 4.00

FLOUR.

The reduced Oriental freight is causing an extremely heavy export movement from the North, and the recent shipping movement from this port has been fairly large. Northern patents are still easy, but local flour is steadily held at the former level.

Cal. Family Extras	$5.40 @5.80
Bakers' Extras	5.40 @5.80
Superfine	4.50 @4.70
Oregon and Washington	4.30 @4.60

Hay and Feedstuffs.

HAY.

There is at present considerable difference between prices quoted by local dealers and those paid in the country. Green feed is still rather short in some sections, and there is a fairly active movement in the interior of the State, though supplies are still excessive and prices are generally unsatisfactory. Arrivals in San Francisco have been heavier than for several weeks past, and the bulk of arrivals have been moved without difficulty, as previous supplies had been pretty well cleaned out. Local dealers have been carrying very light stocks, and are now buying quite freely in the country, though their purchases are limited to the requirements of the near future. Fancy wheat hay is a little higher, and good tame oat hay is also very firm, this description being very scarce. There is little feature in other lines, prices remaining as last quoted.

Choice Wheat	$11.00@13.50
Good Wheat Hay	9.00@11.00
Other Grade Wheat	7.00@ 9.00
Wheat and Oats	7.00@10.50
Tame Oats	7.00@11.50
Wild Oats	6.50@ 8.50
Alfalfa	8.00@12.50
Stock Hay	5.50@ 6.50
Straw, per bale	35@ 55c

FEEDSTUFFS.

Feedstuffs in general find a good demand for this season, the movement in some lines being larger than for some time past, and prices are steadily held. Bran, however, is rather quiet. Rolled barley is strong, and has advanced in sympathy with the raw grain.

Alfalfa Meal, per ton	$20.00
Bran, per ton	$24.50@25.00
Cocoanut Cake or Meal	26.00
Cracked Corn	32.00@33.00
Middlings	32.50@35.00
Mixed Feeds	28.00@31.00
Rolled Barley	25.50@26.00
Rolled Oats	29.00@31.00
Shorts	25.50@28.00

Garden Truck.

VEGETABLES.

The only onions now offered come from Oregon, and are in fair demand at the previous prices. A few Texas string beans arrived during the week, but the quantity is too small to be worth quoting. Supplies of Mexican tomatoes are sufficient for current needs, prices standing as before, while eggplant and most southern California stock is rather easy. Cucumbers, however, are scarce, and bring high prices. Turnips, cabbage, and other local garden truck is easy and unchanged. Green peas are arriving in larger quantities, but choice stock is still firm, and the best lots of southern lettuce are higher. Celery is in good demand at the former quotations. Mushrooms are still coming in quite freely, and while prices are held at the former level, offerings are larger than the market will readily absorb. The principal features of the market at present are rhubarb and asparagus, the arrivals of both having been greatly increased during the last few days. Rhubarb is being shipped in on consignment, and is selling by the box at comparatively low figures, with a general pressure to sell. Asparagus has been fairly steady, but with excessive offerings the price is now lower, as the local consuming demand has not been sufficient to take care of the increasing arrivals.

Onions: Oregon, sack	$ 2.40@ 2.50
Garlic, per lb	4@ 5c
Green Peas, per lb	6@ 12½
Turnips, per sack	60@ 75c
Tomatoes, per crate	1.25@ 1.50
Eggplant, per lb	10@ 12½
Cucumbers, per doz	1.50@ 2.50
Cabbage	40@ 50c

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Carrots, per sack	65@ 75c
Celery, large, per crate	1.50@ 2.00
Mushrooms, per box	25@ 75c
Rhubarb, per box	1.00@ 1.75
Lettuce, per crate	1.75@ 2.50
Cauliflower, per doz	50@ 60c
Asparagus, per lb	5@ 8c

POTATOES.

Very little change is noted in this department, supplies of old stock being closely held at firm values, with about the usual local consuming demand. Trading is limited entirely to current needs. New potatoes have been coming in steadily from the Bay district, and sell readily at the prices quoted, though the market is not settled.

Salinas Burbanks, per ctl	$ 2.10@ 2.25
River Whites, per ctl	1.70@ 1.95
Oregon Burbanks	1.85@ 2.05
Early Rose	1.65@ 1.85
New Potatoes, per lb	4@ 5c

Dairy Produce.

POULTRY.

Local chickens are as scarce as ever. Arrivals from Eastern points, however, have been a little larger in the last few days, and some stock was carried over from last week. Hens are quite plentiful, and while the price is unchanged, there is an easier feeling. The best roosters, however, are firmer.

Large Broilers	$ 4.50@ 5.50
Small Broilers	3.50@ 4.50
Fryers	6.00@ 7.00
Hens, extra	8.50@12.00
Hens, large	7.00@ 8.00
Small Hens	6.00@ 6.50
Old Roosters	5.00@ 6.00
Young Roosters	7.00@ 8.00
Young Roosters, full grown	9.00@10.50
Squabs	4.00@ 4.50
Geese, per pair	3.00@ 3.50
Ducks	8.00@10.00
Turkeys, live, per lb	Nominal

BUTTER.

Considerable butter has been shipped North, and extras have stood at 28c. most of the week, though a little lower at present. Firsts show a slight advance, and all grades are firm at quotations. The following prices are quoted by the San Francisco Dairy Exchange. A change in the system of marking quotations is now under discussion in the Exchange.

California (extras) per lb	27½c
Firsts	26 c
Seconds	22½c

EGGS.

Production continues very heavy, but considerable stock is being taken for storage, and a large buying movement in producing districts tends to keep prices up. The consuming demand is also very strong, and the market is steady to firm at an advance.

California (extras) per doz	21 c
Firsts	19½c
Seconds	18 c

CHEESE.

New flats went down to 12½c., but a better demand in the last few days has brought an advance in both fancy flat and Y. A.s The market is weak, however, at the advance.

Fancy California Flats, per lb	14 c
Firsts	11½c
New Young Americas, fancy	16 c

Deciduous Fruits.

FRESH FRUITS.

Ordinary apples are a little higher. The principal feature is the strong shipping demand for Newtowns in producing districts, and some of the Watsonville packers are endeavoring to repurchase some of the stock held in storage at San Francisco. Prices are accordingly very firm, with some dealers holding for an advance. No other fresh fruits are offered at present.

Apples, per box—	
Newtown	$ 1.40@ 1.75
Other varieties	1.00@ 1.25
Fancy Red, 4-tier	1.25@ 1.75
Spitzenbergs	2.50

DRIED FRUITS.

Growers still hold a considerable quantity of raisins, but are becoming firmer in their ideas as to prices as the final clean-up approaches. Some peaches are also held by growers, though it is difficult to get any idea of the quantity available, and an increasing demand is rapidly reducing the supplies. In other lines there is practically nothing to be had except from packers or jobbers, and the prices quoted are almost entirely nominal. Growers who have anything to offer can easily realize the prices quoted, or possibly more for some lines, such as apricots, of which there is little to be had anywhere. Evaporated apples, which are scarce and in strong demand, have again advanced, and quite a sharp advance has been made in prunes, as most of the packers are sold out in this line. The large supply of raisins recently purchased by the packers has also been pretty well sold up, and in their desire to control the remaining stock they are openly quoting an advance, as shown below. The New York Journal of Commerce says: "While the consuming demand for California prunes is moderate, an active speculative movement is in progress. It has for its basis the light supply in first hands and the expectation of a large consuming demand during the next few weeks, while fresh fruits are unobtainable. Quite a little business is said to have been done between local operators within the past few days, continuing the activity of last week, which has for its object the closer concentration of spot stocks. According to advices from the Coast, only one or two packers are in a position to fill orders from the East in even the most prolific sizes on this season's crop, which are 30s and 40s. Most holders, in view of the rapid advance in the market, are disposed to reserve the balance of their spot stocks to meet the needs of their regular trade. Peaches are advancing on the Coast owing to an increasing demand from distributing markets, now that the season of largest consumption is at hand. More interest in spot apricots is being shown by local consumers. The market is firm, but without quotable change. California raisins of both Coast and city seeding are firmer in sympathy with reports from California, but the demand is still rather slow, and prices on the spot show no appreciable change. While the Coast market for seedless varieties is firm as a result of the close clean-up of supplies there, the spot situation is somewhat unsettled because holders who bought early at low prices are disposed to take profits."

Evaporated Apples, per lb	10½@11 c
Figs, black	4½@ 5 c
Figs, white	5 @ 7½c
Apricots	**12 @13 c**
Moorpark, fancy	**13½@14 c**
Peaches	6½@ 7¼c
Prunes, 4-size basis	8 @ 8½c
Pears	8½@12 c
Raisins—	
Loose Muscatels, in sweatbox	2¾@ 3¼c
Thompson Seedless	4 @ 4¼c
Seedless Sultanas	3¾@ 4 c

Citrus Fruits.

Oranges are going to market from California at an unprecedented rate. A big crop and several weeks of rainy weather held back shipments during February and part of March, but the past ten days has seen the golden fruit going out very fast. Last week in one day 375 cars, containing nearly 150,000 boxes of citrus fruit, were sent East. Up to Monday, the 20th, there had been shipped so far this season 14,816 cars of oranges, and 1848 cars of lemons.

At the auction at New York on March 20, 39 cars of navels were sold at good prices which ranged from $3.25 down to $2.10. Lemons were some lower, ranging from $2.90 down to $2.15.

On the same day at Philadelphia, California navels brought from $2.15 up to $2.75. Florida oranges averaged $2.40.

On the 20th, at Boston, 25 cars of navels sold well, averaging from $2 to $3.15. Lemons were low, averaging about $2.

At St. Louis on the same date, eight cars of navels were sold at prices averaging about $2.50.

The orange market in San Francisco is extremely active at present, the larger and more attractive class of fruit finding an exceptionally heavy demand. The week opened with large arrivals, but they came in on an absolutely bare market, and sold off readily at full quotations. Lemons and grapefruit are also moving well, and an advance has been made in the top prices of both lines. Limes are also very firm, nothing being obtainable at the moment under $7.

Navel oranges—	
Extra choice	$ 2.00@ 2.50
Choice	1.75@ 2.00
Valencias, choice to fancy.	Nominal
Choice	Nominal
Standard	Nominal
Tangerines	1.00@ 1.75
Choice Lemons	2.00@ 2.50
Fancy Lemons	2.75@ 3.25
Standard	1.25@ 1.50
Limes	7.00
Grapefruit	2.00@ 2.75

Nuts, Honey, Hops, Etc.

NUTS.

There is very little doing in any line, owing to the scarcity of stock. Reports of damage to the new almond crop continue to come in, and apparently the production will be smaller than usual. The New York Journal of Commerce says: "At the present rate of consumption, trade authorities assert that all good walnuts are likely to be disposed of before summer arrives, so that nothing will be left for the early fall trade."

Almonds—	
Nonpareils	15½@16 c
I X L	14½@15 c
Ne Plus Ultra	13½@14 c
Drakes	11¼@11¾c
Languedoc	11 @11½c
Hardshells	8 @ 8½c
Walnuts—Softshell, No. 1...	15 c
Standard	14½c
Softshell, No. 2	11 c
Budded	17½c

HONEY.

The better grades are scarce and hard to find. Amber and dark stock finds little demand, but offerings are not large, and prices on all lines are firmly held.

Comb—White Sage	Nominal.
Extracted—Water White ..	Nominal.
Light Amber	7 @ 8 c
Amber	5 @ 6 c
Sacramento River Comb....	12 @12½c

BEESWAX.

A little inquiry has brought an advance in the inside price of light stock, but otherwise there is no feature to the market.

Light	28 @30 c
Dark	23 @26 c

HOPS.

Trading is dull here at present, but the market is extremely firm, with light stocks and considerable demand for both old and future crops. Some recent sales have been closed in Washington at 18c. California growers are holding very firmly and so far buyers are not inclined to pay the prices asked.

Hops, 1910 crop	18 @22 c
1911 Crop	15 @16½c

Live Stock.

DRESSED MEAT.

Beef Steers, per lb	10 @10½c
Cows	9 @ 9½c
Heifers	8½@ 9 c
Veal	10 @12½c
Mutton: Wethers	10½@11 c
Ewes	9 @ 9½c
Lambs	13 c
Spring Lambs	14 @14½c
Hogs, dressed	12½@13½c

LIVE STOCK.

In the dressed-meat department, new spring lamb is offered, and finds a good demand at high prices. Heavy orders for beef placed by the Government seem to have an influence on both dressed meat and livestock markets. Beef stock is very strong, and prices are unusually high, another sharp advance having occurred. The high prices are expected to bring out larger offerings, but so far stockmen are shipping very little. Live hogs find very little demand, and lower prices are quoted. Wethers are easy.

Gross weight:	
Steers: No. 1	6 @ 6½c
No. 2	6 @ 6¼c
Cows and Heifers: No. 1....	5¼@ 5½c
No. 2	4¾@ 5 c
Bulls and Stags	2½@ 4 c
Calves: Light	6½@ 7 c
Medium	6 @ 6½c
Heavy	5½@ 6 c
Hogs: Grain-fed, heavy	7¾@ 8 c
150 to 250 lbs	8 @ 8¼c
100 to 150 lbs	8 @ 8¼c
Common Hogs, per lb	5 @ 6 c
Small prime wethers	5¼@ 5½c
Large prime wethers	5¼@ 5½c
Ewes	4 @ 4½c
Lambs	6½@ 7 c

WOOL.

The spring clip is now under way in parts of the San Joaquin valley, but so far nothing has been shipped. Buyers are apparently taking no interest in new offerings. In the absence of business, prices are quoted as before, but the quotations are entirely nominal, as the market is unsettled. Local dealers attribute this condition to the tariff agitation.

Fall Clip—	
Mountain Free	8 @10 c
Valley Fall and Lamb....	6 @ 9 c
Northern	6 @ 9 c
Southern Spring	10 @11 c
Middle Counties	12 @13 c
Northern	15 @16 c

HIDES.

Sheep skins are considerably lower, owing to conditions formerly mentioned. Several lines of hides show a sharp advance, and the market is developing increased strength all around, with a good demand from the consuming trade.

Heavy Steers, over 56 lbs.	10 c
Medium	9 @ 9½c
Light Steers, under 48 lbs.	9 c
Heavy Cows, over 50 lbs..	8¾c
Light Cows, 30 to 50 lbs..	8½c
Kip	10½c
Veal	15 @15½c
Calf	15 @15½c
Dry—	
Dry Hides	18 c
Dry Bulls	16 c
Dry Kip, 10 to 15	17 @18 c
Dry Veal, 5 to 10	16½@17 c
Dry Calf, 7 down	22 c
Fall Lambs	24 @40 c
Sheep Skins—	
Long Wools	$0.85@ 1.25
Medium Wool, 6 to 9 mos..	50@ 80c
Short Wool, 3 to 6 mos....	35@ 60c
Lambs	15@ 50c

HORSES.

Desirable Drafters, 1700 lbs. up.	$275@300
Light Drafters 1500 to 1650....	225@275
Chunks, 1350 to 1500 lbs	200@250
Wagon Horses, 1250 to 1350 lbs.	175@200
Delivery Horses, 1050 to 1250...	125@150
Desirable Farm Mares	135@150
Young	200
Old Mares	100@150

PUBLISHER'S DEPARTMENT.

We were pleased to receive this week a letter from H. O. Arton of Cape Colony, South Africa, from which we take the following: "I may say that I was in the fruit business in California for six years and have been at it here for fifteen, and find your paper most interesting and valuable. It is a great help to us here, where we are not so far advanced as you are." Showing the range of production in that country, Mr. Arton ordered a copy of each of "California Fruits" and "California Vegetables," also a book on thinning and packing table grapes, growing and fertilizing asparagus, growing blackberries, fertilizing citrus and deciduous trees, and Burbank's latest catalogue.

March promises to be the banner month for new subscribers under the present management. From all parts of the State we have received new business. To these new, as well as old subscribers, we wish to commend our advertisers. We take as much interest in the advertising columns as in the reading matter, and if our farmer friends will do the same they will find many ways of making money by dealing with our advertisers. Don't fail to mention that you saw the ad. in the PACIFIC RURAL PRESS, when dealing with them. It will aid us in giving you a better paper and will please them.



OWNERS ARE PROUD OF I H C WAGONS

There is a certain pride in owning a wagon that you know is built of the highest quality materials obtainable—a wagon that is not only attractively finished with the best paint and varnish, but which also gives perfect service, day after day, and year after year. That's why I H C owners are so proud of their wagons. If you want to be proud of your next wagon—choose any one of these in the I H C line—

Weber
New Bettendorf Steel King

Weber wagons have been leaders for 66 years. Hickory is used for axles, singletrees, doubletrees, and neckyokes. Oak is used for hubs, hounds, bolsters, reaches, and sandboards. Oak or hickory is used for spokes.

New Bettendorf wagons are the only wagons with tubular steel axles—the only wagons with extension reach box—no extra reach is needed to lengthen the gear. Removable malleable sleeves protect the axle and can be replaced when worn.

Steel King is the only wagon that has a perfect adjustable stake and internal reinforcement of axles and bolster. Wheels and box same high quality as the other I H C wagons.

Why not see the I H C local dealer now about the wagon you want. Let him tell you about the many features and advantages possessed only by I H C wagons. Let him give you the reasons why I H C wagons are so light running, why they are so strong and why they last so much longer than any other wagon. Also get literature from him, or, write nearest branch house.

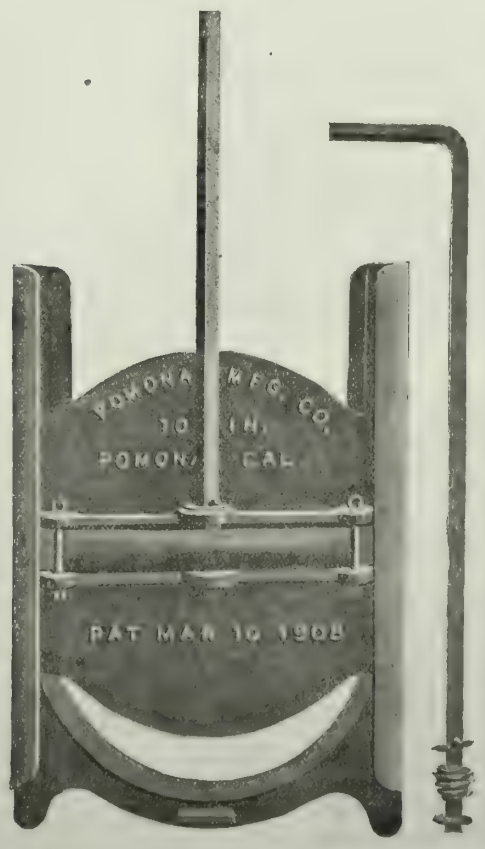
I H C Service Bureau

This Bureau is a clearing house of agricultural data. It aims to learn the best ways of doing things on the farm, and then distribute the information. Your individual experience may help others. Send your problems to the I H C Service Bureau.



WESTERN BRANCH HOUSES:—Denver, Colo.; Helena, Mont.; Portland, Ore.; Spokane, Wash.; Salt Lake City, Utah; San Francisco, Cal.

International Harvester Company of America
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Chicago U S A



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No rubber or wooden facing to rot or wear out. Absolutely water tight when closed. Locking mechanism is protected against rust or clogging with sand or dirt. Simple in construction. Cheap in price and as durable as solid iron.

THE LOCKING DEVICE

Is the simplest made, merely a tapering screw with split tapering nut socket. It locks the cover in any desired position or locks the faces, making an ABSOLUTELY WATER TIGHT JOINT.

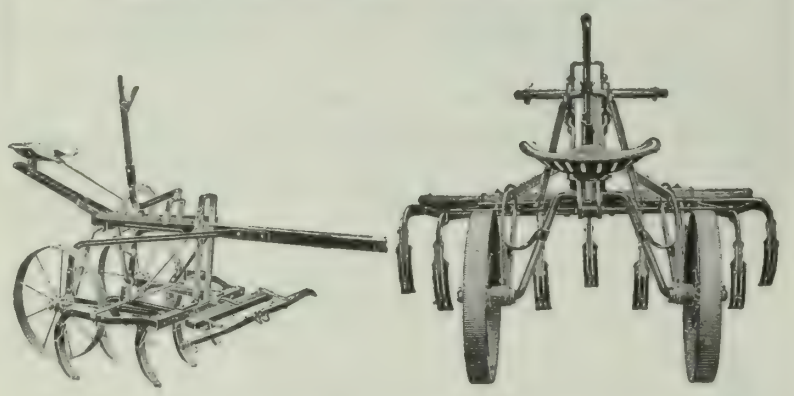
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ALSO A FULL LINE OF CIRCULAR VALVES FOR ORCHARD AND ALFALFA IRRIGATION CARRIED IN STOCK.

Write for descriptive circular and price list.

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POMONA, CAL.

Benicia-Orr Cultivator



These Illustrations Show the Frame Raised Out of the Ground.

Just note how the frame extends out beyond the wheels so that the driver can work up close to the trees, vines or vegetables.

Note that the frame is level in every position.

Note how well the various parts are bolted and braced so as to get the desired strength and rigidity and still be light in weight and draught.

The **BENICIA-ORR** is made in two sizes—seven and nine teeth—which cultivate a width of four and five feet respectively. By the loosening of six bolts it can be changed from one size to the other. Center tooth can be removed, if desired, for cultivating small vegetables, as beets, beans, etc.

Bear in mind that this implement was designed and is built by practical men who understand the need of agriculturists.

For **good, hard, thorough work in garden, orchard, vineyard or field, the BENICIA-ORR has the lead over any other cultivator on the market.**

If you want to use the latest, **up-to-date cultivator,** place your order for a **BENICIA-ORR.**

Code.	Size.	Width.	Net.	Weight. Gross, Cased.	Measurement. Cu. Ft., Cased.
Sevenor	7 teeth	4 feet	283 lbs.	365 lbs.	8
Nineor	9 teeth	5 feet	308 lbs.	390 lbs.	8
	Pole		32 lbs.	32 lbs.	1

IF THERE IS NO AGENT IN YOUR VICINITY
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BENICIA IRON WORKS

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BUCKET SPRAY PUMPS
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POWER SPRAY PUMPS
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SAN FRANCISCO SACRAMENTO LOS ANGELES

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Now is the Time to
USE OUR REMEDY

ROOT BLIGHT

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PEAR-BLIGHT REMEDY COMPANY
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THE EASIEST WAY TO INSURE THE EFFICIENCY OF YOUR IRRIGATION SYSTEM

THE efficiency of your irrigation system depends on the efficiency of the engine that operates it. You may not need to use it for months, but when you do need it, your need is urgent. It means actual financial loss then if it doesn't work. Bear this in mind when you select your engine. Pick out one that is a known quantity—not an experiment.

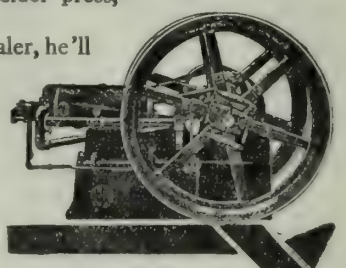
I H C Gasoline Engines are always a safe selection. Their efficiency has been proved. They have years of success behind them. There are thousands in use.

I H C Gasoline Engines

are made in all styles and sizes—1 to 45-H. P.—vertical or horizontal—stationary, portable, or traction. This makes it easy for you to get just the right type and size for your individual use.

Besides supplying power for your irrigating system, an I H C engine can be used for operating the feed grinder, fanning mill, thresher, separator, churn, washing machine, cider press, alfalfa cutter, etc.

If you will call on the I H C local dealer, he'll be glad to show you points of I H C superiority you ought to know about. Ask him for the I H C Gasoline Engine catalogue, or, write the nearest branch house.



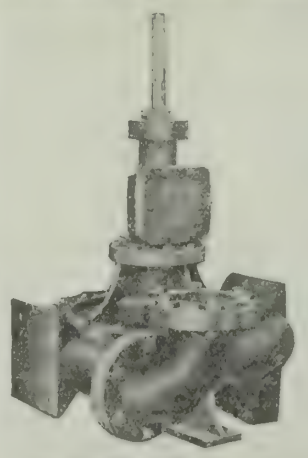
Western Branch Houses: **Denver, Col.; Helena, Mont.; Portland, Ore.; Spokane, Wash.; Salt Lake City, Utah; San Francisco, Cal.**



IHC Service Bureau

What is it? A clearing house of agricultural data.
What does it do? Helps farmers to help themselves.
How can it be used? By sending your farm problems and puzzling questions to the Bureau.
We are co-operating with the highest agricultural authorities, and every source of information will be made available to solve your difficulties. We shall be pleased to have an opportunity to assist you. Write the I H C Service Bureau.

INTERNATIONAL HARVESTER COMPANY OF AMERICA
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We can supply you with any size and quantity of **Standard Pipe or Casing**—all new threads and couplings—all stock guaranteed first class.

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HYDRAULIC, IRRIGATION AND POWER PLANTS, WELL PIPE, ETC. ALL SIZES.

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Water and Oil Tanks—all sizes.

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Sheet Metal Work of All Description.

THE PACIFIC RURAL PRESS

Vol. LXXXI. No. 13. SAN FRANCISCO, SATURDAY, APRIL 1, 1911. Forty-first Year.

CALIFORNIA STATE

Cotton Industry in Imperial Valley

Written for the PACIFIC RURAL PRESS by Mr. W. E. PACKARD, Field Agent University of California Experiment Station in the Imperial Valley, El Centro.

Cotton planting began early in the history of Imperial county, the first upland cotton being planted by Ira Aten in 1906. Excellent results were reported, so that cotton was planted later on several ranches, but only in small patches; just enough to demonstrate its adaptability to Imperial conditions. In 1909 1500 acres were planted to test the production of the upland cotton of a commercial scale, and a four-stand gin was erected in El Centro to handle the crop. The average yield that year was less than a third of a bale to the acre, when the total acreage was counted, but the fields which had been well cared for and had not suffered for lack of water yielded as much as a bale, and in one or two instances two bales to the acre. The larger yields obtained by the best growers encouraged the planting of more cotton, so that the acreage was increased ten fold in 1910. Six four-stand gins were erected in various points in the valley, and an oil mill was built at El Centro through the co-operation of the growers. The same inexperience and lack of care and the unforseen shortage of water had its effect, so that only 5900 bales were produced, making the average less than one-half a bale per acre for the total planting.



Cotton Plant and Planters of the Imperial Valley.



The Business End of the Cotton Industry—The Pickers.

As in any new venture started on a comparatively large scale under new conditions, many growers have been disappointed in the results obtained. The total yield for the valley was far below the estimated output, but the success of those who knew the crop and how to grow it has been a "proof of the pudding." Plans are being made to increase the acreage in cotton this year, and as most of the planters have now had experience, it augurs well for the future.

All of the cotton raised commercially has been of the short staple upland variety, the Mebane Triumph being the most commonly planted. This is a big boll, storm proof cotton, originated by Mr. Mebane of Lockhart, Texas. The staple is strong and of excellent color and twist, varying from 1 to 1⅛ inches in length, making a very good spinning cotton. Egyptian cotton was introduced by the U. S. Department of Agriculture before the growing of short staple cotton was taken up in Imperial valley, and careful selections and crossing have been made with very gratifying results. This cotton has a staple measuring from $1^3/_{10}$ to $1^5/_8$ inches long, and is used mainly for goods of smooth finish and high luster. It appears that this cotton is especially adapted to this section, and as it commands twice as much per pound as short staple, it will probably be the type which will ultimately be planted to the exclusion of the short staple varieties. The expense of picking this cotton is practically the only additional cost in its production. Sea Island cotton, which is considered the finest on the market, having a staple from $1^4/_{10}$ to $1^8/_{10}$ inches long, has been tried a number of times, but has never given good results, probably due to the excessive aridity of the climate. Crossing Sea Island cotton with other varieties has not proven to be satisfactory. The growing of long staple upland cotton, which ranks on the market along with the Egyptian cotton, has not been successful. It prospers best in the more humid sections, especially along the Mississippi bottom lands, the staple shorteneng up under arid conditions. As all the improved varieties of cotton are a product of artificial methods, continued artificial selection of seed for planting is absolutely necessary to maintain the standard. The importance of proper selection can not be over emphasized.

The cost of raising cotton under irrigation is greater than in the South, for in addition to preparing the land, planting and cultivation, there is the cost of the water and the expense of applying it to the fields. Pickers are paid $1.25 per hundred pounds, which is the same wage paid in many other cotton sections. The total expense of handling the crop from planting to bailing varies from $25 to $35 per acre. In the South it costs from $15 to $25, so that the additional cost of raising cotton under irrigation varies from $5 to $10 per acre. A bale to the acre will bring in from $50 to $70, depending upon the market value, and the seed can be sold for $15 per ton, making an additional income of $7.50 per acre. A good yield of cotton therefore represents good profit above all expenses, while an average yield of one-third to one-half bale to the acre does not make a very profitable venture. From $30 to $70 per acre net was realized from the best fields this year. Cotton was sold largely to the Oakland mills and to Japanese buyers.

A bale to the acre is not uncommon in Texas or in the South, and two bales is sometimes produced, but such yields only occur where moisture conditions are favorable. In Imperial valley the amount of water used for irrigation can be controlled, and it is not presumptous, therefore, to

(Continued on Page 254.)

Pacific Rural Press

667 HOWARD ST., SAN FRANCISCO.

TWO DOLLARS PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

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Advertising rates made known on application.

R. J. WICKSON - - - - - - - Editor
FRANK HONEYWELL - - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Mar. 28, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.14	25.51	37.96	64	38
Red Bluff	.00	22.41	21.05	82	44
Sacramento	.00	21.06	16.78	74	48
San Francisco	.00	24.29	19.26	77	48
San Jose	.00	22.74	10.94	78	40
Fresno	.00	10.24	8.13	76	48
Independence	.00	5.48	8.00	74	38
San Luis Obispo	.00	33.60	17.79	80	44
Los Angeles	.00	16.08	13.79	72	50
San Diego	.00	11.22	8.72	64	50

The Week.

Is California about to realize what has seemed just within reach for half a century, a considerable and profitable production of cotton the world's greatest textile? An exceedingly interesting account of current undertakings in the Imperial Valley is given on other pages of this issue by Mr. W. E. Packard, who for the last two years has been making a careful study of the natural and industrial conditions in the newly awakened southeast corner of California in the service of the University Experiment Station as provided for by the legislature of 1909. An official report giving an outline of local researches, covering nearly all products grown in the valley, the joint work of Dr. J. E. Coit and Mr. Packard, with contributions from other members of the Experiment Station staff, has just been published and can be had on application to the Director at Berkeley. To signalize the cotton undertakings because of their broad California bearings, we requested Mr. Packard to prepare the detailed statement which we print this week, with local illustrations showing the enthusiasm with which the effort is regarded and the little beginnings which are, obviously, chiefly interesting because of their relations to the inception of enterprise which may become great, and not of themselves indicative of greatness. Of course readers in the great cotton States may find these pictures a little amusing. To them we can only say: "Watch us grow." Never mind if the pictures do show a greater weight of men than of cotton; never mind if the little gin should indicate only a one-finger indulgence either for men or for fiber. The only question of importance is: "Will the gin of the future be even less for the men and much more for the fiber?" We sincerely trust it may.

We have alluded to the facts which Mr. Packard presents as the results of half a century's effort, and this makes it seem all the smaller until it is also stated that the effort has been chiefly in the line of waiting. It is important, however, to connect with the present announcement a few facts from this long period of great expectations and little accomplishment. Naturally cotton was one of the plants first tried in California. Our State was held from the first to be in the category of Southern rather than of Northern States, and though the great rush to California was from north of Mason and Dixon's line, there were many from the south of that line, and cotton plants were garden curiosities and served as fair exhibits during the very first decade of American occupation. As early as 1857 there was a report made by a committee of the State Agricultural Society proclaiming that California samples were equal, if not superior, to the product of the Gulf States. In 1862 premiums for California-grown cotton were appropriated by the legislature to the amount of $6,500, and in 1865 some of these premiums were paid to Matthew Keller of Los Angeles. During the later years of the decade several hundred acres of cotton were grown in Kern, Fresno and Merced counties and there were small plantings scattered through the Sacramento valley. During the decade beginning with 1870 there were considerable cotton undertakings in the San Joaquin valley. In 1872 there was estimated to be not less than 2000 acres in Merced county, growers' associations were organized, gins constructed in Merced and Kern counties, and in 1873 a single shipment of over ten tons of cotton was made from Merced county to Liverpool. Resisting the temptation to multiply such historical details, for they are to be found by the diligent student in the Cotton Production volume of the Census of 1880, we will only emphasize the fact that that volume was itself prepared in California by Prof. E. W. Hilgard of the University of California, and while the State was playing with cotton production the output of cotton literature, the greatest of its kind up to date, was made in California as aforesaid. In that volume California was demonstrated to be a cotton State, on the basis of samples grown during the preceding three decades and through a scientific study of soils and climate which Prof. Hilgard undertook as the first great California undertaking of his distinguished career. Coming as he did to California from the South, and from personal study of cotton growing there, it may be claimed that California produced a great cotton expert, on the basis of the volume of 1880, before California produced a great cotton crop. Forgetting the past, the question now is, will the Imperial valley produce the great cotton crop? The answer will apparently depend upon whether growers can successfully settle the economic question of producing cheaply enough. The cost of labor killed all the early undertakings. Will the Imperial growers command labor which is cheap enough, or will they cut out labor by machine-picking, or will they have the advantage of higher cotton prices than prevailed in previous decades so that cost of picking becomes less determinative? These are the questions to be met. As for growing good cotton, aside from the cost thereof, there is no question. California always has grown good cotton and always will grow good cotton—if it can be sold at a profit.

As our comments have started to run on the great staples this week, they may as well proceed in the same line, and as staples without statistics are vain, we must cover that requirement, surely. Some very significant figures are coming from the Government factory at Washington. People who fear starvation because of exhortations to farmers to grow more food, by common carriers who desire more freight to haul, may be gratified to know that Uncle Sam still has enough to enable him to do a brisk business with hungry people in other lands. For eight months ending March 1, the exports of wheat and flour in combination are larger in value than corn exports, the value of wheat exported in the eight months ending February last being seventeen million dollars, and of flour thirty-two and three-quarter millions, while the value of corn exported is nineteen and three-quarter millions.

Exports of wheat last month were one and one-third million bushels, against 25,000 in February, 1910; of meat and dairy products, ten and three-quarter million dollars in value, against nine and three-quarter millions a year ago, and of cotton, four hundred and ten mellion pounds, against one hundred and sixty-nine million pounds in the corresponding months of last year. Cotton exports aggregated $501,000,000 in value in the 1911 period, and $345,000,000 a year earlier.

Upon another page there is an interesting statement about increasing the wheat yield of California. Nothing could be more timely and important. The Pacific coast is becoming the Egypt of the new world of the Pacific ocean. Of all wheat exports of the United States during the month of January last, almost 75 per cent was shipped from Portland and the Sound ports. Taking the whole country, the monthly exports of wheat were, for the first time, exceeded in quantity by the exports of corn, according to the Bureau of Statistics of the Department of Commerce and Labor. Decreased receipts of wheat at leading interior markets and smaller shipments of flour were the leading features of the commercial movement of breadstuffs during January. California is not exporting wheat; we are importing wheat for our own bread. It is a State discredit and is as unnecessary as it is unfortunate. The State yield of wheat can be rehabilitated as fast as San Francisco was, if the effort is made. Without taking land from other profitable use the wheat product can be made to overflow in exports again at higher prices than were realized when California was great in wheat before.

But writing about staples, there is another of the group which California contends shall be thus classified as a great item of public sustenance, and that is fruit. In a way, it is gratifying to know that the American people are coming to demand so much fruit. There has been notable increase in imports of fruits and nuts during the last decade. In 1900 the valuation of the whole class was $19,000,000, while for the year 1910 they are given as $39,500,000. The imports of fruits alone have increased on an average of $1,000,000 a year since 1900. For the year 1910 they were valued at $26,000,000, an increase of $10,000,000 since 1900. Bananas showed the principal increase in this class, having grown from $6,000,000 in 1900 to $12,000,000 in 1910. These are fruits which the continental United States are not likely to have as a home product. Probably the most we can learn from the growth of the banana trade is the advantage of combination for pushing the fruit into consumption. What the combination has done can be better appreciated when one thinks that the banana, with something of the form of a crowbar but nothing of the substance thereof, is really prying that great American institution, the beefsteak, out of the frying-pan, and is displacing the reinforced concrete of American pie with the mush of a banana pudding. A combination which can accomplish such feats in the face of race prejudice for fried steak and pie, is certainly a power, and if Mr. Di Giorgio knows how the game is worked he has not entered the California fruit business too soon. Still, we are not disposed to contend for little things at this time. If we get fruit recognized as a great staple in America we can later take up the issue that it must be American fruit. Just at the moment it is gratifying that we shall not be obliged to get fruit

into the Great Northwest at local rates. The Interstate Commerce Commission decided last week that carloads of citrus fruits should be taken from California to Montana for no higher rate than prevails to the far eastern terminals. The rates heretofore have been as high as $1.70 per hundred pounds. They are now reduced to $1.15 per hundred pounds, and the carriers are required to maintain that rate from September 1 last for at least two years. Reparation is awarded to the complainant on shipments transported under the higher charges since September 1 last when the Commission declared its long-haul rate. This will be good for us and for the Northwest. The Commission is a great hygienist—to say the least of it.

Labor questions also intrude again. Governor Johnson has signed the eight hour law for women and accompanied his approval with a message in which he claims that "productivity will not be materially decreased under an eight hour law," and cites the report of the New York Bureau of Labor statistics for 1900 in maintenance of this view. The Governor also quotes a telegram from Alexis E. Frye of Highlands, Cal., urging the passage of the bill, and stating that the Highlands Orange Growers' Association voluntarily has reduced the hours of labor with excellent results. The Governor also says: "The eight hour law for women is admittedly right in principle; it is the exemplification of humanitarianism; its beneficent purpose has long since attached to man." We demurred to the eight hour law because it would decrease the wages which the women desire and often need to secure for a day's work. If they are as fortunate as some men have been in getting continually more money for less work, our demurrer has no basis. The new law includes in its provisions all females publicly employed, except those engaged in the handling of perishable fruits.

Supposing the women do get less money for a day's effort, there is another law which may even up the matter between the sexes to a certain extent, if the Governor should sign it also. It is a bill passed by both houses which provides for sending derelict husbands and fathers to hard labor on the roads, and which provides for the payment of their wages to their dependent families. The bill refers only to the crimes of abandonment, neglect of children and failure to support wives. Upon conviction of those offenses the court shall send the defendant to work upon the highway, or at any other public work the supervisors may require. For each day of such work $1.50 shall be paid to the dependent family.

Queries and Replies.

Weed-Killing and Sewage Evaporation.

To the Editor: I wonder if you can recommend to me any weed killer for use in road gutters, earth tennis-courts, and more especially on the discharge area of my sewage system. We discharge on the surface of the ground and are anxious to have free absorption in the ground and freedom from shade, both of which are interfered with by the growth of weeds. Of course, it should be a substance that would not interfere with the porosity of the ground.—Owner, Santa Clara.

A solution which will kill all vegetation and prevent its appearance for an indefinite time afterward, is made as follows: Dissolve 1 pound of caustic soda, or potash lye, in 2 gallons of water; in this, dissolve 2½ pounds of arsenious acid (white arsenic); when this is dissolved, add water to make a total of 20 gallons; apply with spraying apparatus or a sprinkling pot. This is, as stated, a killing solution and is capable of being moved by surface flow of rainfall or by underground movement of water to which it may attain. Therefore there is an element of danger in it to adjacent vegetation which you may wish to preserve, and the material should be used in as small a quantity as will serve to kill the particular place to which application is made.

This will, of course, prevent growth on land to which you wish to apply waste water. It seems to us, however, that the better policy would be to apply waste water in a furrow, covering under vegetation of any kind, even weeds, because they have a tendency to keep the soil open and to promote evaporation of moisture by their growth. To flow water upon a killed area would be to increase the compacting of the soil incapable of being prevented in any way known to us except by plant growth. We should think, therefore, that either application to areas alternately, plowing each as soon as dry enough, would be superior to an area incapable of growing plants. Such a flat, sewage-drying ground would dispense odors to the whole countryside, which, though not necessarily dangerous, would not be nice.

Plantings Between Trees.

To the Editor: Will you kindly advise what crops would do best for planting between two-year-old peach trees on land three miles northwest of Atwater, Cal.? And would it be feasible to plant between eucalyptus trees that are a year old set 8 feet each way? If so, what? And what crops might be suitable for eucalyptus trees set 8 by 8 feet this spring. This land is under pump irrigation, and it would help very much if the cultivation which it is intended to give the trees could be paid for by growing crops among the trees. Your advice and any suggestions as to what crops would adapt themselves to these conditions and pay profit, will be highly appreciated.—Owner, Merced county.

You can grow squashes, melons, and various other summer crops in a young peach orchard, providing you give the trees sufficient moisture by irrigation and do not let the intercrop encroach too closely upon them. They should have not less than three or four feet of clear ground, which should be kept well cultivated. We would not for a moment think of planting anything between eucalyptus trees planted as close as you mention, but give them good cultivation and the advantage of all the moisture available. What you can plant for profit depends upon the local market and your cost of production. Those are matters upon which we cannot advise you. Every man has to determine such things for himself on a business basis.

Handling Winter Melons.

To the Editor: I will be much obliged to you if you are so kind as to give me full particulars regarding harvesting, storaging, and shipment of winter melons. I do not find reference to it in Mr. Wickson's "California Vegetables." I have already planted one acre of them, but as there is not local experience, I should like to know how do you harvest and pack them: in boxes£ baskets? with cuttings? for distant market, by railroad.—Subscriber, Santa Rosa, Argentine Republic.

There is no particular system in the handling of winter melons. They are gathered into piles on ground where water will not gather and covered with the trash of the vines on which they grow. They will keep for months in this way, as our autumn temperatures do not freeze them. Other growers collect them in open sheds shaded from sun and rain, and still others put them into barns or shallow cellars under buildings, etc. The melons are very durable and seem disposed to keep in any old way. Perhaps we shall develop better ways of handling as the growing comes to larger amounts than are now grown. The melons are shipped in large packing cases with slat sides, or in the smaller slat crates that are used for summer canteloupes. No packing is used, generally. If it seemed necessary, a little clean straw would be sufficient.

Top Grafting.

To the Editor: In grafting over apple and pear trees to some other variety, is it advisable to cut off and graft the entire tree the first year where the trees are from 7 to 15 years old, or would i tbe better to cut off only a part of the top the first year and the rest the following year?—B., Little Rock.

There is a good deal of difference in doctrine and practice on this point. We attempt a generalization in this way: In the coast region it is a good practice to graft over the whole tree at one time, cutting, however, above the forks and not into the main stem below the working. This gives many scions which seem able to take care of the sap successfully. In the interior valleys, it is rather better practice to leave a branch or two, cutting them out at the following winter's pruning. This has the effect of preventing the drowning out of the scions from too strong sap-flow. Cutting back and regrafting of old trees should be done rather early, before the most active sap-flow begins. The later in the season the grafting is done, and the warmer the locality, the more desirable it seems to be to leave a branch or two when grafting.

Damping-Off.

To the Editor: I send you a few little egg-plants and a few peppers. I have been losing so many in every hotbed I make this year. They come up finely and when about an inch high they seem to die off at the roots, from the top of the ground down; the plant falls over and dies. If you can tell what is the matter, please let me know, and what to do for it.—Amateur, Lemoore.

Your plants fail by what is called "damping-off." This is caused by a disease which attacks the stem just above the surface of the earth, and is due to excessive moisture at that point. It is prevented by the use of a layer of sand on the surface of the seed-bed which will quickly dry out after watering if care is taken not to close the bed too tightly until surface-dried, or if care is not taken to secure regular ventilation for the bed. It is also necessary that sprinkling should be less frequent and in large amount each time, so that the moisture should penetrate and the surface be dry for a longer period between waterings.

Grafting Walnuts.

To the Editor: Please inform me if in cleft grafting walnuts it is necessary to use scions with only a leaf bud, or if you can use scions with staminate or pistillate buds? Is cutting the pith of the scion or stock fatal to the tree?—Beginner, Wallace.

In grafting walnuts it is usual to take good shoots bearing wood buds, and not the spurs which carry the fruit blossoms. These blooming buds are readily recognized and should be rejected, although a part of the graft containing also a wood bud can be used, retaining the latter. Cutting into the pith of the scion or of the stock is not fatal, but it is generally avoided because it makes a split or wound which is very hard to heal. For this reason it is better to cut at one side of the pitch in the stock, and to cut the scion so that the slope is chiefly in the wood at one side of the pith and not cutting a double wedge in a way to bring the pith in the center.

Horticulture.

TEMPORARY AND PERMANENT VARIATIONS.

To the Editor: The article in your issue of March 11, entitled "Bud Selection, etc.," is interesting and may be useful if it serves to promote a careful discussion of the value of "pedigree stock." It is to be hoped, however, that it will not serve to make us satisfied with our old careless ways.

The degree in which the crop of an orchard can be influenced in quality and quantity by selection of buds to produce the trees which are to constitute that orchard is not known. The conclusion to be fairly drawn from the article of Mr. Burton is that he believes it cannot be influenced at all. The claims of others would lead us to believe that it can be influenced so profoundly as to be equivalent to the choice of another variety. The question can be discussed more clearly by dividing it into two parts. First, do the buds of a given variety vary?; and, second, if variations occur, are they or any of them found in the trees produced from these buds?

No reference is made here to "bud spots," such as the production of a nectarine on a peach tree, which are of rare occurrence. Aside from these, the fact of bud variation is undeniable. It is, in fact, universal in greater or less degree. Mr. Burton himself instances several variations due to differences of soil, of location, of grafting stock. Many others are of constant occurrence. On almost any fruit tree we can find buds which will produce blossoms and others only leaves. On a vine we find buds from certain branches produce fruiting shoots, others sterile shoots. Buds from the top of a Zinfandel vine produce leaves only slightly lobed; buds from the base of the same vine produce leaves deeply cleft almost to the center. These are some of the most marked of common variations. As no two shoots on a tree or a vine are absolutely identical, however similar the conditions in which they grow, we must conclude that the buds from which they come varied.

Characteristic Variation.—These variations, however, occur only along certain lines and within certain limits. They are indeed an essential part of the character of the variety. The leaves on a vigorous water sprout of a blue gum are totally different from the normal leaves of the same tree; some acacias produce both pinnate leaves and phyllodes. These variations are characteristic of the species and variety, but undoubtedly correspond to differences pre-existing in the bud. Minor differences occur in all plants differences in amount of crop, size, color and texture of fruit are universal. Some of these differences are due undoubtedly to influences affecting the fruit directly and not to any peculiarity of the original buds. Some of them, however, are due to climatic, soil or exposure conditions and to cultural methods which affect the fruit through changes brought about in the bud. Some are due to unknown causes acting before or during the development of the bud.

Capable of Reproduction.—The second part of the question to be solved is: "Can any of these variations be fixed or reproduced by careful choice of suitable buds for propagation?"

The leaves near the growing tip of a vigorous ivy shoot are heart-shaped, those on the rest of the plant are five-lobed. If we root a slip from the tip of a shoot we get a plant which for a year or more may have all its leaves heart-shaped. Slips from other parts produce five-lobed leaves. A cutting from a Zinfandel sucker produces a vine with deeply cut leaves; a cutting of fruit wood, a vine with shallow lobed leaves. As the ivy plant becomes older the leaves tend to become normal, that is to say, five-lobed on the main part of the plant and heart-shaped on vigorous shoots. The same is probably the case with Zinfandel vines. In the meanwhile the latter, however, remain for years an almost sterile vine.

Strength and Weakness.—In many cases the crop of a vineyard has been very much increased by grafting the light-bearing vines with cuttings from heavy-bearing vines of the same variety. How much of the improvement in this case is due to bud variation and how much to the increased fruitfulness that usually accompanies grafting is hard to determine. The selection of cuttings from only the heavy-bearing vines, however, is a practice of long standing in the older grape-growing countries.

The vigor of a vine is also undoubtedly influenced by the character of the bud or cutting from which it arises. A weak cutting gives a weak vine. How permanent this weakness is it is hard to say. Professor Ravaz considers the Anaheim disease to be nothing but debility of the vine due to over-bearing, and he believes that this debility is communicated by cuttings to the new vines.

There seems to be no doubt therefore that the qualities of fruitfulness and sterility of vigor and weakness are influenced very markedly by cutting selection. Whether size, color and texture of fruit can be so influenced is perhaps not determined with certainty, but it seems probable that they can be to some extent.

Permanence.—The question of the permanence of these variations is one of great importance and one to which little attention seems to have been called.

The variation due to a bud sport is permanent. A nectarine obtained from the bud of a peach tree is a new variety. The variations with which bud selection has to do, however, are transitory. Some of them, such as the large size of a pear grafted on a certain stock, or the deep color of an apple grown in a certain soil, may be evanescent and disappear immediately when the bud is removed to another environment. Others, such as the heart-shaped leaves of ivy or the incised leaves of Zinfandel, may persist for years.

The specific characteristics remain constant through all these changes. The Zinfandel always produces red grapes, the Burger white. Therefore, as Mr. Burton says, the Winesap apple is always the Winesap apple. The difference in character and value between two Winesap apples, however, is very great, and while most of this may be due to cultural and environmental conditions, some is undoubtedly due to the nature of the original buds.

It should be kept in mind, moreover, that bud selection does not finish with the grafting of the tree in the nursery. It should continue throughout the life of the tree. This is particularly true in the case of the vine. Every time a vine is pruned there is opportunity for bud selection, and the size and quality of the crop can be greatly influenced by the choice of buds we make at this time.

FREDERIC T. BIOLETTI.

University of California, Berkeley.

PEACHES AND FROST.

Mr. A. M. La Follette of Salem, Ore., who is growing peaches in the Willamette valley, has been making observations on the behavior of peaches toward frost, and some of our readers may like to test his conclusions, which are as follows: About the first of August I clip back all branches, cutting from three to five inches from the ends of this year's growth. By doing this I compel the tree to produce an enormous amount of fruit buds, and where there are such a great amount of fruit buds there will be from ten to fifteen days difference in the first blooms and last ones opening on the same tree, and it will be almost a miracle if the frost gets all the buds with fifteen days difference in the first and last buds blooming on a tree. With a peach tree pruned in summer, if one-tenth of the buds survive the winter, you will have a full crop. If a peach blooms out and gets from five to eight days without a killing frost, nine times out of ten it is safe and immune from injury from any subsequent frost. When a peach is from the size of a currant to the size of a gooseberry it can freeze solid and will not be injured. In proof of this, I will state that some years ago my peach trees bloomed early in February, and when the peaches were about the size of a gooseberry there came a killing black frost and froze them till you could not cut them with a penknife. I went down in the orchard, examined the peaches, came back and told my wife we would have to do without peaches that year, but the freezing did not hurt them in the least, and we had an extra fine crop of peaches that season. Now, I think that by following the rules I have laid down, you reduce the damage of frost almost to a minimum, and in proof of my theory I will cite you to the fact that I have failed to have a full crop only once in 29 years. Do you want any better proof?

[Our observation does not agree with that of Mr. La Follette as to the effect of frost on small fruit. What do our readers know from their observations? In cutting back the summer growth to force fruit buds (as he claims it will do) it will probably be desirable to cut a little later in California valleys, because on moist lands our peaches grow later than they do in Oregon, probably, and cutting back the first of August would in many cases force a new break of laterals, which is not desirable, probably.—EDITOR.]

DIFFERENT KINDS OF THERMAL BELTS.

To the Editor: Thermal belts are not uncommon. Perhaps the knowledge of the apple thermal belt of the Columbia River basin is less known than the famous thermal belt of the Carolinas, Tennessee, etc. The thermal belt discussed in the "Apple Points" booklet which I send you has an interesting analogy in parts of California where it is asserted that the peach and apricot do not thrive above 1200 feet above sea-level. I believe the facts are worthy of wide discussion for the general good.—E. H. Libby, Lewiston, Idaho.

[We have thoroughly enjoyed the pamphlet on "Apple Points." It is the raciest horticultural thing we have seen, and it occupies an honorable place in our collection of horticultural literature. We advise all who desire discussion of elevations in the Columbia River country to send to Mr. Libby for a copy. But the generalization in Mr. Libby's letter, above, is not quite true for California; for the peach is successfully grown commercially at elevations up to 2500 feet, possibly a little higher. The apricot, however, owing to greater susceptibility to frosts from cold air blown in from higher elevations, generally stops at about 1500 feet commercially, although some trees can be found at a higher point, while apples, plums, and pears easily go to 4000 feet, and we are likely to have considerable commercial production of mountain apples on high plateau when better transportation facilities open up desirable lands. It is, we suppose, to be expected that, being considerably less in north latitude than the situation of which Mr. Libby writes, our fruit regions would climb to correspondingly higher elevations. It is a fact that in what we call thermal belts, which are almost frostless, we have more trouble with some deciduous fruits than we do at places both higher and lower, where the temperature extremes are farther apart. This would mean to say, in a way, that California fruit trees have more disposition to work than to rest, and too much work is a bad thing for a man or a tree, presumably.—EDITOR.]

APPLES APPROVED AT THE NORTH.

California apple growers who like to keep track of what is doing in apples farther up the coast will be interested to know that the Washington Horticultural Association has declared the following twelve apples as first in commercial importance and prominence: Spitzenbergs, Jonathan, Wagener, Winesap, Yellow Newtown, Northern Spy, Baldwin, Gravenstein, W. W. Pearmain, Arkansas Black, Grimes Golden, Rome Beauty.

Sylviculture.

CALIFORNIA CONIFERS IN NEW ZEALAND.

[The following letter received from New Zealand is of interest as an indication of the growth-

behavior of various Californian conifers in the southern hemisphere. Of special interest is the recognition by Mr. Adams of certain well defined forms propagating truly from seed, especially knob-cone pine, a species destined in all likelihood to play an important part in establishing cover on those excessively dry or rocky slopes which occur with us in mountain ranges where the general rainfall is high. For the convenience of Californian readers the writer of this note has inserted the common names in parentheses, but he has not disturbed the Latin names, even where they are old trade names or out of date botanically.—W. L. JEPSON, University of California, Berkeley.]

Mr. Adams' Letter.

Dear Sir: A few days ago I received your book, "Trees of California," through a local bookseller of whom I ordered it, and I am sure I shall find it very useful, as I have for forty years been introducing trees from California and other Western States of America and was in need of a popular book on the trees of your State. Californian trees do remarkably well in this part of New Zealand, as you will see by the following particulars of the height of some of them which were taken two years ago. I shall retain the names under which I received them:

Abies Douglassi (Douglas fir), 60 ft.; Abies macrocarpa (desert spruce), 18 ft.; Abies Mertensiana (coast hemlock), 33 ft.; Abies Menziesii (Sitka or lowland spruce), 47 ft.; Cupressus macrocarpa (Monterey cypress), 53 ft.; Cupressus Goveniana (Gowen cypress), 23 ft.; Cupressus Lawsoniana (Lawson cypress), 28 ft.; Libocedrus decurrens (incense cedar), 18 ft.; Picea concolor (white fir), 16 ft.; Picea Lowiana (California white fir), 23 ft.; Picea grandis (lowland fir), 22 ft.; Pinus insignis (Monterey pine), 118 ft., and still growing several feet every year; Pinus muricata (Bishop pine), 50 ft.; Pinus Coulterii (big-cone pine), 47 ft.; Pinus ponderosa (yellow pine), 50 ft.; Pinus Murryana (Tamrac pine), 50 ft.; Pinus Torreyana (Torrey pine), 23 ft.; Pinus tuberculata (knob-cone pine), 29 ft.; Thuja gigantea (Canoe cedar), 40 ft., and Wellingtonia gigantea (big tree) 29 ft.

All the above have borne cones, some of them for many years. Perhaps a few observations on the growth of the different species may prove interesting to you, as I have been planting on a fairly large scale and received seed from many sources. Here Pinus contorta (beach pine) and Pinus Murrayana (Tamrac pine) are quite distinct, though the cones and leaves are much alike. Pinus contorta forms a true pyramid much in shape like Sequoia giganta (big tree), while Pinus Murryana grows a heavy top, and in cultivation would seem to be more nearly related to Pinus muricata and is an equally fast grower. He have three distinct forms of Pinus tuberculata (knob-cone pine) which come true from seed, one form with the scales but little raised is not so drouth-resistant as the others.

As hundreds of thousands of Pinus radiata (Monterey pine) have been raised from seed in New Zealand, we have many interesting varieties, one with very distinct golden leaves, and I have seen cones quite equal all around, more like cones of Pinus Torreyana or Pinus pinea than Pinus insignis, and others with very prominent knobs on the scales, but all these seem to be only varieties. With Pinus ponderosa (yellow pine) there are at least two forms, and they always remain distinct from seed. I should say we have two species. I have been disappointed with Californian broad-leaved trees so far as I have been able to try them, none of them proving of any particular value.

T. W. ADAMS.

Greendale, Canterbury, New Zealand.

TREES FOR OVERFLOWED LANDS.

To the Editor: I have 20 acres low bottom land subject to overflow during the May and June rise of the (Mokelumne) river, and I would like to know what kind of trees would make a good growth on same. Have tried pears, but they were not a success. Would the eucalyptus tree succeed or would the overflow water scald or drown them out? What varieties are the most resistant to the effect of overflow waters; also when is the proper time to plant same? What other tree might be more useful and successful than the eucalyptus? J. H. ECCLES.

Acampo, Cal.

The ordinary blue gum will endure considerable submergence. Willows are, of course, born that way, and elms are quite resistant. Some reader who has these thriving under such conditions can best answer the question.

Cereal Crops.

HOW TO INCREASE THE YIELD OF WHEAT IN CALIFORNIA.

There has just appeared as Bulletin No. 211 of the University Experiment Station at Berkeley a very direct and straightforward statement of the results of several years' experimentation by the University of California, as provided for by special State appropriation under the general title of cereal investigations. This work has been in progress at several points in the Sacramento and San Joaquin valleys, and has been in direct charge of Dr. G. W. Shaw, experimental agronomist of the Station. The report, which is just out, carries the striking title which we have used above, and its aim as stated by the writer, Dr. Shaw, is "to set forth in as brief a manner as possible some of the more important results bearing upon the question of an increased yield, leaving the more intricate problem, the effect of environment upon the gluten content of wheat, almost wholly for discussion in a subsequent publication. On account of the limited funds available for printing, it will be possible to set forth little more than a summary of the work at this time." We shall introduce a few statements of a general character at this time, reserving more specific matters for later use as action based upon them may be timely.

California Grain Growing.—The particular feature which has dominated grain culture in California, and on the Pacific Coast generally, has been mass production, rather than maximum production per unit of area or quality of product. But with the inevitable ultimate deterioration of soil under such a practice, heightened by the encroachment of other crops, there has been a notable falling off in the production in toto, as well as in the yield per acre, during recent years. While grain farming on an extensive scale is not an industry to be particularly encouraged when natural conditions are such as to make more intensive crops safe, yet it is still, and is destined to be for all time, a very important industry in California; and as one of the staple crops of a general farm is worthy of not only much encouragement, but also the greatest aid that can be given it by scientific research. Further, on account of climatic and topographical conditions, there will always be large areas in the State in which cereal culture will be the principal interest. How to produce more grain of better quality per acre, then, is a very pertinent problem.

Influence of Old Methods.—The old methods of grain growing still persist in California. They are generally very simple and very crude. At first satisfactory returns were obtained because of an unusually fertile virgin soil. At the outset there was an annual cropping of the land to the cereals with no attempt to either rotate crops or restore any of the humus that such a system destroys. In order to cover as large an acreage as possible, the crudest methods of culture were practiced. The practice consisted simply of three or four-inch plowing, broadcasting the seed, and harrowing it in. But little attention was paid to the selection of pure seed, and far too often the growers purchased a second or a third grade seed under the false notion that anything that would sprout was good enough.

The more important changes which have taken place since the introduction of the above-named crude practices, have been the replacing of the header and stationary thresher by the combined harvester, and the quite general introduction of the practice of summer-fallowing of land.

The development of the combined harvester has without doubt decreased the cost of production where grain is harvested upon a large scale, but it has at the same time tended to encourage a desultory system of culture, rendered the fields very foul, both by the general distribution of weed seeds and because, by the time the grain is harvested in this manner, practically all the serious weeds have fully ripened their seed; and further, on account of the long time the grain is left in the field after maturity, has tended to seriously increase the loss from shattering of the grain from the wind. This latter condition is especially true in the Sacramento valley. It is very questionable, then, as to whether the combined effects of these undesirable factors have not more than offset the decreased cost.

The summer-fallow practice was introduced for two reasons: first, it was an attempt to save as much of two seasons' precipitation as possible for the production of a single larger crop; second, to clean the land of weeds resulting from continued grain culture. The latter effect has been largely offset by the use of the combined harvester.

The shallow preparation of land and the continual practice of burning off the straw has had a very bad effect upon the humus content of the top foot of the soil, which in turn has so affected its physical condition, generally speaking, as to materially reduce its moisture capacity and seriously affect the yield of grain. Further, the earlier seeding made possible by the summer-fallow practice has also rendered the quality of grain, as shown by analysis of a large number of samples of early and late seeded grain.

Things Essential to a Better Grain Yield.—The following is a brief statement of the essentials for success in grain culture:

1. The minimum limit of precipitation for successful culture is about 8 inches.

2. When the precipitation is less than 15 inches, biennial cropping, summer-fallowing, should be practiced. It saves as much as possible of two seasons' rain for one crop. It kills weeds which use up moisture, plant food, and increase the cost of operation. It increases aeration, and makes plant food more available. But it is destructive of humus, which must be restored by green-manuring.

3. Add organic matter to the soil by turning under winter-grown rye, field peas, or some other leguminous crop. This improves the mechanical condition of the soil. It enables it to hold more moisture. It helps to make plant food more available. It lessens washing, drifting, and blowing of soils.

4. For fall preparation of grain land, plow not less than 8 inches deep. This enables rain to get into the soil easily. It prevents run-off in case of very heavy rain. It provides more feeding space for plant roots. It encourages deep rooting of plants. It makes more plant food available.

5. On light land sub-pack the soil immediately after plowing, using either a sub-packer or a disc harrow. This fills up air spaces in the furrow. It gives a compact lower soil which brings moisture up to the plant roots. It leaves the surface soil loose; the lower soil compact. The press-wheels firm the soil about the seed, and hasten germination.

6. Harrow to a good mulch or seed-bed immediately following the packer. This prevents rapid evaporation of moisture, and provides a good seed-bed for quick germination.

7. Seed with a drill with press-wheel attachment. It distributes the seed evenly over the land. It places the seed all beneath the surface of the soil at a uniform depth. It requires less seed.

8. Select large, vigorous, plump kernels of grain. These have greater vitality and a greater reserve supply of plant food, thus producing more vigorous plants.

9. Harrow the grain after it is well up. This serves to retain moisture.

10. Disc the land as soon as possible after the crop is off. This tends to save residual moisture and gives a fine earth to turn under in the first plowing.

11. In case of summer-fallow practice, maintain a clean, well cultivated soil mulch during the summer.

These all make for success in dry-land farming, or the growth of grain on unirrigated land in California.

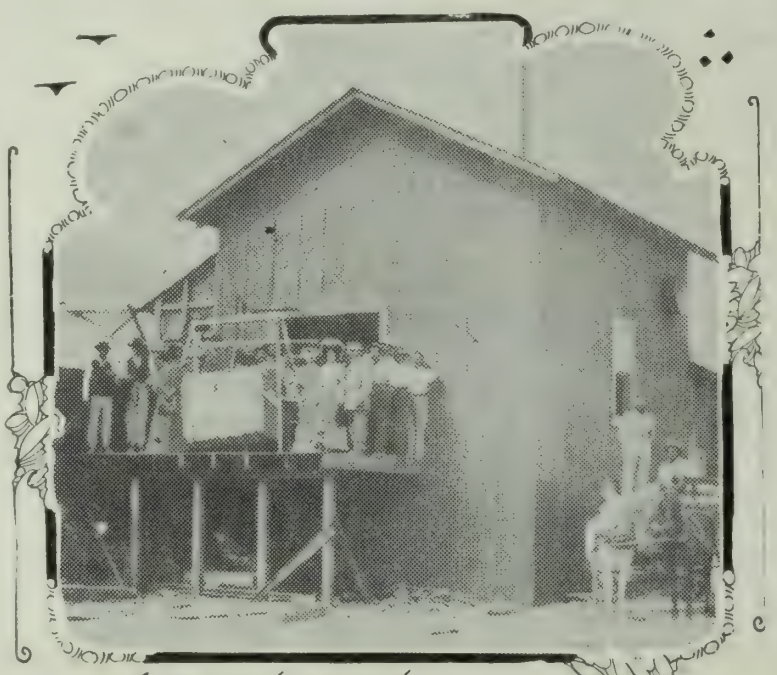
COTTON INDUSTRY IN IMPERIAL VALLEY.

(Continued From Page 249.)

believe that the best seasonal conditions of the South can be duplicated, and a large average yield expected, when the best methods are known. Practice makes perfect, so that the mistakes of the past two years should at least be partly avoided in the future. The methods most generally recommended and that have given the best results, so far, are early planting (March preferred) in a firm seed bed, previously irrigated to at least a depth of three or four feet. Thorough cultivation should be given until the plants are too large, when irrigation should be more frequent than before, in some soils every ten days to two weeks. No irrigation should be given for from five to eight weeks after planting, depending upon the soil and the thoroughness of the irrigation, in order to give the plants a deep, well developed root system. The moisture conditions then should be kept as constant as possible. Too much water causes a rank growth at the expense of the yield, while too small an amount, on the other hand, not only decreases the yield but shortens the staple. Water should be turned off entirely by the middle of August.

Cotton does well on all of the soils in this section, depending more upon the irrigation than upon the character of the ground. The medium soils have given uniformly better results, however, probably because they are more easily handled and irrigated. Old alfalfa land has proved to be especially adapted for growing cotton, and for this reason a rotation of cotton with alfalfa, or some other legume will be highly desirable and in time necessary.

The problem of securing pickers has not been so serious as first anticipated. Mexicans, Indians, Negroes, Hindoos and Americans can be found in the fields at picking time. Japanese, so far, have done practically none of this work. The Americans and Negroes are decidedly the best, while the Hindoos rank above the Indians and Mexicans, the Indians being practically worthless. They prefer to take their time and, in some cases, sit down by each plant while picking, and consequently cover little ground, picking on the average from 50 to 70 pounds per day.



A great event.



Seed cotton ready for gin.

Cotton growing in Imperial valley is not without its insect and plant disease enemies, although the boll weavel has not yet been introduced, and probably never will be, as strict quarantine regulations on the cotton seed are enforced. A fungous or bacterial disease affected many of the bolls the latter part of the summer and in the early fall, but outside of the damage done by this boll rot the crop was but slightly injured, although the boll worm, which was present, may prove to be a serious insect enemy in the future.

The opinions of the growers regarding the future of the cotton industry in Imperial valley vary largely, according to the amount of money lost or made in cotton during the past two years. Cotton growing has of course come to stay, in spite of the pessimist's prephesies, but hogs, alfalfa and dairy cows, along with cantaloupes, asparagus, onions and grapes have not yet lost their charms. Farmers must raise the things they like and the things they know. Cotton will always be counted among the profitable staple articles in the valley—no more and no less.

OVERCOMING 'BALDWIN SPOT' BY TREE FEEDING.

The ugly blemishes beneath the skin of the apple have been carefully studied by fruit-disease experts and no invading organism has been found to which the destruction of the tissues could be attributed. This being the case, the cause has been conceived to be some malnutrition or other evil which induced the degeneration of the tissue. For this reason all experience which points out ways to overcome the trouble should be widely known and considered. Mr. E. Shelley Morgan of Hood River, Oregon, gives the Pacific Homestead an outline of his experience in this way:

A number of years ago I bought a fruit farm at Hood River, Oregon. On this place was an orchard of about 450 trees, 14 years old, which were in a run down condition and affected with about every disease to which the apple is heir.

Effective work for about three years in pruning, spraying and cultivation eradicated about all of the trouble except the "Baldwin spot" on the apples, and this was prevalent on the greater majority of trees.

On some trees almost every apple would be affected, while on others there might be only a few. Again, some seasons it seemed to be more troublesome than others. I secured and read all of the literature I could get upon the subject and discussed it with many of the leading orchardists of the Northwest, but no one was ever able to tell me what was the cause of this disease or suggest a remedy. I tried all kinds of sprays and at different times of the year.

In 1909 a friend of mine from San Francisco visited me at my ranch, and I took pleasure in showing him over my orchards and discussing with him everything pertaining to the business. Having shown him a number of the trees affected with the "Baldwin spot" and telling him of the difficulties I was having, he advised me to try a special fertilizer prepared by the Pacific Guano & Fertilizer Co., 310 Sansome street, San Francisco, California.

I at once decided to try this remedy, and asked my friend to see this firm upon his return to San Francisco, which he did, and they at once wrote me and asked for an analysis of the soil about these diseased trees. This I made at once and sent them, and in a few weeks they shipped me 200 pounds of fertilizer with instructions to apply it to ten trees, 20 pounds to a tree, and asked me to let them know the next summer or fall the result.

This fertilizer was applied, as directed, in November of 1909, and in the spring every one of the ten trees took on new life and vigor. The leaves were of a much darker green; they all blossomed, and last fall I picked a good crop of perfect apples from every one of the trees. Not a single apple on any of these trees had a trace of "Baldwin spot." The other trees in the orchard had, as usual, large quantities of apples badly affected. While this seemed almost too good to be true, it was a sufficient demonstration to me, and I at once ordered a sufficient quantity of the fertilizer to cover the entire old orchard, and this was applied last November. I feel sure that next fall I will not only have no "Baldwin spot," but I will have a larger and better crop of apples than I have ever had.

TREES
TRUE TO NAME

THE ADVANTAGES

of being able to get home-grown trees and vines from a reliable concern who use the greatest care and save no expense to supply their customers only healthy, clean stock, "True to Name," are very great. Our 28 years' experience in this business with thousands of satisfied customers all over the West can best testify to our record for square dealing and superior stock.

We solicit your orders for nursery stock of all descriptions:

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CITRUS
ORNAMENTAL
PALMS
SHADE TREES
ROSES
VINES AND PLANTS

Let us figure on your requirements

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Our citrus stock is grown under ideal climatic conditions in heavy black loam soil, insuring sturdy, strong, well matured trees with excellent roots.

Now is the time to place your orders, as most planting is done in April. We are prepared to fill orders for almost any quantity, no matter how large or small your order may be.

Every fruit grower should have a copy of "CALIFORNIA HORTICULTURE"—the fruit growers' guide. It gives the best methods and suggestions for planting, pruning and care of stock based on 25 years' actual experience. It is a veritable compendium of information. 120 pages, beautifully illustrated. Price 25 cents postpaid.

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The process is termed **LIKFRESHING** because the products treated contain in their cell structure the essential oils, acids, sugar, and other constituent elements unimpaired and require only water to restore them to their original appearance, color and flavor when cooked.

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VEGETABLE GROWERS: Think of being able to market all over the world throughout the year, corn on the cob, string beans, peas, cauliflower, asparagus, etc., with freight charges greatly reduced and with canning expense and danger of ptomaine poisoning entirely eliminated.

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Plants are built in units to hold 200 (thirty-pound capacity) trays and averaging one ton of dried product in 24 hours. Cost of plant is nominal and cost of operating is less than evaporating or even sun drying.

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Demonstrating Plant—Near Shattuck Hotel, Berkeley, Cal.

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is the standard remedy for the codling moth and leaf-eating caterpillars. Arsenic is an effective stomach poison for insects, but must be so combined as not to go into solution and injure the foliage.

We make a specialty or "Ortho 13" Neutral Arsenate of Lead, **being the originators and sole makers of Ortho Arsenate of Lead, the new, all-superseding premier of lead sprays.** This compound fully meets the requirements of foliage neutrality and insect control. It contains approximately 13% of arsenic oxide, on a 48% water basis. This 48% paste is readily mixed with water, and has good powers of suspension.

Ortho Arsenate of Lead, the latest innovation in this branch of spray knowledge, is fully endorsed by the best authorities, and its greatest merit is this, that it can be used freely under all conditions, under all climates, and on all kinds of foliage. **In these respects it differs from all other brands upon the market, which cannot be so used.** It has been used all over the West with great satisfaction, and its use is constantly growing wider.

"Ortho 13" Arsenate of Lead is put up in superb steel containers containing 5, 10, 20, and 50 pounds net, of arsenate of lead. These kegs are air and water tight, and there is no danger of evaporation causing the material to become hard and unworkable. We make a liberal allowance for the return of the steel containers, and stand the freight, thus further reducing the cost of the material to the consumer.

"Ortho 13" Arsenate of Lead is put up in barrels containing from three hundred to eight hundred pounds.

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Distributors in all the principal fruit growing sections of the West.

"AM-FER-GYP"

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If you use fertilizer or if you are in touch with people who do, write for particulars about our new gypsum product, the best and cheapest.

FIRST ORDERS AT HALF PRICE.

We will make you an order well worth accepting to introduce our new fertilizer in your locality. We want Agents. Big profits to you, from its use and sale.

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In answering mention this paper.

ALFALFA SEED

Cheap seed is dear at any price, but why pay high price for the best? Write for our price and sample, stating quantity wanted.

New Seed Catalog
also
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West Coast Seed House
111, 113, 115 Winston St
LOS ANGELES, CALIFORNIA

Fruit Marketing.

WHAT I LEARNED AT THE WESTERN FRUIT JOBBERS' CONVENTION.

To the Editor: If it is the duty of each individual to bring himself to a point where he can form an essentially true judgment of the requirements to social welfare and judge the value or worthlessness of those ready-made opinions which now control his life, the growers of this section of the country are not doing their duty. Otherwise I surely would have found more growers attending the fruit jobbers' convention, eager to gain direct information from the men on the other side of our green-fruit market and eager to learn their wishes and objections, so that we as growers might act harmoniously and succeed. Or is it, perhaps, an old story we knew long ago, and wasn't there anything new we could have learned and profited by? It did not look so to me, especially after studying our own history a little bit.

About two years ago there was general despair not only among green-fruit growers, but even among shippers, and that dreadful word, "overproduction," became a regular nightmare. But Mr. J. W. Jeffrey, our excellent State Horticultural Commissioner, found, after close investigation, that there was by no means and never will be an overproduction of good fruit, but that the markets were flooded with poor stuff. That the same grower who was constantly clamoring for a square deal and fair play was guilty himself of putting up a dishonest pack and of trying to deceive the trade. To stop the development of such deplorable tendencies, several hundred progressive Californian growers got together with the aim of standardizing the pack and bringing about better moral conditions in our fruit industry by exposing the insufficiency of the individual grower. How important and how valuable efforts along these lines are, a talk with any of the Eastern jobbers or brokers will convince you. Yea! these men from the East are going so far in their demands as to lose sight of the growers' end entirely. When some of them ask us to ship nothing but the best and give the bad to the wineries, they forget that there is something between bad and best and that we growers are not only in the business for the fun that is in it. But what we can do to satisfy everybody is to grade our fruit and let the trade know what it is getting. That will create confidence and strengthen the market, because the inferior fruit will no longer set the price for our good fruit. Everything will sell on its real merits.

Knowing what and how to ship, the next question of interest will be, how to put up a first-class, attractive pack. On these points opinions differed greatly, according to the different markets represented by the different jobbers and brokers. Though all agreed on a full, heavy pack, with the corners well filled, they disagreed on the number of baskets per crate. While the Denver table-grape market, for instance, wants not more than four baskets, the Chicago markets, with a lot of small peddlers as buyers, has favored lately crates with eight to twelve baskets. As those baskets could be sold at from 15 to 25 cents apiece, some of them being provided with handles for carrying home easily, they were disposed of as fast as they arrived.

Inquiring into the advisability of advertising individual brands, I received the almost universal answer: First let your fruit advertise your brand and after a while the brand will advertise the fruit. A nice label with a catchy name will

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GOLD BEAR FERTILIZERS

FOR CALIFORNIA SOILS

TANKAGE

The Citrus Fruit Growers of California use thousands of tons of Tankage annually

Tankage is the best form of Organic Nitrogen.
HUMUS-FORMING. ALL AVAILABLE.

We are the largest Pacific Coast producers of High-Grade Tankages in perfect mechanical condition and of

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Will ship direct to you no agent near you

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BY THE MILLIONS

for November and Spring planting. Trees planted in November will stand the summer heat and produce a larger per cent of live trees. Our 21 years of experience places us in the front ranks of successful growers, which should mean something toward your success. Write us for information.

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REDUCED PRICES ON EUCALYPTUS TREES

We offer a large stock of the tree that made San Jose famous—the tree of the sudden saw log—the tree that will yield you an income as long as time shall last. The genuine Blue Eucalyptus; also the red gums Rostrata and Tereticornis.

Roses, Roses—all the leading kinds. Acacias, Silk Oaks, Peppers, Dracaenas, Hedge Plants, Fruit Trees. Black Walnut Seedlings cheap.

Giant Himalaya, Loganberry, Superlative and Yellow Antwerp Raspberries. The "San Francisco," a veritable giant among strawberries.

Prices right. Lists mailed free. Correspondence and inspection invited. Wolesale and retail. Write and see if we are not a LIVE WIRE.

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RED GUM OFFER EXTRAORDINARY!!

100,000 Twice Transplanted, 1-2 Feet High, at Very Attractive Prices.
No "replanting" if such stock is used.
Also good stock smaller plants. General Nursery Stock.

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Not dug-over culls, but splendidly rooted, strictly first class 2-year-olds. A bargain stock for those who want the best in this variety. I offer a good size at lowest quotations.

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Navels, Valencias, Lemons.

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Soil becomes worn out and run down the same as human beings. Send today for our FREE Booklet

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It explains how to build up the productiveness of your land. State nature of soil and what you grow and we will tell you, free of charge, the class of fertilizer needed. Write today.

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THE BEST MAYETTE WALNUT

The "San Jose" Mayette Walnut has established itself to be the best Mayette yet introduced. It is an early bearer, fills well and bears well, and is blight-proof, frost-proof and proof against sun-burn. When grafted on California Black Walnut it is a rapid grower. Price reasonable.

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NEW CATALOGUE just out; send for a copy. Now is the time to sow Payne's Royal Exhibition Pansy Seed, the best strain on the Pacific Coast. Giant Perfection Stocks and Christmas Flowering Sweet Peas.

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Best varieties, large well rooted plants. Some balled for distant shipment at trifling extra cost. Large lots grown by contract Circular Free.
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HENRY SHAW

naturally help the cause, but what is far more important and what should be our first and last care is to avoid disappointing the trade. If a larger amount of good fruit is shipped by one individual he might successfully advertise and call the trade's attention to it by sending stickers to the jobbers and to the managers of the different auction houses shortly before the fruit season opens up, with the request to post them in the auction rooms. But never forget: first good fruit, and then as a natural consequence a good brand.

If you keep that in mind, it does not make much difference when we ship or through what company we ship. One will naturally stick to the company carrying out his policies; one that is not so much a quantity as a quality shipper. Whether or not we shall give preference to a company belonging to the Distributors or to a so-called independent concern will be left with ourselves. The system of the Distributors is certainly as effective as it is simple to control and equalize the market, and, as far I could see, perfectly just. Whether it is of such great importance I will not decide. We must not forget that California's output of deciduous fruit is not much more than 25 per cent of the general output of the United States, and that we on this end can not judge the respective markets, but have to rely entirely on the jobber, who asks for the fruit as it is needed. The Distributors will by all means retain their value only as long as their different constituents are separate concerns. If it should be true, as has been stated as a positive fact, that a few men own the largest companies already, we growers might do better to support some independent house, as the California Fruit Exchange, a strong farmers' company, with a splendid selling system.

Now I could close if that ominous word, "farmers," did not bring something to my mind worth mentioning. This is the striking difference between a farmers' convention and a convention of business men. Here you have a set of men trained by their very business life from the early days of apprenticeship up to independent positions to yield to the requirements of organized life, to accept the fact that somebody has to be the boss and that we have to subordinate our individual selves and recognize a central power sustaining life and order of the organization. There we have a lot of independent individuals representing as many individual opinions and will-powers not recognizing anybody as their superior, carrying on with much noise a useless war of words, but unable to accomplish anything. These men are just as capable as the others, but they are untrained and maybe not as wise. They have not yet proceeded far enough on the upward course of this life, and, of course, when the virtues are expended, back to seed again, as the egg by evolution produces the chicken, and the chicken by involution the egg. I fear some of our growers are not out of the egg yet.

HANS KARRER.

Sanger, Fresno county.

THE AVOCADO
OR ALLIGATOR PEAR
Illustrated circular containing description, cultural directions, and much other useful information, free.
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SHIPPING CRATES AND FEED HOPPERS
We can sell them cheaper than you can make them. Write for prices.
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Nitrate of Soda
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"The Cost of Available Nitrate," Sent Free
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Parties contemplating the planting of citrus groves this coming spring will do well to send for our prices soon, as there will evidently a a shortage of strictly first class stock. Write today for particulars, or, better still, pay us a visit so that we may be able to show you just what we have.
Our finely illustrated booklet, "Citrus Fruits," covering the industry from the seed to the market, mailed to any address on receipt of 25c in stamps.
SAN DIMAS CITRUS NURSERIES
SAN DIMAS, CALIFORNIA



HIGH GRADE FERTILIZER
For Orchards, Vineyards, Gardens, Lawns
GUARANTEED ANALYSIS shows a fine compound of sheep manure and commercial plant foods. Write for free booklet "A Recipe for Making Gold." It gives details and instructions for using.
FANCHER CREEK NURSERIES, Fresno, Cal.
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360 acres devoted entirely to Deciduous Trees.
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CAMPIN & MOFFET, Props.,
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Special Prices on all the Leading Varieties of
Almonds, Peaches, Plums, Apricots and Cherries
All trees strong and thrifty.
Guaranteed true to name.
ACAMPO NURSERY COMPANY, : Acampo, Cal.

AGRICULTURAL REVIEW.

With the Fruit Men.

County Horticultural Commissioner Bowman states that the fruit growers of Placer county are working as a unit this season to eradicate pests on the trees and to introduce scientific methods.

The early estimates of the fruit crop of Solano county place the yield at about one-third of normal.

A large peach packing-house is to be erected at Selma, Fresno county, this spring, in time to handle the coming crop.

A fruit preserving company is being organized at Lodi, with a capital stock of $60,000. Already a good portion of the shares have been subscribed.

W. L. Brenholts, recently from Oregon, has purchased the McGuire ranch of 60 acres, near Lemon Grove, San Diego county, tne consideration being $32,000. About half of the place is set out to lemon trees, and the balance is seeded to grain.

There is a great deal of planting being done around Orland this spring, now that the big Government dam on Stony creek is completed, and the reservoir will supply plenty of water to all in the district. About 2000 acres in all are being planted to trees of different kinds and to alfalfa. Sturm Bros. are planting 40 acres to almonds. Others who are planting fruits are Messrs. Thomas, Hale, Curtis, Drew, Douglass, and Sieviers.

While it is early to make guesses on the coming fruit yield, yet from present indications California will market a very heavy crop of all kinds, with the exception of apricots and some varieties of peaches which bore unusually heavy last year. Also, early varieties of almonds were damaged by the rains. In the southern part of the country, the Georgia peach crop is said to have been ruined by cold weather that visited that section last week. In the middle section, from Chicago to Kansas City, great damage was done to fruit buds by a blizzard. The dispatches say that the entire fruit crop of Missouri was destroyed, but this is probably overstated.

The cannery at Sebastopol is being put in shape for a heavy run this season. of the 51,000 cases of fruit put up last year, all have been sold excepting 10,000 cases, and these will move soon.

Around Hanford the prospects at this time are excellent for a good crop of peaches. Elbertas and Lovells are especially promising, though Muirs are not as good.

County Horticultural Commissioner Sharp reports the recent scare of blight in the peach orchards in the northern part of Kings county as not being well founded. The prospects are for a big yield.

Agricultural Notes.

The Fresno Herald states that grain in that section is growing rapidly, and part of it is already headed out. The acreage in wheat and barley is fully up to the average.

Nearly 22,000 acres have been signed up for beet planting around the Spreckels beet-sugar factory this season.

Barley shipments were made from Fullerton last week in car lots to Arizona.

Cabbage shipments are being made from Fullerton at the rate of several cars per week. The crop is good and prices fair.

Several thousand acres of land near San Jacinto are being plowed for summer fallow. This is the first season that any considerable acreage is to be treated in this way in that section.

An especially heavy acreage is to be planted to Lima beans in Orange county this spring. It is stated that buyers are already in the field offering to contract at the rate of $4.25 per 100 pounds. This county produces nearly $800,000 worth of beans annually.

Last week the bill became a law in this State which makes eight hours a day's work for women employed in mercantile, manufacturing, telephone, and other lines, with the exception that those employed in handling perishable fruits are not included.

The reports of the grain crop in Tulare

Genuine Florida Sour Orange Seed-Bed Trees

Extra fine one-year stock—the best to be had. Be sure you are getting the genuine article. If you will send your orders in now, we are prepared to fill them, be they large or small; but order early, as the supply is limited.

Three thousand fine large two-year **Valencias.** Get our prices.

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EUCALYPTUS BARGAIN

50,000 Tereticornis (Forest Red Gum), 6 to 8 and 4 to 6 inches, fine, even, hardy plants. State number you can use and I will quote ridiculously low price. Would trade for cheap land suitable for eucalyptus. Other leading varieties, any size desired.

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SPECIAL.—Blue, Red and Forest Red Gums, roots packed in moss, cheaper than you can raise them. These are fine, hardy trees, 10 to 15 inches high.

APPLE TREES

12,000 Winesap, Rome Beauty, Jonathan, etc.

Cherries, Calimyrna Figs

PLUMS—Satsuma, Hale, Kelsey, etc. Luther Burbank's new "DUARTE"—two weeks earlier than Satsuma.

Pioneer Nursery Co., Dept. P, **Monrovia, Cal.**

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ONLY FRUIT PITTING MACHINE ON EARTH.

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PASADENA, CAL. **R. F. D.**

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KERNS-SESSIONS, Engineers
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Insures farm property only and at rates that will surprise you. See the agent in your locality and get prices.

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Where the rainfall is limited or water is expensive there is no more profitable forage and dry feed crop than **Milo Maize.** It belongs to the sorghum family of tropical Asia and Africa, where it is the principal grain grown.

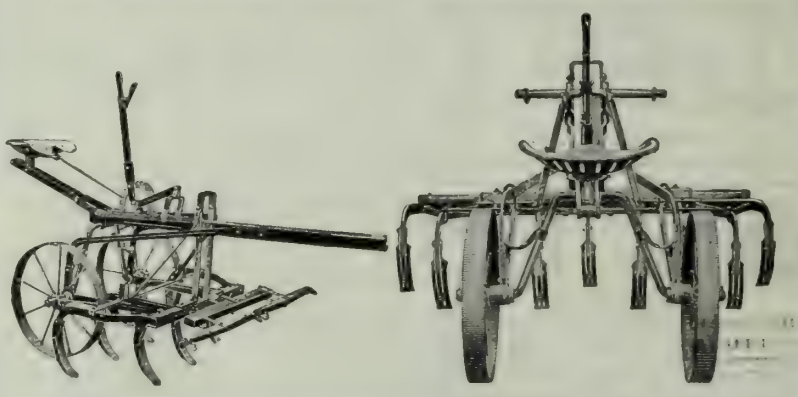
We have secured a stock of a dwarf variety that has been thoroughly tested in Southern California and Arizona, yielding two and one half tons of grain per acre. It grows a stalk 4 to 5 feet high with large, compact, erect heads, and stock especially like the sweet flavor of the stalk.

Write for cultural directions and prices.

PLEASE MARK LETTER DEPT. 0

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Established 1871.
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Benicia-Orr Cultivator



These Illustrations Show the Frame Raised Out of the Ground.

Just note how the frame extends out beyond the wheels so that the driver can work up close to the trees, vines or vegetables.

Note that the frame is level in every position.

Note how well the various parts are bolted and braced so as to get the desired strength and rigidity and still be light in weight and draught.

The **BENICIA-ORR** is made in two sizes—seven and nine teeth—which cultivate a width of four and five feet respectively. By the loosening of six bolts it can be changed from one size to the other. Center tooth can be removed, if desired, for cultivating small vegetables, as beets, beans, etc.

Bear in mind that this implement was designed and is built by practical men who understand the need of agriculturists.

For **good, hard, thorough work in garden, orchard, vineyard or field, the BENICIA-ORR has the lead over any other cultivator on the market.**

If you want to use the latest, **up-to-date cultivator,** place your order for a **BENICIA-ORR.**

Code.	Size.	Width.	Net.	Weight. Gross. Cased.	Measurement. Cu. Ft., Cased.
Sevenor	7 teeth	4 feet	283 lbs.	365 lbs.	8
Nineor	9 teeth	5 feet	308 lbs.	390 lbs.	8
	Pole		32 lbs.	32 lbs.	1

IF THERE IS NO AGENT IN YOUR VICINITY WRITE DIRECT TO

BENICIA IRON WORKS

451 BRANNAN STREET, SAN FRANCISCO, CAL.
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MR. DEALER: We are receiving many inquiries for Benicia-Orrs; have you secured the agency in your vicinity?

The Boss Tree Protector



Made of Yucca Palm

Is cheap, durable, and quickly put on the tree. It prevents rabbits from destroying your trees. A sure protection against frost sunburn, grasshoppers or dry winds. Can be easily moved; will last for years Send for samples.

Price

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10 in. long, 7 in. wide,	$9.50
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county are to the effect that while the straw will be short, yet the grain heads are of good size and are filling out well, insuring a large crop.

Early oats harvest is now in progress in Tulare county.

G. D. Willoughby and brother will sow 1700 acres to lima beans this year in Los Angeles county, and expect to harvest 27,000 sacks at the end of the season. Last year the Willoughbys had 1364 acres in beans, from which they harvested 22,000 sacks and sold at above 4 cents per pound. They claim that the crop netted them $29 per acre.

Harry Fraser, who leases the American Hop and Barley Ranch near Chico, has shipped 400,000 hop roots to Sacramento, where they were distributed to different growers.

It is stated that above 2000 acres will be planted with black-eyed beans in the San Fernando valley this spring. This crop is a new one in that locality.

A recent ruling made by the U. S. Department of Agriculture states that oats or barley may be sulphured to make them appear brighter, and sold, provided the fact is stated upon the package and that an abnormal amount of sulphur dioxide is not used to make an excessive moisture content.

The first car of asparagus for the season was shipped from Sacramento last Saturday to the East. Shipments are late this season owing to the heavy rains. Canneries will commence packing it in a few days, and it is stated that growers have contracted a large amount to them at 3 and 3½ cents per pound.

The California Bermuda onion crop will be short this year. Most Bermuda onions are grown in the Imperial valley, and the output from there this year will not be more than 50 cars. Shipments will commence in a few days.

The season for shipping celery from this State is now closing. Growers have been disappointed in the returns, which were less than usual owing to lateness of the crop. The total number of cars sent out this year will be about 1500, and the total receipts about $300,000. This showing is much less than previous years and may be further reduced next season, as many growers will use their land for growing sugar-beets.

Miscellaneous.

C. A. Colmore, a well-known horticultural expert of Berkeley, will accept the management of the Trumbull Seed Co., with headquarters in San Francisco, the first of April. Mr. Colmore is well fitted to conduct the old established business and will doubtless make it a great factor in seed distribution on this Coast.

Practically the entire available supply of broom corn of this country was destroyed by fire at Charlestown, Ill., last week. Loss is stated to be $300,000.

The Supreme Court last week handed down a decision in favor of J. J. Stevinson against the Kings River Canal & Irrigation Co., preventing the company from diverting waters from the San Joaquin river. This case has been in court for ten years and affects many thousands of acres of land.

Squirrels are said to be very numerous in the section around Prunedale, in Monterey county, and the supervisors have been requested to have them poisoned.

A press dispatch states that F. A. Vanderlip, head of the Rockefeller bank of New York, with two financiers of Spokane, have secured the Los Molinos ranch in Tehama county, containing 12,000 acres, for a consideration of $1,000,000.

As soon as the $15,000 worth of bonds recently voted are sold, the work on the drainage system to reclaim 3000 acres of land west of Santa Ana will be commenced.

A movement is in progress to start an alfalfa-meal mill at Corona, Riverside county.

A tract of 4000 acres near Perris, Riverside county, is being divided into small tracts for citrus culture and alfalfa fields.

The Co-operative Land & Trust Co. of San Francisco closed a deal last week in which it purchased 6000 acres of land from the Crocker estate. The lands secured lie about two miles north of Atwater in Merced county. This land will be irrigated by the Crocker-Huffman system, and 3000 acres will be subdivided into small tracts and placed on the market at once. This land is adapted to the raising of deciduous fruits, sweet potatoes, and alfalfa.

MORSE'S Sweet Corn



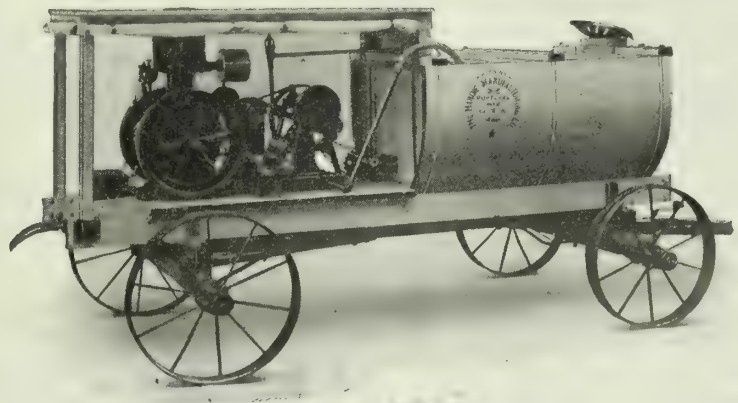
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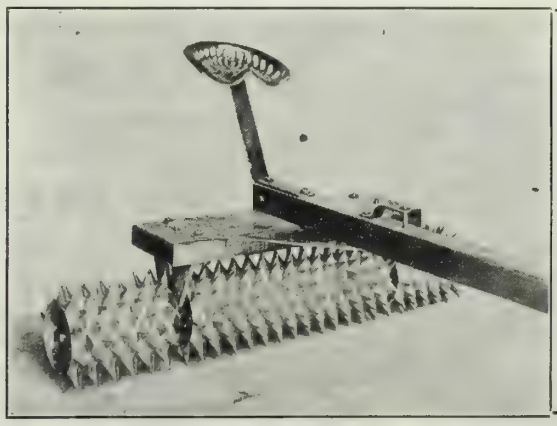
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MILK FEVER AND ITS TREATMENT.

(Continued from Last Issue.)

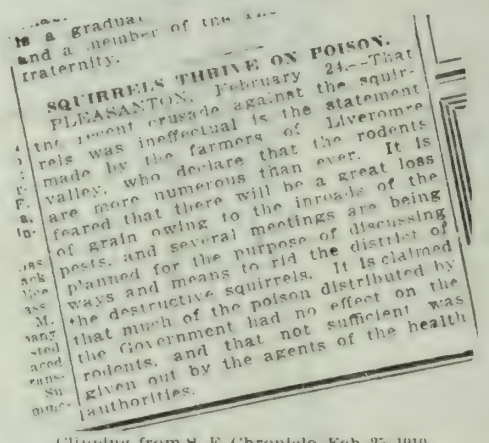
THE NEW AIR TREATMENT.—Of all known methods of treating milk fever, the injection of sterile atmospheric air into the udder is by far the most simple and practicable, as well as the most efficacious and harmless one at our disposal, and only occasionally requires that medicinal treatment be given.

The method of injecting filtered air into the udder is easy of manipulation, requires but little time, and is readily accomplished by means of a milk-fever apparatus. It consists of a metal cylinder with milled screw-caps on either end, one of which may be removed in order to place sterile absorbent cotton within the chamber. To this cap rubber bellows are connected by 9 inches of rubber tubing. The other cap is to be removed together with the attached 18 inches of rubber horse, at the free end of which is the self-retaining milking tube, for the purpose of disinfection before treating each case. The pulling on or off of the tubing on the nozzles of the milled caps is thus rendered unnecessary. Within the metal cylinder is a wire net which prevents the obstruction of the outlet of the chamber by holding back the sterile cotton, and also permits of the unscrewing of the lower cap and the disinfection of this portion of the apparatus, including the milking tube, without contaminating the packing. Absorbent cotton impregnated with carbolic acid (carbolized cotton) or otner suitable disinfectant can be purchased from the drug trade in most localities, and is better, though more expensive, than the plain cotton.

Previous to making the air injection, the hands of the operator should be thoroughly cleansed and the udder should receive careful antiseptic treatment. Soap and water should be applied to the teats and udder, after which they should be carefully disinfected with a 5% solution of carbolic acid (3 tablespoonfuls of pure carbolic acid to 1 quart of water). A clean towel should then be placed under the udder to prevent the teats from coming in contact with dirt or filth of any kind. The milking tube, before it is placed in the teat, should have been perfectly sterilized by boiling for fifteen minutes, with the lower hose and cap of the cylinder attached, and the apparatus should be wrapped in a clean towel, without touching the milking tube, to prevent contamination before use. If the apparatus has been subjected to this treatment shortly before and it is desired to disinfect only the milking tube, the latter may be placed in a 5% solution of carbolic acid for five minutes. It is then carefully inserted into the milk duct of the teat without emptying the udder of milk. Air is now pumped from the bulb into the reservoir and thus a continuous flow of air is forced through the filtering chamber and into the udder. Slight massage or kneading of the udder will cause the innermost recesses of the milk tubules to become distended with the injected air. After one-quarter of the udder is well distended the milking tube is removed, care being taken to prevent the outflow of air by having an assistant tie a broad piece of tape about the teat at the time the milking tube is withdrawn. The same treatment is repeated with the other three teats until the udder is satisfactorily distended. In case the air becomes absorbed and no improvement is noted within five hours, a repetition of this treatment should be made under the same antisep-

HALL'S SQUIRREL POISON

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SQUIRRELS THRIVE ON POISON.

PLEASANTON, February 24.—That the recent crusade against the squirrels was ineffectual is the statement made by the farmers of Livermore valley, who declare that the rodents are more numerous than ever. It is feared that there will be a great loss of grain owing to the increase of the pests, and several meetings are being planned for the purpose of discussing ways and means to rid the district of the destructive squirrels. It is claimed that much of the poison distributed by the Government had no effect on the rodents, and that not sufficient was given out by the agents of the health authorities.

Clipping from S. F. Chronicle, Feb. 25, 1910.

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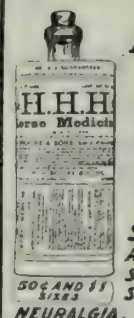
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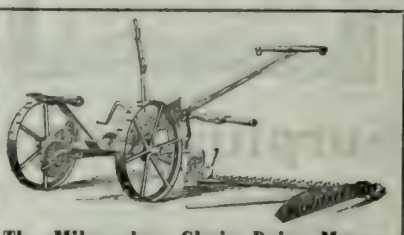
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tic precautions as at first. The tape should be removed from the teats two or three hours after the cow gets on her feet, the constricting muscles at the tip of the teats being now depended on for retaining the air. In this manner the air may be left in the udder for 24 hours, and when recovery is assured, it should be gradually milked out. It is needless to say that the calf should not be permitted to suck during this period.

While this method of treating milk fever is a comparatively easy one for a farmer or dairyman to adopt, he cannot expect to have the same successful results as those obtained by a skilled veterinarian, and it is therefore advisable that the services of such a veterinarian should always be obtained in those districts where it is possible. In many cases it will be found that the injection of air into the udder will be sufficient to combat the disease without any other treatment, but it is always advisable to study the symptoms of each individual case and administer in a rational manner the indicated medicines.

PREVENTION.—Until recently most stringent measures were resorted to by every careful dairyman to prevent the development of the disease in his herd. However, since the treatment of the present day has so greatly reduced, and even in some cases obliterated, the mortality, prevention is no longer such an important problem, and therefore preventive measures which have a severe and lasting effect upon the animals should be abandoned from an economic standpoint. It has long been advocated to starve all suspected animals for two weeks prior to the birth of the calf. It is frequently noted that this has an injurious effect on the milk flow of the animal, from which it may require several weeks for her to recover and gain her normal output of milk. This measure is no longer considered advisable, as it is better to have cows attacked with the disease once in a while (the mortality being less than 5%) than to decrease the flow from every heavy-milking cow for one to three weeks after she becomes fresh by starving her before calving.

A method which is not quite so sure of reducing the plethoric condition of the cow, but which nevertheless proves very efficient and is without the slightest permanent injurious effect, is the administration of 1 to 1½ pounds of Epsom salts two or three days prior to calving. In case this has been neglected and a well-nourished, heavy-milking cow has passed through an easy, nonexhausting calf birth, the administration of the salts after the labor is over should by no means be neglected. Blood-letting has also been advocated, but there is always the danger of exciting the blood-making organs to excessive activity, thus largely neutralizing the effect. It should therefore be resorted to only when the cow is extremely fat, is a heavy milker, and has had one or two previous attacks. The blood should be drawn from the jugular vein until the pulse softens perceptibly, 1½ pints for every 100 pounds of the animal's body weight being about the right amount.

Another very good preventive measure, and one easily carried out, though frequently overlooked, is to give the cow plenty of exercise up to the time of calving. Many animals are allowed to run continuously on pastures from the time they go dry until a week or two before calving, when they are transferred to the stable without any subsequent exercise. This is very conducive to the enriching of the blood and the development of the disease.

The most recent preventive treatment suggested is in line with the favorable results obtained by the injection of air into the udder. It consists in allowing the susceptible cow to retain in the udder for 24 hours after calving all the milk except the small quantity required by the calf, which should be taken, if possible, from each quarter. The distention of the udder naturally follows as in the air treatment and acts as a preventive against milk fever. General sanitary conditions should also be looked after, such as the supply of pure air and clean stabling, with penty of clear, cool water and laxative foods, such as grasses and roots.

THE HOG HOUSE IN CALIFORNIA.

To the Editor: A few years ago I read in a Pacific Coast live stock paper that our climate was so mild that hog houses were not needed in California. About the same time I read in a Los Angeles magazine that it never was cold enough in southern California for children to wear shoes or hot enough for them to wear hats. These statements are doubtless hailed with joy by the fellow that wants an excuse to raise a barefooted and bareheaded family, or grow hogs without the trouble or expense of a comfortable hog house.

As I have never been in Los Angeles, I suppose the above statement is true, but I claim the right to differ from the man who says the hog house is needless in the Sacramento valley. In our locality the temperature seldom falls below 25 degrees above zero, and still we occasionally have a light fall of snow. Of course, the snow does not, as a rule, lie on the ground but a very short time. As we write (March 4) the rain is falling on green fields and hillsides. Our pigs are huddled away in their houses in warm beds. It is a pleasure to know that they are comfortable, and also to know that we are not feeding valuable feed to generate heat. Feeding cold, wet hogs to keep up warmth is like feeding lousy hogs to keep the hogs alive and the lice in a thrifty condition. It does not pay.

I use a collapsible A-shaped house, large enough to accommodate one sow and pigs. This house is hinged at the top with a pair of 6-inch strap hinges. This lets the sides close up flat when the ends are removed. It can be laid across a low wagon for moving from place to place.

The ends are constructed of inch boards and secured in place by common baling wire. One wire at each corner is sufficient. The opening at the peak is closed by a saddle-board made after the fashion of a V-shaped trough.

The floor is made of rough one-inch boards nailed to one-inch battens and made in sections of any width that is most convenient for handling.

In ordinary weather the front end can be left open. When this is done, nail a six or eight-inch board across the front to hold the bedding in place.

The individual or colony house has the advantage of keeping each sow and her litter by themselves, and the further advantage of easy removal.

The objectionable hog smell can be easily disposed of by moving the house a few yards and giving the sun a chance to disinfect the old site. There are few disinfectants that equal the sunshine.

These houses are exceedingly cheap; that is, one that will answer for this mild climate, because low grade lumber can be used for the greater part.

I have also used houses that give excellent satisfaction, constructed by making a frame of 1 by 4 and covering with shakes. These are light and easily handled, and while they break up somewhat, they can be repaired quite cheaply. This style of house will not cost, for material,

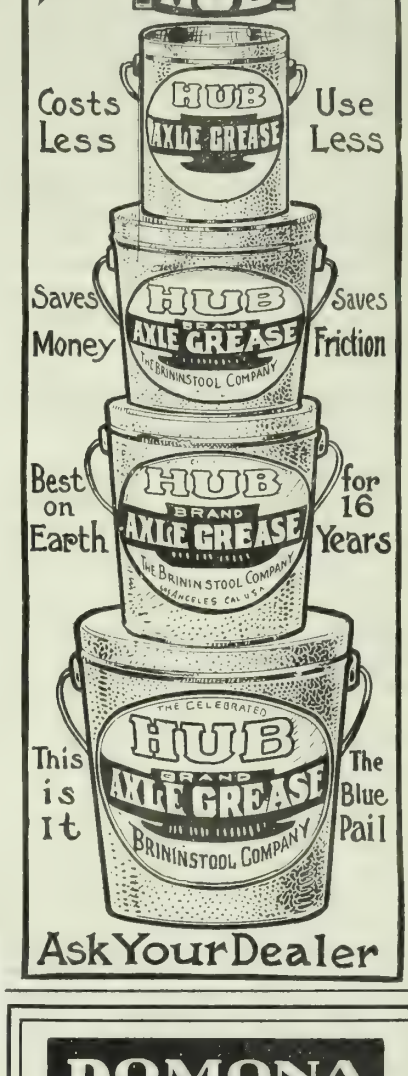
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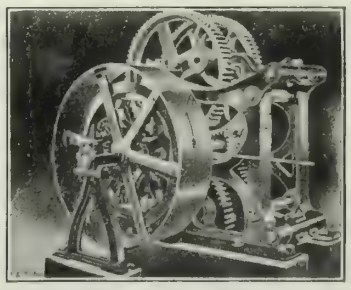
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very much in excess of $5, and any farmer that is at all handy with tools can construct it himself.

The "hotel" hog house is something that we would not make use of if we had it. It is a thing of beauty to look upon, but that is about all there is of it. To keep clean and sanitary is most certainly a great task, and to keep down the odor is simply impossible. Also, when once disease gets in business goes out. This style of house is far more objectionable in a warm climate than in a cold one. And the expense of construction is quite heavy. They are constantly falling out of use, even in the cold climates of the East.

CHARLES GOODMAN.

Williams, Cal.

[This is straightforward, rational, and will be widely helpful to people who are beginning with hogs. In fact, there are many who have been long in the business who have not learned so much. We shall be glad to have such contributions continue.—EDITOR.]

A PROFIT-SHARING ENTERPRIZE.

To the Editor: I submit to you a proposition in "sharing" for your judgment as to what would be equable and would be pleased to see your answer in the PRESS.

A has four young sows, but no place to keep them. B has land, but no accomodations for swine in the way of pens, fenced pasture, etc. But B takes the sows, builds pens, fences, pastures, and feeds skim-milk from his ten cows, but grain has to be bought to augment feed There is no friction between A and B, but they agree that, not knowing what would be a fair basis of sharing, to be governed in the matter by the judgment of a competent third party. The costs of pens, fences, and appliances is about the same as the cost of the young sows. Now, if B does all the work, buys, or otherwise furnishes all the feed, markets the product, etc., what share in the original stock and in the increase should B be fairly entitled to, A having no responsibility or care other than furnishing the original four sows.

If you can be a Solomon in this case, A and B will be greatly obliged.

Willows. PIGS.

[Instead of being "Pigs", you are both geese for not arranging beforehand what each should stand for. Who can suggest a fair basis for settlement? We cannot see that A is entitled to much beyond the value of the hogs at the time he delivered them to B, plus the interest on that sum. B has done everything and furnished everything beyond that. Why should A have more?—EDITOR.]

ALFALFA MEAL.

To the Editor: Will you please let me know if alfalfa meal is a good feed for young calves, fed in connection with skim-milk from the separator; and, if so, how should it be fed, and how much at a feed? Is it a good feed to mix with skim-milk to fatten hogs? Is the meal any better than alfalfa hay as a feed for dairy cows? P. H. T.

Gualala.

Yes, to both your calf and pig questions, theoretically. Like any other feeding of young stock, however, you should proceed carefully and watch for derangement of digestion. It is, however, true that a grain meal makes a better balanced ration with skim-milk. Grinding alfalfa hay does not change its nutritive contents, though it probably makes it more digestible. A disadvantage is that you cannot tell whether you have leaf hay or stem hay after grinding. You can therefore judge of the quality of the stuff you are feeding when it is hay and not meal.

LIVE STOCK NOTES.

The three years' drouth in Texas having been broken, a great demand for beef stock is developing. The ranges are almost bare of stock, and good-breeding beef types are in great demand.

County health officer, Dr. G. E. Tucker, of Riverside county, states as his belief that ranch dogs get the rabies from coyotes. Upon several occasions ranch dogs have come into contact with coyotes, with the result of a fight and a case of "mad dog" within the prescribed twenty-one days. Dr. Tucker has had for consideration fifty cases of rabies during the last ten months.

Two hundred and forty mules were recently purchased to use in the building of the Los Angeles aqueduct which cost an average of $250 per head.

Last week 500 Rambouillet sheep and 15 Short-horn cattle were shipped from Seattle, consigned to the Manchurian Agricultural School at Mukden for breeding and experimental purposes.

The Four Oaks Stock Co., of Woodland, Cal., reports recent sales of registered thoroughbred animals to the following parties: Whittier State School, two Berkshire sows and two boars; C. A. Foust, La Grande, one Hampshire sow and one boar; Schmidt Bros., Salinas, one Hampshire sow; James Christian, Tehama, one Hampshire boar and two sows; H. E. Coil, Woodland, five Hampshire sows; G. C. Francis, Florin, one Hampshire sow and one Berkshire boar; B. W. Worley, Arbuckle, one Hampshire sow; Oak Grove Dairy Farm, Woodland, two Berkshire sows; T. J. Cummins, Arbuckle, three imported Hampshire Down bucks; H. V. Traynham, College City, six Hampshire Down lambs; C. T. Crow, Montpellier, one Hampshire boar and sow; C. H. Springmeyer, Minden, Nev., one Hampshire boar; H. T. Goethe, Sacramento, one Berkshire boar; R. S. Thomas, Tehama, two Hampshire sows and one boar pig; J. H. Sims, Woodland, one Berkshire sow; W. H. Saylor, San Francisco, two Berkshire sows.

DAIRY NOTES.

O. F. Brown, of Washington, who recently purchased land in Biggs Colony No. 1, is erecting a cheese factory on his place which will be ready for operation by May 1.

Quite a number of milk goats from Switzerland are being imported in the district at Hayden Lake, Idaho, where they are being established to supply milk for babies.

An organization of creamery men of Oregon and Washington was recently completed embracing about 20 creamery operators. The object of the organization is to handle the butter in large markets to better advantage.

Smith & Gregory have completed their big dairy barn near Poplar, Tulare county. The barn is 150 by 54 feet and will accommodate 100 cows, and has cement floors. This firm seeded 100 acres to alfalfa last season which is now ready to cut.

H. Tauberner Goethe recently bought several hundred acres of land near St. Helena for the purpose of establishing a stock farm. Mr. Goethe calls his place the El Taufaner Stock Farm and will breed fine hogs and cattle.

Following a recent decision, the Commissioner of Internal Revenue at Washington has addressed a ruling to local collectors to the effect that in the future butter containing over 16% moisture would incur liability under the law to special and stamp taxes as being adulterated.

The Lampenheim Creamery Co. will have its new creamery plant at Hardwick, Kings county, ready for business this week.

KNOB HILL STOCK FARM—Reg. Poland-China swine. A. M. Henry, Farmington.

MATURED MALE GOATS—Milch strain. Write Geo. Langlois, Sebastopol, Cal.

THE N. H. LOCKE CO., LOCKFORD, CAL., are offering for sale **pure bred Jersey service bulls** and **bull calves.** Among these, **Borello's Golden Pogis, No. S9243,** 1st prize yearling bull, 1910 Cal. State Fair. He is sired by the choicest lines of the great Island Bull, Golden Lad, P.S. 1242 H. C., and from a line of dams that produced over 20 lbs. butter in 7 days. These young bulls are from prize winners in the show ring and big producers at the pail. This herd was 1st prize winner 1910 Cal. State Fair, having won 4 champion medals and 15 ribbons, with 18 head exhibited. It is headed by the imported bull King's Valet, the unbeaten champion. Prices and particulars on application.



Heavy Fence
For Economy

WOVEN-WIRE FENCES must be heavy as they have to turn animals by sheer strength of the wire. A fence with barbs is protected from excessive pressure because the animal fears the barbs. Remove the barbs and the greatest strength of the animal is thrown upon the fence. Its wires must be larger and stronger. To have a long-life woven-wire fence the fence must be heavy.

AMERICAN FENCE

is a thoroughly galvanized square mesh fence of weight, strength and durability. Large wires are used and the whole fabric is woven together with the American hinged joint (patented)—the most substantial and flexible union possible. Both wires are positively locked and firmly held against side slip and yet are free to act like a hinge in yielding to pressure, returning quickly to place without bending or injuring the metal.

Dealers Everywhere—Stocks of American Fence are carried in every place where farm supplies are sold. The Fence is shipped to these points in carload lots, thereby securing the cheapest transportation, and the saving in freight thus made enables it to be sold at the lowest prices. Look for the American Fence dealer and get the substantial advantages he is enabled to offer. He is there to serve the purchaser in person, offer the variety of selection and save the buyer money in many ways.

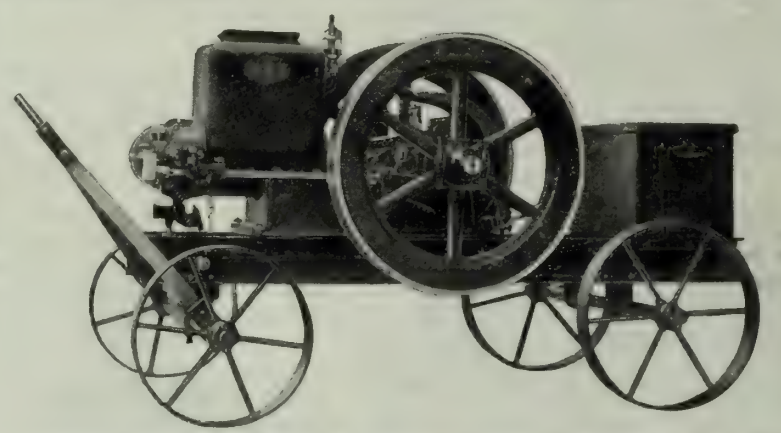
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Send for copy of "American Fence News," profusely illustrated, devoted to the interests of farmers and showing how fence may be employed to enhance the earning power of a farm. Furnished free upon application.

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The **"Little Giant" sold** as 2 H. P. **guaranteed** to develop 3 H. P. Brake Test.

All Steel Truck, $125. Runs like a clock.

This is the baby of the "ZS" Line, 2 to 22 H. P. Carried in stock by

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FOR SALE—NAPA VALLEY VINEYARDS

Choice subdivision of 15 acres containing imported vines (Resistant stock) Petite Syrah variety—average income $60 per acre. This is a part of Rancho Rincon de Los Carneros, 4 miles from Napa City. Rural mail delivery and telephone line. School within half mile. Good market for grapes in Napa. Price $1270. Terms easy. Apply to Cutting Packing Co., owner, 510 Kohl Bldg., San Francisco, Cal., or M. A. Theiler, Napa, California.

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LAND OPENING

Merced County

MERCED COLONY No. 2—A 3000-acre tract divided into small farms. Just secured from the great Crocker Estate. Now offered for the first time. Located on main line of Santa Fe. Station on the tract. Irrigation canals already traverse land. Especially adapted to the growing of ALFALFA, DAIRYING and HOG RAISING. Terms Easy.

Write today for particulars.

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NAME.....

ADDRESS.....

Poultry Department.

Conducted by M. Russell James.

DIGESTION EXPERIMENTS WITH POULTRY.

Summary of experiments in digestion by the Maine Agricultural Station:

1. Corn shows a higher digestibility than any other grain tested.

2. Wheat bran shows a low digestibility, and at present prices is not an economical feed.

3. A mixture of equal parts fine-cut clover and cornmeal is more digestible and a more economical feed than bran.

4. India wheat or buckwheat compares favorably with oats as a grain for fowls.

5. The ether extract of wheat has a low digestible coefficient.

6. Crude fiber was but very slightly digested, and evidently is of but little use in a ration for poultry except to give bulkiness.

7. The mixing of about seven per cent of bone-ash with a ration consisting wholly of vegetable matter gave slightly higher average digestion coefficients than when the mixture was fed without.

This last contribution to poultry knowledge by the Maine Experiment Station is one of the most important to poultry raisers. It is also a vindication of the hen's right to choose her own bill-of-fare. Of all grains she likes Indian corn the best, but the savants considered this preference one of the vicious instincts of nature that must be controlled, and declared that this especial grain must be largely or entirely eliminated from the poultry menu. They prepared "balanced rations" for the hen, and assured her that all she had to do was to fill up and to have done with picking and choosing; also that corn was taboo and that oats was the grain that her system demanded whether her appetite did or not. The hen protested to the best of her ability, showing in the matter of oats that while she was agreeable to hulled oats, the hulls and beards were too tough for her gizzard. But it was no go; she must bow to the law of mind over matter. All of which wisdom soaked into the hen raisers, if not into the hen; and to this day the majority of poultry raisers on this Coast are afraid to feed corn to their fowls, and keep a hopper of dry bran constantly before even the young chicks.

Long since, this writer discovered that bran is not a suitable food for chicks, whose digestive apparatus, like that of all young things, is easily irritated, with resultant diarrhea. Now we find that bran is difficult of digestion for even a mature fowl. When we consider how freely bran is used in poultry feeding and how equally freely it is adulterated with rice hulls and the like, light begins to grow upon one cause of the prevalence of bowel troubles, enteritis, gastritis, diarrhea, among poultry. Too much of such indigestible fiber naturally irritates the digestive tract of even the mature fowls; how much more so that of little chicks and half-grown chickens. We also learn that even wheat is not all it is "cracked up" to be as a poultry food, and that "an exclusive diet of wheat has a deranging effect upon the digestive system of the bird."

We congratulate the practical scientists of the Maine Agricultural Station upon this valuable contribution to poultry knowledge, and we welcome the vindication of the hen's knowledge of the requirements of her own gizzard. We likewise applaud the victory of King Corn. As in the case of all great potentates, he has his detractors and those who would undermine his power. Not only has he been accused of demoralizing the hen, but of causing pellagra and other horrid things. Nineteen hundred and ten has been a banner year for King Corn. All those vile charges of unwholesomeness have been proved false; the "bumper" crop of all years has been produced, and for the first time in history the exports of corn have exceeded those of wheat. Hail to the king! With the American hen and the American hog, he heads the invincible trio of American prosperity.

Poultry Notes.

The Return of the Robin.—A farmer in Cook county, Illinois, James McGwan, has protected and fed the wild birds for the last forty years, and has done everything to attract them to his large or chards and fields. Have his fruits and grains suffered thereby? On the contrary, his orchards, fields, and a large truck garden are noted in that section for the fullness and perfection of their crops, and by the sheer force of example he has spread the gospel of bird protection among farmers of duller perception; in fact, he has converted his entire community into an army of bird protectors, and no bird is destroyed nor nest robbed in that section. His especial ward is the robin. Regularly, for the past fourteen years, he has sent an annual "first-robin report" to the Associated Press. On the edge of a long, cold winter, what a thrill that message of springtime must bring to waiting hearts:

"For never a year is lost that brings
The time of bloom when the robin sings."

The Most Important Conservation.—We hear much of conservation these days—the conservation of forests, the conservation of soils, and the like—but the most important conservation of all is the conservation of the American farmer. A real estate man of Castro valley says that for the past twenty-five years he has watched the trend of Americans to the cities to live in rented houses while the country homestead passes into the hands of foreigners, and he declares that t will not be many decades before Americans will be paying tribute to foreigners, for "Whoso owns the soil shall one day rule the land." The true wealth of our country is American homes—real homes anchored in the soil and built upon American ideals and traditions.

An Indian Runner Duck Egg-Record.—F. L. Hunt, of Napa, in answer to many inuiries about the laying capacity of these ducks, herewith gives the bona fide egg-record of 11 ducks hatched in April and May last: "They commenced laying November 4. During that month they laid 108 eggs; in December, 235 eggs, and in the first 28 days of January they laid 268 eggs. As a bird for table use they are certainly fine, making a splendid 'green roaster.' They put on fat quickly, and when nicely roasted are delicious."

For the benefit of those unfamiliar with this breed of ducks we will say that the flesh is more like that of the wild duck and will appeal to the taste of those who relish a "gamey" flavor.

Factors Making for Egg Profit.—The New Jersey State Board of Agriculture issues its first poultry pamphlet. The subject with above heading is prepared by Professor Lewis of the New Brunswick station. The most remunerative branches of the poultry business for the average poultryman is the production of eggs, combined with the sale of market broilers as a side line. If the greatest profits are to be realized, these eggs must be produced during the winter months when the prices are highest and at a season when under natural conditions the hens lay but a small number. Winter eggs cannot be produced without giving special attention to the birds and endeavoring to produce spring conditions in as many ways as possible.

Stock of Vital Importance.

The best way to start is to build up one's own flock with winter egg production as the main object. In view of the fact that our markets are willing to pay a premium of from 3 to 8 cents per dozen for a white-shelled egg, the best breeds adapted for winter laying are the Leghorns or Minorcas. Yearling hens of whatever breed selected will give the strongest chicks. The health of the adults is of great importance, as strong chicks can only be gained by having strong, vigorous birds, free from any kind of disease; hence the necessity of having the breeding stock full of life and stamina.

The adults should be cared for with the purpose in view of producing fertile eggs which will hatch a large percentage of strong healthy chicks. They should not be crowded in small, unsanitary houses, nor should they be forced to an extensive egg production during their pullet year. When it approaches time for hatching they should be mated to strong males known to come from big egg strains. Not over ten birds should be mated to one male if best results are to be gained. They should be fed an abundance of green food and given free range if possible.

The selection and saving of eggs for incubation should begin about the last of February, and great care should be exercised to select those about medium in size, uniform as to color of shell (white), and they should be kept in a cool place (40 degrees), with an even temperature.

THE ARENBERG BROODER STOVE



Proven to be the most successful Brooder Stove on the market. Awarded gold medal for most meritorius California invention at California State Fair, Sacramento, September, 1910. Burns distillate; perfectly simple and easy to manage. **Write for details.**

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F. BALDWIN'S WHITE LEGHORNS



1st Pullet, A. Y. P. Ex.

Winners from Seattle down; 33 out of a possible 35 prizes in 3 shows this season. **Bred as layers first.** Stock, any age, for sale at reasonable prices. Eggs $6 and $10 per 100 Settings $2 up. Send for **new free folder** and prices.

49 Washington Ave , San Jose, Cal.

THOROUGHBRED BUFF LEGHORNS

Proven winter layers; 600 hens selected by Hogan system, in breeding yards.

Chicks, $10 per 100. Orders taken only for May and June delivery.

Eggs for hatching, $5 per $100; $1 per setting.

R. M. HEMPEL,

R. F. D., No. 1, Lathrop, Cal.

POULTRY.

WAYSIDE POULTRY YARDS, Petaluma, Cal.—HATCHING EGGS from S. C. White Leghorns, Buff Orpingtons, Rhode Island Reds, Light Brahmas and Houdans, $6 per 100. EXHIBITION MATINGS of White Leghorns and Black Bantams, $5 per 15; $7.50 per 30. Address Carl Gregory, Manager.

OAKLAND POULTRY YARDS, 149D, California St.—Established 40 years. Standard bred poultry. White Orpingtons, R. I. Reds, Brd. Rocks, White Leghorns. Agency Norwich Automatic Feeder and Automatic Water Fountain; the best devices ever offered to the poultry raiser. Send for circulars.

PIONEER POULTRY YARDS—Standard bred Light and Dark Brahmas, Buff Cochins, R. I. Reds, Houdans, Black Minorcas, Cornish Fowls, Brown Leghorns, Bronze turkeys, peacocks, guineas and Rouen ducks. Address W. A. FRENCH, 545 W. Park St., Stockton, Cal.

SULLIVANS' BUFF ORPINGTONS—1000 birds to select from. Trios, $7.50 and up. Eggs for hatching, $2 and $3. Special selection. Prices on application. Mr. and Mrs. W. S. SULLIVAN, 25 Market St., Agnew, Santa Clara Co., Cal.

S. C. B. MINORCA EGGS for hatching at $6 per 100; can fill large orders; 12 yards large beautiful hens, excellent layers; a few young roosters left at $3 each. Black Beauty Poultry Yards, Dixon, Cal.

MAMMOTH WHITE HOLLAND TURKEYS—Eggs for hatching, $5 per 13 eggs; fine large vigorous stock, not related; no stock for sale. Mrs. A. R. Sutherland, Santa Barbara, Cal., R. F. D., No. 2.

FOR GOOD, HEALTHY CHICKS in large or small lots, try Penn Grove Hatchery. All chicks guaranteed. Incubators, brooders and supplies. E. W. Spring, Prop., Penn Grove.

DAY-OLD CHICKS—R. I. Reds, S. C. White Leghorns and Barred Rocks; also eggs for hatching; good laying strain. Fairmount Hatchery, Box 29 B, R. F. D., Santa Cruz, Cal.

WHITE WYANDOTTES—221 egg strain. Owner first-prize cockerel, Oakland and Petaluma 1909. Eggs $2 per 15. H. B. WINTRINGHAM, Middletown, Lake Co., Cal.

CHICKS, 10c.—Shipped anywhere; 30 varieties; thoroughbred chickens and eggs; free circular. Ingleside Hatchery, 807 Mt. Vernon Ave., San Francisco, Cal.

INDIAN RUNNER DUCKS—Eggs for hatching, $1 per setting; $2 for 30; for 50 or more, 5c each. F. L. HUNT, Lincoln Ave., Napa, Cal.

PETALUMA INCUBATOR CO., Petaluma, Cal.—You will be pleased with our new Free CATALOGUE. Send for it.

FREE BOOK—"Poultry Feeding for Profit," on application to Coulson Co Petaluma, Cal., Box P.

CARRINGTON WHITE LEGHORNS—Send for circular. Address C. B. CARRINGTON, Hayward, Cal.

WHITE LEGHORNS—Chicks, eggs, cockerels. Fine stock. Reasonable. O. B Morris, Lodi, Cal.

INDIAN RUNNER BABY DUCKS, May and June. T. M. Alexander, 460 33rd Ave. San Francisco.

BRONZE Turkeys and Eggs. Ed Hart Clements, Cal. Large size, good plumage, early maturity.

TWIN OAKS FARM—W. H. Bissell, Proprietor, Livermore, Cal.—Buff, White Orpington.

ORPINGTONS—White, Buff, stock, eggs. Ellen Jacque, 3117 School St., Fruitvale.

HATCHING EGGS—White Leghorns. Circular 164. A. H. Gregory, Fruitvale, Cal.

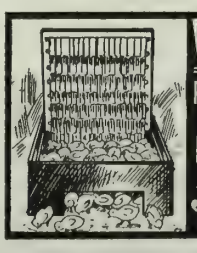


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Orders booked for spring delivery of baby chicks. Our specialties are Rhode Island Reds and S. C. White Leghorns.

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INDIAN RUNNER DUCKS

FROM A. Y. P WINNERS.

Indian Runner Ducks lay eggs that sell as "firsts." They don't mind cold fe and they lay in winter. They eat cheap feed and lay upwards of 200 eggs a year They mature at five months. They are well called "mortgage lifters."

Eggs for hatching. Ranch on Hayward Hill at the junction of the Livermore and Crow Canon Roads. Visitors welcome every day in the week.

MELLETTE & CO., Hayward, Cal , R 3

The Home Circle.

A Westerner.

My fathers sleep o'er the sunrise plains
And each one sleeps alone;
Their trails may dim to the grass and rains,
For I choose to make my own.
I lay proud claim to the blood and name
But I lean on no dead kin:
My name is mine for the praise or scorn,
And the world began when I was born,
And the world is mine to win!

They built high towns on their old log sills,
Where the great, slow rivers gleamed,
But with new, live rock from the savage hills,
I'll build as they only dreamed.
The fire scarce dies where the trail-camp lies
Till the rails glint down the pass;
The desert springs into fruit and wheat
And I lay the stones of a solid street
Over yesterday's untrod grass.

I waste no thought on my neighbor's birth
Or the way he makes his prayer;
I grant him a white man's room on earth
If his game is only square.
While he plays it straight I'll call him mate,
If he cheats I drop him flat.
All rank but this is a worn-out lie,
For all clean men are as good as I,
And a king is only that.

I dream no dreams of a nursemaid state,
That will spoon me out my food.
A stout heart sings in the fray with fate
And the shock and sweat are good.
From noon to noon all the earthly boon
That I ask my God to spare—
Is a little daily bread in store,
With the room to fight the strong for more,
And the weak shall get their share.

The sunrise plains are a tender haze,
And the sunset seas are gray,
But I stand here where the bright skies blaze
Over me and the big Today.
What use to me is the vague "may be,"
Or the mournful "might have been?"
For the sun wheels swift from morn to morn
And the world began when I was born,
And the world is mine to win!

—Charles Badger Clark, Jr., in Pacific Monthly.

What Are You Getting Out of Life?

What does each day bring you? Work, worry and discontent? Are you dreading the dawn, and do you fret and rebel at fate which has been imposed upon you, and do you weep and pray for better things to come?

If this is your habit of thought, you are placing an impassable barrier between yourelf and any possible future happiness.

You are training your mind to despondent mental habits, and these habits will pursue you, no matter how conditions may change for the better. This is not theory, but a scientific fact.

I have known a woman to dwell with morbid persistency upon her really unhappy life, and to shut away any suggestion that it could change for better, with a dogged pessimism. And, when, later, conditions did change (through the efforts of others), and she was given ideal surroundings and every affectionate care and attention, she found herself unable to change her way of looking at life.

From morning until night, year after year, she was despondent, discontented and complaining. She had developed the gloomy pessimistic part of her brain and atropied the optimistic portion by disease.

If you should tie your right arm to your side for years, it would become enfeebled and in a measure paralyzed. When, some day, you undertook to put this hand to work, you would find it incapable of obeying your commands.

If you never allow your child to walk, but kept it in a perambulator until it was grown, you could not expect it to walk.

It is precisely so with the mind. It must practice the habit of pleasant and hopeful thoughts before it can enjoy any blessing or event in full.

Begin yourself today and give yourself a kindergarten training in happy thinking. No matter how miserable and burdened your life may be, look for some one bright spot, some beauty in nature, some hour of rest, some sweet little hope, and dwell upon that for a few moments until you can feel a thrill of joy in your heart.

Look at other lives and realize the fact that you would not exchange your lot in the entire world for that of any other human being you know. Then be glad you are yourself and go to work to make yourself what you wish to be.

You have an idea that powerful qualities lie in you to change the conditions of your lot for the better.

But it is useless to change them unless you change your way of thinking about your present environment.

Find something to enjoy each day and look forward to more enjoyment tomorrow. Do not be discouraged if your hopes are slow in materializing, the delay is but temporary.—M. L. Stewart.

Delicious Baked Ham.

This is one of grandmother's ways of baking ham, and is one of the grandest ways one can be cooked:

Cover your ham with cold water and simmer gently just long enough to loosen the skin, so it can be pulled off. This will be from two to three hours, according to size of ham.

When skinned, put in a dripping pan in the oven, pour over it a teacup of vinegar and one of hot water, in which dissolve a teaspoon of English mustard; bake slowly, basting with the liquid, for two hours. Then cover the ham all over to the depth of one inch with coarse brown sugar, press it down firmly, and do not baste again until the sugar has formed a thick crust, which it will soon do in a very slow oven.

Let it remain a full hour after covering with the sugar, until it becomes a rich golden brown. When done, drain from the liquor in the pan and put on a rish to cool. When cool, but not cold, press by turning another flat dish on top, with a weight over it.

You will never want to eat ham cooked in any other way when you have tasted this. Pressing makes it cut firmly for sandwiches or slicing.

To Incline Toward Mercy.

Jim has been far from a good boy during the day, and toward nightfall he realized the fact fully. Being well acquainted with the workings of family discipline, he essayed a little diplomacy.

"Shall you tell father about me?" he inquired of his mother.

"Certainly I shall tell him," responded his mother, with sorrowful firmness.

"Shall you tell him before dinner or after dinner?" asked the culprit.

"After dinner," was the announcement.

"Mother," and Jim gave a wriggle of anticipation, "couldn't you have a blueberry pudding for his dessert? Couldn't you do that much for me, mother?"

Nearer to us than the things we see are the things we believe. More potent than the forces that press us without are the confidences we have within, and these determine the riches or poverty, the joy or sorrow of your life, and the richness or poverty to other lives.

The mule is celebrated for kicking but is renowned for working.



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FLOOD BUILDING, PALACE HOTEL,
MARKET STREET FERRY DEPOT,
THIRD AND TOWNSEND STREETS DEPOT,
BROADWAY AND 13th STREETS, OAKLAND

Thomas Moore is quoted as saying something like this: "A rose is a lovely creation, but give me a potato cooked as a country woman can do it." Probably the best way to cook a perfect potato is to bake it. By that process nothing of its value is lost and the starch is more thoroughly cooked than when put in water. A well-baked potato eaten as soon as it is done, with butter, or, better yet, with cream and salt, is a delicious morsel. A hot oven is required to secure the best results in baking the potato. A crisp crust should be formed rather quickly on the outside, thus retaining the moisture, which, changed to steam, cooks the starch. As soon as this is accomplished the skin should be cracked, that the surplus moisture may escape, leaving the potato light and mealy.

There once was a man who did not tell his troubles to anybody. He was cast away on a desert island.

A conversational bore is a man who won't let you do all the talking.

OUR YOUNG FOLKS' DEPARTMENT.

Conducted by M. RUSSELL JAMES.

Good Poultry Work by Boys and Girls.

Contributed to Our Young Folks' Department by Courtesy of Oregon Agricultural College.

Capital work was done by the boys and girls who were contestants in the juvenile poultry contest at Portland, organized by the Oregon Agricultural College and the Y. M. C. A. The winner of the first prize, Clarence A. Hogan, made a total score of 95 points out of a possible 100, and Ruth Hayes, winner of the second prize, scored 93 points; the ten others securing prizes, Frank Mitchell, Harold Ball, Melvina Guttscheck, Herbert Adams, Ralph Repp, Elva Smith, Edwin Elliot, Harold Hilton and George Drew, each scoring 88 points or over.

Herbert Adams, whose hens made the best laying record, tells how he accomplished this end as follows:

"In the spring of 1909 I bought a hen and twelve chicks. Soon after this a man came to our school and talked to the boys and girls about the Poultry Junior Poultry Association. I sent for a prospectus, and after reading it joined the association. When the poultry contest opened in November I entered four hens and a rooster, but later withdrew the rooster and entered a hen in his place. In raising the chicks I followed the instructions given in the reading course, and as a result my hens were the best layers in the contest. One of the five hens laid right through the molt.

"I fed the chickens a ration recommended by the Oregon Agricultural College. The amount of food for each hen for a year when fed on this ration should be about 20 pounds of corn, the same amount of wheat, 10 pounds oats; 10 pounds bran, 5 pounds middlings and 5 pounds linseed meal, besides plenty of green food and animal food. The bran, middlings and linseed meal I mixed together and placed where the chickens could get at it at any time. Before I fed this ration the hens would lay good for about two weeks and then would lay very poorly for awhile, but when I changed to this feed they did not quit laying after a heavy laying period.

"The house and yards were made from lumber taken from the scrap piles of a near-by mill. This lumber cost me nothing. At first I had only an old shed for housing them, but I pulled that down and built from the scraps, having to buy only 80 cents worth of building material. The east end of the house is covered with burlap to within two feet of the ground. This burlap lets in plenty of fresh air, but stops the wind. During all last winter I did not have any sick chickens. I thoroughly enjoyed the contest and hope another will be started soon."

Colorado Has the Youngest Poultry Fancier.

Johnnie D. Hartman, of Fort Collins, Colo., is laying a foundation for future business. He is only seven years old, but his poultry won six prizes at the big Stock and Poultry Show held at Denver this winter. He used his own money to buy stock with last spring and took all care of the birds himself. On one pen of Golden Seabright Bantams young Hartman was awarded 1st hen, 1st and 2nd cockerel, 1st and 2nd pullet and 1st pen. His flock consists of 25 birds. Doubtless there are plenty of other boys, and girls' too, who could do as well as young Hartman if they would only try.—Western Poultry World.



Some Prize Winners in the Oregon Poultry Contest.

Another Letter From Hilda.

Concord, Cal., March 6, 1911.

Dear PACIFIC RURAL PRESS:

I thank you very much for printing my former letter in the Young Folks' Department. I was happy about it all day Sunday when the paper came, and I am happy about it yet.

I will tell you more about the farm I live on. We have two palm trees that are the same number of years old. They are both twelve years old. The one growing on the lawn is a great deal bigger than the other, because it gets more water. The other trees in our yard are two Texas umbrella China trees, two apricot trees, two elderberry trees, two peach trees and one big oak tree at the back of the house; then there are eight walnut trees in the yard and many more in the vineyard, and a few in the orchard. Papa planted some gum trees and is putting out some more this year. The almond trees are now in full bloom. We have 57 rose bushes. I counted them. We have 93 lambs now, and 5 little kittens out in the barn. We have a raised telephone line to Concord. Not far from here is Mount Diablo. We have a fine view of it. There is snow pretty near half way down, and it looks very beautiful. We always have nice weather here. Good winter weather and good summer weather. This year we have had lots of rain.

I am glad you are going to publish stories about Indians and wild animals. I shall enjoy them very much because I can not go to school any more this term, for I have rheumatism, and our doctor said I am not strong enough to go. My teacher said if I studied at home and did good work I could go in the fifth grade with my class next term. I hope the stories will come soon. Yours truly,

HILDA THELMA GEHRINGER.

Sweet Peas.

Our young folks will find the sweet pea the most lively of all annuals for their flower garden. Among sweet peas the Spencers are greatly superior to all others, both in dainty fringed petals and delightful fragrance, and also in long blooming. Planted now and properly cared for, this variety will bloom until Christmas.

Sweet peas need plenty of sunshine, plenty of water, and a rich, well-drained, well-cultivated soil. The most satisfactory arrangement in planting is in rows to form a trellis. The frame for this purpose should be placed when the peas are planted, so that the first little tendrils may catch to it. Wire fencing, tacked every four feet to sharpened posts set firmly in the ground, makes excellent trellis, and may be readily put wherever a screen of the fragrant sweet peas is desired.

The Farm Wins Four to One in the Northwest.

The Minnesota School of Agriculture inaugurated a prize-letter contest in order to get at the proportion of farmer boys in the Northwest who intended leaving the farm, and why, to the number who wished to become farmers. Five hundred boys were found of the former class and two thousand of the latter. Thus the farm wins four to one.

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THE MARKETS.

San Francisco, March 29, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The continued heavy movement from the North has caused increasing firmness, and local buyers are showing more interest. Local grades are comparatively scarce, Sonora being about out of the market. Both local and Northern Club as well as bluestem and Russian red are quoted higher.

California Club	$1.47½	@1.50
Sonora	1.60	@1.65
White Australian	1.55	@1.60
Northern Club	1.50	@1.55
Northern Bluestem	1.55	@1.60
Russian Red		1.50

BARLEY.

The market has taken quite a jump this week, as it is becoming apparent that the heavy shipments East have left very short supplies for the local market, and "short" interests are buying freely. The new prices will probably curtail the shipping trade. The advance extends to all grades, and amounts to about 20c. per cental.

Brewing and Shipping	$1.35	@1.45
Choice Feed, per ctl	1.35	@1.40
Common Feed		1.30

OATS.

The shortage in the barley market is bringing other feed grains into more prominence, and oats show a corresponding advance, with considerable demand for both red and black. There is no longer any demand for seed oats, and the white and gray varieties are not moving locally.

Red Feed	$1.25	@1.35
Gray		Nominal
White		Nominal
Black Feed	1.25	@1.35

CORN.

Is quiet locally, but there is some movement through the country. Prices on Eastern grades have advanced quite sharply.

Eastern Yellow	$1.30	@1.42½
Eastern White	1.30	@1.42½
Brown Egyptian	1.50	@1.60

RYE.

This grain is very dull, and as some holders are becoming anxious to sell, the top price has been reduced again. There is little demand here.

Rye, per ctl	$1.40	@1.45

BEANS.

Quite a lot of beans have come in from the Orient, and as the prices are comparatively low, they find a fairly good market. Local descriptions in general are receiving more attention, and the shipping movement, though not yet large, is increasing. There is a stronger feeling on nearly all descriptions, several being quoted higher. Blackeyes, horsebeans, and red kidneys are especially strong. There is a continued upward tendency in limas, though quotations stand as before.

The movement of lima beans for April is expected to be light, but the demand for seed will be felt during May, in addition to the Eastern demand. It is reported from Santa Ana that a number of buyers are endeavoring to make contracts for the new crop, offering about $4.50, as compared with $3.55 last year. Growers, however, are inclined to keep their crop in the Association. It is reported that speculators have been working for a corner on spot offerings of limas in New York. A New York broker expresses some anxiety as to the keeping quality of rain-damaged limas in the summer season, though there has never been any complaint on this ground in the past.

Bayos, per ctl	$4.75	@4.85
Blackeyes	6.00	@6.25
Cranberry Beans	4.00	@4.25
Garvanzos	2.85	@3.00
Horse Beans	2.50	@2.75
Small Whites	3.40	@3.55
Large Whites	3.40	@3.55
Limas	6.20	@6.30
Pea		4.25
Pink	5.50	@5.60
Red Kidneys	6.25	@6.50

SEEDS.

The season of spring activity is about over, and there is not much demand for anything at present. Prices are steady to firm as last quoted.

Alfalfa	18@	20c
Broomcorn Seed, per ton	$20.00@	25.00
Brown Mustard, per lb		5½c
Canary	3½@	4 c
Hemp	3½@	4 c
Millet	2¾@	3¼c
Timothy	8 @	9 c
Yellow Mustard		5¾c
Dried Peas, per ctl	3.75@	4.00

FLOUR.

Northern export grades have been advanced, in sympathy with the grain market, but former prices prevail on both local and Northern patents. There is considerable movement from this market to Southern points, local trading being of about the usual proportions.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.30	@4.60

Hay and Feedstuffs.

HAY.

The advance in barley has caused an impression in some quarters that an improvement is due in the hay market, though stocks of most ordinary varieties are very large in most parts of the State. Choice wheat hay is rather scarce, however, and local dealers have been buying quite freely in the country for the last week or two, causing a slight advance in that description. Arrivals here have been been quite large, but are moving off in better shape than for some time past. Dealers here, however, are now pretty well supplied. The continued dry weather, with north winds in some parts of the State, has caused some anxiety in regard to the crop, and while no appreciable amount of damage has been done so far, the crop will suffer unless there is rain very soon.

Choice Wheat	$12.00@	14.00
Good Wheat Hay	9.00@	12.00
Other Grade Wheat	7.00@	9.00
Wheat and Oats	7.00@	10.50
Tame Oats	7.00@	11.50
Wild Oats	6.50@	8.50
Alfalfa	8.00@	12.50
Stock Hay	5.50@	6.50
Straw, per bale	35@	55c

FEEDSTUFFS.

The sharp advance of barley and the firmness of all grains has caused an advance on numerous lines of feed, and while the consumption is hardly as large as last month, there is quite an active demand. Rolled barley and oats, bran, shorts and middlings, as well as mixed feeds, are all somewhat higher.

Alfalfa Meal, per ton	$20.00
Bran, per ton	$25.00@26.00
Cocoanut Cake or Meal	26.00
Cracked Corn	32.00@33.00
Middlings	33.00@36.00
Mixed Feeds	29.00@32.00
Rolled Barley	27.50@29.00
Rolled Oats	30.00@32.00
Shorts	26.50@30.00

Garden Truck.

VEGETABLES.

Oregon onions have been moving off slowly, and the price is rather easy at a reduction. Several lines of green vegetables are becoming more plentiful all the time, and there is accordingly a tendency to lower prices all around, although a few descriptions are higher. The principal feature of the market is the heavy arrival of asparagus, causing a further sharp decline in price, though large lots are being taken for shipment to outside points, and the canneries will be coming into the market very soon. Arrivals of rhubarb from bay points are also quite large, and prices have been greatly reduced. Green peas are offered more freely, but there is little good stock arriving. Mexican tomatoes stand as before, while cucumbers and eggplant are considerably lower. Celery is a little stronger, the Southern crop being about over. Lettuce is plentiful and weak. Mushrooms are about out of the market. The only change in local garden truck is a slight advance in cauliflower. Stockton asparagus has been selling in the East at $7 to $16 per crate of 27 pounds.

Onions: Oregon, sack	$ 2.25@	2.35
Garlic, per lb	4@	5c
Green Peas, per lb	5@	7c
Turnips, per sack	60@	75c
Tomatoes, per crate	1.25@	1.50
Eggplant, per lb	6@	10c
Cucumbers, per doz	75c@	1.50
Cabbage	40@	50c
Carrots, per sack	65@	75c
Celery, large, per crate	1.50@	2.50
Rhubarb, per box	75c@	1.25
Lettuce, per crate	1.50@	2.00

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Cauliflower, per doz	60@	75c
Asparagus, per lb	3@	5c

POTATOES.

Arrivals of new potatoes are still small, with high prices. The general situation in old stock shows little change, supplies being scarce and closely held. Another sharp advance has been made in River, Salinas, and Oregon stock, though the demand is light at present. Early Rose potatoes are quiet and unchanged.

Salinas Burbanks, per ctl	$ 2.25@	2.45
River Whites, per ctl	1.75@	1.95
Oregon Burbanks	1.90@	2.15
Early Rose	1.65@	1.85
New Potatoes, per lb	4@	5c

Dairy Produce.

POULTRY.

There is very little change in prices, a decline in squabs being the only thing worth noting. A car of Eastern chickens was held over from last week, and with liberal arrivals since then, there is more than enough to supply local needs. Little California stock is appearing.

Large Broilers	$ 4.50@	5.50
Small Broilers	3.50@	4.50
Fryers	6.00@	7.00
Hens, extra	9.00@	12.00
Hens, large	7.00@	8.00
Small Hens	6.00@	6.50
Old Roosters	5.00@	6.00
Young Roosters	7.00@	8.00
Young Roosters, full grown	9.00@	10.50
Squabs	3.00@	3.50
Geese, per pair	3.00@	3.50
Ducks	8.00@	10.00
Turkeys, live, per lb	Nominal	

BUTTER.

A new grade has been established, known as "Prime Firsts", which will include a large amount of stock of almost extra quality, which has formerly been graded with firsts. Arrivals have been more than the market could absorb, and while there has been some shipping business, prices have declined on all grades. The following values are quoted by the San Francisco Dairy Exchange:

California (extras) per lb	25 c
Prime Firsts	24½c
Firsts	23½c
Seconds	22½c

EGGS.

The market is again down to practically bedrock prices, with receipts far in excess of the current demand. Quite a lot of stock has been shipped out, but most of the surplus is now taken for storage, the present prices being highly favorable for this class of business.

California (extras) per doz	19 c
Firsts	17½c
Seconds	16½c

CHEESE.

New local flats have again dropped off a little, but are firm at the decline. Y. A.s are considerably lower. Oregon stock is weak, as production is increasing in the North.

Fancy California Flats, per lb	13 c
Firsts	11½c
New Young Americas, fancy	14½c

Deciduous Fruits.

FRESH FRUITS.

Ordinary apples are entirely cleaned up, and there is comparatively little of anything left. The supply consists mostly of Newtowns, and is much smaller than a year ago. The shipping demand continues active, and the range of prices stands about as before, the better offerings being firmly held. Strawberries are expected to be in the market in fairly large quantities within a week or two. Arrangements for handling the melon crop are now being made in the Turlock district.

Apples, per box—		
Newtown	$ 1.25@	1.75
Fancy Red, 4-tier	1.25@	1.75

Dried Fruits.

DRIED FRUITS.

No further changes are noted in any line of fruits, though the few packers who have any prunes are holding for an advance, and sales are being made at practically sellers' prices. The remaining supply of peaches is gradually decreasing under a steady though not very urgent demand. Apples, apricots, etc., are extremely firm, but as far as can be learned, the growers are all sold out. There are still quite a lot of raisins in growers' hands, but the packers are pretty well sold out and are becoming anxious to increase their holdings. They have again advanced their open quotations on sweatbox stock, and will probably get a large proportion of the remaining stock at the new prices. Little definite information is obtainable regarding new crop contracts, but some packers are in the market for 1911 stock at comparatively high prices. The New York Journal of Commerce says. "The movement in California prunes on the spot is restricted by the light offerings and high prices demanded. There is a steady demand for small lots needed to cover immediate requirements of consumption, but in accordance with the shrinkage of buying interest due to the extreme prices asked the demand is slow. The Coast market is strong and little stock is offered for prompt shipment on an f. o. b. four-size bag basis of 8¾c., but that price applies chiefly to 30-40s and 40-50s, other sizes being almost unobtainable. A better demand for peaches is noted for both immediate and forward shipment. Orders for a considerable quantity of peaches have been sent out from here to the Coast based on prices recently quoted, but in almost all instances the reply came back that the orders could not be booked because the goods were already sold. In some cases choice Muirs were quoted up to 7½c. f. o. b. Coast, and extra choice at 8c. The peach market has not until recently felt the influence of the upward movement in other lines of dried fruits, but now holders are appreciating the value of their goods and are not trying to force sales. According to some reports, not more than 100 cars are left unsold on the Coast. Apricots do not receive much attention, but in view of the small stocks here, and the closely cleaned up condition of stocks on the Coast, the market has a firm tone. Speculative interest in spot Thompson's Seedless raisins has been created by the clean-up of Coast stocks and the fact that spot stocks are closely concentrated. In fact, there are said to be but two holders here, and they are East Side jobbers who are in a position to fill orders for any considerable quantity."

Evaporated Apples, per lb	10½@	11 c
Figs, black	4½@	5 c
Figs, white	5 @	7½c
Apricots	12 @	13 c
Moorpark, fancy	13½@	14 c
Peaches	6½@	7¼c
Prunes, 4-size basis	8 @	8½c
Pears	8½@	12 c
Raisins—		
Loose Muscatels, in sweatbox	3 @	3½c
Thompson Seedless	4 @	4¼c
Seedless Sultanas	3¾@	4 c

Citrus Fruits.

It has been stated that this week would see the turn in Eastern orange markets, and that if no break occurred the season would prove a good average in prices. Oranges have gone forward at the rate of 300 cars daily, which is more than has ever before been sent. It is figured that about 7500 cars will be marketed during April and 4000 cars during May, which will dispose of the navels, and

after that time valencias and other varieties will be shipped. Prices this season have been fairly good, and Eastern auctions of last Friday showed firm, and demand good. On Monday, the 27th, at New York, 57 cars of navels were sold at prices a shade lower than last week, but part of the loss was owing to decay. Average prices ranged from $3.15 down to $1.70. Lemons averaged from $3 to $2.40. At Pittsburgh, on the 27th, 17 cars of navels were sold. The market was weaker on navels and stronger on lemons. Prices averaged from $2.85 down to $1.70 for navels, lemons brought from $2.30 to $3.05. At St. Louis the market was a trifle weaker on account of heavy offerings and condition of fruit.

Total orange shipments for the season, up to March 27, were 16,638 cars; lemons, 1970 cars.

The valencia crop, soon to come forward, is estimated at 8000 cars, which is a great gain over preceding years.

On the San Francisco market, tangerines have been rather scarce and show a little advance at the inside figure. Limes are higher, with very little offered. Otherwise, prices in the San Francisco market stand as before. The demand for navel oranges continues quite active, but the amount shipped in of late has been excessive, and at the moment there is some difficulty in maintaining prices.

Navel oranges—	
Extra choice	$ 2.00@ 2.50
Choice	1.75@ 2.00
Valencias, choice to fancy.	Nominal
Choice	Nominal
Standard	Nominal
Tangerines	1.25@ 1.75
Choice Lemons	2.00@ 2.50
Fancy Lemons	2.75@ 3.25
Standard	1.25@ 1.50
Limes	7.00@ 7.50
Grapefruit	2.00@ 2.75

Nuts, Honey, Hops, Etc.

NUTS.

A few almonds are said to be still in the hands of growers, but the amount is negligible. In view of the prospects of a short crop and a close clean-up of the old stock, high prices are expected on the new crop, but it is too early to make any predictions. The jobbing trade appears to have sufficient stock for current needs, as the demand is rather light, but there is likely to be little left by the time the new crop is available. Walnuts are scarce and closely held.

Almonds—	
Nonpareils	15½@16 c
I X L	14½@15 c
Ne Plus Ultra	13½@14 c
Drakes	11¼@11¾c
Languedoc	11 @11½c
Hardshells	8 @ 8½c
Walnuts—Softshell, No. 1	15 c
Standard	14½c
Softshell, No. 2	11 c
Budded	17½c

HONEY.

Some new contracting is reported in the Imperial district, but it will be some time before the new crop appears, and meanwhile the market is largely nominal, all desirable grades being closely cleaned up. Prices are steady at the former figures.

Comb—White Sage	Nominal.
Extracted—Water White	Nominal.
Light Amber	7 @ 8 c
Amber	5 @ 6 c
Sacramento River Comb	12 @12½c

BEESWAX.

Remains fairly firm at the previous quotations, with a better demand than for some time past.

Light	28 @30 c
Dark	23 @26 c

HOPS.

The market is in a very strong position, and some contracts have been made at an advance over the recent quotations, but on the whole the market is quiet, as buyers are acting with caution. Old stock is slow, but the small amount left is gradually moving off.

Hops, 1910 crop	18 @22 c
1911 Crop	15 @17½c

Live Stock.

DRESSED MEAT.

Beef Steers, per lb	10 @10½c
Cows	9 @ 9½c
Heifers	8½@ 9 c
Veal, large	10 @11 c
Veal, small	11½@12½c
Mutton: Wethers	10½@11 c
Ewes	9 @ 9½c
Lambs	13 @14 c
Hogs, dressed	12 @13 c

LIVE STOCK.

Hogs are more plentiful than for some time past, and with a limited demand the market is weak, with lower prices for both live and dressed stock. Otherwise the market remains about as before. Beef stock is still scarce and extremely firm at the high prices last quoted, while sheep are rather easy.

Gross weight:	
Steers: No. 1	6 @ 6½c
No. 2	6 @ 6¼c
Cows and Heifers: No. 1	5¼@ 5½c
No. 2	4¾@ 5 c
Bulls and Stags	2½@ 4 c
Calves: Light	6½@ 7 c
Medium	6 @ 6½c
Heavy	5½@ 6 c
Hogs: Grain-fed, heavy	7¼@ 7½c
150 to 250 lbs	7¾@ 8 c
100 to 150 lbs	7¾@ 8 c
Common Hogs, per lb	5 @ 6 c
Small prime wethers	5¼@ 5½c
Large prime wethers	5¼@ 5½c
Ewes	4 @ 4½c
Lambs	6½@ 7 c

WOOL.

Quotations are entirely nominal, as buyers here are taking no interest whatever in the new clip. They state that the market through the country in general is dull and very unsettled, and are willing to receive nothing except on consignment. It will probably be some time before new prices are established. Some Oregon wool is being sold at about 3c. below the price prevailing last year.

Fall Clip—	
Mountain Free	8 @10 c
Valley Fall and Lamb	6 @ 9 c
Northern	6 @ 9 c
Southern Spring	10 @11 c
Middle Counties	12 @13 c
Northern	15 @16 c

HIDES.

There is now a fair demand from tanners, and buyers show more interest than for some time past, prices being steady as last quoted.

Heavy Steers, over 56 lbs.	10 c
Medium	9 @ 9½c
Light Steers, under 48 lbs.	9 c
Heavy Cows, over 50 lbs.	8¾c
Light Cows, 30 to 50 lbs.	8½c
Kip	10½c
Veal	15 @15½c
Calf	15 @15½c
Dry—	
Dry Hides	17 @18 c
Dry Bulls	16 c
Dry Kip, 10 to 15	17 @18 c
Dry Veal, 5 to 10	16½@17 c
Dry Calf, 7 down	22 c
Fall Lambs	24 @40 c
Sheep Skins—	
Long Wools	$ .85@ 1.25
Medium Wool, 6 to 9 mos.	50@ 80c
Short Wool, 3 to 6 mos.	35@ 60c
Lambs	15@ 50c

HORSES.

Desirable Drafters, 1700 lbs. up.	$275@300
Light Drafters 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	200@250
Wagon Horses, 1250 to 1350 lbs.	175@200
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	135@150
Young	200
Old Mares	100@150

MULES.

1200 lbs	$250@300
1100 lbs	200@225
1000 lbs	150@175
900 lbs	125@150

PUBLISHER'S DEPARTMENT.

A letter received from C. A. Stowe of Stockton is pleasant reading to the publishers. Here are a few excerpts: "I have advertised in the PACIFIC RURAL PRESS for the past twenty years, and the returns have been very satisfactory, both in inquiries and number of sales. The class of customers so secured are thoroughly reliable, as in not a single instance have I lost a dollar." Mr. Stowe is a breeder of Berkshire and Poland China hogs.

ADVERTISING IN FARM PAPERS.

In a recent number of Advertising and Selling, this question is discussed by the advertising manager of the Avery Company of Chicago. In his paper, Mr. Bowen says that circulation is not everything. He states that the editorial policy of the paper has much to do with its pulling power for advertisers. Here are some of the points he declares should influence the placing of advertising: Who is the editor of the paper? Does the paper help its readers? Do the readers have confidence in the matter appearing in its columns? Is the material in the paper clipped or written? Do the subscribers pay for the paper, or does the paper come to them as a premium or with a premium? The further questions of buying power of subscribers, proof of circulation, rate cutting, trading space, paper stock, presswork, all have their bearing. If you are thinking of advertising, why not look over our columns with the above questions in mind and see whether the PACIFIC RURAL PRESS measures up to the standard.

"FRESH DRIED FRUITS."

The recently completed demonstrating plant of the California Likfresh Company, located near the Shattuck Hotel, Berkeley, is being visited by many people daily. The visitors include many fruit growers, packers, etc., from all over the State. The writer recently spent a very interesting hour there. A number of Chinese apple driers from Watsonville were at the plant for the purpose of inspecting it and investigating the merits of the system as compared with evaporating in the handling of apples.

W. H. Swett, the inventor of the system, was on hand to make everything clear. He explained how the heat in the drying chambers was distributed in horizontal rays, preventing hydrolysis and consequent loss of food values. Incidentally, we learned that the process for apples required only 4 to 5 hours as compared with 5 to 6 hours in an evaporator; also that less than one-quarter as much sulphur is required, and that, owing to the fact that no moisture is deposited on the galvanized-iron lining, the sulphur does not corrode and destroy it in a few months as in an evaporator.

Proceeding downstairs to the furnace we were amazed to see the small amount of fire required to keep the heat in the drying chambers to the required temperature, 180 to 200 degrees Fahrenheit, and were told that this plant requires only about one-sixth the fuel that would be required by an evaporation plant of like capacity, also that insurance companies charged no higher rates on such a plant than on a country store.

Lastly, to convince us of the vast superiority of the product, we were allowed to eat apple sauce and apple dumplings made from the likfreshed apples. These were so like those made from fresh fruit as to absolutely defy distinction. This last feature, after all, is the most interesting, and is the feature that gives the process its name, "Likfreshing."

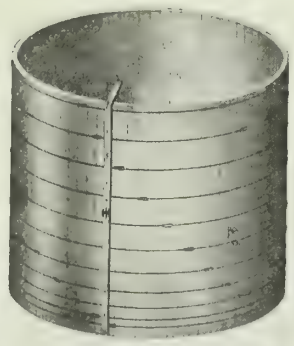
The process is said by its inventor to be applicable to nearly every kind of fruit or vegetable, and even to meats and fish. The writer took home with him a shriveled ear of corn that weighed a few ounces, and by the simple process of boiling converted it into a luscious roasting ear. Equally astonishing and gratifying were the results with samples of cauliflower, squash, potatoes, string beans, peas, rhubarb, berries, and prunes.

The process is no longer an experiment but a demonstrated success. In Oregon, the former home of the inventor, it is in practical operation. Likfreshed fruits and vegetables were awarded every prize offered for dried products at the Oregon apple show last season. We quote the following from the press of that State:

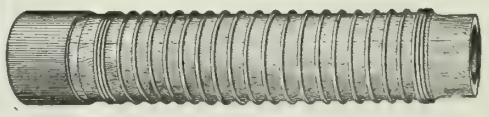
"Since only the water is eliminated by the 'Likfresh' system of evaporation (as its inventor has pleasantly termed it), it stands to reason that the re-absorption of the percentage of water originally taken out will bring this product back to its native state, at least as far as its food value, taste and odor are concerned. All dried fruits, meats, and vegetables retain a portion of their native essences; were this not true they would simply be dried pulp, tasteless, and by chemical test would show no retention of food values. Hence Mr. Swett's discovery differs from everything heretofore attempted in that he retains practically all the elements constituting colors, flavors, and food values. For lack of a better descriptive term, it may be stated that 'Likfresh' products are always fresh foods minus the water, and only the addition of water is necessary to have the original product."—Daily Capitol, Salem.

"The most competent authority, Dr. Wiley, United States chemist, says that nine months is the limit at which cold storage is safe. The Government finds it impossible, with all its pure-food laws, to protect the community from the poisoning of tinned victuals and the adulteration of foods. There are loss and waste in some places, and want and suffering in others for lack of facilities of interchange. The increased cost of living presses upon the family at every point, and almost makes the family an impossibility for the many. A process like Mr. Swett's, which seems to have in it the possibility of meeting all these conditions, and helping to solve all these problems of living, should surely be examined without prejudice, and, if approved, it should be exploited."—Portland Oregonian.

All those who are interested are invited to visit the plant in Berkeley and bring products from orchard or garden to be likfreshed free of charge.—W. H. S.



PACIFIC TANK & PIPE CO.
SUCCEEDING
National Wood Pipe Company
Pacific Tank Company
MANUFACTURERS
PIPE & TANKS



TANKS FOR WATER, OIL, WINE, MINING AND CYANIDING.
WOOD PIPE FOR IRRIGATION, CITY SYSTEMS, MINING, POWER PLANTS.
Machine Banded Pipe 2 in. to 24 in. made up ready to lay.
Continuous Stave Pipe 12 in. to 12 ft. shipped knocked down.
Send for Printed Matter. New Pipe Catalogue in Preparation.
FACTORIES: SAN FRANCISCO, CAL. PORTLAND, ORE. LOS ANGELES, CAL.
OFFICES: 318 Market St., San Francisco, Cal. Kenton Station, Portland, Ore. 404 Equitable Bank Bldg., Los Angeles, Cal.

BOXES and BOX SHOOKS
FRUIT AND VEGETABLE BOXES OUR SPECIALTY.
WRITE FOR PRICES.
MERCANTILE BOX CO.
231 BERRY STREET (Near Fourth) SAN FRANCISCO, CAL.



ERICKSON'S PATENT EXTERMINATOR
A CARTRIDGE CHARGED WITH DEATH—Positively the most effective method known for exterminating burrowing pests. Better than poison, for it is absolutely safe and acts ONLY on pests that burrow. Tests made by the Department of Agriculture resulted inunqualified satisfaction. Awarded the Grand Prize A.-Y.-P. E., Seattle. Simple, safe, effective. Send for booklet. Sold by Dealers. If not, write to Hitt Fireworks Co., Seattle, Wash.
KILLS GOPHERS SQUIRRELS

For Sale By DUPONT POWDER CO., San Francisco, Salt Lake City, Portland, Seattle, Spokane, Denver and St. Louis

MT. DIABLO CEMENT

best for foundations, dairy floors, fruit dryer floors, etc., etc.

SANTA CRUZ LIME

best for bricklaying and plastering.

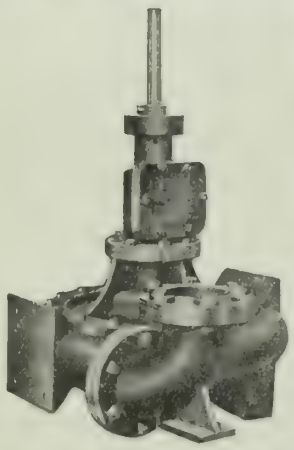
MT. DIABLO ◇ LIME

best for spraying and whitewashing.

WRITE FOR INFORMATION AND PRICES ON ALL BUILDING MATERIAL.

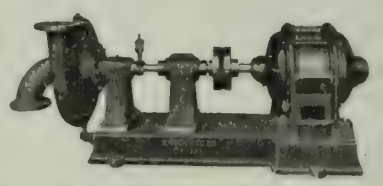
HENRY COWELL LIME & CEMENT COMPANY

9 MAIN STREET, SAN FRANCISCO



Krogh New Vertical Water Balanced Pump

¶ Careful irrigationists are investigating our new water balanced Pump---then buying it.



Krogh Electric Pump

¶ Experience has taught them that a successful pump must be not only efficient but must also be capable of withstanding, to a reasonable degree, the cutting action of sand. Our pumps excel on this point. Bulletin No. R10 tells all about them.

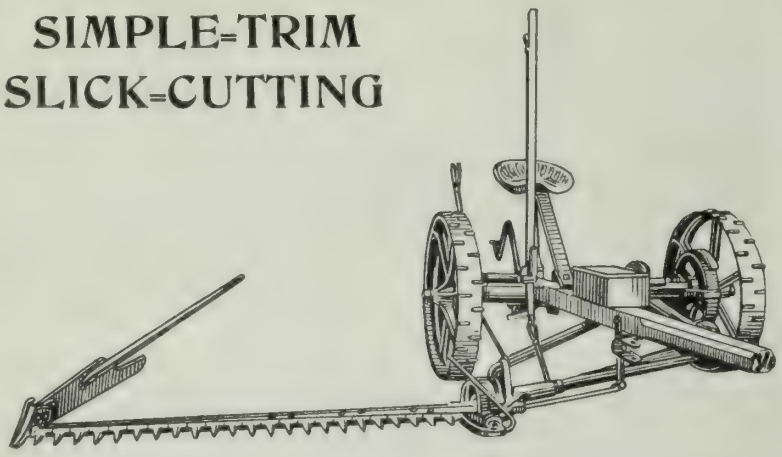
¶ Our branch house, 206 N. Los Angeles Street, Los Angeles, carries a complete stock.

Krogh Manufacturing Company

149-157 BEALE STREET, SAN FRANCISCO, CAL.

JOHNSTON MOWER

SIMPLE-TRIM
SLICK-CUTTING



Absence of friction makes it almost noiseless in operation.
The less friction the less wear—longer life and lower up-keep.
Your request will bring important information.

NEWELL MATHEWS COMPANY

ESTABLISHED 1886

Los Angeles, - - CALIFORNIA - - Stockton.

EUCALYPTUS TREES

GENERAL NURSERY STOCK

4,000,000 Eucalyptus Trees. Large Stock of Fruit Trees

ORANGE COUNTY NURSERY & LAND CO., FULLERTON, CAL.

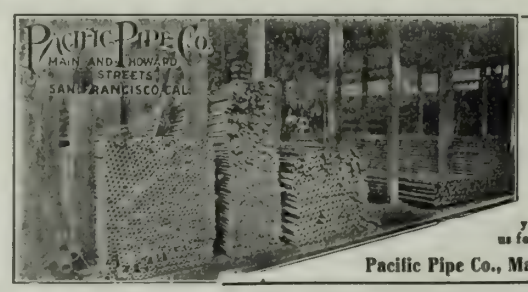
SPRAYING DOES PAY

WE HAVE A COMPLETE LINE OF

BUCKET SPRAY PUMPS
BARREL SPRAY PUMPS
POWER SPRAY PUMPS
ALSO DUST SPRAYERS

BAKER & HAMILTON

SAN FRANCISCO SACRAMENTO LOS ANGELES



Save Money By Buying This Good Second-Hand Pipe

We can supply you with any size and quantity of **Standard Pipe or Casing**—all new threads and couplings—all stock guaranteed first class.

If thinking of buying any kind of pipe, your best interests will be served by writing us for prices and particulars.

Pacific Pipe Co., Main and Howard Sts., San Francisco

WESTERN PIPE AND STEEL CO.

SHEET IRON & STEEL PIPE

FOR TOWN WATER WORKS

HYDRAULIC, IRRIGATION AND POWER PLANTS, WELL PIPE, ETC. ALL SIZES.

OFFICE, 444 MARKET ST. WORKS AT RICHMOND, CAL.

Water and Oil Tanks—all sizes. Sheet Metal Work of All Description.

THE PACIFIC RURAL PRESS

Vol. LXXXI. No. 14. SAN FRANCISCO, SATURDAY, APRIL 8, 1911. Forty-first Year.

CALIFORNIA STATE

Short-Horn Supremacy.

Our taking alliteration is neither new nor original with us, but its supreme significance is signally suggestive of the particular point we desire now to make. The standing of the Short-horn historically an influentially in the building up of the great animal industries of the world is apt to be overlooked by the present generation because of the extra emphasis which is placed upon the serviceability of several special purpose breeds which are recognized as meeting particular demands, and which, in the enthusiasm over their more recently demonstrated values, naturally figure largely in current discussions both oral and printed. The result of thus saying less about Short-horns is apt to be too narrow a notion of the value and adaptations of the breed and of the great public service it is constantly rendering in the advancement of agriculture and trade which is based upon the products of agriculture. The relation of the Short-horn to other breeds is indicated by the disposition of advocates to proclaim their favorites "as good as the Short-horn" or "better than the Short-horn," thus unconsciously recognizing the Short-horn as a standard which to equal must be counted grand and to surpass must be magnificent. The fact is that no one who desires to constitute himself well informed on cattle subjects can afford to be ignorant of Short-horn history achievements and characteristics, no matter what breed he may particularly favor. The Short-horn is the embodiment of principles of breeding and the demonstration of the creative powers of the human mind in determination of extreme desirability and the attainment of them by direction of natural forces. For this reason no one claiming to be a breeder can ignore the "lordly Short-horn" and the deeds of the men who brought the offspring of some wild races to this high estate.

To the California live stock breeder there is added to such broad studies the desirability of understanding the relation of the Short-horn to the improved common stock of the Pacific Coast country, which is now the basis of all lines of grading upward to the special characters of any breed. It was the Short-horn which gave us our first great departure from the gaunt, fiery, well-nigh worthless wildlings of the Mexican rancheroes. It was the Short-horn which gave California pioneers their first high-class beef, and it was the Short-horn which laid the foundation for our dairy industry—in disposition, form and productivity; perhaps in temperament most of all. It was the intervention of the Short-horn, developed to meet all purposes for which cattle are bred, which gave us the grand foundation for the subsequent efforts to attain special purposes and adaptations and this endowment is, of course, wholly additional to the advantage of the pure-bred Short-horn interest which has flourished in California since the first decade of occupation by Americans.

But we do not consider the supremacy of the Short-horn as a matter of history alone. Lord Polwarth of Scotland, in the course of some thoughts on Short-horn cattle which he recently transcribed for the Breeders' Gazette, gives the following significant paragraphs:

"That the Short-horn has a great place in the future as in the past I have no doubt. It has been proved all over the world to be the breed which bears within it the most certain power of doubling, yea quadrupling, the value of native races. It has done so in the past and it remains with our breeders to maintain in its integrity the valuable legacy left us. The spread of the breed over the world is a matter of congratulation and of importance, for the time may come when under special and careful restriction an interchange of breeding animals may be possible to mutual benefit. The breeders in America, whether in the North or South, have purchased many of the best animals bred in this country, and their skillful management along with climatic influences may yet prove of recuperative influence. All the same, we in Great Britain will endeavor to maintain in its integrity and purity the fountain head of pure blood handed down by our ancestors.

"The breeder of the future, wherever he be, must not forget the great aims and methods of the past. Fashion and trade may call for new types, but many of these may prove transient and the sound old pedigrees still prove necessary. Nothing is more remarkable than the way in which they rejuvenesce by the re-introduction of the same blood long separated. There is somewhat of a dislike at the present time to in-breeding, and while it undoubtedly has its perils in unskillful hands, there is no other way of really fixing a type or of obtaining one than the harmonious blending of kindred blood, always on the condition of sound constitution on both sides. The breeding of the future no doubt has difficulties which the earlier breeders had not, but on the other

(*Continued on Page 282.*)



Roselawn 29th of T. B. Gibson: 1st Yearling and Jr. Champion, Cal. State Fair, 1910.



Short-Horn Calf Herd of 1909: Roselawn Stock Farm of T. B. Gibson, Woodland.

Pacific Rural Press

667 HOWARD ST., SAN FRANCISCO.

TWO DOLLARS PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

PACIFIC RURAL PRESS CO - - - PUBLISHERS

Advertising rates made known on application.

E. J. WICKSON - - - - - - Editor
FRANK HONEYWELL - - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Apr. 4, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.00	25.51	39.20	68	44
Red Bluff	.10	22.51	21.70	86	40
Sacramento	.20	21.26	17.27	80	48
San Francisco	.07	24.36	19.76	79	48
San Jose	.00	22.74	11.20	82	42
Fresno	.00	10.74	8.34	82	48
Independence	.00	5.48	8.25	78	38
San Luis Obispo	.42	34.03	18.24	76	48
Los Angeles	.12	16.20	14.15	72	52
San Diego	.36	11.58	8.93	62	52

The Week.

We are fast losing our good nature through continued protest against exaggeration of farming profits which the popular press persists in indulging in. We do not object to reasonable statements that farming well done is a good and satisfying business to those who do it that way, and that the selling value of farming land is increasing everywhere, and that the farmer can sell out to better advantage than ever, perhaps—for all these things are true. There are, however, a host of objections to the conclusions which are drawn from these truths. One favorite conclusion is that, in view of the general good times in agriculture, the cost of farm labor is a negligible matter; that the farmer is making so much money that the wages of farm hands can be doubled on him just as well as not. The gleeful way in which this nonsense is set forth is shown by the following typical utterance by a city paper: "Farm laborers are now paid the highest wage scale in the history of the country, the average throughout the United States being $27.50 per month and board. In other respects the condition of the farm laborer has been improved; his hours are not so long and he has more comforts. His wages have increased fifty per cent in the last twenty years. But with all that, he has not fared so well as the land-owner. The value of farm products has gone up 120 per cent, while the wage of the farm laborer has gone up 50 per cent."

This trifling, assertive writer does not give any support to his declaration that values of farm products have more than doubled in twenty years, and we could reply with the declaration that the assertion is a thing which it would be picturesque flattery to call a falsehood. Our conscience does not allow us to meet one bluff with another, and so we rise to proof. These figures are local, and are just what our people have to work with, viz.:

Produce Prices in San Francisco April 1.

	1891.	1911.
Wheat	$ 1.53 @ 1.55	$ 1.47½@ 1.65
Barley	1.42½@ 1.42¾	1.35 @ 1.45
Oats	1.70¼@ 1.70½	1.25 @ 1.35
Corn	1.40 @ 1.42½	1.30 @ 1.42½
Rye	1.32½	1.40 @ 1.45
Hay	14.00 @16.00	9.00 @14.00
Butter	19 @ 20c	22½@ 25c
Cheese	11 @ 11½	11½@ 13c
Eggs	18 @ 22c	16½@ 19c
Wool	19 @ 21c	8 @ 16c
Beef	4 @ 7½c	8½@ 10½
Mutton	8 @ 9½c	9 @ 11c
Lamb	10 @ 12½	13 @ 14c
Hogs	4 @ 5¾c	5 @ 8c

If anyone can figure out an advance of 120 per cent in values of produce, or in fact any advance at all, except in meats, he can do more than we can. There has been advance in meats, but they were at that time below cost, and their recent advance is not nearly so great as these free writers claim. To claim, then, that prices of farm products have more than doubled, and that the rise in farm wages does not matter to the farmer, is worse than nonsense. So far as the claim is based upon anything, it may rest on the advance in retail prices of foods. It is obviously too great even for those, and whatever advance has been made is largely irrelevant to the issue of the farmer, because, as the figures show, he gets none or an insignificant percentage of it, if all staple products are considered together.

This does not argue at all that forehanded, skillful farming is not a good business, for it is, and the outlook justifies investment in good land by those who know how, or will learn how, to do good farming. It therefore justifies the development of farming lands and investment in them, as is now the general disposition in California. But it does not justify, nor can anything ever justify, going into agriculture on the belief that prices have more than doubled in two decades and that it does not matter what it costs to produce them. On the other hand, the figures show that the farmer must be put to it to increase his labor bill 50 per cent when there is only a small fraction of that increase in selling prices—taking all products together. As a matter of fact, the farm laborer at $27.50 per month with board and lodging, is making a net income equal to the interest of 6 per cent on a capital of $5,527, which is often more than the owner of the farm nets on his investment of that amount. Of course, we do not mean that the farm laborer is doing better than other laborers. He is simply in the same class with the cook of a well-to-do salaried city man, who nets more money than is left to his employer after he gets his monthly bills paid. And yet these flippant writers, in the wild zeal of their urban demagoguery, heroically turn from the thought of their own thin purses under the heels of their cooks and thump the plutocratic farmers in this way: "* * * The farmer of today is a prosperous and often opulent citizen. He complains about the increase in the cost of living, but he does not look at the other side of the ledger. He closes his eyes to the fact that for every dollar's increase in the cost of labor he gets two dollars or more increased profit. So far as the advance in prices is concerned, the farmer has a long way the best of it. He ought to be a happy man." He is a happy man—happier with less rewards and more misrepresentation than any other man in the community; but that is no reason why such ridiculous things should be said about him.

And now that our good nature is so nearly gone, we may as well throw in what is left of it. The critics who claim that the farmer ought to be happy because he has to pay 50 per cent more for the labor which he uses in production urge as an additional reason for the farmer's joy the fact that his land has increased several times in value, with apparent forgetfulness of the fact that increase in valuation increases cost of production: first, directly, by multiplying taxes; second, indirectly, by increasing the charge against the crop for interest on the investment, which the farmer seldom makes but which he should always insist upon. Only on one condition can the increase in the value of his land be of real advantage, and that is in selling out. Another condition, the ability to borrow more money upon it, may or may not be an advantage. Supposing the owner desires to stay in as an earnest and successful producer, of what possible advantage can it be to him to have his land increase in value? And yet here is the joyful note of how glad a farmer ought to be that such increase has come about: "Farm lands in Iowa that could have been purchased for $30 to $40 an acre twenty years ago now sell for $100 and $120 an acre. The same ratio of advance is noticeable in all the agricultural States. Even in New England, where there is much talk of abandoned farms, farm values have increased. Whether measured by the acre or by the total area, farm values have enormously increased. This increase is in almost exact proportion to the increase in value of farm products." As we have tried to show that the increase in value of staples to the producer has been very slight except in the prices of meats, which were depressed at that time, we might admit that the increased value of lands is as the quoted writer claims it to be, but that retort would not be true. There has been a notable advance in the value of farming lands, and the joyful farmers of the Middle West are selling out freely and going after lands in the farther West where the same effort will yield more produce. What the reaction will be when the buyers of these lands at higher prices find out how the investment is related to the real "increase in the value of farm products" and the "fifty per cent increase in the cost of labor," is a matter which is occasioning careful agricultural economists in those States much concern. But we are not worrying about that just now. We are simply noting the fact that we cannot understand how the farmer should be so joyful over increased cost of production of articles which do not bring to him any notably larger returns, although they probably do cost the consumer very much more. We commend to those who preach so much gladness to farmers the researches of a contemporary economist who has demonstrated that the farmer only gets 35 cents of the consumer's dollar.

This is all rather sad and serious. Here is a jolly story. The Metropolitan Magazine seems to be a better farmer's paper than other metropolitan prints, for it says that once upon a time a lot of New England farmers raised a large number of fine turkeys for Thanksgiving and sent them in bulk to a commission dealer. The farmers had never been satisfied with the prices returned for their goods, and they had their own ideas about what the commission man received. So they wrote notes asking the persons who bought the turkeys to write them just what they had paid a pound. These notes were rolled up in parchment paper and carefully tucked inside the birds. The commission man promptly reported sales. He was sorry that some of the birds were poor and not well packed. He did his best, but 14 cents was all that he could get, and here was the money with the expenses taken out. In a few days replies from the private letters tucked away in the turkeys began to arrive. The purchasers had paid 35 cents, and in some cases 38 cents, a pound for the best birds. With the cost of hand-

ling taken out, some of those farmers received 12 cents or less per pound. This was about the 35% of the consumer's dollar to which reference has just been made. This must be a very old story, for it is a long time since "drawn" birds have been marketable in any quantities. It will be comforting to the farmer to know that his grandfather was just as happy as he is, and for about the same reason, perhaps.

Speaking about poultry reminds us that the difficulties in marketing Sonoma county eggs seem to promise solution. They are trying to arrange a co-operative effort by which the market can be controlled by the producers rather than by distant dealers. Mr. C. E. House, manager of the Sonoma County Fruit and Produce Company, proposes that his company incease its capital from $25,000 to $50,000, the amount to be divided into shares at $100 each, one share to be disposed of to each of the 240 poultrymen. The company would hold the other 260 shares and have control of the corporation. Under the plan a percentage could be withheld by the firm from eggs delivered until the corporation is formed or until each of the poultrymen has the $100 to his credit for stock. The profits of the concern would be returned to the poultrymen in dividends. It does not seem to be an ideal co-operation into which producers must be forced and of which they cannot get control, but we are having so much trouble in getting pure co-operations into effective form, it may be the best that can be done.

Something like this may also be true of the new organization in the fruit line which is reported from Sacramento, where the Pacific Fruit Exchange is being incorporated with a capital of half a million. It is apparently intended to cut into the business of proprietary fruit distributing concerns, and a distinctive character is claimed in the fact that none but those actually raising or interested in the distribution of fruit will be allowed to hold stock in it. The Exchange will handle citrus fruit as well as deciduous fruit. Mr. W. C. Walker, secretary-manager of the new company, says: "The salient feature of the corporation is that it will be controlled solely by Californians. We will establish our own agencies throughout the East and open our own offices under our own name as rapidly as the business warrants. We already have a very considerable support from the growers of many sections, and in the trade." So far as the accounts go, this Exchange makes no claim at co-operation except as it exists among those who sign for its capital stock. It seems to be a declaration that the fruit shipping business is so good that Eastern capitalists and fruit dealers will not be allowed to do all of it. This is all right in the absence of co-operation, which, as we have said, seems to be very hard to attain. We do not care particularly how much proprietary concerns cut into each other's business, providing they do not cut into the value of the fruit by dumping it on each other's markets. Competition for the trade may be all right so long as intelligent distribution is secured, and the more pushing for sale the better on that basis. Perhaps it may help the growers to get a greater share of the consumer's dollar.

Queries and Replies.

Planting Seedling Stock or Budded Orange Trees.

To the Editor: I have some land now ready to be planted to oranges, but it is impossible for me to buy the necessary budded stock now or even later this year. Would you advise me to plant the "sour stock" as it comes from the nursery and have it budded or crown-budded later? Are there any real objections to this method, and, if so, what are they? The situation is urgent, as the ground is ready for planting now and the price of good budded stock is prohibitive.—Planter, Fresno county.

It is perfectly feasible to plant sour-stock seedlings and to graft them afterward to whatever variety of oranges you desire to grow, but it is undoubtedly better to pay a pretty good price for budded trees of the kind you desire rather than incur the delay and the irregular growth of trees budded or grafted in the field. There is also danger of an irregular stand from accidental breaking of new growth started in the field without the protection which it finds in the nursery row. There would also be at once a considerable difference in the selling value of the land, for land with sour-stock seedlings ready to graft or in process of grafting would be only a little more than unimproved land, while thrifty, growing, young budded trees would have a selling value much greater than the increased cost of buying budded trees even at what seems to be, because of the sharp demand now, rather a high price. The question is, however, a business one which each planter must determine for himself.

Damping-off of Seedlings.

To the Editor: I would very much like to hear from you about the damping-off of little orange plants when they are just coming up in the seed-bed. Can you give me anything to prevent it? My seed last year came up finely and the plants grew quite well, say for three to six weeks, and then turned black and died. Is there any way to treat the seed to prevent this? In preparing the bed, I used some old cow manure on one-half, and on the other half of the bed I used horse manure; the half of the bed on which I used horse manure is better, but not satisfactory, either.—Amateur, Hemet.

The damping-off of seedlings is generally due to excess of moisture directly at the surface, and can often be prevented by sanding the surface as soon as the shoots appear, so that it will dry quickly after watering. A quarter of an inch of sand covering could be used in this way. When this is done, water can be applied in larger amount and at less frequent intervals, and the stems of the seedlings can be kept rather dry while their roots find sufficient moisture. The fertilizers which you mention as a surface application would not be likely to prevent the trouble, because they would retain too much moisture just at the point it should not be.

A Wrong Idea of Inter-Planting.

To the Editor: What forage plant can I grow on a piece of ground lying in a newly planted orchard. The soil is on a gently inclined hillside—red, decomposed rock, very deep, mellow, fluffy, and light, and deep down is clayish in character. It cannot be irrigated, therefore I wish to put out a drought-resisting plant which could be harvested, say, in June or July, or even later, as you know what our California climate is. In looking over the seed catalogues I find the following plants that I thought would answer the purpose, but I cannot decide which one is the best: Yellow soja bean, speltz, Egyptian corn, Jerusalem corn, yellow Milo maize, or one of the millets. What do you think?—Reader, Shasta county.

We should not think for a moment about planting any such plant as you mention between orchard trees which are to subsist on rainfall without irrigation. Your trees will have difficulty enough in making satisfactory growth on rainfall, and would be prevented from doing so if they had to divide the soil moisture with crops planted between them. The light, deep soils which you mention, resulting from decomposed rock, are not retentive enough, and, even with the large rainfall of your region, require irrigation to carry trees through the latter summer and early fall growth. As to whether the plants which you mention would yield you satisfactory growth in the summer-time without irrigation, you could only determine by trying them. The sorghums, including Egyptian corn, Jerusalem corn, and Milo maize, will give you the best results with the least amount of moisture.

The New Washington Orange.

To the Editor: I read in some paper that the State Department of Agriculture had discovered a new variety of orange tree that is supposed to be a great thing, and that the department is going to distribute several thousand of the trees throughout the State early this season. I should very much like to get one. Please let me know how to obtain it.—Reader, Hemet.

No State Department of Agriculture in California has made any such announcement. The daily papers have made a great deal of trouble by their statements. The United States Department of Agriculture has brought out an orange which it claims to be hardy enough to grow as far north as Maryland. It is an inferior fruit as compared to the oranges which we grow, and is not thought desirable for distribution in this State because our conditions favor better varieties. On another page of this issue there is a Washington letter stating that the Department has nothing for distribution in this State at present.

We Do Not Condemn Acacias.

To the Editor: Many citizens of Redwood City have signified their willingness to plant ornamental shade trees, and the acacia has been recommended by some, while others contend that it breeds and holds insects and pests. Could you kindly advise me on this matter?—Planter, Redwood City.

We should plant acacia trees if we enjoyed their shade and flowering without any reference to their harboring insects. They are no worse in this respect than peppers and some other evergreen trees which are used for ornamental planting. Deciduous shade trees are also subject to scale insects. It is true that acacias were discriminated against some years ago because the cottony cushion scale enjoys them, but we have since learned that this scale also finds refuge on other trees; therefore, the acacia does not merit distinctive condemnation. Besides, the acacia trees in Berkeley, although carrying a good deal of scale, are still satisfactory in growth and blooming.

Pears on Peach.

To the Editor: I saw, the other day, some Bartlett pear grafts in Salway peach trees, and the party informed me that he had seen three-year-old grafts that had pears last season, and he intended to graft a block of Salway peaches to Bartletts. I would like your opinion, as I always thought that such a union was not possible.—Harry A. Runyon, Courtland.

Our opinion is like yours, and seeing some pear grafts set in peach branches would not convince us that they would grow or bear fruit.

Seedling Olives Must Be Grafted.

To the Editor: Will olive trees grown from the olive seed be the right thing to plant? Will they be true to the parent tree or will they have to be grafted?—J. M., Marysville.

Olives which a seedling olive tree will bear will be, as a rule, very inferior and generally of the type of the wild olive. All such trees must be grafted in order to produce any particular variety which you desire.

Horticulture.

GET AFTER THE APPLE APHIS.

[When we spoke in the PACIFIC RURAL PRESS of March 18 of Mr. Essig of Ventura county as an exemplar of the advantage of having, as county horticultural commissioner, a man well trained and capable of pursuing original investigation as well as able to enforce ordinances, we had in mind, of course, the first and fullest demonstration of the fact which is found in the career of Mr. W. H. Volck, county horticultural commissioner of Santa Cruz county. Mr. Volck has kept on the trail of the codlin moth, as it performed in the Watsonville district, until he discovered all the local weaknesses of the pest, and then, in association with another trained man, Mr. E. E. Luther, brought out a new line of chemical killers and did other things so that at present the apple worm has no chance at all with a grower who has proper spunk and understanding. How far would the Watsonville apple industry be from such a condition now if Mr. Volck had not been a capable investigator as well as a good executive? And now Mr. Volck is pursuing all apple pests in the same way for the advantage of the whole State. We have below the history of the apple aphis and the fighting program against it. Let every apple grower commit the following to memory, for the only way to stay in the apple business profitably is to get this pest out of it. The latest public announcement of Commissioner Volck is concerning this insect, the "leaf-curling" or "purple" aphis (aphis sorbi), and we present it below for careful study. EDITOR.]

Description.—The leaf-curling aphis is usually the first plant louse to appear in the spring. It attacks all varieties of apples, and can be recognized by the pronounced effect on the shoot that it infests. The leaves curl in toward the under surface where the colonies of aphids are located. This curled foliage has a sickly yellow-green color and a more or less rumpled surface. The distortion and twisting is also apparent in the shoot which bears the leaves.

When a fruit spur is attacked the apples also suffer seriously, and in most cases are rendered worthless. The poison injected by the aphids causes an abnormal number of fruits to set, but the "aphis apples" do not grow normally. They often get no larger than a walnut, are much deformed, and do not develop the normal flavor or character of pulp.

The reactions produced by the aphis are undoubtedly due to the injection of a toxic substance in much the same manner as a mosquito injects poison at the same time that it is sucking blood from an animal. The poison injected by the aphis travels along the shoot and starts leaves to curling which have not yet become infested. This provision of nature works to the advantage of the aphis, as a shelter is provided for the insect in advance of its coming.

Life History.—The full life history of this insect is still in doubt. In the spring it is in the unsexual form. All the individuals are females and bear living young (do not lay eggs). Some of these females develop wings and so are able to fly to other branches or trees and start new colonies.

This process does not continue through the season, for in the month of June all the individuals suddenly develop wings and fly from the trees. They do not establish new colonies, but appear to wander aimlessly about and the great majority of them die. What becomes of the few that are necessary to perpetuate the species is not definitely known. It is supposed that they migrate to some other food plant.

An Eastern entomologist states that a few sexual females return to the apple trees in the fall and lay small numbers of eggs.

The leaf-curling aphis, like other plant lice, sucks the sap and does not eat the surface of the leaves. It also produces a considerable amount of honey dew, but the black-smut fungus does not appear to thrive on it, so the trees seldom become black as a result of the work of this species.

Extent of the Damage.—Often this aphis attacks only a few twigs on a tree in a single season. Under such conditions the damage is trifling and can be overlooked. Under other conditions the infestation may be general, resulting in a great loss to the apple grower. This aphis is capable of destroying the entire crop, and has done so in several local orchards for the past three years.

The behavior of this pest cannot be predicted in advance. Much, if not all, depends on the nature of the early spring season, and we have not yet determined just what the factors are which favor the increase of this plant louse.

Remedies.—Owing to the fact that the leaf-curling aphis colonies are almost always protected under the curled-up foliage, effective spraying is very difficult. The only method that has proved successful is to begin early, while the trees are yet in bloom. At this time the aphis is just starting to increase, and not many leaves will be curled up tight, so that thorough spraying of the under surface of the foliage will reach most of the insects.

In addition to this spraying, a very careful watch must be kept, and the application repeated whenever there is any sign of increase. In some cases it may require three or four sprayings to prevent undue injury.

The formula is as follows:

One pound "Black Leaf 40" (nicotine sulphate containing 40 per cent nicotine), about one-tenth gallon; 10 pounds whale-oil soap, or 1 gallon cresol soap; 200 gallons water.

When whale-oil soap is used, it must be melted in boiling water. Add the melted soap to the water in the spray tank and start the agitator, then add the "Black Leaf 40" and continue agitation until thoroughly mixed.

Cresol soap is a liquid and requires no heating. Add it directly to the water in the spray tank, agitate, and add the "Black Leaf 40" as before. In our experiments the cresol soap has proved superior to whale-oil soap, as the cresol forms a compound with nicotine which appears to be more poisonous than the free nicotine.

Soap of any kind improves nicotine sprays, because the penetrating and wetting power is increased by the addition.

Smaller quantities of this spray can be made by using proportional weights of the materials, thus ¼ pound of "Black Leaf 40" and 1 quart of cresol soap makes 50 gallons of spray.

The trees must be thoroughly drenched with this spray to do good work. It will require at least double the amount commonly applied for the codling moth. The nicotine spray kills by contact with the bodies of the aphids, and the insects will escape unless they are thoroughly soaked.

Combined Sprays and Precautions.—Nicotine sprays, when used alone, have caused no injury to the foliage or fruit, but when combined with the bordeaux mixture serious injury has resulted, due to the liberation of soluble copper. For this reason nicotine should not be combined with the bordeaux mixture. These sprays should be applied separately, and if close together, the nicotine should be put on first.

If it is desired to use a fungicide along with a nicotine spray, it had best be iron sulphide, usual strength; arsenate of lead may also be added. With these combinations, however, the soap recommended with the straight nicotine had best be omitted.

The Lime-Sulphur Solution as a Preventive.—As a result of the accidental observation of the effect of strong lime-sulphur solution, Mr. G. F. Gallagher of Agnew, Cal., found that apple trees which received the application were practically immune to the aphis, while adjoining, unsprayed trees were very badly attacked. Mr. Gallagher first observed this difference two years ago. Last year he did some spraying with special regard to the aphis, and the results were similar. The observations of Mr. Gallagher are confirmed by Mr. Earl L. Morris, horticultural commissioner for Santa Clara county.

The lime-sulphur solution was about one-half stronger than that usually used for the San Jose scale, and the application was made after the buds had begun to swell. It is probable that ordinary strengths of lime-sulphur would have the same effect, but in lesser degree. A notable fact, in this connection, is that the orchards in Pajaro valley which have suffered most from the leaf-curling aphis are those that have not been winter-sprayed.

In our sprayed orchards, however, there has always been some damage from the aphis. Aphis was also reported on the trees sprayed by Mr. Gallagher, but the pest did not increase enough to do any damage.

This apparent control is probably not due to the killing of the winter eggs, as the aphis on nearby trees could quickly reinfest those sprayed. The effect is apparently due to the establishment of a sort of immunity in the tree, a curious result when it is remembered that sulphur applied during the spring and summer increases the tendency to become infested with aphids.

To duplicate Mr. Gallagher's work, the commercial solution should be applied 1 to 6, and the home-made formula should contain 90 pounds of sulphur and 45 pounds of lime to 200 gallons. The spray is applied when the buds are swelling or the latter part of March. After the opening of the buds and at the time the first blossoms are appearing, the concentration must be reduced to ordinary winter strength or less. It is probable that ordinary winter spraying done at this time should give reasonably good results as an aphis preventive.

Citrus Fruits.

TRYING TO GET BETTER ORANGES.

(By Mr. A. D. SHAMEL, of Riverside, at the Fruit Growers' Convention at San Bernardino.)

My subject is "A Study of Bud Selection in Citrus Fruits." I came to southern California for the first time in March, 1909, at the suggestion of Dr. B. T. Galloway, Chief of the Bureau of Plant Industry, to study the methods of investigation of the handling and transportation of citrus fruits, in charge of G. Harold Powell. In the course of this work it was necessary to visit citrus groves, in order to secure lots of fruit for experimental purposes. As I had been engaged in plant breeding work for eleven years previous to coming to this State, it was natural that the trees should attract my attention, particularly the comparative habits of growth, character, and amount of fruit, and foliage characteristic of the individual trees. It soon seemed apparent that there was great diversity in regard to these characteristics of trees in the same orchard, and under similar conditions of culture. Even with my inexperienced eyes I could plainly see that trees of the Washington navel orange, for instance, of the same stock, and under similar conditions so far as could be judged, varied widely in the amount and quality of fruit borne by the individual trees. Inquiry developed the fact that in the opinion of many of the growers questioned, this variability of yield of individual trees was an established fact, but that there was a probability that the large yielders of the season of 1909 would be the small producers in 1910.

One of the pioneers in modern citrus culture and a leading citrus grower of southern California, E. A. Chase of Riverside, stated to me that he believed that there existed in his citrus groves consistently good and consistently poor bearers. In support of this idea, Mr. Chase had studied his groves from this standpoint, and was then in the process of rebudding a considerable number of what he considered to be undesirable trees.

After talking the matter over with Mr. Powell, I was asked to lay out a practical plan for the investigation of this problem. The plan was drawn up briefly, in the light of the conditions, was approved by Mr. Powell, and through him arrangements were made to undertake a serious study of this subject in the field under the direction of the office of pomology.

I came to southern California with the idea of staying not longer than three months. I have now decided to make this State my permanent home, in order to more effectively prosecute this work, and because I like to live here.

Plan of Work.—Our definite beginning of the study of bud variation and selection was begun

with the season of 1910, so that we now have one season's complete data, and part of another, together with photographs and notes on the Washington navel orange and Marsh's seedless grapefruit.

In view of the limited amount of work that one person can accomplish with the degree of accuracy and care needed for permanent data, it was decided to locate this first work in a typical section for a given variety or kind of citrus fruit, so that the results would be secured under typical conditions, and, if valuable, could be utilized in a practical way at the earliest possible moment. After consultation it was decided to begin work with the Washington navel orange, and after several months of study of different localities it was decided to locate this first study on the Eureka ranch of the National Orange Company of Riverside. Through the active co-operation and assistance of the owners of this property, arrangements were made to secure performance records from carefully selected plots, and from individual trees in this orchard.

The Washington navel orange was selected for this first work for the reason that the history of its introduction is well known, and it is an established variety of world-wide reputation and importance. It was found possible to undertake work with the Marsh seedless grapefruit variety, in addition to the navel orange, as the pomolo fruits are naturally picked at such time as not to interfere with the navel orange pickings.

Selection of Plots.—The Eureka grove is nine years old from transplanting, and the trees are apparently more uniform as a whole, with regard to yielding behavior, at least, than any grove of navel orange trees that I have visited. The grove is free from scale, has never been injured by cold or other seasonal causes, and the soil conditions are very uniform. The fertilization of the grove and other factors of culture are known since the planting of the grove, and before planting the soil had not been cultivated. The reputation of the high quality of fruit from this grove is established. The trees have not been pruned other than the usual removal of dead wood, and are in good, healthy condition. Three factors are extremely important for the true interpretation of results, and I feel that we have been extremely fortunate in being able to begin work under such favorable conditions. Another fact of some importance is that, in future announcement of results, it cannot be said that they were secured where the trees were notoriously variable from mixture of stock or other causes, as this grove, as has been stated, is unusually uniform, due in part, at any rate, we believe, to the more than ordinary care used in selecting buds for its propagation. Two typical plots of 50 and 55 trees, respectively, were selected by the owners and myself for plot data. In addition, many individual trees were picked out for special study. About 100 more trees were selected on the Vivienda ranch, near the Eureka ranch, belonging to the same owners, for comparative data. Particular pains were taken in these selections, especially to eliminate all possible outside influence, such as wide rows, missing trees, unusual amounts of irrigation water and other supposedly influencing factors in tree variation.

Recording Individual Tree Data.—Our first consideration in securing definite data of the variation of individual trees is the amount and quality of fruit. By amount is meant the total yield in pounds of fruits from each tree, and by quality is meant the proportion of first to second or third grade, and the proportion of the different sizes of fruits. In other words, I have called it the fruit's commercial quality. Necessarily, each tree is picked separately in order to secure this data. The second part of our data consists of photographs, one taken of each tree before it is picked, and one after picking, with the boxes of fruit that the tree produced arranged at the base of the tree in order to give a graphic illustration of its yield. The third part of our data is made up of written notes, descriptive of characteristics that are not brought out in our yield data or our photographs. In securing this data on the Eureka and Vivienda ranches I have had the constant co-operation of the owners of the orchards, particularly H. B. Chase, who has performed no small part of the work.

After picking, the fruits from a given tree are graded and sized, each tree separately. This work is greatly simplified by the use of a small mechanical grader, the suggestion of Frank Chase. Three grades are made, a first which we call orchard, a second called standard, and third, culls. In the orchard grade all of the sound, unmarked fruits are placed. In the standard, marked but commercial fruits fit for shipping are included, and in the culls the fruits not fit for shipping. Eleven sizes are used, the usual commercial orange sizes. The culls are not sized, but counted and weighed collectively. After grading and sizing, the fruits in each lot are weighed and counted, and the weights and numbers recorded in our blanks which we call our orange performance record blanks. Later this data is transferred to sheets providing for the recording of five years' data from each tree, together with the photographs and descriptive notes.

Our grapefruit work is being done on the Dixon ranch of L. V. W. Brown of Riverside, and the Mutual ranch of the National Orange Company at Corona. Similar work with individual grapefruit trees to that of individual orange trees, is being carried on, and one season's data has been secured from 75 trees.

Propagation Work.—A limited number of sweet orange seedlings in the nursery belonging to the C. E. Rumsey estate of Riverside have been budded from select orange and grapefruit trees. Also, on the Eureka ranch, some of the poorest yielding trees have been rebudded with buds from the best yielding trees, and vice versa. It will be necessary to wait until further performance record work has been done in order to do further bud propagation work intelligently. At the same time, it is desirable to do as much of this work as practicable at the earliest possible moment in order to secure information on this most important phase of this work.

Some Preliminary Observations.—We have found, so far, a tremendous and, to us, unexpectedly great variation in the yield and quality of fruit from comparative trees. It must be kept in mind that these results were obtained from normal, healthy trees. In one case we secured from one tree in 1910 fourteen inferior fruits weighing 6 pounds 15 ounces, while in the same plot a neighboring tree produced 541 fruits weighing 233 pounds 9 ounces. Another tree produced 816 fruits weighing 432 pounds. The yields are comparatively the same this year as last season. These are extreme but typical examples. In the grapefruit plots even greater extremes were observed.

In other words, the trees we are studying varied greatly—much more than had been heretofore supposed. The largest yielding trees invariably have produced the best fruit; not only the largest proportion of first-grade orchard fruit, but the largest proportion of larger and more valuable sizes, such as from 150s to 96s, inclusive. The poor yielding trees have produced the extreme, either very small or very large fruits. Such results are contrary to the generally expressed belief to me of growers before I began this work.

Our large yielding trees of the season of 1910 are now large producers in 1911. While these trees are producing more fruit than last season, they are yielding proportionately about the same in comparison with the poor trees of last season. The only marked difference has been found where some of the poor trees have failed to show much, if any, comparative increase. This, too, is contrary to many opinions expressed to the writer. Some of these observers had concluded that the large yielders of the season were the poor yielders of the following season, and vice versa.

We have found many interesting sports on mutations, both in the branches of trees, or single fruits, and on entire trees. Some of these have been budded from, not in the hope of producing a better orange than the navel orange, but in the hope of throwing some light on the origin of varieties of the navel orange. Numerous interesting observations have been made as the field work has progressed, but in this paper it is not possible or important, perhaps, to speak of them.

Possible Utility of Bud Work.—If the results of the past work are confirmed by future work, it will demonstrate the importance of propagation from pedigreed citrus trees. By securing trees propagated from parent trees of known and demonstrated high productiveness and the ability to transmit this quality, the grower will be able to greatly increase the productiveness and value of his land. The elimination of the poor bearing trees in our present orchards constitutes, I believe, not less than 10 per cent—probably much more—would go far toward improving this industry. In securing reliable, pedigreed trees, new planters could prevent the loss due to the culture of barren and worthless trees. Two possibilities present themselves to my mind, if our work is confirmed, namely, the rebudding of poor trees in our present orchards and the planting of uniform groves of reliable trees in the case of new plantings.

While we cannot prophesy what will occur in this connection, and I have no desire to do so, such a consummation is not unnatural to expect. It is strictly in accord with our experience with other plants, such as corn, tobacco, and seed-bearing plants which have been greatly improved by seed selection. Variation is the rule in nature. We have bud variations in the case of citrus fruits, the extent and character of which, however, I am uncertain about. What more natural than that we should have bud-producing trees that from some cause, perhaps the development of large amount of fruit-bearing wood in proportion to foliage-producing wood, are more suitable for our highly specialized uses than others. If so, it will be strictly in accord with plant-breeding experience. We hope that these investigations will throw some definite practical light on this important subject to citrus and other fruit growers.

A Hint to Growers.—I would like to emphasize the importance, to my mind at least, of fruit growers making a careful study of the individual trees in their orchards along this line. It may not be practicable to study many trees, and this is perhaps unnecessary. If a few carefully selected trees were studied, it would not only be a pleasant occupation to most growers, and I believe for their own benefit, but might add to the progress of the accumulation of information on this subject to others. Not only do I firmly believe this, but further, that unexpectedly perhaps, valuable new strains of fruits might be produced from select trees. We cannot tell where one may find a valuable sport or mutation. It has frequently happened in the case of other fruits, that our most valuable varieties have originated under what are ordinarily considered most unpromising conditions. I will venture to recommend this work to all those who are interested in botany or horticulture, as a most promising field for study and a most pleasant and interesting occupation for those who love the outdoors and the contemplation of growing plants. In this connection, I will be glad to furnish samples of our record-keeping blanks to all who desire them.

NO NEW NAVELS FOR DISTRIBUTION.

To the Editor: The attention of the Department of Agriculture has been called to a dispatch published in various California papers on the 9th and 10th inst., stating that the Department had originated a new type of navel orange, and that several thousand young trees were ready for distribution this month throughout California.

These statements as published are misleading and are apparently based on a misapprehension of the facts. The Department has no new navel oranges nor new citrus fruits of any kind for distribution in California at present. Experiments in the breeding of new navel oranges and other citrus fruits have been under way for several years, but these experiments are still in the preliminary stage. None of the new sorts will be distributed until thoroughly tested under the auspices of the Department and found to be of promise. None of them has as yet fruited, therefore it is not known whether any will be of commercial value. CORRESPONDENT.

Washington, D. C.

[We have had sense enough not to print the reports to which this correction refers, for we knew that they were incorrect and sensational. Still, the correction may help our readers to correct wrong impressions received by others.—EDITOR.]

AGRICULTURAL REVIEW.

With the Fruit Men.

The cherry crop in the Chico district will be large this season, though it will be fully two weeks later than last year. Shipments will commence about the middle of May.

The suit brought last year by Jos. Baisle, Jr., against Robert Caporgno, at San Jose, to recover damages owing to the latter party refusing to accept the fruit he had contracted for, was decided last week in favor of the plaintiff. Mr. Baisle was given judgment for $87.35, the difference the fruit sold for in open market and the contract price.

An experiment in orange packing is being made by R. H. Shoemaker of Lindsay, who is having valencias packed and stored for June delivery. The outcome of the experiment will prove interesting.

O. E. Bremner, of the State Horticultural Commission, recently made an investigation into the condition of fruit in the Courtland and Grand Island sections, and now states that the pear and prune crop there has been greatly damaged by the thrips, and that not more than a half crop will be secured. Cherries have not been molested by the pest.

Apparently raisins will be much higher priced the coming fall than for several seasons. One broker at Fresno last week refused to offer seeded raisins for August delivery at less than 7½ cents.

Horticultural Commissioner Galloway reports finding thrips at work in the orchards in the Sonoma valley.

At a recent meeting of the Farmers' Club of Ukiah, the fruit committee reported that an offer had been made by the Wine Association of Sonoma County to buy all the grapes raised in that vicinity for $15 per ton on a contract extending over 10 years, the growers to pay freight charges to point of delivery. The club asked that the price be $15 f. o. b. cars, and there the matter now rests.

Great things are promised in fruit marketing lines this season. The recent purchase of controlling interests in two of the largest fruit-shipping industries in this State by Di Giorgio is but the forerunner of the organization of a big competing fruit-shipping concern. The new concern is known as the Pacific Fruit Exchange, and was formally announced at Sacramento last week. The new company is capitalized at $500,000, and will have its office at 412 J street, in Sacramento. The directors of the concern are: Scott F. Ennis, president; E. S. Brown, treasurer; W. C. Walker, secretary-manager; W. J. Smith of Vorden, F. E. Webber of Ryde, W. H. Mobley of Newcastle, and J. G. Smith of Sacramento. Citrus as well as deciduous fruits will be handled.

The Ink ranch, near Aetna Springs, Napa county, comprising 2500 acres, has been sold to colonizers who set out a great part of it to vineyards and then subdivided it.

One day last week a PACIFIC RURAL PRESS representative called on J. T. Costello, horticultural inspector of the northern district of San Joaquin county, and he reports the outlook on fruits in his section as follows: Almonds, early varieties, have been badly hurt, with a chance of not more than half a crop, while the Drakes and Texas Prolific, which are later-blooming varieties, stand a good show for an average yield. The Nonpareils are not far enough along to determine. The IXL and Ne Plus Ultra are a failure. Apricots and peaches are very slow in blooming, and the outlook for them at present is very poor. On the Patee orchard, near Acampo, where fall spraying with the bordeaux mixture was practiced, as a fungicide for the shot-hole fungus, a notable difference is seen. This orchard was thoroughly sprayed in November and again in February, and is now in heavy bloom.

A movement is reported on foot at Fresno among the raisin packers to form a gigantic raisin-seeding company which will put a stop to the seeder war that has been carried on there for several years. The plan is to take in the various companies that have been outside, and to charge $10 per ton royalty for seeding, and allow all firms in the company to get their royalties back. It is claimed that the new plan will help to make a stable market.

A report was made to the Grange at San Jose last Saturday that the thrips are much less troublesome in the prune orchards this year than last, owing to the pests being affected by a fungous growth which has been helped along by the heavy rains of January and February. The trees have blossomed unusually well this spring, and give promise of a big crop of prunes, though many of the buds that blossomed were small, which may cause an unusually heavy drop of young fruit later.

E. T. Reynolds, of Chico, states that fruit prospects in that district are now more promising than they have been at the same time for several years. He estimates almonds at 75% of a full crop, apricots a light yield, cherries a ful crop, Peaches have set well, but will not be as heavy as last year. Plums and prunes will yield a full crop, and pears a good average.

At the reorganization of the State Board of Agriculture at Sacramento recently, A. L. Scott of San Francisco was elected president; Ben F. Rush, of Suisun, vice-president; J. A. Filcher, secretary, and Leon Miller, assistant secretary. The date of holding the State Fair was set for September 7.

Doak Bros. are planting 80 acres of the Fair Oaks ranch, near Oakville, Napa county, to cherries. The total number of trees to be set out is 6000, and the varieties are Rockport, Royal Anne, Black Tartarian, and Bing. Fruit tree planting has been active all through the Napa valley this season.

A date farm of ten acres is to be established on the W. E. Wilsie ranch near El Centro, Imperial county, by the Government. At this farm will be concentrated the work of several date experimental stations.

Agricultural Notes.

Louis Johansen, Claude Hutton, and John Freer have secured a large traction engine and necessary implements, and are now putting the ground in shape to seed two sections of land to Egyptian corn in the Huron sink, Kings county.

Three pumps which give a flow of 120,000 gallons per minute are now at work on the Wright and Elmwood tracts near Stockton, pumping the overflow water, which is seven feet deep. The work of unwatering these tracts will be completed the latter part of this month, which will give the farmers a chance to put in a crop of beans.

The talked-of alfalfa-meal mill for Chico will soon be a reality. Land has been secured and the building is under way.

The vegetable growers of Placentia district of Orange county are working to organize an association for better marketing. A final meeting to perfect the organization was to be held April 7.

The first full car of asparagus from the Imperial valley for this season was shipped to Chicago last week.

Under the direction of the Department of Agriculture, rice-growing is to be tried on a much greater scale in central Cali-

DWARF MILO MAIZE
A DRY LAND CROP

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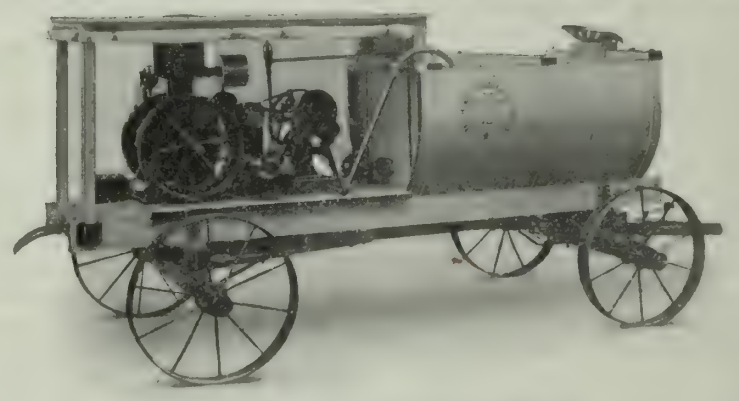
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fornia this season than before. Different varieties of rice under varying conditions will be thoroughly tested.

Several thousand acres are to be planted to eucalyptus trees near Dixon this spring.

A poultry association has been organized at Napa, with Frank Huff as president and Wallace Rutherford as secretary. A poultry show is to be held at that place next fall.

Miscellaneous.

A 2200-acre tract of land northeast of Clovis, Fresno county, has been purchased by the Federal Realty Syndicate of San Francisco. The land is said to be good citrus land, and will be divided into small tracts for settlers.

An effort is being made to secure the erection of an alfalfa-meal mill at Live Oak, Sutter county.

Under direction of the U. S. forestry department there has been planted this season 50 pounds of yellow pine seed on Palomar mountain, San Diego county, at an elevation of 5028 feet.

A large number of pumping plants are being installed in the district around Merced, this season, for irrigation purposes.

Horticultural Commissioner McBride, of Yolo county, is getting up a petition to have the commissioners give him authority to have noxious weeds along the roads exterminated.

The Pacific Pea Packing Co. of Oakdale has completed the planting of 450 acres to peas to be used for the season's pack.

A ranch containing over 500 acres at Ashland, Ore., was sold to Portland men last week. Part of the land is already set to apples and pears, and the balance of the tract is to be planted at once.

At the annual meeting of the California Farmers' Union, held at Fresno last week, A. Sorensen was re-elected president; for vice-president, Fred Z. Currier of Santa Clara; secretary-treasurer, William J. S. Bennett. Mr. Bennett is to succeed H. G. Johnson, the present treasurer. It was decided that the union will handle no fresh fruit on the commission basis this year. No green fruit was handled last year. It is likely that some will be handled this year, but the union demands that it must be sold f. o. b. the point of shipment. The stockholders generally are strongly opposed to the commission plan of selling.

Jack London has secured 1000 acres of land near Glen Ellen, Sonoma county, which he will set out to eucalyptus trees. He has finished planting 50,000 trees and will as fast as possible set out 450,000 more.

Tree planting in the Imperial valley has been more extensive this season than ever before. Many acres have been set out to eucalyptus.

The Saratoga annual blossom festival is to be held April 8.

Merced is to hold a five-day Land and Products Exposition, commencing May 16.

The third annual picnic at the University State Farm at Davis is to be held on Saturday, May 6. President B. I. Wheeler and Allison B. Ware of the Chico State Normal are to be the principal speakers.

Water is to be turned into the big irrigating canal between Willows and the river by April 15.

The Cone ranch, located in Tehama county, has produced $200,000 worth of wool in the last eight years.

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The Irrigator.

HOW MUCH WATER FOR A CROP?

Mr. S. O. Jayne, irrigation manager for one of the northern subdivisions of the Irrigation Investigations of the U. S. Department of Agriculture, has recently written an excellent report upon "the best use of our water supply," instancing a number of cases of actual measurements of water used which should be interesting to all who are growing crops by irrigation, and we present them herewith:

Some Computations.—Farmers' Bulletin No. 404 of the U. S. Department of Agriculture states that the most reliable and in many ways the most valuable records pertaining to duty of water on orchards have been obtained from the companies of Riverside county, California. Here more or less irrigation water is used every month of the year. The average duty for the Riverside Water Company for a period of seven years was 3.3 acre-feet, including rainfall. Dr. Fortier, the author of this bulletin, states that with the same degree of economy in Washington, 20 per cent less, or 32 inches, should be sufficient. The lands irrigated by the California company just mentioned included 6000 acres of orange orchard and 3000 acres of alfalfa. Prof. E. J. Wickson, in Farmers' Bulletin No. 116, states that evergreen fruit trees, including citrus fruits, require about 50 per cent more water than deciduous fruits under the same conditions, and that with adequate depth and retentiveness of soil, 20 inches of rainfall, if duly conserved by good cultivation, may render irrigation unnecessary for deep-rooting deciduous fruits. In the eastern part of Washington we find commercial orchards being grown without irrigation where the annual precipitation is 23 inches, about one-fifth of which runs off, leaving 18 inches for the trees. But this is not sufficient to give yields comparable with those from irrigated orchards, and we know that additional water would be beneficial.

Washington Measurements.—On a 20-acre apple orchard at Wenatchee the water was measured during the season of 1908, showing that a depth of 23.04 inches was applied between May 13 and September 23. On the same orchard in 1910, 27 inches of water was used, the first irrigation being May 30 and the last September 12. To this amount in each year should be added the rainfall to the extent of possibly 6 inches, making a total of 29 inches for 1908 and 33 inches for 1910. The trees were seven years old in 1908 and bore a very heavy crop that year, another in 1909, and another last year. The orchard is one of the best cared for, as well as one of the best producers, of the Wenatchee district. The irrigation was done with more than the ordinary intelligence and care. But the soil texture is rather coarse and the water-holding capacity low, thus favorable to large percolation losses into the subsoil. Undoubtedly a considerable saving in water would have been possible had the furrows used been only 330 feet long instead of twice that length.

Another Wenatchee orchard of 50 acres, including apples, peaches, cherries and other fruits, used in 1908, according to measurements, something over 16 inches, and in 1910, 17.5 inches, rainfall not included. The soil here was perhaps somewhat heavier than in the former case, but the furrows used were twice as long, and none of it so uniformly good as the other example cited. The records of one of the Spokane valley companies show that on that system a depth of 14.7 inches was applied in 1905, 19.2 inches in 1906, 22.8 inches in 1907, and 17 inches in 1910, the rainfall in addition averaging about 20 inches per year.

Comparative Use With Different Crops.—So we have some data at last as to what is actually being used by a few, but what everybody uses ought to be known and on record. However, even if we did know the exact amount used annually on every single orchard, on every alfalfa field, on every potato patch throughout the entire State, it would still be a legitimate question to ask how much is best. It would be well for every irrigator to determine how much is used, and then how much this can be economically reduced.

If we limit the use too much, smaller yields will result, but this might be possible, even necessary to best use, for a maximum yield per unit of area does not always imply most economical use of the water, as, for instance, in one Utah experiment 20 inches of water produced a yield of 446 bushels of potatoes, while increasing the water to 40 inches gave 523 bushels. It was evidently not best use to apply the second 20 inches just to get the additional 77 bushels, when it could have been used on another piece of ground to produce 446 bushels, or, in other words, it would be better to have every acre in the Yakima valle yyielding profitable crops than only half of the acreage yielding maximum crops.

Variation for Soil Character.—The time will never come when we can arbitrarily fix the duty of water for orchards or other crops and expect it to apply everywhere. It is possible, however, to take given conditions and determine the water requirements within reasonable limits. Present knowledge indicates that on deep, fine soil, such as is found more or less generally throughout the Yakima valley, for instance above the Sunnyside canal, 24 inches of irragition water, or possibly less, will produce orchards, assuming that waste is reduced to a minimum by careful application and thorough cultivation.

This type of soil will hold about 23 per cent of moisture, or 19 inches in the first four feet. Where it is 8, 10 or possibly 50 feet deep, as is not uncommon, there is no excuse for waste of water by percolation into the subsoil, for trees are able to get moisture from the depth of 8 to 10 feet. With the same type and depth of soil at Wenatchee or some other part of the State having a greater rainfall, less irrigation water would be necessary.

Now if the soil is but 18 inches to 3 feet deep, as we will find it in some sections, or coarser in texture, it is impossible to use water with the same degree of economy as on the fine deep soils, for the reason that a larger percentage is lost by percolation into the subsoil, and more by evaporation occasioned by the greater frequency of irrigation necessary. On soils of this kind, humus should be added by every possible means to increase the water-holding capacity if for no other reason. If manure is not available, this means cover crops in the orchard.

More Water for Cover Crops.—In fact since the practice of growing cover crops is coming to be so generally adopted, its influence upon the water requirements of orchards must be considered, for the two crops can not be grown on the same ground at the same time without requiring more water than for one. To grow one ton of clover hay per acre, about 5 inches of water is required, allowing nothing for any loss by percolation or run-off; alfalfa needs about the same. So if either clover or alfalfa is to be grown with the trees, 5 inches or more per acre of irrigation water will have to be added for each ton of dry matter produced. In the light of present experience it is unwise not to make provision for growing such crops to some extent at least in connection with every orchard scheme.

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SELECTING A CENTRIFUGAL PUMP.

Written for the PACIFIC RURAL PRESS
By Mr. C. R. SESSIONS.

(Continued From Issue of March 25.)

Before a centrifugal pump will pump at all, it must be full of water. The runner must work in solid water, because the entrance of even a small quantity of air will cause the pump to make a rumbling noise, and perhaps lose its priming. A pump is primed by filling it full of water and excluding the air. This is done practically by either closing the suction opening with a foot or check valve, and simply filling the pump through the discharge pipe; or by closing the discharge-opening with a flap or check valve and pumping out the air from the highest point in the shell, thereby creating a vacuum and drawing the water through the suction pipe. Circumstances determine which of these means is best to use. When the head is greater than forty feet, a check valve on the discharge side of the pump is necessary to protect the shell and light suction piping. In any event, the valve, of whatever kind, and the connecting piping should be sufficiently large (corresponding to the next size larger pump) so that losses due to friction, etc., shall be a minimum. On large pumps a power priming pump or a steam primer is used, but when the pump is close to the supply water and the suction piping is short and tight, the necessary vacuum is not great, and an ordinary hand-pump does very well and is inexpensive.

It is always well to use as large suction and discharge piping as is consistent with the nature of the work, and unnecessarily sharp bends and quick changes in the diameter of the piping must be avoided. The piping should be gradually flared, both where the water enters the suction and where it leaves the discharge-pipe. When the lift is small, this is very important.

A farmer who is selecting a pump for irrigating is concerned with how high he must lift a certain amount of water. This is his lift. If we add to this lift an amount necessary to cover the loss occasioned by the water entering the suction pipe (called the entrance head) and the loss due to frictional resistance of the suction and discharge piping, valves, etc. (called the friction head), and the loss due to the energy wasted in the discharge water (called the velocity head), then we will have what the pump manufacturer calls his total head and upon which he bases all his guarantees. Total head is not, therefore, the same as lift. This should be understood, because the total head is generally two or three feet more than the lift, and where there is much discharge pipe, many feet more. A manufacturer measures this total head by means of a vacuum gauge on the suction-elbow and a pressure gauge on the discharge of the pump, while the pump is delivering the specified quantity of water. If the discharge of the pump is throttled, the quantity delivered will be decreased, and the total head will be increased, so that unless the water is measured in any test such readings are meaningless. The diameters of the pipes where these readings are taken must be the same and no small tubes projecting inside and bent in the direction of the stream in the case of the vacuum gauge and against the stream in the case of the pressure gauge (thus increasing the readings) should be allowed.

A horizontal pump is cheaper and more efficient than a vertical pump, and is always used, unless the water to be pumped is so low that a horizontal pump cannot be placed within reach without great expense. A centrifugal pump must be placed within 20 or 25 feet of the water-supply. With a long suction pipe and a high vacuum, the chances for an air leak are great, so that the closer the pump is to the water, the more nearly is this trouble eliminated. An air leak affects the efficiency of a pump very much, and in this is an answer to the question so often asked, "Will a centrifugal pump suck as well as it will force water?" Yes, if it is within 20 feet of the water-supply and the suction piping and stuffing-box are tight.

Centrifugal pumps are fairly reliable, and liberal guarantees covering material and workmanship are usually given. A uniform price-list is adopted by most pump manufacturers, and the discount is at present about 35 to 40 per cent off. Catalogues sent out by the local pump people contain interesting and valuable tables and rules for figuring total head, horse-power, etc. Screwed casing and wrought-iron pipe in the smaller diameters and galvanized iron (riveted and soldered), and riveted sheet iron dipped in an asphaltum mixture in the larger sizes are used for suction and discharge piping. This piping can nearly always be obtained locally, and when just what is wanted is known, a saving can be effected by buying it separately from the pump. The pump manufacturer takes more or less of a risk when he furnishes this piping, and protects himself by as much as a 20 per cent margin at times. This grows out of the fact that it is difficult to get exact measurements of wells, ditches, etc., unless a map or plan of these things is made by an engineer or man sent out from the shop.

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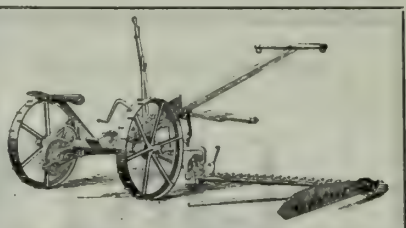
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The Swineyard.

SWINE PLAGUE AND HOG CHOLERA.

To the Editor: I wish you would explain through your paper the symptoms of hog cholera, also swine plague. There has been a heavy loss of hogs in this county during the past year. Some people claim hog cholera was the cause, and others claim that swine plague was causing part of the deaths. If you would publish a course of treatment for these diseases, you would be doing a good work for the community which has many readers of your valuable paper.

Woodbridge, Cal. N. H.

We have discussed these matters from time to time in the past, but repeat leading points for the benefit of newer subscribers. Concerning the relations between swine plague and hog cholera, it can only be said that the differences which were formerly held to exist have been disproved, and there is practically no difference between the diseases from the grower's point of view, and the preventive method by immunizing serum covers all phases of the trouble. The following outline of symptoms, etc., is by Dr. B. F. Knapp of the Colorado Agricultural College:

SYMPTOMS.—All cases of hog cholera do not show the typical symptoms. Generally two, or possibly three, hogs appear dumpish; the eyes watery; later the lids may become adherent. There may be a slight discharge from the nostrils. In the course of a week or ten days these hogs go off their feed and are attacked by diarrhea. The discharges from the bowels vary in color from black to grayish, are watery, and a very offensive odor. They now appear tucked up in the flanks and possibly thumping may be noted. They rapidly become thin in flesh and finally too weak to move about, crawl under some straw and die. In a few days others become sick; those that were first attacked now begin to die, and in the course of three or four weeks most of the herd may have succumbed to the malady unless remedial agents are administered and the ravages of the disease are checked. Pneumonia may accompany the disease, and when it is present, there may be noted accelerated respiration and a short hacking cough.

AUTOPSY.—There may be noted red or purple patches, particularly along the belly or flanks; this is particularly noticed in white-skinned hogs. The ears may become inflamed and appear red and swollen. When the hog is opened, small hemorrhages may be observed on the serous membranes or linings of the thorax and abdominal cavity. Very small hemorrhages may be noted in the kidneys. The lymph glands (kernels) may show hemorrhage in them. When the bones are cut open, the softer, spongy parts may appear reddish black, due to hemorrhages. If the stomach and intestines be opened, areas in the stomach will be noted bright red. This is an area of inflammation, but may not always be present. The inflammation may affect only a part of the stomach. This inflammation may extend into the intestines. If the colon or large intestines be opened, there may be found ulcers varying in diameter up to one-half inch. These usually appear button-like and are hence sometimes called button ulcers.

TREATMENT.—Intestinal antiseptics such as sulpho-carbolate compounds have been given in the feed, or water or slop. This no doubt aids in warding off the cholera, but our experience shows that this kind of treatment has no curative properties.

The serum treatment is the only scientific cure for hog cholera. Many state experiment stations are preparing this serum. Some of the biological houses have also taken up the preparation of the serum, but the demand has been so heavy this year that many herds have suffered the usual loss when attacked by this disease. The serum could not be obtained. The future should see an enlargement of these plants and others established at experiment stations, as the serum road is the only one to the conservation of the pork industry.

CALIFORNIA SERUM DISTRIBUTION.—A law was passed by the legislature last month providing for the manufacture and distribution of immuninzing serum in California which it is expected will receive the Governor's signature in a few days. It provides for the manufacture and distribution of the serum by the Veterinary Division of the University Experiment Station at Berkeley. When the law is signed, we shall promptly print its provisions and give an idea of when the serum will be available for distribution. It will naturally take a little time to get the work under way.

The Ornithologist.

BIRD RIGHTS AND WRONGS.

To the Editor: I feel flattered that your correspondent, "H. O., Jr.," should have referred to any remarks of mine, however much he may differ from my views on the bird question, economically considered. There is, at all times, a lot of excuse for indignation and resentment expressed when one is smarting under the recent loss of some succulent early lettuce or peas, or berries, or of the first cherries to ripen; but I would assure "H. O., Jr.," that the bird is no respecter of persons, and is, apparently, utterly void of gratitude toward those who befriend him.

Birds are a worse pest, your correspondent thinks, in the sequestered nooks adjacent to the large valleys, where, he believes, the finest fruits and vegetables are raised. This may be so, but does any practical farmer expect to make money in such places? He must get his satisfaction mainly from the delights of living amidst the beauties of nature. But I would not admit that this is an established fact, because it is from the San Joaquin valley that so much lament has come owing to crop losses from birds.

"H. O., Jr.," thinks the nurseryman has a mercenary motive in wishing birds protected, because he would say, "Buy more berry plants so you will have enough." The argument is rather far-fetched, and I would say, in reply, that the nurseryman's losses are often much greater than those of the farmer or berry grower. As a case in point, within the last few weeks we have lost almost the whole crop of some extremely valuable sweet peas which we hoped to have introduced next season. This notwithstanding everything was done in the effort to so cover the plants that the birds could not get to them. They would squeeze through the lath and crawl under, with diabolical shrewdness. And all of our early lettuce was eaten, too!

Apart from all sentiment about the songbirds, it is only necessary to refer to the conclusions come to by those men appointed by the Department of Agriculture to investigate and report on the depredations committed by birds on growing crops, and the compensating benefits by reason of the injurious insects destroyed by them. And no one can accuse these scientific investigators of giving way to sentiment.

The gentleman from the secluded glen in Napa county forgets that if everyone had the right to destroy as many as he wished of his special feathered enemies, there soon would be but few birds left. Almost every bird which is at all numerous is the bete noir of some farmer. For generations hawks and owls have been killed, with the only excuse that they sometimes caught a chicken. These birds destroy many rodents and other "vermin," and, doubtless, they aided in preventing too rapid multiplication of small birds, such as sparrows, linnets, etc.

The whole question should be considered dispassionately, and I do not think the time far distant when the control or regulation of bird life will be deemed of sufficient importance to warrant federal legislation.

"H. O., Jr.," would have the farmer be a law unto himself in the matter, but what would happen if only a fence separated my farm from his? Words fail me. LEONARD COATES.

Morgan Hill, Santa Clara county.

Entomological.

MORE ABOUT THE THRIPS.

To the Editor: The following item recently appeared in your columns: "S. W. Forester, of the U. S. Department of Agriculture, who has been studying pear thrips for two years, has returned from Washington and will carry on his investigations at Walnut Creek, Contra Costa county." Referring to this statement, will you kindly inform me if Mr. S. W. Forester has found a remedy to destroy the pear thrips after two years study? As a matter of fact, the fruit growers of Sonoma valley have for the first time, the past week, found cherry buds and pears alive with the thrips, and the best and safest remedy we are impatiently waiting to apply with spray outfits. Any suggestion or information from you will be greatly appreciated. ROBT. HALL.

Sonoma.

The results of the investigation by the United States entomologists at Walnut creek and at San Jose, so far as commendation of remedies go, are given in detail on page 73 of the PACIFIC RURAL PRESS of January 28, 1911. That article gives exactly what you ask for.

A later announcement is the success of the combination lime and carbolic spray as recommended by Mr. Earl Morris, county horticultural commissioner of Santa Clara county. Mr. C. L. Stowell, of Sunnyvale, writes as follows:

The results obtained from this spray were far greater than I had anticipated would be derived from any spray found during the present season. I have used it on prunes, cherries, and pears, and believe that a fair estimate of the killing would amount to between 75 and 85 per cent. There has been no injury to the buds whatever, and I anticipate bringing all of my trees through to a good blossom.

I sprayed a block of Imperial prunes for J. F. Spaulding with most satisfactory results. C. W. Spalding has also been using the same spray with results equal to those had by myself.

My mixture has been three-quarters of a gallon of crude carbolic acid and 90 pounds of lime, properly slaked, to 100 gallons of water.

Mr. Morris is to be complimented upon having found a spray so thoroughly efficient in the destruction of thrips.

PUBLISHER'S DEPARTMENT.

This is the season when one naturally thinks of irrigation, and many are now planning to put in a pumping plant. Before buying, we would suggest that you get catalogues from the Krogh Manufacturing Co. of this city if you want one of the vertical kind, or if you want an electric pump this firm has a good one. Read their ad.

The Henry Cowell Lime and Cement Co. of San Francisco, one of the largest concerns on the Coast, is asking for your patronage in this issue of the RURAL PRESS. Whether you want cement for any service, or lime for building or for spraying and whitewashing, this firm can fill your orders. Prices gladly given.

The Newell Mathews Company, one of the old substantial implement houses of Los Angeles, has recently established a branch at Stockton, and asks your patronage through our columns. See their advertisement elsewhere.

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EXTRA FEED FOR DAIRY COWS.

To the Editor: To attempt to tell every dairyman just what to plant to supplement his cow feed in times of short age, would for an area as large and a climate as varied as that covered by this paper, be a thankless and perhaps a hopeless task. Therefore, leaving to each cow keeper the task of selecting that special kind of food or feeds best suited to his own locality and climatic conditions, I shall try and confine this paper to an attempt to show that the profitable dairy cow must eat large quantities of milk-producing food, not only in spring when pastures are green and flush, but for practically 365 days in the year.

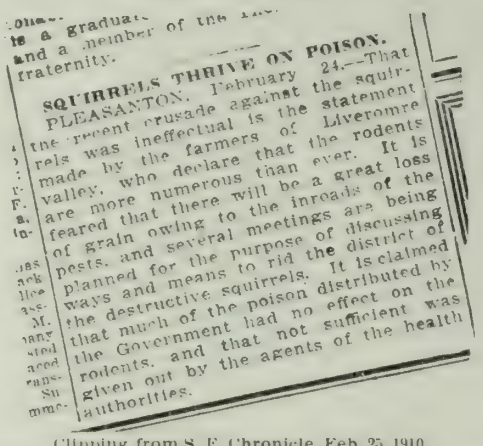
Some may say 300 days is as long as any cow should be milked. Granted—as far as the average cow is concerned; but if she goes without eating, or even on a starvation ration for the two or more months in which she is supposed to be resting, your cream checks may disappoint you. The feed of the dry cow may be varied a little in quality, but she should certainly be well fed; for, with more than one living organism to be nourished through her one mouth, she certainly needs plenty of good food; and if she is the right kind of a cow she will prove herself to be the surest kind of a savings bank for any extra feed that you may trust to her keeping. As to just how long a cow should rest between her lactation periods, it should depend largely upon the cow; but there should be no half-way business about it. That is, she should give a paying quantity of milk nearly up to the time she is dried off. The most profitable cows are the stayers.

Quitters and Stayers.—A cow may post as a "fill-pail" for three or four months, but if she runs in the dry-cow herd the rest of the year, her cream will never pay many store bills, nor pay that mortgage, which seems to be sometimes recorded here in California as well as in other and less favored States. But if a cow is to be a "stayer" her feeder must be a stayer, too, and give her all the feed she can utilize, at all times.

The Feed Required.—At the Louisiana Purchase Exposition at St. Louis, a few years ago, several herds of cows were fed and tested in what is often called "the battle of the breeds", with the result that, since then, every one of the breeds represented there—and some that were not—have claimed the world's championship. In this long contest both feed and product were weighed, and the reports show that the amount of feed consumed by each cow in that test was more than double the amount fed to the average cow on the average farm. Probably something similar may be pulled off at our greater exposition at San Francisco in 1915. At any rate, I hope so; and when it comes, though I may not be there to see it, I venture to predict that those who do see it will open their eyes at the size of the "grubstake" which those cows will put out of sight, at least in the shape in which they receive it, though it may show up later in milk and what may be made from it. Again, likening a cow to a bank; and a good cow is a very safe and sure one, with just this difference: While the regular bank may sometimes pay a check which overdraws the account, trusting that it will be made good later, the cow never does. Under her system of bookkeeping, you can check out in milk just in proportion to what you deposit in feed—and nothing more. Be

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SQUIRRELS THRIVE ON POISON.

PLEASANTON, February 24.—That the recent crusade against the squirrels was ineffectual is the statement made by the farmers of Livermore valley, who declare that the rodents are more numerous than ever. It is feared that there will be a great loss of grain owing to the inroads of the pests, and several meetings are being planned for the purpose of discussing ways and means to rid the district of the destructive squirrels. It is claimed that much of the poison distributed by the Government had no effect on the rodents, and that not sufficient was given out by the agents of the health authorities.

Clipping from S. F. Chronicle, Feb. 25, 1910.

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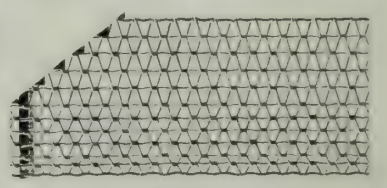
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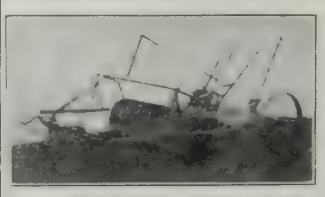
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honest with her, and she will be so with you.

ALFALFA.—In the above-mentioned cow tests both hay and ground meal from this grand legume were fed with the best of results; while nearly all of the Experiment Stations, both before and since that time, have shown the great value of alfalfa hay as a feed for milch cows. For the successful production of milk, a cow should be supplied with a large amount of protein, which is essential both for bodily maintenance and milk. The carbohydrates (starchy matter) as well as some fat are also needed to form what is usually termed a balanced ration; but as early-cut alfalfa hay, cured beneath the cloudless skies so prevalent over the greater part of this State, supplies at least some of both of these elements in some degree, it seems better, in all parts where it can be cheaply produced, to feed enough more of this hay so that the excess of protein will nearly or quite make up sufficient of the other elements needed to properly balance the ration and rightly nourish the cow. So in most of the localities where alfalfa is so successfully raised, many of the most practical dairymen feed alfalfa hay for 365 days in the year, and claim that there is a larger margin of clear profit in this manner of feeding than in any other. One old and very intelligent man who has fed cows in Dakota and Kansas, assured me that he got better results here in the San Joaquin valley by feeding alfalfa alone, than he used to get by feeding hay, corn, and wheat bran back East, though these three feeds are claimed to form an ideal balanced ration. From the size of the cream checks he showed me, as well as from the condition of his cows, I could not dispute him in the least.

THE SILO.—In nearly all of the dairy regions of the East this very useful structure is used by many progressive dairymen, not only to store up feed for the long cold winters of those regions, but also to supply a succulent feed with which to eke out the short pasture of the late summer and fall. In some localities where the high price of land has made the pasturing of cows unprofitable, they are fed in yards or barns, either with some green crop which is cut as needed, or with siloed corn. Two or more silos are built, so that one can be fed from while others are being filled up, corn being the crop most generally and profitably used for this purpose.

Now, whether the silo will ever become a profitable part of a California dairy-farm outfit depends almost entirely upon the locality. At any place where Indian corn can be successfully raised the silo should pay well, as good corn ensilage, supplemented with alfalfa hay such as can be produced or bought in most parts of the State, forms almost an exact balanced ration on which the right kind of a cow should just do her best—provided, always, that she is kept dry and comfortable. And even where alfalfa is practically all the crop that is raised, it would seem that a silo could be very profitably used for storing the first cutting, which sometimes contains more or less weeds, and the curing of it as hay is often very difficult at that time on account of the late spring rains. Broadly speaking, the advantages of the silo lie in the fact that a small roof and a comparatively cheap building will store a large amount of feed. Even if the alfalfa hay is properly cured, it seems wasteful to stack it and leave it exposed to the winter rains, and unless the hay is baled quite a large barn will be required for holding the crop on even 40 acres of irrigated land in any of our best valleys. But whatever plan may be tried for supplying feed to the dairy cow, rest assured of this one important fact, no cow will give much milk without feed, and, generally speaking, the more of the right kind of feed you can get a cow to eat, the greater your profits will be. Do not for a moment think you can get rich by stealing feed from your cows. A certain, or possibly an uncertain, amount of food is required to keep up all animal life. The cow may live for a time on a very small ration, or none at all, but to produce milk she must have more than a mere maintenance ration; and, in a broad way, the more good feed she can be induced to eat the more milk she can and probably will produce. Therefore it is very important that the cow's appetite be catered to just as much as possible, and that she has the foods which she most desires and relishes best, and in this way she may be coaxed to eat, for if she is the right kind of a cow, the more she eats the more milk she will give. And even if she is of the beef type and inclines to put this surplus feed on her back instead of in the pail, the butcher will cast longing eyes on her that much sooner, and thus give her owner a chance to dispose of her and replace her with a better one, which can hardly be done with cows that are low in flesh.

Here comes in the great benefit of weighing and testing the milk of each and every cow in the herd; something that all cow-keepers should do; and if he once gets in the habit of doing this he will very seldom go back to the old blindfold way of not knowing which are the payers and which the deadbeats.

N. S. FRENCH.

Oakdale, Cal.

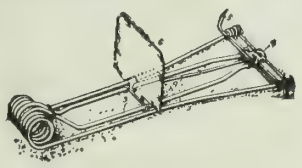
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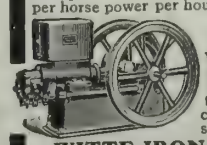
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On having sufficient water depends the success of your crops. On the success of your crops—your living.

You can't always be sure of enough rain—but if you have a creek, pond, slough, or other source of water supply you can hitch it up to an I H C Gasoline Engine and pump the water where and when you need it. The cost is slight—the results sure.

Gasoline Engines

are the most economical, efficient power known for pumping water and doing other farm work.

They are simple—strong, and easily operated. They give more power with less gasoline consumption than any other engine.

It's easy to get just the right engine for your particular needs because they are made in all styles and sizes—1 to 45-H. P.; vertical or horizontal—stationary, portable, or traction.

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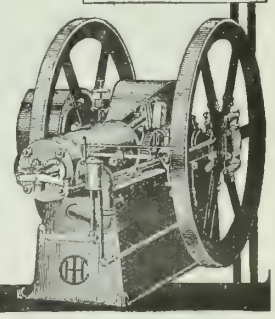
The purpose of this Bureau is to furnish farmers with information on better farming. If you have any worthy question concerning soils, crops, pests, fertilizer, etc., write to the I H C Service Bureau, and learn what our experts and others have found out concerning those subjects.

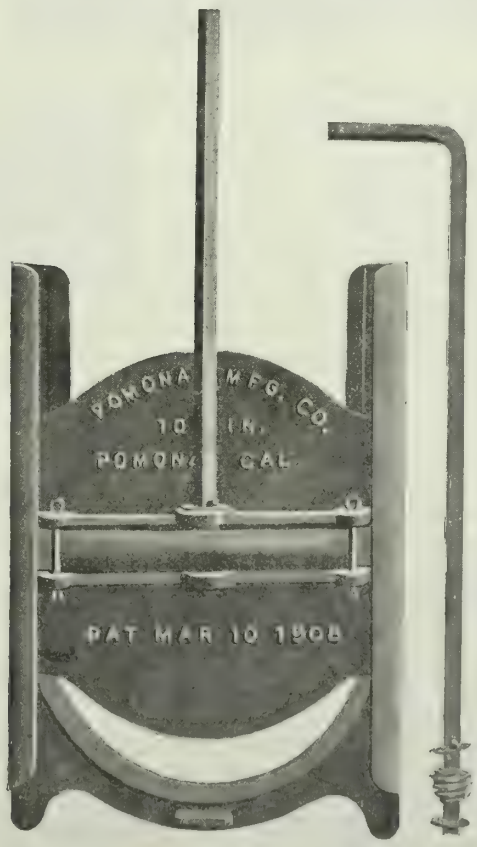


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GIVE THE POMONA PATENT PRESSURE GATE A TRIAL.

No rubber or wooden facing to rot or wear out. Absolutely water tight when closed. Locking mechanism is protected against rust or clogging with sand or dirt. Simple in construction. Cheap in price and as durable as solid iron.

THE LOCKING DEVICE

Is the simplest made, merely a tapering screw with split tapering nut socket. It locks the cover in any desired position or locks the faces, making an ABSOLUTELY WATER TIGHT JOINT.

TWO FOOT HANDLE FURNISHED WITH EVERY PRESSURE GATE FREE.

ALSO A FULL LINE OF CIRCULAR VALVES FOR ORCHARD AND ALFALFA IRRIGATION CARRIED IN STOCK.

Write for descriptive circular and price list.

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SHEET IRON & STEEL PIPE

FOR TOWN WATER WORKS

HYDRAULIC, IRRIGATION AND POWER PLANTS, WELL PIPE, ETC. ALL SIZES.

OFFICE, 444 MARKET ST.
Water and Oil Tanks—all sizes.

WORKS AT RICHMOND, CAL.
Sheet Metal Work of All Description.

SHORT-HORN SUPREMACY.

(Continued From Page 267.)

hand the material is now widely spread and is under such diverse conditions as to facilitate breeding with more or less consanguinity to advantage."

Mr. F. H. Brown of St. Paul, whose Short-horn faith is well known in California, when president of the American Short-horn Breeders' Association, made an address on Short-horn expansion which has some interesting local bearing: "How about the future for Short-horns? Some of you may say we are going to fill up with Short-horns and there will be no room for more. Look at our United States; look at our Western range of country that is yet unoccupied—Colorado, Nevada, Montana, California, if you please; look at the South, though that is a small field; and look at the Republic of Mexico. There is a good big field. You may say that will soon be supplied. Grant it, if you please; but have you thought of the opening of the Panama Canal and what it is going to bring to our door when this country is filled up? By the time the Panama Canal is opened, we will take it for granted that we are going to be pretty well supplied, but we will be only starting on the road at that time. The opening of that canal will bring to our market a strip of country on the Pacific Coast 5000 miles in length, including an area of some 9,000,000 square miles, containing today some 20 small republics, inhabited today by a population of about 70,000,000 people—almost as large as the United States—and all unoccupied by any of the improved breeds of cattle, or virtually so. The only part of that whole coast of Mexican, South American and Central American country that has been improved with Short-horn cattle is the Argentine. They have been improving their stock down there for quite a number of years, largely with Short-horns."

It will of course interest California breeders to note the complacency with which the Short-horn breeders of the central West take to themselves the west country of South America opened to them by the Panama Canal. Of course southern activity will also stimulate production in California and those who start now with good foundation stock will have something good to trade in when the time comes. The same is true of the Orient. China and Japan should draw breeding stock from the coast much more freely than they have hitherto if they can find what they want here. There is every reason to believe that the Short-horn will implant size and quality upon the inferior stock of Asia as it has set the pace for similar improvement in America.



Pure Bred Short-Horn Steer: Champion 2 Year Old, Cal. State Fair, 1909; Weight 1600 lbs; Bred by T. B. Gibson, Woodland.

DAIRY NOTES.

Several dairy ranchers on the Salinas river have been selling off part of their cows, owing to being unable to keep them since the late floods. Good cows are bringing them $60 per head.

Dr. C. W. Evans, who owns a dairy ranch near Ceres, has purchased the famous Holstein cow, Escudo de Kol, formerly owned by W. O. Dale of Salida. This cow has been producing 89½ pounds of milk daily.

Tulare county dairymen have asked that a dairy and creamery inspector be appointed and paid by the county. They contend that the dairy industry is important enough to justify as much attention as the fruit interests.

After being in running condition for a week, the new condensed-milk plant at Corcoran is sending out 600 gallons of cream and condensed milk daily. The dairies around Corcoran are now producing nearly 40,000 pounds of milk daily, and the herds are constantly increasing.

W. R. Whitcomb, of San Francisco, who recently secured a large dairy ranch in Fresno county, is reported to be looking for a large acreage in Butte county to be used for dairying purposes.

LIVE STOCK NOTES.

The Imperial valley is becoming a heavy stock shipping section. Until recently stock was all going into the valley, but last week there were shipped from one station, Brawley, six cars of steers, eight cars of sheep, and one car of hogs.

B. W. Jennings, of Visalia, received a shipment of fine mules from Missouri last week.

The Maxon Nowlin Company, which recently secured 160 acres of land west of El Centro, is putting the place in shape to raise fine cattle, horses, and hogs.

W. E. Mulick, of Willows, on February 15, sold to H. P. Slocum of Blair, Neb., eight head of thoroughbred Holstein yearling heifers for $200 per head, the highest price ever paid in Glenn county for cows. At present Mr. Mulick has 14 head of thoroughbred Holstein cows and one bull, the latter valued at $1500, all fully registered. Mr. Mulick is planning to raise pure-bred stock for the market and for dairy purposes. H. P. Slocum, who purchased the eight head of yearlings, plans to start a model dairy near Willows on his return from the East. He thinks that the conditions are fine here for dairying.

TREATMENT FOR CAKED BAG.

To the Editor: I have a Holstein-Jersey cow whose udder is caked hard and has been swollen from the udder to the forelegs. This latter swelling has gone down by applying equal mixture of turpentine and lard, but the udder itself still remains hard. When first noticed, one teat caked, then another, until all four are caked alike. Insert quills occasionally, but there is no drip. Cow is not old and will not be fresh for six months yet. She eats well and drinks well standing.

Visalia. READER.

RESPONSE BY DR. E. J. CREELY.

Insert a milk tube and inject the following: Hydrogen dioxide, 8 ounces; tincture iron chloride, 1 ounce; water, 7 ounces. Inject into each affected teat.

Apply the following externally: Camphorated oil, 8 ounces; tincture belladonna, 2 ounces; oil eucalyptus, 2 ounces. Mix and apply twice daily.

E. J. CREELY.

S. F. Veterinary College, 1218 Market St.

If you have not yet secured a copy of Wickson's "California Fruits" or "California Vegetables," write this office for free circular, which fully describes the books.

HORSES AND CATTLE.

THE N. H. LOCKE CO., LOCKFORD, CAL., are offering for sale **pure bred Jersey service bulls** and **bull calves.** Among these, **Borello's Golden Pogis, No. 89243,** 1st prize yearling bull, 1910 Cal. State Fair. He is sired by the choicest lines of the great Island Bull, Golden Lad, P.S. 1242 H. C., and from a line of dams that produced over 20 lbs. butter in 7 days. These young bulls are from prize winners in the show ring and big producers at the pail. This herd was 1st prize winner 1910 Cal. State Fair, having won 4 champion medals and 17 ribbons, with 18 head exhibited. It is headed by the imported bull King's Valet, the unbeaten champion. Prices and particulars on application.

W. A. FORBES, BOX 746, SACRAMENTO, has arranged with either of two Eastern judges to locate and deliver, on orders, live stock of any description. All cattle tuberculin tested; six mixed cars landed since the first of the year and buyers delighted; prices lower than those current on the same grade of stuff; carloads of Holsteins and Shropshire sheep a specialty; references and correspondence solicited.

JOHN LYNCH, breeder of Registered Short-horns; milk strain. High class stock. First-class dairy breeding. Smooth cattle. Best pedigree. P. O. Box 321 Petaluma, Cal.

PURE-BRED SHORT-HORNS, Poland-China hogs, and Shropshire sheep. Roselawn Stock Farm, Woodland, Cal.

PAICINES RANCH CO., Paicines, San Benito county, Cal.—Young Percheron stallions for sale.

POLLED JERSEY CATTLE—Some on Pacific coast. Chas. S. Hatfield, Secretary, Springfield, Ohio.

HENRY WHEATLEY, Napa, Cal.—Breeder and importer of Shires and Percherons.

KNOB HILL STOCK FARM—Reg. Poland-China swine. A. M. Henry, Farmington.

MATURED MALE GOATS—Milch strain. Write Geo. Langlois, Sebastopol, Cal.

SWINE

FOUR OAKS STOCK CO., breeders of Berkshire and Hampshire hogs and Importer Hampshire Down sheep. Woodland, Cal.

THOROUGHBRED MULEFOOT AND BERKSHIRE HOGS. California Hog & Land Co., Calistoga.

GEO. V. BECKMAN, Lodi, San Joaquin Co., Cal. Registered Poland-China Hogs, both sexes.

G. A. MURPHY, Perkins, Cal. Breeder of Champion Herd of Berkshires; also Short-horns.

BERKSHIRE AND POLAND-CHINA HOGS Both sexes. C. A. Stowe, Stockton, Cal

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroughbred Berkshires.

H. B. WINTRINGHAM, Middletown, Lake Co., Cal. Breeder of Tamworths.

STUDARUS & CUNNINGHAM, Mills, Cal. Registered O. I. C. swine.

LIVE OAK STOCK FARM

Six Miles N. W. from Petaluma, on the Petaluma and Sebastopol Road.

FRANK A. MECHAM, Prop.

Importer and Breeder of

Red Polled Cattle

Color Deep Red. Both Sexes for Sale.

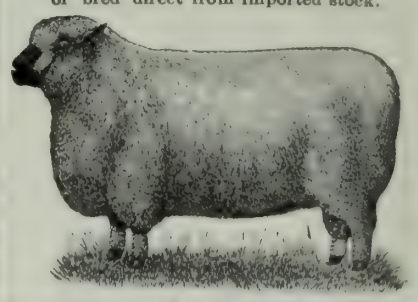
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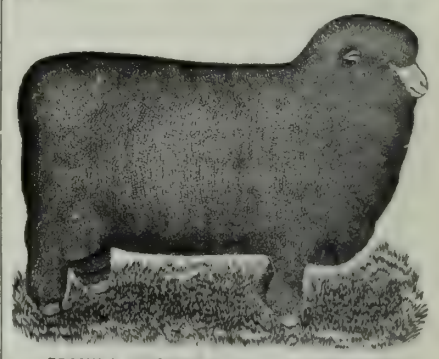
FRANK A. MECHAM

Importer and Breeder of Shropshire Sheep

They were all imported from England or bred direct from imported stock.



We have also bred American Merinos—Hornless Sheep—for 30 years. They are a large sheep without wrinkles. Rams will produce 20 to 25 pounds of long, white wool yearly. Sheep of both sexes for sale.



FRANK A. MECHAM, Importer and Breeder

Shipping Points: PETALUMA and SANTA ROSA, SONOMA CO. CAL.

PERCHERONS AND BELGIANS

Los Altos Stock Farm, established for breeding with a choice selection of pure-bred, imported, registered stallions and mares with pedigrees running into the best blood lines. All of the big draft type, first class in every way. Some of the stallions and mares reach a ton in weight.

Now ready for sale, a few selected, coming three-year-old and one coming four-year-old stallions. All registered. These colts are fine in conformation, size, bone, and disposition, and give great promise. They can be seen at the barn near the station at Los Altos.

ADDRESS

LOS ALTOS STOCK FARM

LOS ALTOS, CAL.

Ranches at Los Altos and near Mt. View.

BERKSHIRES

Boars, different ages. Sows, both open and bred. State Fair Prize Winners. Over 100 Spring Pigs to select from. Sired by large Boars and out of prolific Sows. Write your wants.

A. B. HUMPHREY,

Grape Wild Farm. Mayhew, Cal.

Poultry Department.

Conducted by M. Russell James.

THE POULTRYMAN'S GARDEN.

Although garden truck in general may be used for poultry, there are certain garden products which are particularly suited to fowls. These should constitute the poultryman's garden. Every poultry raiser should have a patch of ground devoted to this purpose.

It is a question if a single flock of fowl, small or large, on this Coast, get sufficient fresh, tender, green food the year through. The shortage in this most important class of food is the cause of shortage in poultry profits. In otherwise well-kept flocks, this shortage in fresh green food produces market eggs of poor quality, hatching eggs of low fertility and stamina, and lack of abounding vigor in the fowls; also, to this cause may be ascribed most of the liver disease and digestive troubles so prevalent among our poultry. Furthermore, there is no other class of food that can take the place of fresh greens, and there are no substitutes for them. Alfalfa meal, sprouted grains, etc., may help out, but they can't fill the whole bill. At least one feed a day should be of tender fresh-cut leaves of vegetables, grass, alfalfa, or young grain.

POULTRY GARDEN PRODUCTS.

Stock beets, Swiss chard, and mammoth kale head the list of these. Of course, where there are irrigated fields of alfalfa the green feed question is pretty well solved, but even in that case the poultryman will find it to his advantage to raise a few of these vegetables, as a variety of green feed is relished by fowl and beneficial to them.

Stock Beets.—The best variety of these for poultry is the "giant" half-sugar beet. This has luxuriant bright green tops, almost equal to chard, and crisp white roots. The fowls are very fond of both root and tops. One of the large beets split open and each half stuck firmly upon two large nails driven in the fence or wall, will give a yarded pen much wholesome employment as well as food. Many varieties of the stock beets have limp red tops and colored roots which are not nearly so good for poultry. Like all stock beets, this variety grows very large and quickly, and, if started before the dry season in rich, well-cultivated soil and the latter kept mellow and free from weeds, little or no water is required. Consequently, it behooves the poultryman short on irrigation to get his beet patch in as soon as possible in the spring. Frost does not affect this beet. Cultivate the ground deep and thoroughly; plant in rows two feet apart and four inches apart in the rows. To use for poultry greens after the plant is well grown, break off the outside leaves and do not take the whole top. By care in this respect, the plant will not be injured, but will keep growing more leaves as the outer ones are removed. This class of beets may also be cooked and mashed, or ground raw to mix with the mash for fowls. One of the most successful and extensive commercial poultrymen in the Petaluma district grinds these beets raw and uses them to wet the mash in preference to milk for the purpose, and considers them more wholesome for chicks. Stock beets solve the problem of a cheap feed for duck raisers.

Swiss Chard.—This plant belongs to the beet family and is also known as sea kale beet. Instead of forming large roots, the growth goes to tops and forms luxuriant curled leaves in the loveliest shades of light green with clear white centers. This white stalk is the "chard" from which it takes its name, and may be used for pickling or prepared the same as asparagus, while the leaves are unexcelled for table greens. Fowls are very fond of this plant, and quite small chicks will eat the entire leaf and stalk without chopping. It should be planted and cultivated the same as beets, but requires more water to produce the tender, succulent foliage. The outer leaves should be carefully broken close to the plant and the mellow soil drawn over the stubs, then the growth of the plant will be unchecked.

Mammoth Kale.—Kale is not as well liked by fowls as either of the other plants, and, like cabbage, to which family it belongs, it is said to give an unpleasant flavor to the eggs if used to excess, but it is good poultry greens in connection with other food of the class. It has the advantage over other poultry forage in one respect. A poultry-run may be planted to kale, and if the plants are allowed to get two or three feet high before the fowls are turned in, they will furnish both shade and green food, while the fowls cannot greatly damage them, at least for a long time. With other plants, even chicks, if allowed to run among them, will pick out the hearts and thus check or kill the growth. Every brooder run should have a large growth of kale in it by the time the chicks come from the incubator.

POULTRY GREENS REQUIRE RICH, WELL-CULTIVATED SOIL.

The poultryman's garden must be well manured and well tilled. To plant seed or set out plants in hard-baked, lumpy soil is useless. The sort of greens which bring profitable returns from poultry must be tender and succulent, and these can be produced only in rich, mellow soil with considerable moisture. To enrich the soil there is nothing better than the poultry droppings. These should be taken from the houses every morning and placed in a box or barrel with a layer of fine soil sprinkled over them. In a short time this manure will become pulverized and in fine condition to work into the soil. A little extra care in cultivating and enriching a patch of ground for a poultry truck garden, and thus providing the fowls with an abundance of fresh tender greens at all seasons, will lessen the feed bills and double the poultry profits.

Question Department.

Plucking Ducks.—G. N. S., of Fresno, writes: "I would like to know about how, when, and how often to pick old ducks so as to get the feathers for pillows and not kill the ducks, either. Will they lay any eggs while growing new feathers? I suppose not."

Neither ducks nor geese should be plucked until after the laying season is over, which will be in July. Just before the moult, when the feathers begin to loosen, they may be plucked again. Those most considerate of their birds make only this latter plucking, which does not greatly inconvenience the fowls. At no time must they be plucked unless the feathers are "ripe"; that is, dry at the root, so that no bleeding or injury to the skin is caused. An old stocking is drawn over the head of the victim, and the bird held in the plucker's lap on a burlap apron; then the soft feathers on the body are quickly and very gently removed; but those on the side of the body which support the wings should not be taken. Great care should be exercised not to injure the skin or pinfeathers or pull the down. To grow new feathers quickly and resume laying are matters which depend largely upon the condition of the bird and the feed. The latter should consist of some 15 per cent of animal food.

Lice and Ticks.—E. E. S., of Dinuba, Cal., writes: "Please give through the columns of your valuable paper a good receipt for lice on cattle and best way to exterminate the chicken tick. Our premises are full of them. This information will greatly oblige a constant reader of the Pacific Rural Press."

To spray the cattle with some one of the standard disinfectant dips would be the best method with the lice. A gallon of Conkey's Dip in 100 gallons water will do the work for bot hilec and ticks. Possibly the cattle may be suffering from chicken mites. In warm climates if hens are allowed to nest in the barn, the latter becomes infested with the mite, which gets on the stock at night, and in sucking their blood causes the hair of the animals to fall of in large spots. For lice, mites, and ticks about the premises, all old straw and trash must be kept cleaned up and burned, and all corners, stalls, nest boxes, cracks, etc., frequently sprayed either with distillate, hot brine, or the disinfectant dip. The latter, which may be bought from $1.25 to $1.50 per gallon and diluted with 100 times its bulk of water, is probably the cheapest and easiest to use.

For the poultry quarters, in addition to the cleaning up of all trash and frequent spraying, the inside walls of the houses should be painted with fuel oil. One application of this each season is sufficient as it is long in drying and nothing in the way of vermin will tackle it; also keep the roosting perches soaked with distillate.

When the chicken tick or flea has fastened itself on the fowl and buried its head into the flesh (hence the name, "Stick-tight") nothing will dislodge it but the direct application of some good salve, but it must be one which will not injure the fowl's eyes. Carbolated vaseline is good for the purpose, also a mixture of lard and coal-oil.

THE ARENBERG BROODER STOVE



Proven to be the most successful Brooder Stove on the market. Awarded gold medal for most meritorius California invention at California State Fair, Sacramento, September, 1910. Burns distillate; perfectly simple and easy to manage. **Write for details.**

H. F. ARENBERG, Petaluma, Cal.

F. BALDWIN'S WHITE LEGHORNS



1st Pullet, A. Y. P. Ex.

Winners from Seattle down; 33 out of a possible 35 prizes in 3 shows this season. **Bred as layers first.** Stock, any age, for sale at reasonable prices. Eggs $6 and $10 per 100. Settings $2 up. Send for **new free folder** and prices.

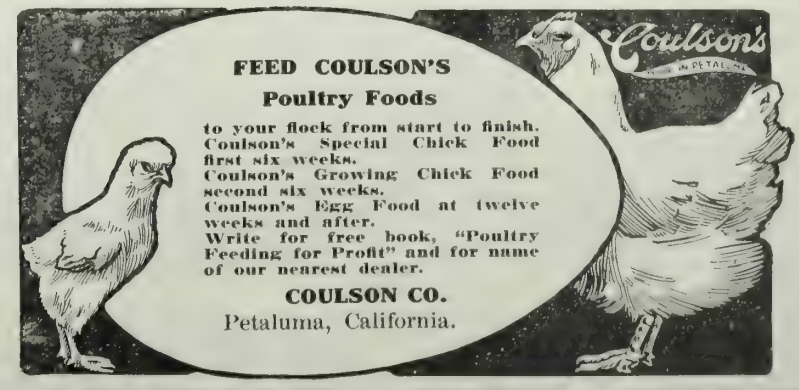
49 Washington Ave , San Jose, Cal.

SHIPPERS AND POULTRY MEN

Call or write to Green for prices and information on Feed Hoppers, Chick Trays, and Shipping Crates.

D. J. GREEN,
109 Third St., Petaluma, Cal.

Please mention this paper.



INDIAN RUNNER DUCKS

FROM A. Y. P WINNERS.

Indian Runner Ducks lay eggs that sell as "firsts." They don't mind cold feet and they lay in winter. They eat cheap feed and lay upwards of 200 eggs a year. They mature at five months. They are well called "mortgage lifters."

Eggs for hatching. Ranch on Hayward Hill at the junction of the Livermore and Crow Canon Roads. Visitors welcome every day in the week.

MELLETTE & CO., Hayward, Cal., R 3

POULTRY.

WAYSIDE POULTRY YARDS, Petaluma, Cal.—HATCHING EGGS from S. C. White Leghorns, Buff Orpingtons, Rhode Island Reds, Light Brahmas and Houdans, $6 per 100. EXHIBITION MATINGS of White Leghorns and Black Bantams, $5 per 15; $7.50 per 30. Address Carl Gregory, Manager.

OAKLAND POULTRY YARDS, 149D, California St., San Francisco.—Established 40 years. Standard bred poultry. White Orpingtons, R. I. Reds, Brd. Rocks, White Leghorns. Agency Norwich Automatic Feeder and Automatic Water Fountain; the best devices ever offered to the poultry raiser. Send for circulars.

PIONEER POULTRY YARDS—Standard bred Light and Dark Brahmas, Buff Cochins, R. I. Reds, Houdans, Black Minorcas, Cornish Fowls, Brown Leghorns, Bronze turkeys, peacocks, guineas and Rouen ducks. Address W. A. FRENCH, 545 W. Park St., Stockton, Cal.

S. C. B. MINORCA EGGS for hatching at $6 per 100; can fill large orders; 12 yards large beautiful hens, excellent layers; a few young roosters left at $3 each. Black Beauty Poultry Yards, Dixon, Cal.

MAMMOTH WHITE HOLLAND TURKEYS—Eggs for hatching, $5 per 13 eggs; fine large vigorous stock, not related; no stock for sale. Mrs. A. R. Sutherland, Santa Barbara, Cal., R. F. D., No. 2.

FOR GOOD, HEALTHY CHICKS in large or small lots, try Penn Grove Hatchery. All chicks guaranteed. Incubators, brooders and supplies. E. W. Spring, Prop., Penn Grove.

DAY-OLD CHICKS—R. I. Reds, S. C. White Leghorns and Barred Rocks; also eggs for hatching; good laying strain. Fairmount Hatchery, Box 29 B, R. F. D., Santa Cruz, Cal.

WHITE WYANDOTTES—221 egg strain. Owner first-prize cockerel, Oakland and Petaluma 1909. Eggs $2 per 15. H. B. WINTRINGHAM, Middletown, Lake Co., Cal.

CHICKS, 10c.—Shipped anywhere; 30 varieties; thoroughbred chickens and eggs; free circular. Ingleside Hatchery, 807 Mt. Vernon Ave., San Francisco, Cal.

INDIAN RUNNER DUCKS—Eggs for hatching, $1 per setting; $2 for 30; for 50 or more, 5c each. F. L. HUNT, Lincoln Ave., Napa, Cal.

PETALUMA INCUBATOR CO., Petaluma, Cal.—You will be pleased with our new Free CATALOGUE. Send for it.

FREE BOOK—"Poultry Feeding for Profit," on application to Coulson Co Petaluma, Cal., Box P.

CARRINGTON WHITE LEGHORNS—Send for circular. Address C. B. CARRINGTON, Hayward, Cal.

WHITE LEGHORNS—Chicks, eggs, cockerels. Fine stock. Reasonable. O. B Morris, Lodi, Cal.

INDIAN RUNNER BABY DUCKS, May and June. T. M. Alexander, 460 33rd Ave., San Francisco.

BRONZE Turkeys and Eggs. Ed Hart, Clements, Cal. Large size, good plumage, early maturity.

TWIN OAKS FARM—W. H. Bissell, Proprietor, Livermore, Cal.—Buff, White Orpington.

ORPINGTONS—White, Buff, stock, eggs. Ellen Jacque, 3117 School St., Fruitvale.

HATCHING EGGS—White Leghorns. Circular 164. A. H. Gregory, Fruitvale, Cal.

The Home Circle.

If We Had the Time.

If I had the time to find a place
And sit me down full face to face
With my better self, that stands no show
In my daily life that rushes so,
It might be then I would see my soul
Was stumbling still toward the shining goal
I might be nerved by the thought sublime,
If I had the time!

If I had the time to let my heart
Speak out and take in my life a part,
To look about and stretch a hand
To a comrade quartered on no-luck land.
Ah, God! if I might but just sit still
And hear the note of the whip-poor-will,
I think that my wish with God would rhyme—
If I had the time!

If I had the time to learn from you
How much for comfort my word would do;
And I told you then of my sudden will
To kiss your feet when I did you ill—
If the tears aback of the bravado
Could force their way and let you know—
Brothers, the souls of us all would chime,
If I had the time!

—Richard Burton.

The Child's Diet.

There are doubtless few children in these days of plenty who are underfed, but I am wondering how many are properly fed. How many mothers make the feeding of their children a study? In how many dinner-pails would we find the right kind of food for the school lunch?

The growing child needs good nourishing food and plenty of it, but he should not be fed on pickles, pie, doughnuts, and fried foods as a steady diet.

The child is active, and his body is growing larger each day, so he should be given foods that will furnish heat and energy to make his activities possible, for thus strength is developed; also foods which will furnish the nitrogenous elements necessary for the building up of body tissue.

Many children are permitted to spend their pennies for candy, and soon the candy habit has destroyed the appetite for the regular meals, impaired digestion, and often ruined the teeth. Not that the child should be deprived of candy, for pure sugar is a food most easily assimilated and one that furnishes an abundant supply of heat and energy with little effort on the part of the body. The child should be taught when to eat candy; never just before meals, for it takes away the appetite for solid food, but just after the meal, and then in moderation.

The child's diet should include plenty of pure milk, eggs properly cooked, either soft boiled or poached, white and graham bread, fruit, vegetables, soups, well cooked cereals, fish or meat in small quantities once a day, and simple cakes and puddings.

Many children do not care for vegetables, yet they should be encouraged to eat them. Vegetables supply valuable minerals which aid in purifying the blood; they also furnish bulk to the food, which causes a healthy exercise of the muscles in the digestive organs.

From infancy children should be taught that older people can often eat things which are quite unwholesome for children; lighter desserts or fruits may be substituted for the rich pastry or pudding and a lesson in self-control be presented.

Children should be trained to eat slowly and masticate their food thoroughly. This necessitates cultivating the habit of being prompt in rising in the morning, so the breakfast need not be hurried. Many a mother thinks she is doing a kindness to her child to let him sleep in the morning. She does not realize what a bad habit she is helping him to form, one that will prove a hindrance all through life. If the child goes to bed at the proper time he will get the required amount of sleep and can rise promptly without the slightest harm.

It is often deemed necessary for the child to eat more often than the adult; in fact, it is a far better plan than to have him overeat at any one meal. The child's stomach cannot assimilate as large a quantity of food at a time as that of the grown person. Lunches between meals should be regular and carefully planned. Highly seasoned foods should be avoided, but simple, nourishing foods such as bread and butter, milk, fruit or a sandwich, may be given.

Tea and coffee have no place in the diet of children. They are stimulants which are injurious to the nervous system. Cocoa may be given at times; it is mild in its action and the fat it contains gives it real food value.

Drinking a great quantity of water with the meal is a bad hibt, for frequently it it taken to wash the food down, and in this way hinders perfect mastication. The diet of the growing child should receive the mother's most earnest care and attention. Variety should be sought for; and salads, highly seasoned meats, pie and all kinds of fried foods should be avoided.—N. M. Farnsworin, of Domestic Science Department, State Normal, North Dakota.

For the Cook.

Use a knitting needle rather than a fork for testing vegetables while cooking. What's the matter with a hatpin?

In preparing pineapples slice the fruit up and down—not through the tough and fibrous core.

Stove polish mixed with vinegar and a small bit of sugar will give additional and more lasting luster.

The raveled threads from old linen will be found most satisfactory for darning tablecloths or napkins.

A good cook adds a teaspoonful of sugar to each quart of water in which corn, peas or squash are cooked.

Keep stirring custard for at least five minutes after it has cooked and the objectionable skin will not form on top.

Since milk bottles are invariably handled by the top, fastidious women will wash off the bottle before removing the paper cap.

To clean bronze, moisten salt with vinegar, rub briskly with a woolen cloth dampened in this, rinse in clear water and polish with a clean woolen cloth.

Cheese wrapped in a cloth previously steeped in vinegar and water will keep fresh for a considerably longer time than if kept in the storeroom in the ordinary way. A dry cloth should be kept wrapped around the saturated one, and the latter re-steeped in vinegar and water from time to time.

It is wise to have a fine strainer in the kitchen sink to prevent solid substances from washing into the waste pipe. Once a week flush the waste pipe with a solution of copperas or washing soda used boiling hot. Pour a gallon of very hot water through the pipe first so the disinfectant will act quickly. Strainers to fit the sink corner can be obtained from any house-furnishing store, but if not obtainable in small towns use a colander.

How to Cook Rice.

An American writing from Japan, says: "They do know how to cook rice here, though, and for the benefit of grocers and customers of the United States I have investigated the matter. Only just enough cold water is poured on to prevent the rice from burning to the pot, which has a close-fitting cover, and is set on a moderate fire. The rice is steamed, rather than boiled, until it is nearly done; then the cover of the pot is taken off, and the surplus steam and moisture are allowed to escape, and the rice turns out a mass of snow-white kernels, each separate from the other, and as much superior to the soggy mass we usually get in the United States as a fine mealy potato is to the water-soaked article. I have seen something approaching this in our Southern States, but I do not think even there they do it as skilfully as it is done here, and in the Northern States but very few persons understand how to cook rice properly."

Easy.

Sir Arthur Conan Doyle sat at a dinner, on his last visit here, beside a lady, who asked leave to consult him about some thefts.

"My detective powers," he replied, "are at your service, madam."

"Well," said the lady, "frequent and mysterious thefts have been occurring at my house for a long time. Thus, there disappeared last week a motor horn, a broom, a box of golf balls, a left riding boot, a dictionary, and a half a dozen tin pieplates."

"Aha," said the creator of Sherlock Holmes, "the case, madam, is quite clear. You keep a goat."

So many men insist that it is bad luck when the trobule with them is plain laziness.

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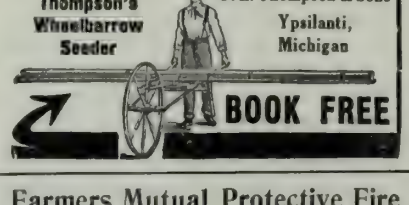
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OUR YOUNG FOLKS' DEPARTMENT.

Conducted by M. RUSSELL JAMES.

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Planting the corn and potatoes,
Helping to scatter the seeds,
Feeding the hens and the chickens,
Freeing the garden from weeds,
Driving the cows to the pasture,
Feeding the horse in the stall,
We little children are busy;
Sure there is work for us all.

Spreading the hay in the sunshine,
Raking it up when it's dry,
Picking the apples and peaches
Down in the orchard hard by,
Picking the grapes in the vineyard,
Gathering nuts in the fall,
We little children are busy;
Yes, there is work for us all.

Work makes us cheerful and happy;
Makes us both active and strong;
Play we enjoy all the better
When we have labored so long.
Gladly we help our kind parents,
Quickly we come at their call;
Children should love to be busy;
There is much work for us all.

Our Young Folks' Letters.

Caruthers, Cal., March 17, 1911.

Dear Editor: We raised four Rhode Island Reds last year. Mamma gave them to Dorothy and me when she took them out of the incubator. Mamma's chickens are White Leghorns, so we know ours. We raised them all by ourselves. Every night till they were four months old they bunched up by the house-door and waited for us to carry them out to the chicken-house. We have eleven eggs saved now to set. I wish we could get a prize of eggs because I wrote this letter. I am seven years old next June, and Dorothy was five last fall.

FLORENCE JARED.

[The above letter, written with much painstaking, is undoubtedly from our youngest fanciers. Last year, when these little maids took charge of the four Rhode Island Red chicks, Florence was less than six and Dorothy but a little over four years old. One of the Georgia papers is very proud over two little girls in that State, seven and nine years of age, who picked cotton and bought them a trio of White Cochin Bantams last fall. We are proud of these little California girls and shall expect to hear more of their poultry work.]

Dublin, Cal., March, 1911.

To the PACIFIC RURAL PRESS: I read in your valuable paper that you want young folks to write interesting letters. I am going to do my best. I am twelve years old and in the fourth grade at school. I live with my uncle. My uncle and I are rolling the grain now, and my aunt is raising a lot of chickens. We are milking 7 cows in the barn and took 19 heifers up the canyon. We have 8 calves, and 5 pigs, and 8 horses. One horse has a colt that was born on the 22nd of February, so we called him Roy Washington. Your friend,

EDWARD NUTTE.

Kellogg, Cal., March 13, 1911.

Dear Editor: I was very glad to see my letter printed, and also to know that we might write another letter. I want to tell about three hens that I set. Two of them hatched the other night, and I was very glad to see 24 nice chicks. I was watching the other hen, and this morning found two chicks lying beside her, dead. Two or three hours afterward I found three more chicks dead, and I could not tell what was the cause. So I watched the hen close. Pretty soon an egg pipped and when she heard the little chick go "Peep, peep," she raised up and pecked the little thing and killed it. It made me so angry that I grabbed the old hen by the neck and flung her as far as I could. There were three more eggs in the nest, so I took them to the house and put them in the warm oven. After awhile I heard a noise like "Peep, peep," and when I looked in the oven there were three dear little chicks already out of the shell. They are getting along fine, but I will put them with one of the other hens, for I have no brooder. I would like to know if the old hen is crazy, and if there are many that do that way? Please tell me the cause. Yours respectfully,

EMMA TAMAGNI.

[We would advise Emma to make a potpie of that hen and thus make sure that such an unnatural mother shall slaughter no more innocents. Hens frequently kill a chick that happens to be of an off color, but such wholesale slaughtering we have never known, except in one case where a hen just gone broody was put upon a clutch of eggs within a week of their hatching. That hen was a good time-keeper and knew that hen eggs require more than a week for hatching, so she promptly killed every chick as soon as it broke the shell.]

A Young Folks' Poultry Club

What the young folks can do for their State and for a great industry is proved by what the Boys' Corn Clubs have done for the State of Louisiana. The staple industry of that great cotton State was bankrupted by the ravages of the boll weevil, but an even greater has been found in corn raising.

"In this movement from cotton to corn," says Editor Steinel of that State, "no factor has had such a wide influence as the Boys' Corn Clubs. It is difficult to place the proper estimate upon the accomplishments of the thousands of young chaps—mere schoolboys—who by cultivating an acre of corn have demonstrated to the world that Louisiana deserves a place along with Illinois and Iowa near the head of the corn column."

California with its diversified soil and climate has no one large agricultural industry, common to all sections of the State, except poultry raising. The hen is at home in the highlands and the lowlands, on the coast and in the interior. More than this, California is destined to be the great poultry State of the Union.

In poultry the boys, and girls, too, in every section of California may take an interest, and also take pride in having their section raise better poultry and more of it than any other section of the State or of the United States.

We feel sure that all that the young folks of California need is to "be shown" how, as have the boys and girls in the Eastern States, in order to do as notable work as boys and girls of other States. So right here we invite those of the PACIFIC RURAL PRESS to form a "Young Folks' Poultry Club." All, from the child old enough to notice and care for poultry and birds to the boy or girl of eighteen, may become members. The only requirement is that member must feel an interest in the feathered world, and learn as much as possible about poultry and birds. When once they feel an interest in such subjects, the matter will take care of itself, and each member will soon manage to have pet stock and fowls, if only a pair of the kind.

Those of our young folks who would like to belong to such a club may send in their names at once to the office of the PACIFIC RURAL PRESS.

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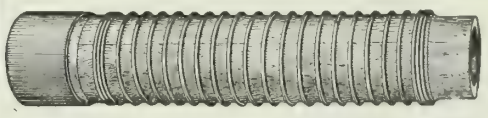
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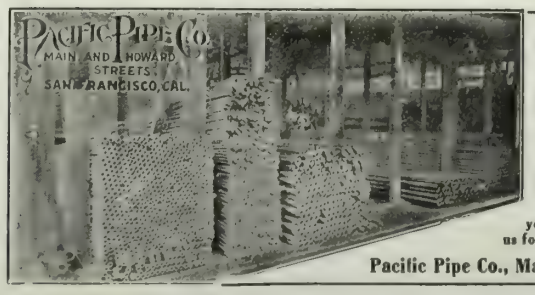


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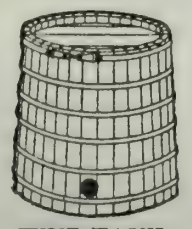


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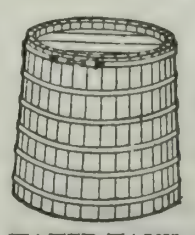


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WATER TANK.

THE MARKETS.

San Francisco, April 5, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

There has been a fairly active movement in this market, with considerable buying by local operators in the North. There is a little easier feeling at present in regard to prices, with some decline in the East, though several varieties stand higher than last week in this market. Offerings are light all over the Coast.

California Club	$1.50	@1.52½
Sonora	1.60	@1.65
White Australian	1.55	@1.60
Northern Club	1.50	@1.55
Northern Bluestem	1.57½	@1.62½
Russian Red	1.50	@1.55

BARLEY.

Another export cargo was cleared this week. Trading at present is largely speculative, and values may be unsettled for several weeks. Prices have been steadily advancing, and are said to be fully as high in the interior as in the city market, though there is an easier feeling at the moment. The barley harvest started last week in the Imperial district.

Brewing and Shipping	$1.45	@1.47½
Choice Feed, per ctl	1.40	@1.42½
Common Feed	1.35	@1.37½

OATS.

Oats continue to advance in sympathy with other grains. Red and black oats for feed find a very fair demand, and the supply has been materially decreased in the last month. The market is accordingly firm at the new quotations.

Red Feed	$1.35	@1.40
Gray		Nominal
White		Nominal
Black Feed	1.35	@1.40

CORN.

Considerable Eastern stock is arriving, and some California small yellow is offered at quotations, but finds little de mand. Eastern descriptions are easy, and lower prices are quoted on bulk lots, though jobbing values are unchanged.

Cal. Small Yellow	$1.70	@1.75
Eastern Yellow	$1.30	@1.42½
Eastern White	1.30	@1.42½
Brown Egyptian	1.50	@1.60

RYE.

There is little to be had below $1.45, though the market is dull and there is more or less Eastern stock offered.

Rye, per ctl	$1.45	@1.50

BEANS.

The market presents a rather uninteresting appearance at present. Recent shipments have been of fair volume in all varieties, but there is no unusual activity in any line, and except in limas the supply appears ample. It is expected, however, that most varieties will be pretty well cleaned up by the time the new crop is available. The market is firm for everything on the list, with a slight upward tendency in prices. Only two changes are noted, blackeyes being rather sharply advanced, while local dealers have made a slight advance in the top quotation on limas. The general situation in limas is about as before, the consuming demand being steady all over the country, and the small remaining supply is steadily decreasing. Dealers are making strong efforts to secure new crop contracts, offering exceptionally high prices, but as far as can be learned they have met with only moderate success. The remaining stock of beans in the Michigan producing district is said to be unusually light for this season, and this shortage may later have an effect on this market.

Bayos, per ctl	$4.75	@4.85
Blackeyes	6.25	@6.50
Cranberry Beans	4.00	@4.25
Garvanzos	2.85	@3.00
Horse Beans	2.50	@2.75
Small Whites	3.40	@3.55
Large Whites	3.40	@3.55
Limas	6.20	@6.35
Pea		4.25
Pink	5.50	@5.60
Red Kidneys	6.25	@6.50

SEEDS.

All descriptions quoted are rather quiet at present, the seasonable demand being over. Prices are steadily maintained at the former quotations.

Alfalfa	18@	20c
Broomcorn Seed, per ton	$20.00@	25.00
Brown Mustard, per lb		5½c
Canary	3½@	4 c
Hemp	3½@	4 c
Millet	2¾@	3¼c
Timothy	8 @	9 c
Yellow Mustard		5¾c
Dried Peas, per ctl	3.75@	4.00

FLOUR.

It is expected that the Oriental freight rates from Northern ports will be advanced in June, but in the meantime shipments continue very heavy. Shipments from San Francisco are light, and local conditions have shown little change for some time, values being firmly held.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.30	@4.60

Hay and Feedstuffs.

HAY.

Hay has been coming in on a smaller scale than for some time past, and the arrivals at San Francisco have been readily absorbed. City prices for nearly all descriptions show a little advance, and are better than for several months, though the general market condition shows but little improvement. Dealers report quiet conditions in the country markets. They are now pretty well supplied, and do not care to buy supplies for more than a month or so in the future. The rain this week has been of great benefit to the crop, and assures a large yield in most sections. The demand for alfalfa hay is smaller than for some time past, and the top price on this variety has been shaded, though it is reported that green feed is still rather short. Straw is steady and quiet, with no demand of any consequence.

Choice Wheat	$12.00@	14.00
Good Wheat Hay	10.00@	12.00
Other Grade Wheat	7.00@	10.00
Wheat and Oats	7.00@	11.50
Tame Oats	7.00@	11.50
Wild Oats	6.50@	9.50
Alfalfa	8.00@	12.00
Stock Hay	5.50@	6.50
Straw, per bale	35@	55c

FEEDSTUFFS.

Very little change has occurred this week, most descriptions being very firm at the recent advance, and all lines are moving well for this time of year. Rolled barley has taken another jump, following the advance in the raw grain. Supplies of bran on hand are very small.

Alfalfa Meal, per ton	$20.00	
Bran, per ton	$25.00@	26.00
Cocoanut Cake or Meal	26.00	
Cracked Corn	32.00@	33.00
Middlings	33.00@	36.00
Mixed Feeds	29.00@	32.00
Rolled Barley	29.00@	30.00
Rolled Oats	30.00@	32.00
Shorts	26.50@	30.00

Garden Truck.

VEGETABLES.

Oregon onions are a little stronger, but move rather slowly. Some Australian stock is offered at present, but is held at stiff prices. A few green onions are coming in, selling up to $1 per box. The market for miscellaneous vegetables shows comparatively few changes, the movement of outside stock being interfered with somewhat by the heavy arrivals of asparagus and rhubarb. Quite a number of canneries have started up on asparagus in the last few days, and are paying 40 to 75c. per box. While they are taking large quantities, the amount available for the local market is in excess of requirements, and with arrivals of 3000 to 5000 boxes per day, it is difficult to avoid a carry-over. Rhubarb is also weak and lower. Green peas are coming in from around the bay, and are bringing top prices, while southern stock is easy. Southern celery is also rather weak, and Mexican tomatoes are lower. A few small lots of green peppers and string beans from distant points have been moved at stiff prices. Local garden truck is unchanged, and finds a comparatively light demand at present.

Onions: Oregon, ctl	$ 2.25@	2.40
Australian	3.25@	3.50
Garlic, per lb	4@	5c
Green Peas, per lb	6@	12½
Turnips, per sack	60@	75c
Tomatoes, per crate	1.00@	1.25
Cucumbers, per doz	75c@	1.50
Cabbage	40@	50c
Carrots, per sack	65@	75c
Celery, large, per crate	1.50@	2.25
Rhubarb, per box	75c@	1.00

? ? ? ? ? ?

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Lettuce, per crate	1.50@	2.00
Cauliflower, per doz	60@	75c
Asparagus, per box	50c@	1.25

POTATOES.

New potatoes are coming in a little more freely from Alameda county, but with a lively demand prices are well maintained. Old potatoes receive comparatively little interest, but with light supplies the market is firm, Salinas stock being a little higher.

Salinas Burbanks, per ctl	$ 2.45@	2.50
River Whites, per ctl	1.75@	1.95
Oregon Burbanks	1.90@	2.15
New Potatoes, per lb	4@	6c

Dairy Produce.

POULTRY.

The general situation remains favorable to sellers, all descriptions being very firm, with an advance in fryers. Arrivals of Eastern stock have been very moderate for the last few days, and nothing of any consequence is being shipped from California points, while the demand is very brisk, being increased by the Jewish holiday.

Large Broilers	$ 4.50@	5.50
Small Broilers	3.50@	4.50
Fryers	7.00@	8.00
Hens, extra	9.00@	12.00
Hens, large	7.00@	8.00
Small Hens	6.00@	6.50
Old Roosters	5.00@	6.00
Young Roosters	7.00@	8.00
Young Roosters, full grown	9.00@	10.50
Squabs	2.75@	3.00
Geese, per pair	3.00@	3.50
Ducks	8.00@	10.00
Turkeys, live, per lb	Nominal	

BUTTER.

Shipments of butter from producing districts have continued to increase, and, while there is a very fair movement from San Francisco by the coast steamers, it is impossible to keep supplies from accumulating. Prices on all grades have taken another drop, and the general feeling is one of easiness. The following prices are quoted by the San Francisco Dairy Exchange:

California (extras) per lb	22 c
Prime Firsts	21½c
Firsts	21 c
Seconds	20 c

EGGS.

Quotations are a little lower than last week, the current arrivals being extremely heavy, though the market is described as firm at the moment. Large quantities are moving into storage.

California (extras) per doz	18 c
Firsts	17 c
Seconds	16 c

CHEESE.

California flat firsts are a little stronger, but otherwise there is no change.

Fancy California Flats, per lb	13 c
Firsts	12 c
New Young Americas, fancy	14½c

Deciduous Fruits.

FRESH FRUITS.

Supplies of apples are small and steadily diminishing, with a lively demand both for local consumption and for shipment. Prices are firmly held, but show no further change. Several lots of strawberries have arrived from southern California, and quite a bit of Florida stock has come in, the first lot bringing up to $1.25 per basket, though most of this stock was in poor condition. Larger arrivals from Los Angeles are expected next week. Cherries will probably not appear in the market until several weeks later than usual.

Apples, per box—		
Newtown	$ 1.25@	1.75
Fancy Red, 4-tier	1.25@	1.75
Strawberries, southern, crate		4.50

Dried Fruits.

Prunes continue to find a steady demand in the trade all over the country, and in view of the requirements of the consuming trade, buyers in general are willing to pay the prices asked. It is certain, however, that the present prices are limiting consumption to a considerable extent. The packers are offering an advance over the former quotation, but there seems to be practically nothing to be had from growers at any figure. All other prices remain as before, but everything is very firm. The demand for apples continues fairly strong, and supplies in packers' hands are rapidly diminishing. Peaches are moving much more freely in the Eastern markets, and large sales are expected within the next month or two, with good prospects for a close clean-up. Raisins are quiet, but there is some movement all the time, and little, if any, stock is likely to be held over at the end of the season. Many packers are taking a lively interest in future raisins, and according to reports from Fresno, 3½c. is being offered for both one and three-year contracts. The stock now in growers' hands is said to be only 12,000 tons, including all varieties. In regard to future fruits, very little definite information is obtainable here, though orders for future prunes are being placed in the Eastern market. The New York Journal of Commerce says: "The most prominent feature in the prunes market is furnished by a speculative movement in both California and Oregon future fruit on a high opening basis. At least two local brokerage concerns are interested in the business, the result of which is said to have involved five cars of each kind. The 1911 Californias are said to have been sold on a 5c. f. o. b. bag basis, the contracts calling for shipment the first half of October, or if the season opens earlier the sales are to be delivered out of the first cars packed. This is considered by some in the trade to be a wide gamble, as, according to present indications, there will be a large crop of prunes this year. In the spot market for California prunes quite a little business is being done in spite of the prevailing extreme high prices. The demand comes chiefly from country buyers and runs from 25 to 100-box lots, though some of the city distributing trade is inquiring for lots of 500 to 1000 boxes.

"Interest in spot peaches is improving, though the market is still inactive, business for the most part being confined within narrow jobbing limits. Holders are confident and are not trying to force business. This is the eve of one of the heaviest consuming periods of the year, and they look for a largely increased consuming demand in the near future. Moreover, the Coast market is firm with a rising tendency, and offerings from that quarter are light. Apricots also are coming in for more attention, though only in a jobbing way, the orders coming mostly from interior jobbers.

"California seeded raisins for August-September shipment are firmer, due to the higher prices packers are paying growers for sweatbox goods and the expectation of a largely increased demand from the Eastern trade for early fall requirements. Spot California raisins of all kinds are in small supply, but there is little demand and prices are somewhat nominal. But for August-September shipment packers are asking more, some of them declining to sell at less than 6¾c. for fancy or 6¼c. for choice, f. o. b. Coast in cartons."

Evaporated Apples, per lb	10½@	11 c
Figs, black	4½@	5 c
Figs, white	5 @	7½c
Apricots	12 @	13 c
Moorpark, fancy	13½@	14 c
Peaches	6½@	7¼c
Prunes, 4-size basis	9	c
Pears	8½@	12 c

Raisins—

Loose Muscatels, in sweatbox	3	@	3½c
Thompson Seedless	4	@	4¼c
Seedless Sultanas	3¾	@	4 c

Citrus Fruits.

Apparently California is to experience its best citrus fruit season in history this year. Shipments heavier than ever before have not broken the markets, and it now looks as though the great 50,000-car crop will all sell at fair, average prices. Up to April 3, 18,184 cars of oranges and 2108 cars of lemons had been shipped since November 1. In some districts all navels have been marketed, but in the older sections there are lots of this variety to be marketed by June 1, to be followed by valencias.

In the auction markets of the East good fruit is selling at about the prices that have ruled for some time, but some cars of oranges are arriving showing heavy decay, which means lower prices.

At New York, on Monday of this week, there were sold at auction 44 cars of navels, at prices averaging from $1.60 to $3.25; bloods brought about $2 per box. At Boston the same day, 33 cars of navels were sold at trifle lower prices, although the market was reported stronger. Lemons sold for $2.80 to $3.10. At Pittsburg heavy offerings were taken at from $1.35 to $2.65; lemons, $1.95 to $2.40. At Cleveland the market was a little higher on the average. At the Los Angeles auction, held April 3, five cars were sold. Choice navels brought $1.32½ f. o. b. California; standards sold for $1.05; fancys brought $1.45.

Florida oranges brought about the same prices in Eastern auctions as California fruit.

The demand in San Francisco has been of only fair proportions for the last few days, the rain early in the week tending to interfere with trade. Arrivals have not been excessive, but the market has been well stocked with navel oranges, prices on which have been shaded. Tangerines, however, remain firm, with another advance of the inside quotation. There is nothing new in lemons or grapefruit. Mexican limes are more plentiful than for some time past, and the price has accordingly been reduced.

Navel oranges—	
Extra choice	$ 2.00@ 2.25
Choice	1.75@ 2.00
Valencias, choice to fancy	Nominal
Choice	Nominal
Standard	Nominal
Tangerines	1.50@ 1.75
Choice Lemons	2.00@ 2.50
Fancy Lemons	2.75@ 3.25
Standard	1.25@ 1.50
Limes	6.00@ 6.50
Grapefruit	2.00@ 2.75

Nuts, Honey, Hops, Etc.

NUTS.

Prices remain nominally as last quoted, but there is little feature to the market, very little of any variety being left to work on. There is usually little activity at this season, and the demand is greatly curtailed at present by the scarcity and high prices.

Almonds—	
Nonpareils	15½@16 c
I X L	14½@15 c
Ne Plus Ultra	13½@14 c
Drakes	11¼@11¾c
Languedoc	11 @11½c
Hardshells	8 @ 8½c
Walnuts—Softshell, No. 1	15 c
Standard	14½c
Softshell, No. 2	11 c
Budded	17½c

HONEY.

A little white comb honey is offered in the jobbing trade, but there is not much to be had, and extracted is now almost entirely nominal. There is not much demand for any line. No new honey is expected to appear on this market within the next month or more.

Comb—White Sage	12 @ 15c
Extracted—Water White	Nominal.
Light Amber	7 @ 8 c
Amber	5 @ 6 c
Sacramento River Comb	12 @12½c

BEESWAX.

Some of the local supplies have been moved off recently, but the demand is not of large proportions, and prices remain unchanged.

Light	28 @30 c
Dark	23 @26 c

HOPS.

The movement is by no means active on either spot or future hops, as buyers are unwilling to pay more than present quotations, while growers are disposed to hold for an advance. Supplies of old stock are very small, and there is a possibility of a further advance before the new crop is on the market. Some large contracts for new crop are being made in Oregon around 16c.

Hops, 1910 crop	18 @22 c
1911 Crop	15 @17 c

Live Stock.

DRESSED MEAT.

Beef Steers, per lb	10 @10½c
Cows	9 @ 9½c
Heifers	8½@ 9 c
Veal, large	11 @12 c
Veal, small	12½@13 c
Mutton: Wethers	10½@11 c
Ewes	9 @ 9½c
Lambs	13 @14 c
Hogs, dressed	12 @13 c

LIVE STOCK.

Very little change is noted in prices, most descriptions remaining firm. The movement of beef cattle to this market has not yet started on any large scale, and fat hay-fed stock is bringing full quotations, though prices on grass-fed cattle are 1c. lower. A larger supply is expected within the next few weeks. Sheep are fairly plentiful, and a few spring lambs are coming in.

Gross weight:	
Steers: No. 1	6 @ 6½c
No. 2	6 @ 6¼c
Cows and Heifers: No. 1	5¼@ 5½c
No. 2	4¾@ 5 c
Bulls and Stags	2½@ 4 c
Calves: Light	6½@ 7 c
Medium	6 @ 6½c
Heavy	5½@ 6 c
Hogs: Grain-fed, heavy	7¼@ 7½c
150 to 250 lbs	7¾c
100 to 150 lbs	7¾c
Common Hogs, per lb	5 @ 6 c
Small prime wethers	5¼@ 5½c
Large prime wethers	5¼@ 5½c
Ewes	4 @ 4½c
Lambs	6½@ 7 c

WOOL.

The spring shearing is now in progress at many points in California and the Northwest. There has been little, if any, business, however, and from all appearances growers will have some difficulty in finding a market in the immediate future. The woolen trade is quiet, and wool dealers and manufacturers generally profess alarm over the prospect of tariff revision. No prices have been named that are acceptable to growers, and the quotations given are entirely nominal.

Fall Clip—	
Mountain Free	8 @10 c
Valley Fall and Lamb	6 @ 9 c
Northern	6 @ 9 c
Southern Spring	10 @11 c
Middle Counties	12 @13 c
Northern	15 @16 c

HIDES.

There is nothing new in this market. The demand continues fair, and quotations have stood unchanged for some time.

Heavy Steers, over 56 lbs.	10 c
Medium	9 @ 9½c
Light Steers, under 48 lbs.	9 c
Heavy Cows, over 50 lbs.	8¾c
Light Cows, 30 to 50 ibs.	8½c
Kip	10½c
Veal	15 @15½c
Calf	15 @15½c
Dry—	
Dry Hides	17 @18 c
Dry Bulls	16 c
Dry Kip, 10 to 15	17 @18 c
Dry Veal, 5 to 10	16½@17 c
Dry Calf, 7 down	22 c
Sheep Skins—	
Long Wools	$ .85@ 1.25
Medium Wool, 6 to 9 mos.	50@ 80c
Short Wool, 3 to 6 mos.	35@ 60c
Lambs	15@ 50c

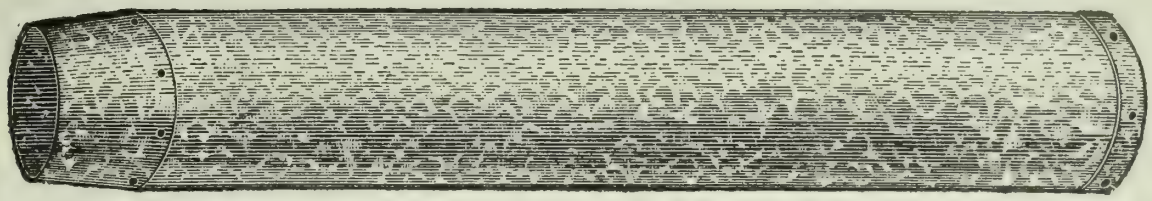
HORSES.

Desirable Drafters, 1700 lbs. up.	$275@300
Light Drafters 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs.	200@250
Wagon Horses, 1250 to 1350 lbs.	175@200
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	135@150
Young	200
Old Mares	100@150

MULES.

1200 lbs	$250@300
1100 lbs	200@225
1000 lbs	150@175
900 lbs	125@150

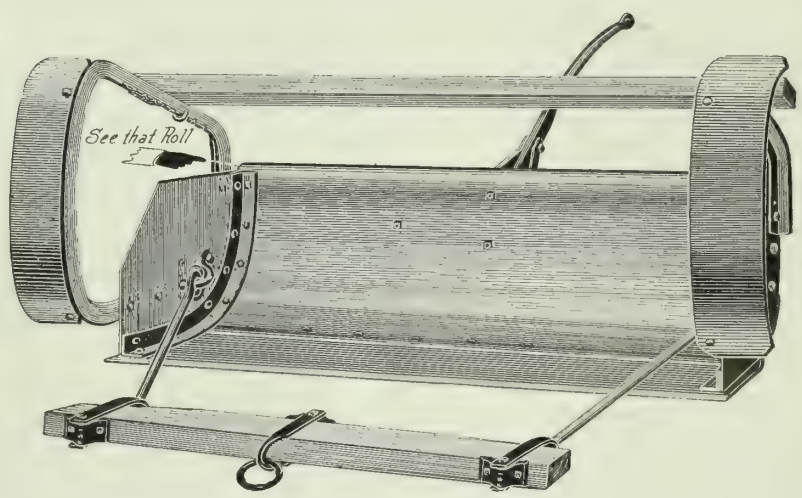
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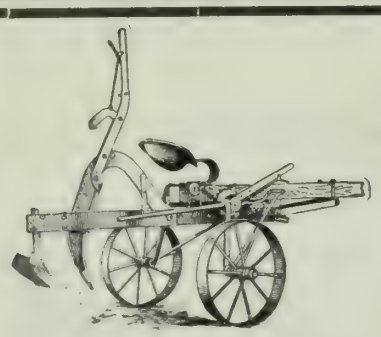
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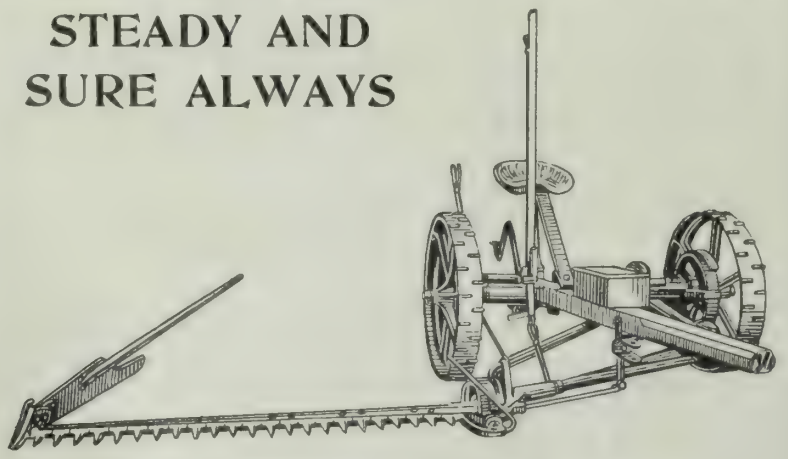
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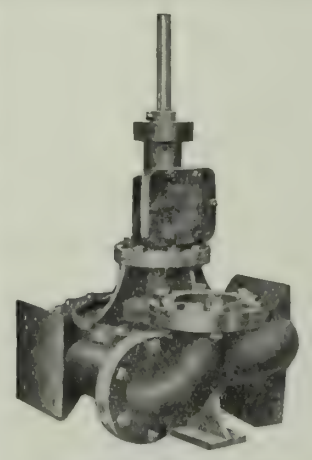
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CALIFORNIA STATE

THE PACIFIC RURAL PRESS

Vol. LXXXI. No. 15. SAN FRANCISCO, SATURDAY, APRIL 15, 1911. Forty-first Year.

California Blossom Festivals.

California has had superb flower shows ever since creation. Immediately following that event the local growth of plants was observed to be so fine that California was among the sites offered for the Garden of Eden. Other considerations were, however, against us. It had been decided that the course of empire should move with the sun—westward. To secure westward movement of a race of beings planted on the west coast of a continent necessitated the creation of creatures with an original aspiration for fins rather than for wings, which would transform the plans for an abode of the blest into an aquarium. Because of such difficulties California was not chosen for the Garden of Eden, and a less beautiful site in Asia was decided upon, since men could trail out in all directions from their birthplace, and, having circled around enough to test their legs, finally strike out upon the great pedestrian excursions which led stragglers to the shores of narrower oceans which they could conveniently cross, while the great central movement westward had an open course upon dry land. Those who had zealously advocated California as a site for the Garden consoled themselves with the reflection that after all it is not what is given a man at the beginning, but what he finds for himself that satisfies him. The wisdom of this thought now clearly appears. The race proved so forgetful of Eden that no one knows now exactly where it was, while California stands in the eyes of the world as the point most desirable to attain and as the place where the world will arrive in 1915.

We count this demonstration of the antiquity of floral displays in California and its relation to human progress important in connection with the exaltation of blossom festivals to which we devote this page, in recognition of what was done last week in the Santa Clara valley. Twelve years ago Rev. Edward Sidney Williams, who adds conscientious reading of the PACIFIC RURAL PRESS to other marks of enterprise for which he has been well known for several decades, conceived the idea that the square miles of fruit tree bloom which covered the floor of the valley and the adjacent hillsides was too great a manifestation of the Creator's beneficence to be judged by commercial standards alone and the beauty of it too grand to be monopolized by residents of the region. To him came the exalted thought that the breadth of bounteous bloom and the breath of its fragrance should inspire in all who could experience them, new conceptions of the glory of God and His goodness. This thought appealed strongly to the public mind, and the annual blossom festivals have served the lofty purposes of their originator with annually increasing force. And Satan came also—for the local priests of mammon did not forget that their sacerdotal prototypes hung garlands of bloom around the necks of their victims. Transcendency and trade intertwined, as they usually do in human affairs, and the blossom festivals grew in general esteem.



A Suggestion of the Beauty of Fruit Blossoms.

Our engraving is suggestive of these forceful considerations thus involved, and to more definitely embody them we borrow freely from the statements of appreciative local writers who participated in the events. The center of sensations was at Saratoga, a congeries of beautiful homes on the high lands on the west side of the valley, which by multiplication of trolley lines is becoming each year more approachable and delightful for rural residence and activity. Saturday, April 8, was the great day and a perfect one. The orchards and vineyards were in perfect condition. The recent spraying for thrips gave the trees a neat and clean appearance which added to the perfection of their wonderful loads of blossoms. From the higher eminences of the foothills the valleys stretched away in seemingly endless vista of pink and white. The scent of the blossoms pervaded everything. The delicate aroma was on every puff of the breeze, and it could not be escaped. Everything was a-bloom from the vagrant brilliant-hued California poppies nodding everywhere, to the long, straight ranks of the orchard trees.

Everywhere through the miles of fruit trees there were sightseers, and the orchard homes, some of the most beautiful of the State, were thrown open to visitors. The perfect condition of the roads brought out scores of automobile and carriage parties from the cities of the bay region.

The festival program at Saratoga was a continuous one, starting early in the morning and continuing well toward sundown. It included all the usual sources of entertainment made traditional at country fetes of this kind, among them athletic events, music, speeches, picnic luncheons, flower drills and folk dances by school children. Automobiles and carriages were on hand to take visitors from outside the Saratoga district to various points of vantage in the vicinity. It is estimated that not less than five thousand people took part in the formalities, while the whole countryside was populous with many thousands more.

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E. J. WICKSON - - - - - - - Editor
FRANK HONEYWELL - - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Apr. 11, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	2.34	28.63	40.34	58	40
Red Bluff	.86	23.37	22.16	72	40
Sacramento	.45	21.71	17.77	64	44
San Francisco	.81	25.17	20.33	58	48
San Jose	.05	23.23	11.55	68	38
Fresno	.10	11.50	8.44	74	44
Independence	.00	5.48	8.56	72	32
San Luis Obispo	.82	34.85	18.39	62	46
Los Angeles	.12	16.32	14.44	66	50
San Diego	.10	11.68	9.11	62	48

The Week.

Well, why not try to be a little glad this week? We got so ill-natured last week by scolding about those who publish exaggeration and downright falsehood about the profits in farming that it required a good bunch of showers to clear our mental horizon. Such a dispensation was vouchsafed to us and to others whom we may have led into gloomy cogitations, and we desire to worship at a brighter shrine this week. Therefore we fasten a spray of fruit blossoms upon our front door and indulge in gladness that something better than the Garden of Eden has fallen to our lot. We cannot think of any other symbolry of picture or of words which could better manifest our desire to be joyful from away back to away forward in the doings of men and of Californians.

These spring showers have been fine everywhere. We were up in the Sacramento valley at the close of the week and we never saw a more complete park-and-lawn effect spread across the valley floor and upon the environing foothills. Summer-fallow grain was lush and late-sown was manifestly pushing forward to grasp the refreshment it has awaited through several weeks of dry winds and tantalizing skies. It is no exaggeration to claim that this run of favoring spring weather is worth millions. Every kind of work has been advanced and made easier, and every kind of product will be greater if the present attitude of the weather should be continued a little longer. Nearly everything is late, but that is a minor defect, providing conditions make it large and strong, as now seems reasonable to anticipate.

Now let us be a little glad over this greatest thing which has come to us: this Panama-Pacific Exposition. We wish we could get at a few old ravens who have perched high enough to be out of reach of clubs, and sit there diligently croaking about the serious social and economic problems in the metropolis which will militate against carrying through the fair project as the world expects us to do. We know there are such troubles, and, if we had last week's mood on, we could carry a line of foreboding so dark in spirit that the ink with which it was printed would look white by contrast. But what good would that do, and what use would it be? Evidently, none: for the simple reason that this great enterprise, when preparations for it get well under way, will awaken a spirit of patriotism and progress which will twist every raven's tongue from a croak to a whistle of wondering admiration and gladness. The fact of the matter is that the effort, which will really begin as soon as a site and a director-general are decided upon, will beget such an emotion of active satisfaction that it will burn up much, if not all, of the ill feeling and distrust between politics and patriotism, labor and capital, trade and transportation, and other interests which are charging each other with selfish self-will and with a disposition unfavorable to the realization of the great enterprise. No doubt all such things exist, but there will come a strong east wind of public sentiment which will sweep them into the Pacific Ocean before the new buildings arise upon the shore of it. Therefore, we claim that it is idle to croak over things which will not exist when the croaking falls due, and that is really what too many people are doing just now.

A great stride toward that end has been taken, it seems to us, in the election of Mr. Charles C. Moore as president of the Exposition. He is a man of broad views and varied experiences. His energetic career in the constructive industries has brought him into contact with all interests, and his ability to organize hesitant forces into a strong united pull for a single purpose is widely recognized. He can do what the accredited representative of a single interest could not do, and his first great influence, which in fact inheres in his name and industrial reputation, will be toward the unification of all interests and the kindling of a fire of public fervor which will burn up all the discord and cross-purposes—that is, all forms thereof which do not get blown into the Pacific as previously described. Mr. Moore has already struck the keynote of his administration which by its deep, clear tone will drown all discordant sounds—and having gotten rid of all little issues by one burning and two drownings, we must stop prescriptions of destruction lest we invoke an explosion to scatter their dampened ashes. Our effulgent theory really is that so great an idea will popularly prevail that there will be no niche for a small idea to nestle in. How can it be otherwise when we fully realize the exposition as the telegraph says Mr. Moore presented it to a New York interviewer on Monday of this week, in these words? "The people of the United States are realizing that the exposition is not merely local, nor even a Pacific Coast proposition, but wholly national in character. They are beginning to realize that no other city in this country can offer the advantages as a fair city that San Francisco does. The thinking men of the East realize that the peopling of the West and the development of its resources is a national benefit which will redound to the advantage of all Eastern cities. The public spirit and patriotism of citizens of San Francisco in assuming the responsibility of what means so much to the Coast and Nation should be commended. Those men that furnished the energy and means for this enterprise were not actuated by the expectation of local benefit, but have planned and are planning a project that will be national in its character and benefit the entire Nation."

How can croaking about social, economic, and political conditions in San Francisco avail anything in the face of such a national idea? Evidently it cannot, and therefore it will become less as the national idea becomes greater, until it reaches the vanishing point with the national idea ascendant. Therefore we say: harp upon the national idea! Whenever you hear a mutter from a raven, sing the national anthem! That is the way national things go nowadays; therefore, seize the method. Even Wall Street is playing for recognition as a national idea. The story is that you can get everything which goes in Wall Street from the "ticker." On Sunday last there was a Wall Street sermon preached in Old Trinity Church, and this got on to the "ticker": "Any plan which in any way would destroy the workings of Wall Street is a crazy one and a monstrous absurdity. Notwithstanding that not a grain of wheat, not an ear of corn, grows in this center, nevertheless buildings here hold those who furnish sinews for millions on millions of acres of agricultural products, and those who guide transportation of millions of tons of those things which sustain the lives not only of the people of this country, but in some way of the people of every country of the world."

We are not approving this declaration for the substance thereof. It has a suggestion of toady preaching—but let that pass, for we are not complaining this week. It is the method of it which appeals to us, in this way: the enrollment of this special pleading paragraph on the "ticker" gets it into more intimate and effective circulation than any amount of public printing would do, and therefore this rather poor specimen of a national idea will no doubt go far toward repairing the somewhat damaged reputation of Wall Street as a world benefit. What we need to put the public mind right, is to get this national idea of the exposition into every brain-cell of the California people, and it will not get there by any amount of printing unless such printing is accepted merely as suggestive of what every individual should do, and that is, to talk it right whenever he hears a raven give it wrong. Depend upon it, Californians are broader than the selfishness of the labor leaders, braver than the timidity of capitalists, purer than the prejudices of the politicians; and there is something in California public opinion to appeal to which cannot be moved by the croaking which people who fear all these relatively little things are too much indulging in. It is our belief in this higher thing of popular confidence and patriotism which makes us glad.

Our live-stock readers will be comforted by the assurance that at least one proposition to introduce African beasts to reservations of this country goes upon securing beasts which are not ferocious, such as large-game hunters esteem, but of beasts which might perhaps be grown as supplementary to existing commercial live stock. The story from Washington is that a lot of assorted African meats kept fresh in cold storage and of dried African meats were served at a dinner given by Captain Fritz Duquesne, a well-known sportsman, to a party of Congressmen in Washington. The menu included such delicacies as roasted dikdik, fried koodoo, broiled giraffe steak, broiled klipspringer, and croquettes of koribustard. Captain Duquesne believes that Uncle Sam should import certain varieties of African wild animals and turn them loose to multiply in the forests and plains of the South and West. We have no report of the success of the dinner. It must have been gamey enough to please the most fastidious.

The contention that fresh deciduous fruits should go overland at as low a rate as oranges,

which Mr. R. D. Stephens, of Sacramento, has urged so valiantly and persistently in the interest of California fruit shippers, is to prevail. It is announced from Chicago that a general reduction from $1.40 to $1.15 per 100 pounds for shipments of fruit from California to points east of Chicago has been agreed to after a conference lasting a week between representatives of transcontinental lines and H. W. Adams, representing California fruit distributers. The new rate will apply only to car lots, and 26,000 pounds will be the minimum weight per car. The rate will be put into effect as soon as the tariff can be published, and will be in time to apply to this season's shipments.

It is quite a satisfactory matter all around that conservation propositions seem to be assuming more rational phases and that development by use of resources may find ample field to go upon. The creation of a California Conservation Commission with $100,000 for its work in the next two years was provided by the legislature and awaits the Governor's approval. The Commission is to consist of five members, to serve without compensation, beyond having their actual expenses paid. The Commission is to gather data and information concerning forestry, water, and water-power, electricity, mines and mining, mineral and other lands, dredging, reclamation and irrigation, and is to advise the next legislature what laws should be passed.

The local apprehension of drawbacks to enterprise by too radical conservation seems to have been not a little quieted by the utterances of Mr. Henry S. Graves, the present Chief of the United States Forest Service, during his recent visit to this State. He expressed himself in favor of granting rights to the use of streams on public lands for sufficiently long periods to warrant private investment and enterprise. He is reported as saying: "The present law gives only revocable permits to water rights on Government land. I do not think this is to the best interests of water development and conservation. I am in favor of permits being granted for a period of, say, fifty years, the lease to be revocable only on breach of conditions. The lessee should have proper protection and should have the right of renewal of the lease." He also said that water development on Government lands is lacking the support of capital on account of the present law. He said that great good would be accomplished by the work of private enterprise, subject to Government control. The adoption of such a policy would certainly make the West glad.

Queries and Replies.

Sweet Potatoes Between Fruit Trees.

To the Editor: I am expecting to grow a fall crop of about 20 acres of sweet potatoes. The land I have in mind is a heavy, sandy loam in the interior, and has been set out this spring to almonds, apricots, and prunes. I wish to grow sweet potatoes between trees. Would an irrigation every 40 days be often enough? Also, if either sweet or Irish potatoes grown between rows are harmful to either of the varieties of fruit mentioned? I have heard that growing Irish potatoes in a peach orchard injures the trees.—Planter, San Diego.

The demonstration of your proposition with reference to a fall crop of sweet potatoes must be gained through experience. We see no reason why you should not get your crop, providing you do not have to run the plants into the frosty period, and sweet potatoes will not, of course, stand frost as well as the common potato. The moisture which you propose to give ought to be enough for a retentive soil in connection with good cultivation until the vines cover the ground.

Growing any crop between orchard trees is apt to be an injury to the trees, because of the spaces which are not and cannot be adequately cultivated, so that the ground around the trees is apt to become compacted either by the run of water or the lack of cultivation, or both. Our observation has been that Irish potatoes are no more injurious than other crops.

Common Salt for Soil Insects.

To the Editor: With regard to the matter of dealing with "thrips," have the experimentalists ever tried a heavy dressing of salt around the trees? If it destroys worms and grubs by making them void the contents of their bodies, why should it not act similarly on the thrips larvae after they emerge from their cocoons in the spring? If applied at the rate of, say, 400 pounds to the acre right after plowing, it would give the salt a good trial. I have heard farmers say salt "poisoned" the land. This is a vague, general, and unsatisfactory statement, and is unproven. I know from experience that it has improved the herbage on low-lying tussocky grass-land, destroying the moss and rendering palatable grass that would otherwise have been refused by cattle. I have also heard that Kainit is used in the old countries for thrips, but whether it is the impure salts contained therein that kills the thrips or the potash itself I am unable to say.—Reader, San Francisco.

A dressing of salt will kill any tree if it is heavy enough, and it would probably have to be heavy enough to kill a tree before it would affect thrips in the ground, because thrips make their way to a considerable depth in the soil merely for shelter, and protect themselves in such a way, during their dormant period, that they are not injured by submergence in water. Protecting themselves against water would also probably protect them against salt in the water, at least unless the amount of salt should become great enough to kill any tree. Salt will poison land in this way, and land which has been too heavily salted will not grow crops for several years, until the salt has been washed out by rainfall and drainage. This has been demonstrated by people who have salted land for the purpose of killing morning glory. The reason why the salt application which you speak of killed the moss and did not kill the grass was because there was not enough to deeply penetrate; the moss, being on the surface, got the strength of it, while the deeper rooting tussock-grass, which also has a certain resistance against salt, was not injured. Kainit probably owes its insect-killing character to impurities which are so abundant that it has largely ceased to be used as a potash fertilizer, and the more innocent sulphate has been substituted. More than this, the killing of worms and grubs, which are naked ground-living insects, are undoubtedly more easily injured by any salt than the protected thrips, merely going to the ground for a rest, could possibly be.

California Chess or Cheat.

To the Editor: Have you any information on killing chess or cheat? The farmers here want to know your method of destroying this pest. I cannot right now send you any samples of the plant, but you may know about it. I myself have never seen it growing. It may not be true chess (Bromus secalinus).—Farmer, Lake City.

What is called cheat in California is Lolium temulentum and not Bromus secalinus. We know of no way to kill it out in low wet lands where it is apt to flourish and where it quickly spreads after the seed grain is killed out by low temperature or surplus water. To prevent its growth the land itself must be brought into better condition by drainage, which, of course, is often impracticable because it is likely to cost more than the land is worth. California cheat is not a bad pasture plant, and lands which are naturally given to the growth of it are utilized for grazing rather than for grain growing.

Fruits and Overflow.

To the Editor: Can you advise me what variety of raisin grapes or peaches would be the best to plant on a very sandy soil, but otherwise fertile, and holding moisture well? And would one kind stand overflowing better than another? The river only overflows the land in years of especially high water, and the water runs off as soon as the river lowers, so the water never stands more than a couple of days. Would peach trees or grape vines be killed or injured?—Enquirer, Kingsburg.

We would not advise you to plant either grapes or peaches of any kind on land which is liable to overflow during the summer time. Both plants will endure winter flooding when they are dormant, providing the water does not stay on too long, and providing, also, that the soil is not so heavy that the ground will remain saturated for a long time afterward. We are not aware that there is any particular difference in the resistance of different kinds of grapes or peaches in this respect. You may be able to get valuable hints by looking about to see whether you can find trees or vines growing successfully on such land as you intend to improve. We have seen fruit trees endure some summer overflow, but they did not tell us that they enjoyed it.

Eastern Seed Corn for California

To the Editor: The question has been raised as to Eastern-grown seedcorn, comparing it with California-grown seed. Some claim that the former does not yield well the first season. As we are contemplating the planting of a good deal of corn, we would very much like to know if you can inform us as to the general experience in this way, or could refer us to some experienced corn grower in regard to the matter.—Farmer, Morgan Hill.

We cannot give you a complete refutation of the impression conveyed by your letter that Eastseed corn does not yield well the first season in California. It is a somewhat prevalent impression. The experiment station will make a definite experiment this year by planting quite a large collection of Eastern and California corn, side by side, on the University Farm. All that we can announce now is that, without any idea of comparison, we have grown collections of Eastern seed corn and have found the product quite as good as could have been expected, and did not encounter, apparently, the trouble of which you write. We would like to have the experience of others.

The Navel Not Thornless.

To the Editor: I have lately purchased some Washington navel orange trees, and upon arrival I find they have thorns upon them. I thought the Washington navels were thornless. Will you please inform me as to the fact?—Planter, Colusa.

Your impression of the navel orange as thornless is incorrect. It is described as a medium thorny variety, so that the finding of thorns upon the trees would not be in itself sufficient indication that they were not of the right variety.

A Native Lupin.

To the Editor: Enclosed find plant which is very common on sandy land in this county. Please tell me the name of it, and if the lumps on the roots are nitrogen nodules.—Subscriber, Live Oak.

The plant is a native lupin and the objects you indicate are nitrogen nodules.

Horticulture.

FRUCTIFICATION OF THE FIG BY BLASTOPHAGA.

By Mr. G. P. Rixford, U. S. Department of Agriculture, Bureau of Plant Industry. Read at the meeting of the Pacific Association of Scientific Societies held at Berkeley, March 31, 1911.)

The subject of this paper is both botanical and entomological, and to make it clear it is necessary to mention some of the botanical characteristics of the fig.

Botanists are now generally agreed in the acceptance of the ideas of Linneus and others that the caprifig is the staminate form and the Smyrna and all the common figs in cultivation the pistillate form of a dioecious species. Hegardt reached this conclusion as early as 1844, and this view is now generally accepted.

The fruit of the fig tree is not a fruit in the sense in which we regard the apple, peach, etc., but is what is known to botanists as a receptacle upon the inner surface of which are arranged hundreds of unisexual flowers. At the apex of the receptacle is an opening which in the young fruit is closed by a number of scales or imbricated bracts. The blossoms of the fig tree are therefore never seen except by opening the fig. The flowers thus being effectually cut off from the outer world, there is no way by which the pollen from the male flowers can reach the female flowers, except by the assistance of some outside agency. In this case the medium of conveyance is the female Blastophaga grossorum.

Crops of the Fig Tree.—All the female fig trees, both of the Smyrna class, the fruit of which never matures without pollination, and the other large class which does not require pollination, have two well defined crops. The first pushes from the old wood and are the first to appear in spring, ripening in July and August, and in the south of Europe are called Brebas, figues fleurs or figues d'ete. The next, which is the main crop, called in France figues d'automne, spring from the axils of the leaves of the new wood, and ripen in summer and fall.

The crops of the male or capri tree are two well-defined and a third which is in doubt by some authorities. To these, for convenience, the Neapolitan names, mamme, profichi, and mammoni have been applied. The first or mamme crop forms in late summer on the wood of the current season, and the Blastophaga from the preceding mammoni oviposits in them when they have reached the size of filberts. By December these are the size of small walnuts and change but little during the winter. The insect hibernates in them in the larval condition, and will endure a temperature of 20 degrees without injury. As the weather becomes warm in spring the wasps develop rapidly, and in April are ready to issue. At this time the spring or profichi crop on the same or other capri trees are in a receptive condition. This crop grows in clusters on the old wood at the extreme ends of the branches, and, unlike the mamme, which is nearly spherical, it is much larger and usually has a pronounced neck. It is produced in enormous numbers many times greater than any other crop—a wise provision of nature, as it is the one which is most abundantly supplied with pollen and also the one which is exclusively used to pollinate the main Smyrna crop.

The third or summer crop of the capri tree, known as mammoni, unlike the others, pushes from the axils of the leaves on the new wood and matures from September to the middle of November. The only purpose of this crop seems to be to carry the Blastophaga through the late summer and fall months and to produce seed. Dr. L. O. Howard, Chief of the Bureau of Entomology of the U. S. Department of Agriculture, has doubts as to the existence of three distinct crops of caprifigs, and with good reason, for at times and in some climates belated mammoni hibernate with the mamme. The chief difference between the two is that the former contains a well-defined cluster of staminate flowers, while in the mamme no male flowers have been observed. These hibernating figs are so similar in form and general appearance that without cutting them open it is difficult to tell them apart. They can be found on some capri trees at the present time. Last Saturday the writer, in company with Professor Harper, found considerable numbers of them on a tree at Niles. When their habits are better known they may prove to be an important source of pollen for the early crops of Smyrna and other breba figs, which often fail to develop. The Blastophaga from these oviposit in the winter crop, and thus the cycle of the yearly life of the insect is completed.

The Fig Flowers.—Count Solms-Laubach and Dr. Meyer, the German botanists, Olivier the Frenchman, and Gasparini Gallisio and Pontedera, the Italians, and later Dr. Gustav Eisen, author of the leading treatise on the fig in the English language, are all agreed that there are four kinds of flowers in the fig. It may seem presumptious to take exceptions to this array of distinguished authorities, but it is nevertheless a fact, easily demonstrable with the abundant material now accessible in California, that there are but two kinds of fig flowers, namely, pistillate and staminate. These authors enumerate the four kinds as the male and female of the caprifig, the regular female flower of the Smyrna fig, and lastly the female flowers of the Adriatic class which some of them contend have imperfect stigmas and cannot be pollinated and are therefore called mule flowers. Pontedera and Gallisio call such flowers fico mula and fico semi-mula, the latter a few of which are susceptible of pollination and the former not at all. This idea has become so fixed in the minds of some horticulturists that they are calling this class of figs "mule figs", a positive misnomer and entirely unwarranted by the facts.

The staminate flowers of the caprifig are arranged in a zone or cluster at the upper part of the fig, just within the eye. The remainder of the receptacle is filled with gall flowers which are nothing more than female flowers, the pistils of which are modified for the purposes of the female Blastophaga. The styles of these flowers are short and thick compared to those of the Smyrna and other female figs, and are provided with a duct down which the female wasp pushes her ovipositor into the ovary where she deposits the egg. These styles are surmounted usually by forked stigmas, the surfaces of which are provided with the usual cells or glands and the viscous coating to which the pollen grains adhere. With sufficient magnifying power, the pollen tubes can be seen pushing their way from the surface down through the cellular tissue into the ovary. The gall flowers of all caprifigs are alike, except for slight variations in the shape of the stigmas.

We now come to the regular female flower of the Smyrna fig, upon the character of which all are agreed. The style is long and slim—two or three times longer than the style of the caprifig—and this is the reason that it is unsuited for the purpose of the insect. It is divided at the summit usually into two stigmas, and they appear to be identical with those of the Adriatic class to which belong all those figs which reach an edible condition without pollination. The stigmas of the latter, the books say, are mostly malformed and cannot be fertilized.

To show how erroneous is this conclusion, it may be mentioned that during the spring of 1909 the writer by applying the Blastophaga to the so-called "mule figs", in more than forty cases found that in every instance heavy fertile seeds were produced, and in as large proportion as in the Smyrna fig. From these seeds thousands of plants were grown at the U. S. Introduction Garden at Chico. It is believed that such plants will be the means of producing some interesting varieties. The breeder does not have to wait long for results, for most of the seedlings bear fruit at the age of two and three years.

A striking instance of the fertilization of common figs occurred last year at Loomis, Placer county, where a fruit grower had grafted a portion of an Adriatic tree with Smyrna scions. The Smyrna branches set quantities of figs, and, wishing to secure a crop, the owner hung caprifigs in them containing Blastophaga ready to issue. Some of the wasps entered the Adriatic figs on the ungrafted part of the tree. The writer secured three matured Adriatic figs which showed by their larger size that they had been entered by the wasps. These three figs contained by actual count 4800 heavy, fertile seeds, or an average of 1600 for each fig—certainly a good crop from a "mule fig" which according to some writers will not breed.

In this way fertile seeds can be secured from all kinds of our cultivated figs and the breeder has complete control of such crosses and can with considerable confidence expect to perpetuate desirable hereditary characteristics in his seedling trees. It is found, however, from experience that about one-half of such seedlings are staminate trees. The process is exceedingly simple. A twig is selected with a number of figs from three-eighths to three-quarters of an inch in diameter, which is the receptive size in most varieties. Drop a caprifig with Blastophaga ready to issue into a paper bag and tie it tightly over the twig, and the insect will do the rest. At the end of two or three weeks remove the paper bag and replace with one of mosquito netting for protection against birds and to prevent the ripe dried fig from falling to the ground.

Caprifig Seeds.—The mammoni crop of the capri tree is the only one which has been observed to produce seeds, and then only in small numbers. The obvious reason is that it is pollinated by the Blastophaga of the preceding profichi crop. The profichi itself yields no seed, because the mamme figs preceding it have no pollen, although the pistils are provided with receptive stigmas.

Solms-Laubach found 20 seeds in 40 mammoni figs and reached the conclusion that not more than one flower in 2000 was a perfect female flower, all the others being gall flowers, incapable of fertilization. The writer has found as many as 75 fertile seeds in one fig, and from a large number of mammoni seeds secured last summer young plants are now being grown at Chico. From careful observations, the writer has been forced to the conclusion that all gall flowers are perfect female flowers and susceptible of pollination, and that most of them are pollinated; but if the Blastophaga deposits an egg in the ovary, the resulting larva would prevent the formation of the embryo, and if formed would be eaten or otherwise destroyed. The seeds therefore found in the mammoni figs are from those flowers in which the insect failed to oviposit.

These seems to be some connection, not yet well understood, between the seed and the secretion of sugar and coloring matter. The pedicels and floral envelopes of the seeds in mammoni figs are succulent, sweet, and generally of a pink color, while all parts of the gall flowers containing Blastophaga are white and quite dry, the difference in appearance being so great that the seeds can be readily picked out with a pair of forceps from the mass of galls by their juiciness and color.

As further evidence that all the flowers in the mammoni fig are perfect female flowers, some of the persistent styles were taken from fertile seeds and others from galls containing fully developed Blastophaga in the same fig and placed side by side under the microscope and were found to be identical in cellular structure. The writer is therefore satisfied that the stigmas of the caprifigs are equally as susceptible to pollination as are those of the female figs, and in fact are so pollinated, but fail to produce more than a few seeds for the reason given.

When the Blastophaga enters the caprifig its stamens are in an undeveloped condition and will not be ready to shed their pollen until about two months later; that is, at the time when the next generation of wasps is ready to issue. It is therefore impossible for a fig to pollinate itself. Here, then, is a striking instance of one of nature's methods of preventing self fecundation.

Life of the Blastophaga.—The beneficent insect upon which depends absolutely the whole Smyrna fig industry was sent over to the United States from Northern Africa in 1899 by Mr. Walter T. Swingle of the Bureau of Plant Industry of the U. S. Department of Agriculture. He succeeded where others had often failed, by confining his efforts to the winter generation and by his happy thought of wrapping each caprifig in tinfoil to prevent evaporation. Mr. Swingle is entitled to full credit for his successful efforts, notwithstanding the fact that the Blastophaga was already here, having been accidentally introduced

with fig trees from the South of Europe about 1865, but not known to orchardists until about three years ago, having been confined to an isolated tree ten miles west of Modesto.

How the Blastophaga Works.—In April in the warm valleys of California the wasp which hibernated in the larval form during the previous few months reaches maturity. The male leaves the gall first. He moves about the interior of the fig, and finding a gall containing a female, gnaws a hole through the cortex at the base of the style and, inserting his long, slim abdominal projection, fertilizes the female while still in the gall. The female enlarges the opening and sometimes makes another, always at the base of the style, probably because it it the point of least resistance. In from 22 to 48 hours she comes out, reaching the open air through the cluster of male flowers, the anthers of which at this time have burst and are shedding large quantities of pollen. She is frequently so loaded that she is unable to fly until she divests herself of much of it in the same way that the common house fly cleans itself. After being relieved of part of the load she flies to the nearest fig, and if found to her liking, immediately seeks the opening at the apex. At this time the figs are hard and from a quarter to three-quarters of an inch in diameter and the eye is closed by the overlapping scales. With her powerful mandibles she sometimes is obliged to cut away a portion of one of them to effect an entrance, but usually she is able to push her head in, and after a struggle of sometimes five minutes or more she pushes her body down the zigzag way to the interior of the fig, leaving her wings behind.

While one wasp is probably sufficient to fertilize a fig, where they are very abundant, as at the Maslin orchard at Loomis, it is not unusual to find a dozen or fifteen in one small fig and as many more in a struggling mass trying to get in, the cluster of wings radiating from the eye like the plumes of a feather duster. If the caprifig from which the wasp has issued has been hung in a Smyrna tree she enters a Smyrna fig and then finds she made a mistake, as the flowers are of such shape that she cannot oviposit in them, and after wandering about in a vain effort to dispose of her eggs, in this way doing her useful work of fertilizing the female flowers, in most cases crawls out. When the weather is warm, say 90 to 100 degrees, the insects are very actice and come out of the caprifig with a rush. The writer has seen 40 come out in one minute. The issue takes place almost entirely in the forenoon, except a cold, windy morning is succeeded by a hot sun in the early afternoon, then a considerable number come come out. The movement depends much upon the weather. During cool, windy mornings very few issue, but if the next morning is warm, calm and sunny a great rush occurs. The wasps continue to issue from a single fig for a week or ten days and from various trees for two to three weeks. After the females have left the fig most of the males soon follow, and, being wingless, drop to the ground like the females from the Smyrna figs.

Every Smyrna fig not entered by the Blastophaga dries up and falls from the tree. The same is true of the caprifig. In a few days the caprified fig undergoes a remarkable change. It begins to increase rapidly in size, becomes smooth by a lessened prominence of the ribs and losing its pea-green color assumes a decidedly pruinose tinge, this being true also of the caprifig.

There are still obscure problems to be solved in connection with the fructification of the fig, and it would be gratifying if some of our skilled cytologists could be interested. One such problem is to determine why the first crop of certain edible figs reach an edible condition without caprification, while the next one never matures without it. One of these varieties is the white San Pedro and another is the Gentile; the first crop of the latter, however, does not entirely fail without pollination, but the crop is much increased by the application of the Blastophaga.

Outlook for the Fig Industry.—The outlook for the Smyrna fig industry in California is extremely promising, due principally to favorable climatic conditions, and is rapidly spreading to all parts of the great valley. The climate is not at all inferior to that of the Smyrna district of Asia Minor, where the bulk of the finest figs of the world are now produced. The valley of the Meander, the seat of the great Smyrna fig industry, has a much moister climate and in some respects inferior to that of portions of California. The rainfall is three or four times greater than that of the central San Joaquin valley, where in this state the industry has at present its greatest development. The rain, however, falls mostly from November to April, with occasional showers and dew in summer, making irrigation unnecessary. One drawback in that country is that once in three or four years a frost occurs which is severe enough to destroy the caprifigs, when the growers are obliged to draw supplies from the frost-free islands of the Mediterranean.

The ideal climate for Smyrna fig culture is one in which the winters are mild enough to permit the Blastophaga to live through without injury, and freedom from early fall rains. The Smyrna fig ripens and dries on the tree in September, October and November, and when sufficiently cured falls to the ground; dry weather at this period is therefore indispensible. As these conditions prevail nowhere else in the United States except in California and a part of southern Arizona, these would seem to be the regions in which the industry will have its greatest development.

Citrus Fruits.

FIGHTING THE ORANGE THRIPS.

It is a fact of melancholical interest that thrips have stricken both our deciduous and citrus fruit interests at about the same time, and that the insects, though both of the euthrips genus, are of different species: one old, the euthrips pyri, which is doing the injury to deciduous fruits; the other new, the euthrips citri, which is working on the orange, and at present doing most harm in the orange regions on the east side of the San Joaquin valley. This new thrips was described by Mr. Dudley Moulton and christened in California, though perhaps not a native son, but possibly born anywhere in North America. This being the case, it is not required to live on the orange alone, but accepts the whole citrus family, and can manage to live on other fruits, or even upon pusley or potatoes, or perhaps on many another old thing, on a pinch.

A result of work on this orange thrips in the Porterville region has been published by Messrs. P. R. Jones and J. R. Horton, of the Bureau of Entomology of the U. S. Department of Agriculture, who have been engaged in studying the pest for some time. From this source we take the following interesting paragraphs.

Cultivation.—Attempts have been made to control the orange thrips, in part, by means of cultivation, but none of these endeavors has been in the least successful. One orchard was hand-raked under the trees and the soil stirred up in the fall, with the hope that pupae would be destroyed, but results were negative. Another orchard which was plowed deeply in the fall yielded similar results.

Fumigation.—Some experiments have been conducted in the hope that fumigation with hydrocyanic-acid gas would prove effective in controlling the orange thrips, but all results have been unsatisfactory, because of the activity of the insects, the large number of generations, and the expense of the operation.

Spraying.—The only method of control which has given good results is spraying at high pressure with a contact insecticide. No sprays aside from those which kill by contact have been tried because such sprays have been unsuccessful in controlling other species of injurious thrips.

In view of the success attained in reducing injury to fruit and foliage by the orange thrips, it is believed that it will be possible to control this species in normal seasons with four applications of lime-sulphur combined with blackleaf tobacco extract.

Time of Application.—Three of the treatments should be made in the spring to free the fruit and spring growths of foliage from injury, since the more severe marking of fruit is done while the fruit is small. The fourth treatment should be made in August or September, according to season, for the protection of the later growths of foliage, and should be timed to catch the thrips when numerous, but before the leaves show much curling. The three spring applications should be made about as follows:

First—Just after most of the petals have fallen from the blossoms.

Second—Ten to fourteen days after the first.

Third—From three to four weeks from the time of the second treatment.

The dates for spraying in any given season must be timed by the abundance of thrips.

Spray Dilutions.—Lime-sulphur solutions should be diluted according to density. In the home-made product this may be determined by the use of a Baumé or a specific gravity spindle. The density of the commercial product will be stated by the manufacturer or may be obtained by the use of the spindle.

Lime-sulphur solution of a density of 33° Baumé should be diluted at the rate of 1 volume to 75 volumes of water; that of a density of 36° Baumé should be diluted at the rate of 1 volume to 86 volumes of water. Therefore the formula for orange-thrips spraying would be:

(1) Lime-sulphur (33° Baumé) 1 to 75 and blackleaf tobacco extract (2¾% nicotine) 1 to 100; or, using blackleaf "40" (40% nicotine), tobacco extract 1 to 1,800.

(2) If lime-sulphur of 36° Baumé is used, the formula would be, lime-sulphur 1 to 86 and blackleaf tobacco extract 1 to 100; or blackleaf tobacco extract "40" (40% nicotine), 1 to 1,800.

To load a sprayer having a 200-gallon tank, proceed as follows: First turn water into the tank until nearly full, add 2⅔ gallons lime-sulphur (33° Baumé) and 2 gallons blackleaf tobacco extract (2¾% nicotine); or 14 fluid ounces blackleaf "40" tobacco extract (40% nicotine). If the lime-sulphur is 36° Baume, use 2.1 gallons, and 2 gallons of blackleaf tobacco extract; or 14 fluid ounces of blackleaf "40" tobacco extract.

How to Spray.—In spraying for the orange thrips only those insects actually hit with the spray will be killed. As this insect obtains its food by sucking the plant juices, stomach poisons are of no avail. In order to spray with greatest efficiency it is necessary to use a gasoline power sprayer, maintaining a pressure of 180 to 200 pounds. Angles or elbows should be used on all spray-rods, so that "overshot" and "undershot" spraying can be done; that is, spraying from above downward, and from below upward to reach the lower surface of the leaves. The trees should be drenched until they drip freely.

Especial care should be taken with the outside fruit, as the thrips scar this badly, but cause little or no injury to inside fruit.

Either chamber nozzles of the Cyclone type or bordeaux nozzles may be used. If the former are used, disks with holes of about $^{3}/_{32}$-inch diameter will be best. Double nozzles can be used to advantage on large trees, and will save time. It is preferable to use two lines of hose, as this will insure more thorough work than where four leads are used. A majority of orange growers fail to apply a sufficient number of gallons of spray per tree.

Summary.—The orange thrips, a minute, orange-yellow insect of the order Thysanoptera, curls the leaves and scars the fruit of citrus trees in the San Joaquin valley of California, the southern California orange belt, and the Salt River valley of Arizona.

Although this insect has been known by its work for some fifteen or sixteen years, it has but recently been described, and it has now become of serious economic importance in the orange belt of the San Joaquin valley of California.

The orange thrips has numerous generations yearly, its life cycle requiring approximately 20 days, and it is to be found upon the orange trees from March to November.

It can be controlled by four sprayings of lime-sulphur solution combined with a commercial tobacco extract, which should be applied when the thrips become sufficiently numerous. Three applications should be made in the spring months to save the fruit and spring growths from injury, and one in the fall to lessen the feeding injury to the fall growth of the orange trees.

From two to eight gallons of this combination spray should be applied per tree, at a high pressure, and in a very thorough manner, as only thrips that are hit will be killed.

Fruit Marketing.

EFFICIENCY IN FRUIT HANDLING.

By Mr. J. W. Jeffrey, State Horticultural Commissioner at the Fruit Growers' Convention at San Bernardino.

For many years the growers and shippers of California fruits have been confronted with the fact that great quantities of unfit fruit have been sent to market every season, bringing disaster to the trade and discredit to the reputation of California orchard products. The more progressive growers have all this time sought to minimize the effect of this bad practice by maintaining a higher standard for their own fruits, and splendid individual packs have been established in this vain effort to overcome the faults of others by excellence in individual work. Until within the last two years the idea of the better class of growers seemed to be that they could break the back of the slovenly growers by meeting his poor fruit in the markets and there discounting it with a superior quality. One cannot discount a valueless article. A single counterfeit note will cast suspicion upon a whole package of genuine bills, but these high standard growers imagined that somehow some economic principle would come to the rescue finally and make inefficient horticulture so unprofitable that efficiency would take the field.

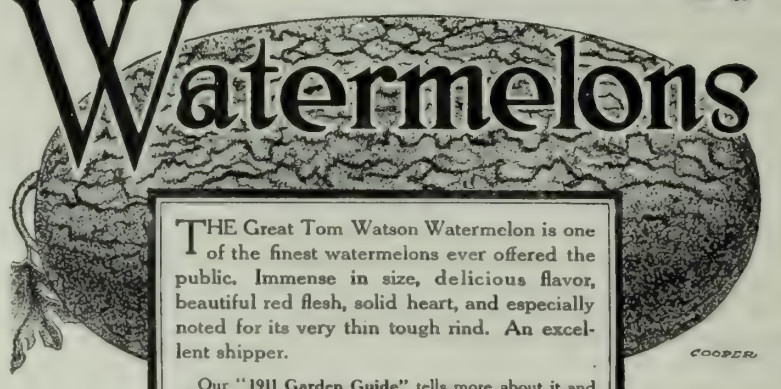
How Inefficiency Has Increased.—We do not have time here to discuss the general philosophy of the survival of the fittest, upon which our first-class fruit growers have depended so long, but a brief view of why this old-time principle does not work well in California fruit growing may be permitted. In this State an unfit fruit grower is born into the possession of an orchard every hour of the year. He is largely the product of the land-booster, is captivated with fairy stories of the great and easy profits and finally cuts his eye teeth in the reality of bitter experience. Whether he be a rich man who knows nothing of practical horticulture, or a poor man who has neither money nor knowledge, he is continually coming and going in thousands, and the effect of his dipping into the fruit business will always be to unsettle conditions here. This class of men will always remain a charge upon the industry. Add to this the fact that even capable horticulturists from other States have much to learn before they can produce first-class fruits here, and it seems to reverse the ordinary laws that usually eliminate inefficiency from an occupation. Every new country has these economic problems to work out, but California, being particularly blessed with opportunity of success, is equally handicapped with liability of failure. Our people hope to hasten the achievement of uniformity in their products, and stability in their industry by standardizing their fruits.

The Customer Is Not Deceived. For a long time many of our fruit growers evidently thought that inferior fruit and deceptive packing fooled the customer. The packer of good fruit imagined, apparently, that the consumer, after being deceived with a bad lot of California fruit would turn to a standard article from the same place with satisfaction, or, that a superior article would be enhanced in value by a contrast with the inferior; the packer of poor fruit thought he could sell it forever upon the general reputation of the State, or by deceptive packing, or by counterfeit branding. But now both classes are awakening to the fact that it is the grower who has been deceived and not the consumer. The latter may have been materially injured, but he has not been deceived, for to him is given the final test of all fruits, and no unwise or superficial policy can ever cause the consumer to pay more upon the average than a produce is worth, unless the seller monopolizes a necessity. This the grower can not do and has no inclination to do. But the consumer can be cheated with a low-grade article until he becomes suspicious and discounts all grades and qualities to a great extent. So the grower of good fruit is abandoning the belief that he is receiving all the profits to which he is entitled, and is casting about for the removal of the influences that are preventing full returns for his skill and industry. The chief of these influences is the shipment of inferior fruit, and when the scheme of detaining this class of fruit by compulsion was broached, it caught his immediate attention, and he called it standardization.

Unfit Fruit Growers.—But there are other elements that enter largely into the economy of better fruit packing. It is a fact that no calling is so burdened with unfair competition as that of the fruit grower. For this the orchardist has himself largely to blame. He has looked too much upon horticulture as an occupation and not a business. The idea that anyone can plant trees and grow fruit has fooled thousands of novices, professional men, merchants, artisans, and laborers into adopting the occupation who know nothing about the business, and they produce an immense tonnage of fruit from fair to indifferent, without the ability, time or inclination to follow out its disposal in a business-like way. With an income from another quarter the banker, the merchant, the motorman dabble in horticulture. It is back to the land with them, but not to live there. They invest with the hope of speculation in realty values, or with the idea that anyone can be a farmer even by proxy, or because real estate agents have filled them with roseate stories of profits, or with a view of retiring to the country when they have a competency. No business is so handicapped by unfair rivalry. Should this class of farmers be denied the right to invest in this legitimate pursuit, even if it results in unfair competition? Not at all. Their right to engage is fundamental. But concurrent with this right is the right of those engaged in fruit growing as a business to protect their investments in every legitimate way. The shipment of a heavy tonnage of low-grade fruits every year endangers the prosperity, possibly the very life of the fruit industry itself, and those who make their livelihood from the orchard should take public measures, if necessary, to protect their capital and do everything to eliminate unfit fruit so far as they can do it without interfering with the prerogatives of others. Here intervenes the question: "Does a fruit shipper have the right to refuse to handle the fruit of that portion of the public whose products do not conform to an arbitrary standard?" The shippers have this right, both moral and legal, and herein lies the most powerful feature of the plan called standardization, except that of the education of the growers, which is the most potent and lasting element concerned with the scheme.

Overproduction.—I heard a fruit grower remark a few months ago that the man who raised an extra ton of fruit without doing his part toward the proper packing, grading and distribution was an enemy to the fruit business. I presume that this was his way of voicing the fear of overproduction. At any rate, we must not accept the common belief that there can never be an overproduction of good fruit in California. As long as our State sends out great quantities of oranges,

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raisins, prunes, dried fruits and green deciduous fruits of inferior quality to become a reproach and a burden to the trade, we may easily have a surplussage of high-grade fruit. When we curtail the shipment of inferior fruit, then we may never hear the cry of overproduction.

THE TARIFF.—I shall not refer to the fruit tariff question here, further than to show that it has a direct bearing upon the question we have under consideration. I wish, however, that time would permit a thorough discussion of the tariff issue at the hands of the convention, for it could be shown clearly that the tariff is not always a tax upon the consumer; it could be demonstrated with facts and figures that protection of California fruits has given to the markets of America an abundance of special fruit products at prices always reasonable and generally low as compared with quantities and prices which would be dictated by importers in the absence of California competition; it could be shown that the tariff on fruits has been a direct benefit to both producers and consumers. The bearing that a duty on foreign fruits has upon standardization is this: The enjoyment of a tariff protection approaches closely in principle the occupancy of a public franchise. Thus the duty exacted from imported fruits places the American growers under peculiar obligation to their customers and it must not be made an element of injury to our own people. It must not be made the occasion of throwing upon the markets a class of unwholesome and worthless products, that, without a protective tariff could not be disposed of. If our growers can take advantage of the tariff paying consumers by foisting upon them a degraded article they place themselves in the position of a public corporation that violates the terms of its franchise. California must continue to send forward only her best fruits. Then, when the revision of schedules comes, the verdict will be: California's fruit is worth protecting; California is not exploiting the consumer. She is offering him wholesome fruits, honestly packed and sold in fair competition with all fruits grown under the American standards of living. California has not attempted to limit the output of her fruits; California has not taken the course of the tariff favored trusts and monopolies. On the contrary, her industries are maintained upon the American plan, and she invites the continent to partake of her fruit commodities upon a basis of mutual advantage and reciprocal responsibility.

THE LABOR QUESTION.—Another economic feature I shall not have time to discuss is the effect of uniform and distinctive fruit-packing upon the farm labor and race problems. I can only voice my belief that in the production of high-class fruit no nationality or individual in California has much advantage over another. Without standardizing the merchantable fruit, without excluding the unmerchantable fruit, the bars are let down to cheap labor, and well has cheap labor taken advantage of its opportunity. If we expect a high-grade and responsible class of help to remain upon the fruit farms we must eliminate the chief element that prevents the proprietor from paying good wages, and making good profits at the same time, namely, we must eliminate the unfit and indifferent qualities of fruit from our markets.

STANDARDIZATION.—But your patience will not permit my taking you over all the ground of economic interest, and I will only have time to call your attention to the great movement in the north, now under way for the improvement of our fruit pack. During the deciduous fruit season of 1909 the fruit trade complained generally of the unsatisfactory condition of California fruits arriving in their markets. This was especially true of peaches, and while the usual quality of our first-class fruit went out, one large territory had quarantined against certain fruits, others had rejected our shipments, and yet others had found them unreliable. A report was sent to my office dealing with the season's experiences with California peaches in the Seattle markets. It then occurred to me to call a mass-meeting of growers at a deciduous fruit center, there to consider the causes that had ruined the fruit trade at one point and injured it at many other places. The meeting was called at Newcastle, in Placer county, and held there on the 22nd day of November, and that date may be historic as the beginning of a new and unique movement that no doubt will reach to all portions of the State, if we judge by the success of the plan after one year's trial. Over 300 growers and a score of shippers attended the Newcastle conference, and thus was inaugurated a campaign for improvement in fruit packing which resulted in holding 26 similar meetings within the year and in ten counties of the State. By the beginning of the fruit shipping season of 1910 we had organized six counties and awakened a lively interest in four which did not formally adopt standardization.

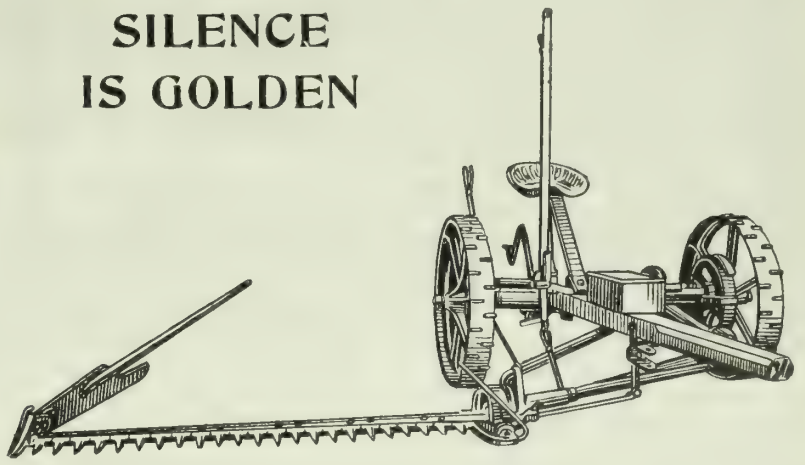
When the season had closed last fall 4910 cars of deciduous fruit and grapes had been shipped under the plan, every box of which bore the stamp of authorized and official inspection, according to figures which were furnished by Mr. McKevitt.

ORGANIZATION.—It may be interesting to have described briefly the methods of organizing a district and to explain the machinery used so effectively last year in excluding unfit fruit. A mass-meeting of growers is called at the most central point in the county, to which all shippers are invited. An order of business is prepared and adopted to afford an orderly discussion and conclusive action. It begins with a conference upon orchard conditions, packing and shipping observations and marketing experiences. Speeches are limited to five minutes, concise and pertinent statements urged in the determination of each subject insisted upon as the conference proceeds. At the proper time a resolution is offered that it is the sense of the meeting that an effort be made to improve the fruit pack. Then a committee of growers and shippers is elected, with instructions to prepare a schedule of standards for the fruit grown commercially in the district, and this committee asked to report to an adjourned meeting. When a standard package for each fruit is adopted at a later conference, the next step is to prepare and ratify the administrative machinery. Five competent men are elected as the board of supervising inspectors, a set of by-laws adopted; also an agreement binding the growers and shippers to certain conditions is signed, and the organization is ready for business.

This is the plan of operation. The scheme embraces everything that enhances the value of fruit and promotes good husbandry. It carries with it in every district a general livening of better orchard practice, interest in cultivation, in pruning and thinning, and in the more complete attacking of insect pests, and makes for better horticulture by exposing to public notice the results of inefficiency in the fruit grower. Standardization calls for standardized packers, for springs upon the farm-wagons, for centralized packing-houses where the operations may be better supervised. It promotes honesty, advances the reputation of districts, calls for pedigreed stock for future orchards, determines the special fruits that should be planted in each district by the elimination of kinds and varieties of fruits that will not come up to the standard under ordinary circumstances. It is a help to everybody, and I believe a live issue throughout the State of California. The eye helps to sell the fruit; the trade-mark label directs the intelligence. Standardized packing increases the distributive ability of the pack. It makes the retail investor sure of his sizes; shuts out small sizes altogether; it encourages the f. o. b. sale of fruit. Standardize the fruit pack, and a portion of the ills of the trade, at least, will have disappeared from the business, never to return.

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The Garden.

TABLE SQUASHES.

THE CANADA CROOKNECK.

To the Editor: I remember very well of my father raising this squash as far back as 1846. I was then 13 years old. There were only a very few kinds of table squashes raised at that time, and the Canada crookneck was generally considered the best. They had a long, large and very crooked neck, and the head was quite small, consequently there was but very little waste. My father always picked them as soon as the frost nipped the vines pretty badly, and stored them under cover. He never failed to hang up quite a number of the choicest ones near the ceiling in the old-fashioned roomy kitchen. His ten children were always glad to see him take down one of the yellow beauties, for they knew that meant plenty of delicious pies very soon.

This squash was inclined to be stringy, rather coarse in texture and somewhat watery, but these objections were mostly overcome by baking them with their shells on, in a slow oven, or boiling them after being cut into small pieces and stewing it down until the moisture mostly escaped. Then, by the addition of plenty of nice butter and the usual seasoning, they were very palatable as well as healthful.

But a better squash seemed to be greatly needed, and it was not very long before it made its appearance.

THE HUBBARD.

This remarkable squash was first introduced by the late James J. H. Gregory of Marblehead, Mass., in the early fifties, and it was then that he advertised the seed for sale. I find by referring to his catalogue of this year that his father obtained the seed from "Old Marm Hubbard," and therefore it was introduced as the Hubbard squash. It proved to be a very valuable acquisition. It was of a dark green color, the rind being very hard and warty. It was of medium size, flesh very thick, with a light orange color, and when well cooked was very dry and sweet, as well as of the finest flavor. It was soon raised to a great extent in preference to any other variety. I found that this squash could not be raised successfully on my place near Calistoga, as the intense heat of the sun when the mercury was from 100 to 110 dergrees in the shade in September, when the squashes were nearly fullgrown, actually roasted the upper half, and I was compelled to sell them all to parties that had stock. I never raised any more.

THE SIBLEY OR PIKE'S PEAK SQUASH.

The next season, 1885, I think, I raised my first crop of this squash. They proved to be very prolific, entirely free from sunburn, as well as late keepers. While eating the first one with my family, we all pronounced it superior to the Hubbard. Later in the winter my wife baked them, as we considered them equal if not superior to the sweet potato.

In Mr. Gregory's catalogue for 1890, he says, in regard to the Sibley squash, that "his old favorite (the Hubbard) has at last really met with a competitor."

THE DELICIOUS SQUASH.

This squash was originated by Mr. Gregory a few years ago. I will not go into detail as to its great merit. Suffice it to say that in every respect it is generally considered the best squash ever introduced. It is rightly named, for it is delicious. Like the Sibley it is, when nicely baked, equal if not superior to the sweet potato, and it is at its best when the entire crop of sweet potatoes are gone. I consider this squash and the Sibley, two of the best squashes grown. A few hills planted to these varieties will produce enough squashes for a large family during the entire winter. In conclusion, allow me to say I have no squash seeds to sell. I merely wrote this hastily written article hoping it might prove interesting to the many readers of your highly valued paper. IRA W. ADAMS.

Potter Valley, California.

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is the standard remedy for the codling moth and leaf-eating caterpillars. Arsenic is an effective stomach poison for insects, but must be so combined as not to go into solution and injure the foliage.

We make a specialty or "Ortho 13" Neutral Arsenate of Lead, **being the originators and sole makers of Ortho Arsenate of Lead, the new, all-superseding premier of lead sprays.** This compound fully meets the requirements of foliage neutrality and insect control. It contains approximately 13% of arsenic oxide, on a 48% water basis. This 48% paste is readily mixed with water, and has good powers of suspension.

Ortho Arsenate of Lead, the latest innovation in this branch of spray knowledge, is fully endorsed by the best authorities, and its greatest merit is this, that it can be used freely under all conditions, under all climates, and on all kinds of foliage. **In these respects it differs from all other brands upon the market, which cannot be so used.** It has been used all over the West with great satisfaction, and its use is constantly growing wider.

"Ortho 13" Arsenate of Lead is put up in superb steel containers containing 5, 10, 20, and 50 pounds net, of arsenate of lead. These kegs are air and water tight, and there is no danger of evaporation causing the material to become hard and unworkable. We make a liberal allowance for the return of the steel containers, and stand the freight, thus further reducing the cost of the material to the consumer.

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We have secured a stock of a dwarf variety that has been thoroughly tested in Southern California and Arizona, yielding two and one half tons of grain per acre. It grows a stalk 4 to 5 feet high with large, compact, erect heads, and stock especially like the sweet flavor of the stalk.

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Roses, Roses—all the leading kinds. Acacias, Silk Oaks, Peppers, Dracaenas, Hedge Plants, Fruit Trees. Black Walnut Seedlings cheap.

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Navels, Valencias, Lemons.

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Citrus Trees Exclusively

The Vineyard.

GRAPES FOR GRAPE JUICE AND SYRUP.

Mr. Charles A. Wetmore, of Stockton, the veteran grape expert of California gives the Wine and Spirit Review some notes on the relation of grape varieties to unfermented juice products which are widely suggestive:

I have had several inquiries as to the best varieties of grapes to be used in making unfermented grape juice; also as to same for preparing syrup to be used after dilution as a beverage; also as to the reason why so many people say they prefer the grape juice which is bottled in New York State.

To these questions I can only give very general information. The question of taste is one that cannot be easily discussed. I have seen some who like and prefer, both in unfermented grape juice and wines, qualities which are entirely different from anything I should select.

The special quality which is liked in some of the Eastern grape juice is due to the peculiar flavor of the Concord variety, largely planted along the Hudson river. That grape imparts some of the wild flavor of the native American variety, to which Eastern palates are accustomed. It yields also much less sugar than our California grown European varieties, and being lighter in body, with pleasant harmony of acids and tonic properties, it is found grateful to the palate without dilution with water. Something may be due also to the length of time the crushed fruit has been heated so as to extract the flavors of skins and seeds. In comparison to some of the Eastern juices, some of ours taste insipid, and being so sweet that they require dilution, they are not palatable without the addition of a little lemon flavor.

The Zinfandel grape, when overripe, is not likely to make the juice that will please many, although when it is known to be pure, and cheap enough, the consumer will drink it contentedly when improved with the lemon and diluted with a carbonated water. The Zinfandel has been often used because it was easier to procure than any other finer varieties, and at first was picked too ripe. Selecting the grapes at an earlier period and extracting more flavor from the skins and seeds has resulted in much improvement.

All the ladies in this country who put up blackberries in jars know how much finer in flavor for such purposes are the wild berries, which they are willing to pay 10 cents a pound for, when they can get the luscious cultivated fruit for 5 cents. There are just the same distinctions of quality in many of the finer varieties of wine grapes, little understood, however, in this valley. Nevertheless, there are some selections that could be made here from grapes already bearing, and vast improvements are possible by grafting many common stocks with fine varieties of Burgundy, Bordeaux, and other places.

In this line, it is not fair to reveal all that one privately knows of the skill acquired by certain producers, but it should be evident that when John Swett & Son of Martinez, who have had twelve years' experience in this business and whose products rank highest among connoisseurs, come to San Joaquin county and pay twice as much for grapes, which they select, as the local wineries pay, the question of the variety is an important one. The Swett vineyard in Conrta Costa county was originally planted to make fine wines of the French types. They were pioneers in introducing grape juice, and their existence shows that the producer must study quality as well as quantity and cheapness, if he wishes to please consumers.

The Martinez juice goes principally to Eastern markets and continues in favor. The California Wine Association at first found the question of insipidity a commercial obstacle to the popularity of the large output that they started to offer. Their recent products, however, show that they have modified their methods by selecting fruit better adapted to the purpose, and the demand for their bottlings shows largely increased favor.

The Flame Tokay will surely make a fine syrup, when properly treated to remove excess of acid and cream of tartar, and may eventually drive much of the corn syrup out of the market; or which is just as well, fairly divide the greater market which is coming for such good table supplies. So also will the Mission grape, while other varieties may be better for making syrup containing all the natural properties of the pure juice to be used, after dilution, as a beverage.

Producers need not expect to please the taste of the public if they have none of their own and do not consult with more experienced men before deciding how to conduct a new business. The question of purity is not the whole thing. The wine men, especially those of other countries, who have had experience with the finer varieties of wine grapes, can give them very useful hints. Most of the wine grapes in this section have been planted with special reference to sale at standard prices to the big sweet wine establishments, which have not offered sufficient premium to induce the planting of such varieties as are used for the finest dry wines. To get quality in unfermented grape juice, there must be a sacrifice in quantity of crops and a commensurate increase in prices for grapes according to quality and yield.

KILLING YELLOW-JACKETS.

To the Editor: In the warm days of spring and summer we are much annoyed by yellow-jackets. They simply overrun the house and literally take possession of the sunny rooms. Is there anything I could do to exterminate them? Please answer in your paper as soon as possible.

Merced. CHAS. GAMBLE.

Not long ago Mr. Geo. W. Collier of Napa reviewed various methods of killing jackets as given in the PACIFIC RURAL PRESS as follows:

The various methods recommended are objectionable. To make a fruit syrup and scoop out the drowned ones which fall into it, is a lot of trouble. To use poisoned meat is still a worse remedy for the reason that poultry eat the dead insects and die; then the cats eat the dead chickens, and likewise are poisoned. This actually occurred in this neighborhood. As to the recently published remedy of placing a piece of meat on the underside of a board and trusting to luck for a small percentage of them to fall into soapsuds and drown, I do not like it either.

Proceed as follows, and I will guarantee anyone to be rid of all the pests in a short time. Get a common woven-wire fly-trap, enlarge the hole in the cone to the size of an ordinary lead pencil, and bait the trap with a piece of boiled liver the size of an egg. At night put your trap in a pail of water; clean out and start again the next morning.

APPLE TREES

12,000 Winesap, Rome Beauty, Jonathan, etc.

Cherries, Calimyrna Figs

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AGRICULTURAL REVIEW.

With the Fruit Men.

Commissioner Volck states that an unusual amount of spraying has been done by apple growers in the Pajaro valley during the past season. He also states that in some orchards which were flooded in February, unless the silt deposited several inches deep around the trees is removed at once, there is danger of suffocation of the roots or injury to the root crown. Mr. Volck predicts a very large apricot crop in that section.

Apricots promise a good crop around Prunedale, Monterey county.

A large fruit cannery is to be built at Lincoln, Placer county, this season.

A large fruit and grain crop is now promised in the southern half of Colusa county.

It is stated that the large cannery owned by the C. F. C. A. will not be operated this year.

Orange tree planting is very heavy at Terra Bella, Tulare county, at this time. It is stated that from 2000 to 2500 acres will be set out to Washington navels there this spring.

Work on the erection of a new fruit cannery at Gridley has been commenced, and the plant is to be ready for operation by July 1.

Orange trees around Porterville are reported to be blooming unusually heavy, which promises a very heavy yield next fall.

A general reduction from $1.40 to $1.15 for 100-pound shipments of fruit from California to points east of Chicago was announced at Chicago last week, after a conference between representatives of transcontinental lines and H. W. Adams, representing California fruit distributers. The new rate will apply only to car lots, and 26,000 pounds were set as the minimum shipment. The reduction will make the rate on deciduous fruits the same as heretofore applied to citrus fruits. It will be put into effect as soon as the tariff can be published and will be in time to apply to this season's shipments. Mr. Adams estimated the actual decrease in shipping cost to the growers would be $80,000 anually.

The San Dimas Lemon Association has sent a circular asking growers to remove all decayed lemons which fall to the ground and recommends that they be buried far from the grove. By carefully attending to this detail, the brown rot can be eradicated from orchards.

The apricot and almond crops in Contra Costa county will be larger than first anticipated. Late blooms have set well, which will make up for early losses.

According to the annual report of W. K. Newell, of the Oregon Board of Horticulture, the total value of the fruit crop of that State for 1910 was $6,662,500, and the prospects are for a larger yield this year.

G. Miller and son have purchased land in Dry Creek valley, Sonoma county, and with A. J. Galloway will establish a nursery on it. Over 70,000 young prune trees have been imported from France, and a general line of deciduous trees will be grown.

Acting under instructions of the new law, State Horticultural Commissioner Jeffrey has appointed quarantine guardians in thirty-seven counties of this State. In each instance the quarantine guardian is the county horticultural commissioner already appointed by the county supervisors. The appointees are: Fred Seulberger, Alameda; Earle Mills, Butte; L. R. Boedefeld, Colusa; F. C. Schell, Fresno; J. E. Hasler, El Dorado; W. E. Wilsie, Imperial; C. A. Maul, Kern; B. V. Sharp, Kings; A. R. Meserve, Los Angeles; Geo. Marchbank, Madera; J. R. Banks, Mendocino; N. H. Wilson, Merced; J. B. Hickman, Monterey; A. D. Butler, Napa; Newton Peck, Nevada; Roy K. Bishop, Orange; H. H. Bowman, Placer; R. F. Cundiff, Riverside; F. R. M. Bloomer, Sacramento; William Garden, San Joaquin; S. A. Pease, San Bernardino; C. W. Beers, Santa Barbara; Earl Morris, Santa Clara; W. H. Volck, Santa Cruz; C. H. Stuart, San Diego; C. K. McBride, Solano; A. R. Galloway, Sonoma; A. L. Rutherford, Stanislaus; L. H. Day, San Benito; H. P. Stabler, Sutter; Charles B. Weeks, Tehama; A. G. Schulz, Tulare; E. O. Essig, Ventura; George H. Hecke, Yolo; George W. Harney, Yuba; George A. Lyons, Lake; Frank T. Sweet, Contra Costa.

Agricultural Notes.

The district around Fullerton, Orange county, will ship about 200 cars of cabbages this spring, there being about 1200 acres planted there. While prices started out very low, yet as they are advancing steadily, growers hope to wind up a profitable season.

The Kerman Co-operative Melon Growers' Association is closing up its affairs, preparatory to going out of business.

J. M. Morton, of the Missouri Pacific railway, after looking over the fields, states that the Imperial valley will ship about 2500 cars of cantaloupes this season. The acreage set out to melons is larger than last year.

About 135 acres will be planted to melons and tomatoes around Gridley this spring.

A dispatch from Santa Ana states that L. A. Cock, of Tustin, has propagated a new lima bean. The new bean is speckled instead of white, is a bush bean, and yields one-third more than the other. It can be produced in 90 days and marketed 30 days sooner than the white lima.

At present 125 people are employed at Oakley, Contra Costa county, in cutting and shipping asparagus, which is selling well in Eastern markets. More help is wanted in the asparagus fields there.

Ten thousand pounds of Mebane cotton-seed has been sent to the Palo Verde valley for spring planting. In the Coachella valley about 2000 acres will be planted to this staple.

A dispatch from Turlock states that a large acreage will be devoted to canteloupes there this season. It is expected that fully 400 cars will be sent out, shipments to commence about July 15.

It is reported that the prospects for a big hop crop around Nord, in Butte county, are very good. A large new acreage is being set out, and as there is but little of the 1910 crop left, the coming crop should command good prices. It is stated that buyers are offering 17 cents per pound for the coming crop.

The rains of last week did incalculable good to the crops, especially to grain, sugar beets, and vegetables. From all parts of the State the reports come of splendid prospects. Hay is being cut in some sections, grain is heading out in other places. Crops are being planted in all parts of the State with the assurance of a big yield in prospect.

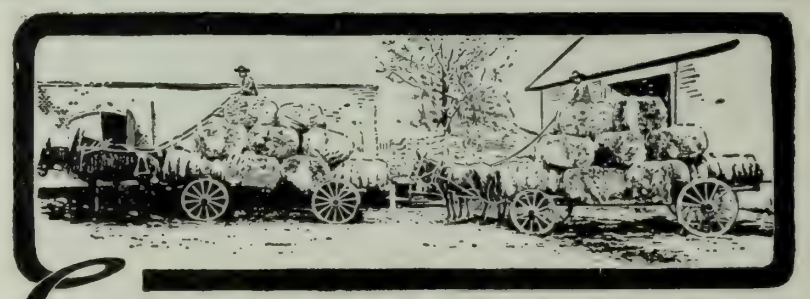
Miscellaneous.

During one week recently the Co-operative Land & Trust Co. cold 160 acres of land in Merced Colony No. 2, in 20-acre tracts.

A carload of honey bees was shipped from Los Angeles to Nevada recently, by way of Auburn, where they were "rested" for two weeks.

The Idaho Forestry Association is setting out 960 acres to eucalyptus trees near Wasco, Kern county.

A syndicate of Washington men has joined with W. N. Woodson and purchased the 5000-acre ranch belonging to Mrs. Finnell, near Corning. This syndicate has



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THE real proof of the strength, durability, and value of I H C wagons is what they have done and are now doing for thousands of farmers throughout the country. Light loads and heavy loads have been carried by I H C wagons, over good roads and bad roads, for so many years that there is hardly a farmer who is not familiar with the high quality that these names on wagons represent—

Weber New Bettendorf Steel King

The reputation gained by these wagons is not due to any one particular feature but to all-round perfection and superiority of the design, the material, and the workmanship used in their construction. They are built especially for the western country and every feature that will increase their wearing life is incorporated in their construction.

WEBER wagons have been leaders for sixty-six years. All the wood is carefully selected and straight grained. It is air-dried for at least two years—so that the sap is retained, giving the wood wonderful stamina. Hickory is used for axles, single-trees, double-trees, and neck-yokes. Oak is used for hubs, hounds, bolsters, reaches, and sandboards. Oak and hickory are used for spokes. The New International stake is also furnished. This is one of the greatest conveniences ever added to a wagon.

NEW BETTENDORF is a steel gear wagon of standard quality with carrying capacity unexcelled. It is the only gear having an axle with removable malleable sleeve which can be replaced when worn.

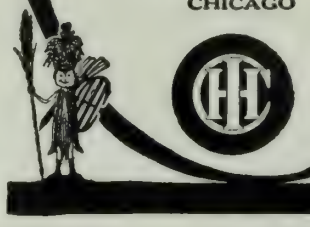
STEEL KING has the only perfect adjustable stake; hollow steel axles and bolsters made to resemble the old wooden type; skeins are cast and can be easily replaced; wheels are A-grade; wagon box of best quality and construction.

I H C WAGON BOXES have long-leaf yellow pine bottoms, box-board sides, protection for the bottom over the front and rear bolsters, and the best box binders ever furnished. A tool box is attached to the front end.

Do not buy any wagon until you see the I H C local dealer. It you prefer, write nearest branch house for literature in which you are most interested.

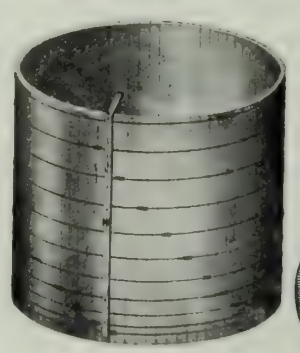
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R. F WILSON
Telephone 2957 Stockton, Cal.

now 10,000 acres there, which will be improved and colonized.

C. V. Harlan is starting a big poultry ranch west of Tulare. He will commence work with 1000 chickens.

At a meeting of the board of directors of the State Fair, held at Sacramento last week, it was decided to make the "Dawn of Gold" a permanent feature, and the city of Sacramento agreed to contribute $25,000 toward its expense. A special feature is to be made of horse-racing, and a purse of $10,000 will be offered on one race, which is the largest prize ever given in the West.

A meeting of poultrymen of northern California is to be held at Sacramento, April 15, to form a general poultry association, the objects of which will be to hold one large show each year and to assist in smaller ones. A membership of 1000 poultrymen is desired.

At a meeting of poultrymen of the State held at San Jose last week, the preliminary work was done to organize what will be known as the Federated Clubs of Poultry Raisers of California. One of the principal objects will be the holding of a big show at the time of the Panama-Pacific Exposition in 1915. Officers were elected as follows: W. E. Gibson, of Oakland, president; Samuel B. McLennegan, of San Jose, first vice-president; J. L. Harrison, of Pasadena, second vice-president; G. W. Smith, of Fresno, third vice-president; Joseph T. Brooks, of San Jose, secretary; W. S. Macy, of Santa Barbara, treasurer.

A movement is on foot at Wheatland to have an experimental farm started there.

In the Superior Court at Stockton last week a decision was handed down sustaining the validity of the acts of the South San Joaquin Irrigation District, and the issue of $1,875,000 worth of bonds. These bonds were voted to pay for the expense of irrigating and draining 70,000 acres of land in the southeastern part of that county.

At a meeting recently held, the Petaluma Egg Exchange voted to discontinue the business of buying and selling eggs. The organization is to be continued, but the plant and good will is to be taken over by Nye & Nisson of San Francisco.

The bee men of the southern part of the State predict a record crop of honey. Spring showers have been plentiful, which means honey-producing flowers, and with warm weather the bees will be busy.

Sheep shearing in the Sacramento valley has commenced. At Vina there are 15,000 sheep to be clipped.

At a meeting of the State Agricultural Society held at Sacramento last week, J. A. Filcher was deposed as secretary and manager of the State Fair, and C. A. Telfer of Fresno was elected to the position. At the same time, George A. Robertson, of Fresno, was elected to the position of statistician for the society. The latter appointment will doubtless prove a good one, and in the future the figures of California products will be correct and of value to the State.

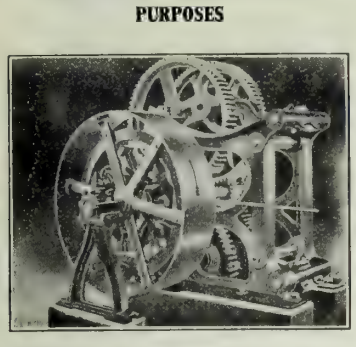
A BUSY HORTICULTURAL COMMISSIONER.

To the Editor: While in the office of the Horticultural Commissioner at Lodi last week, it was my pleasure to note a little of the work required of J. T. Costello. Two different shippers of rooted vines came in to get inspection cards showing same to be free from insect pests and diseases. Mr. Costello went to the freight sheds, and upon examining one lot of vines found them to be free from disease and pests, but a number of the lot were dead and others poorly rooted. This lot he condemned and the grower had to destroy them. The second lot, upon examination, was found to be all right, but the shipper did not have the name of the party to whom they were to be consigned. Mr. Costello required this before issuing the inspection card. He also received a telephone message from the depot stating that a shipment of trees had arrived. These he inspected thoroughly before allowing them to be delivered. In the office of Mr. Costello can be found diseased vines and trees of every kind, many of these having been taken from shipments which he had condemned, saving the samples as an object lesson. Among the diseased trees was an apple showing the work of the woolly aphis, a pear showing the black knob on the root, also samples of almond, peach, and cherry showing the same disease. There were also two 19-year-old grape vines which had been killed by the oak fungus and crown gall. The destructiveness of the root borer was shown in the walnut—in fact, there are samples of almost every kind of diseased trees, vines and vegetables, and also injurious weeds to be seen in the office. It is worth while for every orchardist and farmer to visit this office and inform himself upon these things. The office is open every afternoon from 1 to 5, and I am sure that anyone who is raising fruits in that section will secure many valuable hints by studying these exhibits. J. A. W. G.

Lodi.

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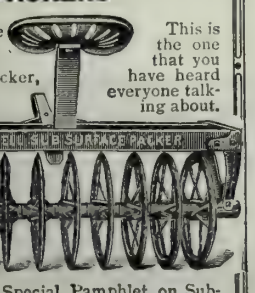
WATER RAISING FROM DEEP WELLS OUR SPECIALTY.

POMONA MFG. CO.
POMONA, CALIF.
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CAMPBELL SUB-SURFACE PACKERS

We are the sole manufacturers of this famous Sub-Surface Packer, the only one made.



This is the one that you have heard everyone talking about.

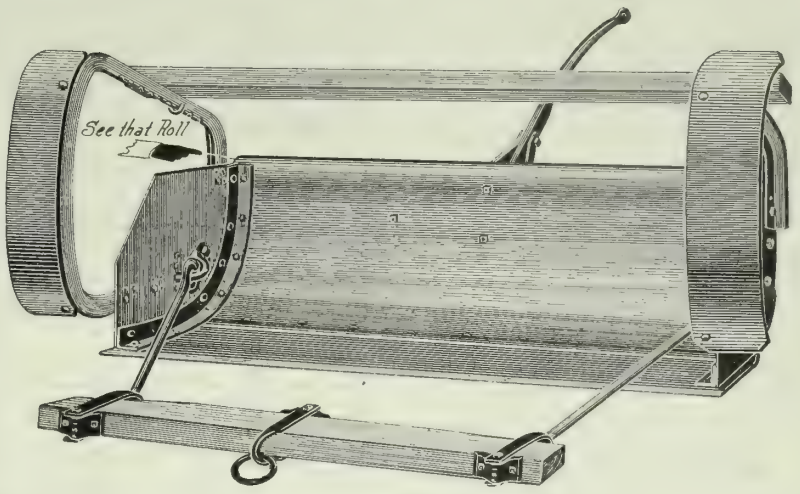
Send for our Special Pamphlet on Sub-Surface Packing, the best known system for "dry farming," a method of absolutely insuring bumper crops with a minimum rainfall—the salvation of semi-arid regions.

Made in Three Sizes, with 10, 16 and 24 wheels, is heavy and strong, and the frame is made to carry all the extra weight required. Write for Catalog No. V

Parlin & Orendorff Co.,
CANTON, ILL.

Blake, Moffitt & Towne
Dealers in PAPER
1400 FOURTH ST., SAN FRANCISCO
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BENICIA FRESNO SCRAPER



Notice the Roll at the top of the bowl. This feature, without decreasing the capacity, insures the strength that enables our scrapers to stand the most severe tests. On a large dirt-moving job recently a number of scrapers of different makes were used. The BENICIA FRESNO SCRAPER was the only scraper that did not have to go to the shop for repairs. Because of this roll at the top of the bowl, which prevents the bowl from buckling under a heavy load; because every part of this scraper is made to exact measurement and securely held in place, and because the handle is so placed that the scraper is always perfectly balanced, the BENICIA FRESNO SCRAPER outlasted all the others.

MADE IN THE USUAL SIZES
3, 3½, 4, and 5 feet

Be sure you buy the BENICIA kind which has Roll at the top and the mark BIW ***on the back, then you get the best.***

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814 Pacific Building, San Francisco, Cal.

Factory: Benicia, Cal.

EAT RAISINS CALIFORNIA RAISIN DAY, APRIL 29th

GOING EAST?

Be sure your ticket reads via

WESTERN PACIFIC

THE NEW ROUTE FROM THE GOLDEN WEST ALONG THE GOLDEN FEATHER RIVER CANYON

The New Route combines all the luxuries, comforts, conveniences, and safety of the best modern railroads—perfect roadbed, latest steel dining, buffet, and observation cars, standard sleepers, unexcelled dining-car service, etc., with many exclusive features, such as easy grades of not over 1 per cent, gentle curves, low elevation (2,000 feet lower than any other line), miles of natural scenery, in the heart of the Sierras.

For reservations and information, call on or write your Local Agent, or,

E. L. LOMAX
Passenger Traffic Manager

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Asst. Gen'l Passenger Agent

SAN FRANCISCO, CALIFORNIA

Live Stock and Dairy.

THE CARLOAD COMPETITION AT THE PORTLAND LIVE STOCK SHOW.

Mr. N. C. Maris, secretary of the Live Stock Show recently held in Portland, Ore., gives a very interesting account of the carload competition held at that fair in which there was one California firm competing, viz.: Goodale & Cassidy of Gazelle, Siskiyou county, who showed two-year-old Short-horns which won the second prize in their class and much [illegible] from Mr. Maris, as the following shows:

The cattle department furnished the most impressive feature of the show. There were fifteen entries in the car-lot classes and twenty-six in the single classes. There were nine loads of three-year-olds entered and the contest was fairly close between the four money winners. The first, third and fourth of these were grade Herefords and the second were grade Short-horns. The Short-horns winning second were a hundred pounds heavier than the first prize load of Herefords and were very close to them in other points, but were not quite so uniform throughout.

The five cars of two-year-olds brought out a lot of the best cattle in the show. Of these the first and fourth prize winners were Herefords and the second and third were Short-horns. The first prize load of twos were well finished, showed excellent quality, were very uniform and finally landed the grand championship prize. The exhibitors of this load certainly had no cause for complaint. Their cattle averaged 1286¼ pounds and sold at $9.35 per hundredweight, or $120.26 a head won $280 in cash prizes, making a total of $2204.23 received for the sixteen head. They won $280 in cash prizes, making a total of $2204.23 received for the sixteen head of cattle, with yet a chance of winning in the killing contest, where the first prize for a carload is $75 and the second $20, and for single animal $20 for first and $10 for second, the second prizes being donated by the Oregon Pure Bred Live Stock Association. It was not without a close contest that this load of cattle won their laurels, for they were pretty hard pushed by the California Short-horns. The second prize cattle were well finished, of excellent quality, and were practically a hundred pounds heavier than the champion load, but were not quite so uniform. They had some friends for first place among the best cattle judges at the show. The decision as rendered by Mr. Bush was generally popular, however.

In the auction sale there was too much difference between the prices paid for the two contending loads of two-year-olds and to our mind the purchaser of the second prize load made one of the best buys of the day, for they will certainly be good killers. We shall await the results of the killing contest with interest.

The third prize load, though not quite so well finished as the other two were a good type of cattle with only a few bad ones in the bunch.

The fourth prize load were strictly hay-fed from the Big Hole, Montana, country and considering their long drive and ship were shown in good form. They were very even, of desirable type and carrying flesh that speaks well for the quality of hay they were fed on.

There was only one load of yearlings, but they were good ones. They were grade Short-horns weighing 1035 pounds and were the nice, handy kind that please the killers. With the exception of the champion load they were sold 10 cents higher than any of the two-year-olds.

EDUCATIONAL BUTTER-SCORING CONTEST.

The Second Entry of the California Butter Scoring Contest at the University Farm, scored April 4, was participated in by twenty-two California buttermakers, representing creameries from Imperial to Humboldt counties. The number of cubes was the same as sent to the first entry, although several new contestants replaced those who have dropped out since then. The butter was scored by W. B. Thurston, who has recently come to the Coast as permanent representative of the U. S. Dairy Division, and by members of the Dairy Department, who placed the scores as follows:

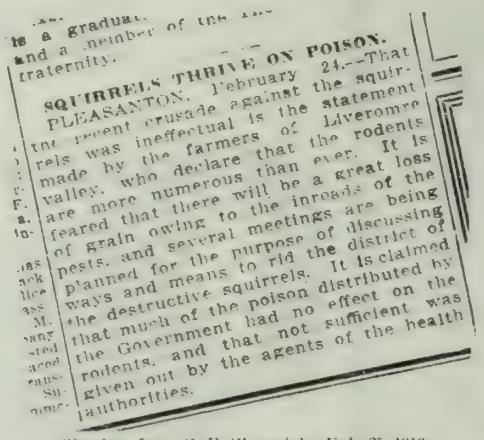
No.	Creamery and Location.	Score.
11	Grizzly Bluff	94½
2	Laton Co-Op., Laton	94
16	Castroville	93
9	Dairymen's Co-op., Tulare	92½
4	Ceres	92½
13	Santa Rosa	92½
10	Elk Horn, Santa Barbara	92½
8	University Farm, Davis	92
7	Meridian	92
20	Pozzi, Marysville	92
1	Elite, Nicasio	92
6	Willow Brook, Penngrove	92
17	Stanislaus, Modesto	91½
14	Cottonwood	91½
22	Salinas	90½
5	Delta, Imperial	90½
15	Suisun	90
19	Crescent, Los Angeles	90
3	Glenn County, Willows	90
12	———	89
18	———	89
21	———	87½

There is one thing in general that is noted from a study of the butter scores since the scoring contest began in 1909, and that is, a general improvement in quality of the finished product. Better butter is being sent in. Many of the competing buttermakers are working under conditions which are adverse to best results, but even in view of this, are doing remarkably well. This leads one to believe that better methods are being practiced.

Some of the contestants report that their best cream is now being used to supply a sweet cream trade, and this puts them at a disadvantage. Having the poorer cream to work with, the plentiful use of a good starter will be found helpful; the amount and time of adding depending upon local conditions. The few warm days of the past week, when cream for the contest butter was delivered, were unfavorable in some parts, especially through the valley regions, and may ac-

HALL'S SQUIRREL POISON

READ THIS


[illegible] a graduate [illegible] and a member of the [illegible] fraternity.

SQUIRRELS THRIVE ON POISON.

PLEASANTON, February 24.—That the recent crusade against the squirrels was ineffectual is the statement made by the farmers of Livermore valley, who declare that the rodents are more numerous than ever. It is feared that there will be a great loss of grain owing to the inroads of the pests, and several meetings are being planned for the purpose of discussing ways and means to rid the district of the destructive squirrels. It is claimed that much of the poison distributed by the Government had no effect on the rodents, and that not sufficient was given out by the agents of the health authorities.

Clipping from S. F. Chronicle, Feb. 25, 1910.

IS NOT THE ORDINARY KIND

This is a poison prepared by special machinery, with a hard, sweet coating, singularly attractive to the animal, and is

A Remarkably Efficient Exterminator

sold and used successfully for 20 years. It is no experiment. The most economical to use, because the most certain.

TIME SAVED LABOR SAVED MONEY SAVED

Don't waste time and money by trying new exterminators.

HALL'S INSURES RESULTS

Sold by Druggists and General Merchandise Stores.

DISTRIBUTORS:

Langley & Michaels Company

SAN FRANCISCO

FOR SALE

100 SHORT-HORN BULLS

KING EDWARD'S GET Won 32 Prizes at State Fair Sacramento 1910

IN SINGLE OR CARLOAD LOTS

These Bulls are range bred and sired by calves of King Edward, Hillcrest Hero, and other prize bulls. For further particulars write to

THORNTON S. GLIDE

Davis, - - - - Cal.

15 Imported, Thoroughbred Short-Horn BULLS All Registered

45 Imported, Shropshire Yearling RAMS All Registered

Few Choice Young Poland-China BOARS

WRITE FOR PRICES

ROSELAWN STOCK FARM, T. B. Gibson, Owner

WOODLAND, YOLO COUNTY, CAL.



America's Leading Horse Importers

At the six World's Fairs since 1900, our Percheron Stallions have won every Championship, and every first prize except two.

At the recent California State Fair our Percherons and French Coach Stallions won 14 Gold Medals and both Championships.

When you want the best come to us.

McLAUGHLIN BROS.,

OAKLAND, CALIFORNIA COLUMBUS, OHIO

ARGO FLOOR OIL

Pratt's Animal and Poultry Regulators The best on the market

C & S AXLE GREASE—30 years of satisfaction.

H & L AXLE GREASE—for 60 years in constant use.

THE ONLY PERFECT LUBRICANTS

Use only one-fourth of what you would use of any other.

WHITTIER COBURN CO.

San Francisco Manufacturers

AGENTS WEATHERPROOF COMPO ROOFING

ARGO COAL OIL

ASK YOUR DEALER FOR

EL DORADO COCOANUT OIL CAKE

FOR

CHICKENS AND MILK COWS

Cheapest Food in the Market to-day. If your dealer doesn't carry it,

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EL DORADO OIL WORKS

149 CALIFORNIA STREET, SAN FRANCISCO.

count, in part, for the lower scores of some of the butter from those sections. A buttermaker who will stay with the contest regardless of unfavorable circumstances is to be commended, and the suggestions made to him should be the more valuable.

Among the defects under flavor, several cubes gave evidence of a feed flavor. Such is likely to appear at this time of the year, and a liberal amount of starter will do much toward its disappearance. Four cubes were critised for a high acid flavor, and in going over the method blanks these particular defects seemed to be due to either holding the cream too long, holding at too high temperatures, or ripening to an acidity too high. When cream is received in the afternoon, it is often necessary to hold until the next morning before churning, but the buttermaker should bear in mind that butter keeps better than cream.

The number of mechanical defects were fewer as compared with the first entry. But two cubes were cut because of grittiness, and four for defective body. One piece was cut for mottles, and several were noted as being slightly mottled.

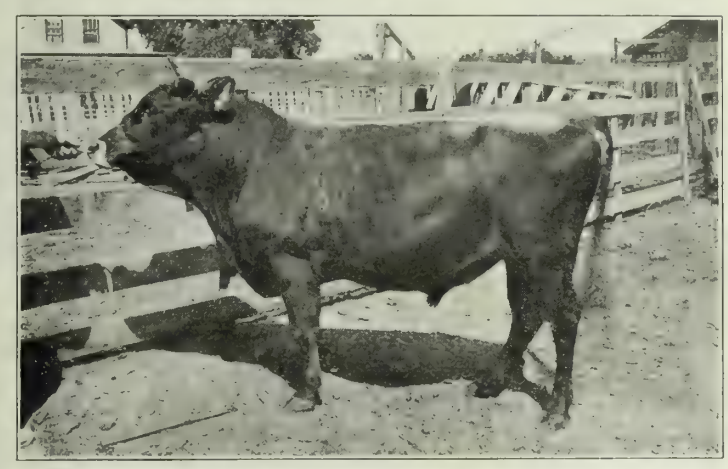
The criticisms under package were not unfavorable. One buttermaker sent his cube packed in ice, and several took extra pains in the preparation of their boxes. A clean, neat package is to be desired, as it indicates, to a certain extent, the care which is given to all parts of the buttermaking. All of the cubes arrived at Davis in due time, and, when scored, had been in the refrigerator room for from 24 to 72 hours.

The call for third entry will be sent out late in May, and it is hoped that not only those who have participated so far, but many more will respond. A report of the work in 1910 has been issued, and may be had by addressing the undersigned. LEON M. DAVIS.

University Farm, Davis, April 5.

A MODEL HERD AND BARN.

N. H. Locke, of Lockeford, Cal., is erecting a model dairy barn to care for his large herd of pure-bred, registered Jersey cattle. His old barn, which was 78 by 100 feet and had a capacity for caring for 88 head of matured animals and storing 200 tons of loose hay, being entirely too small, so that during the late rains may of his animals had to remain in the open pastures. His new barn will be 54 by 84, and 22 feet to the eaves, with cement floor. It will be arranged on modern lines and will comfortably care for 108 head, leaving ample room for feed-ways and 200 tons of hay. This additional room is needed now, as the herd numbers nearly 200 head. Mr. Locke's aim is to have a registered milking herd of 100 or more pure-bred Jersey cows. He is now milking 70 head and has a large number of young heifers coming in. He is keeping only the pure-bred heifers and sells all his young bulls for breeding purposes, finding a ready market for the latter, as his herd was winner of first prize for best herd at the California State Fair in 1910. His farm is ideally situated for the dairy business and comprises 600 acres, of which 160 are low bottom-land on the banks of the Mokelumne river, and is used for hay and grazing purposes. The grazing land is seeded to white clover, alfalfa, and Bermuda grass, while the balance is devoted to general farming and fruit raising.



Borellos Golden Pogis; 1st Prize Yearling, Cal. State Fair 1910: Owned by N. H. Locke Co. Lockeford.

CALIFORNIA RAMBOUILLETS.

Mr. J. K. Scott, writing from this State to the American Sheep Breeder, scores one for our French-Merinos in these words: "The California climate, soil, association and grandeur of nature have contributed to the health and vigor of your old servant. I have visited the hospitable and wide-awake Bullard boys in Yolo county and examined their large bands of Rambouillet sheep, and I am bound to say that they are handling their large flocks with wondrous skill that is achieved only by long experience and sound judgment. In the size of their sheep and high quality of fleece, I believe they are one step in advance of the Ohio flocks.

A new creamery is being built at Alamorio, Imperial valley, by V. E. Stockwell.

WHY AMERICA MUST GROW WOOL.

In the course of an argument for the maintenance of the protective tariff on wool, Senator Warren of Wyoming recently said:

Latest statistics show that the total number of sheep in the world is less than 700,000,000, and the total number in the United States 57,216,000, or about one-twelfth of the whole number. The total wool product of the world is 2,952,782,955 pounds; the total wool product of the United States is 321,262,750 pounds, or about one-ninth of the whole production. The total wool consumption of the United States is over 500,000,000 pounds, or over one-sixth of the product of the world. The United States consumes far more wool than any other nation in the world. People differ widely sometimes in computing wool statistics, because of the difference between grease wool and scoured wool, but the figures I have given represent quantities computed in the regular and accepted way.

Shall we then lose our sheep through failure to properly protect and rely solely on foreign countries for our wool supply? If so, how long will it be after our sheep are gone before the foreigner will raise the price, send us cloth instead

Horse Owners! Use



GOMBAULT'S
Caustic Balsam
A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish*
Every bottle sold is warranted to give satisfaction Price $1.50 per bottle, Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland, O.

INSIST ON
HUB
BRAND
AXLE GREASE
Makes a hard load pull easily.
In constant use for 16 years.
Most machinery makers say:
"Use Good Grease."
HUB brand is the best.
It's cheapest at first and at last
Try this 20 Oz. Pkge.



Lasts Longer — Use Less
The Brininstool Co.
Los Angeles, Cal.
ALL DEALERS

BE READY FOR EMERGENCIES.



H.H.H LINIMENT
SHOULD BE IN EVERY HOME AS A SAFE-GUARD AGAINST SORE THROAT, SWELLINGS, SPRAINS, RHEUMATISM, NEURALGIA, STIFF JOINTS, LAMENESS, STOMACH CRAMPS, DIARRHOEA, Etc.
THE STOCKMAN'S STAND-BY FOR SUCCESS IN VETERINARY USES
IT DOES THE WORK.



HERCULES HARNESS SADDLES HORSE COLLARS
They Last Longer
The only sure way to get a HOME Industry Harness is to look for the Hercules stamp. Made by W. DAVIS & SONS, San Francisco, Cal. Your Dealer has our Catalogue

BERKSHIRES
Boars, different ages. Sows, both open and bred. State Fair Prize Winners. Over 100 Spring Pigs to select from. Sired by large Boars and out of prolific Sows. Write your wants.
A. B. HUMPHREY,
Grape Wild Farm. Mayhew, Cal.

HORSES AND CATTLE.

THE N. H. LOCKE CO., LOCKFORD, CAL., are offering for sale **pure bred Jersey service bulls** and **bull calves.** Among these, **Borello's Golden Pogis, No. 89243,** 1st prize yearling bull, 1910 Cal. State Fair. He is sired by the choicest lines of the great Island Bull, Golden Lad, P.S. 1242 H. C., and from a line of dams that produced over 20 lbs. butter in 7 days. These young bulls are from prize winners in the show ring and big producers at the pail. This herd was 1st prize winner 1910 Cal. State Fair, having won 4 champion medals and 17 ribbons, with 18 head exhibited. It is headed by the imported bull King's Valet, the unbeaten champion. Prices and particulars on application.

W. A. FORBES, BOX 746, SACRAMENTO, has arranged with either of two Eastern judges to locate and deliver, on orders, live stock of any description. All cattle tuberculin tested; six mixed cars landed since the first of the year and buyers delighted; prices lower than those current on the same grade of stuff; carloads of Holsteins and Shropshire sheep a specialty; references and correspondence solicited.

JOHN LYNCH, breeder of Registered Short-horns; milk strain. High class stock. First-class dairy breeding. Smooth cattle. Best pedigree. P. O. Box 321, Petaluma, Cal.

PURE-BRED SHORT-HORNS, Poland-China hogs, and Shropshire sheep. Roselawn Stock Farm, Woodland, Cal.

PAICINES RANCH CO., Paicines, San Benito county, Cal.—Young Percheron stallions for sale.

POLLED JERSEY CATTLE—Some on Pacific coast. Chas. S. Hatfield. Secretary. Springfield, Ohio.

STEVENSON & WAGNER, Newman Cal.—Holstein-Fresian bulls, heifers for sale.

HENRY WHEATLEY, Napa, Cal.—Breeder and importer of Shires and Percherons.

KNOB HILL STOCK FARM—Reg. Poland-China swine. A. M. Henry, Farmington.

MATURED MALE GOATS—Milch strain. Write Geo. Langlois, Sebastopol, Cal.

SWINE

FOUR OAKS STOCK CO., breeders of Berkshire and Hampshire hogs and Importer Hampshire Down sheep. Woodland, Cal.

THOROUGHBRED MULEFOOT AND BERKSHIRE HOGS. California Hog & Land Co., Calistoga.

GEO. V. BECKMAN, Lodi, San Joaquin Co., Cal. Registered Poland-China Hogs, both sexes.

G. A. MURPHY, Perkins, Cal. Breeder of Champion Herd of Berkshires; also Short-horns.

BERKSHIRE AND POLAND-CHINA HOGS Both sexes. C. A. Stowe, Stockton, Cal.

CALIFORNIA NURSERY CO., Niles, Cal Breeders of Thoroughbred Berkshires.

H. B. WINTRINGHAM, Middletown, Lake Co., Cal. Breeder of Tamworths.

STUDARUS & CUNNINGHAM, Mills, Cal. Registered O. I. C. swine.

Proteina SOY BEAN OIL MEAL
46% PROTEIN and 10% FAT
Cows, Calves, Poultry
ALL FARM ANIMALS
Highly recommended by all authorities. The U. S. Agricultural Department says: "It is almost without an equal as a concentrated feed."
Sold by Dealers. Ask for Literature.
PACIFIC OIL MILLS, SEATTLE.

Cutter's Anthrax and Blackleg Vaccines
are given the preference by 80 per cent of California stockmen because they give better results than others do.
Write for Prices, Testimonials and our New Booklet on Anthrax and Blackleg
THE CUTTER LABORATORY
P. O. Box 257, BERKELEY, CAL.

FOR SALE
FOUR THOROUGHBRED AYRSHIRE BULLS, Aged 12 to 20 Months.
If you don't want tuberculosis, breed the Ayrshires.
J. W. & J. D. McCORD
Phone Red 123. Hanford, Cal.

of wool and leave our labor unemployed and our factories standing idle as monuments to our folly?

Touching the importance of growing wool in our own country with which to supply our mills, I quote the following from the report of the Revenue Commission appointed in 1865 to consider and report upon our entire revenue system. The members of this commission were from Massachusetts, Connecticut and Pennsylvania. Personally they were not particularly interested in wool growing or manufacturing, but in the exhaustive report they made upon all the matters submitted for their consideration they reported, among other things, concerning wool problems the following:

"The home production of wool is necessary to render us properly independent of foreign powers, in peace and in war, of obtaining our supplies of an article on which the lives and health of all our people depend. It is necessary to national economy, for no great agricultural country can afford to import its most important and costly raw material."

And, "finally it is necessary to extend and complete the circle of diversified industries on which the wealth and independence of nations so much depend."

LIVE STOCK NOTES.

J. G. Brattin has purchased from Judge Carroll Cook of San Francisco 1000 acres of land known as the Turk ranch in the Sonoma valley, near Kenwood. The new owner will develop water rights and turn the property into a stock ranch.

A part of the Wilbur ranch in Sutter county has been purchased by J. H. Mackenzie, a San Francisco mining engineer, who will raise thoroughbred Guernsey cattle.

At Bingley Hall, Birmingham, England, the record price of 1500 guineas, or $7665, was recently paid for a Short-horn bull 22 months old.

V. E. Breese, a new settler near Willows, will go East to purchase high-class pedigreed hogs to stock his ranch in the Sacramento valley.

The Red Bluff Sentinel says that Barry Bros., who reside in Tehama county near the Shasta line, recently made a sale of 109 head of grass-fed steers, which averaged 1100 pounds in weight. The price paid was 11½ cents, and the total received was about $7000.

A big fight is being put up by the residents of Baldwin Park, who object to the removal of the big hog raising plant near Vernon to their locality. The city of Los Angeles has an ordinance in effect that garbage from that place must not be distributed nearer than five miles, and as the garbage is largely fed to a big band of hogs near Vernon, they must be moved.

Ulyses G. Strader of Ceres, reports the recent sales of registered pure-bred animals to the following parties: E. J. Camp, Sacramento, one Dutch Belted bull and two heifers; Mrs. Z. E. Hughes, Watsonville, one bull, one heifer and one Hampshire boar; Robert East, Modesto, one bull and six cows; A. Johnson, Bothwell, Wash., two heifers; E. Peterson, Ceres, seven Hampshire hogs; W. H. Graham, Ceres, three Hampshire hogs.

J. H. Corey, auctioneer, reports two recent sales of grade dairy cows which shows how good dairy animals of a high grade are selling in the San Joaquin valley. At a sale on March 30 on the J. M. Pike place near Ceres, in which 64 head of grade Holsteins and Jerseys were sold, 52 head of the mature cows brought an average of $75.53 each and 12 grade Holstein heifers aged from 18 to 20 months averaged $52 per head. The highest price was $110 for a grade Holstein, and the next highest $95 for a grade Jersey. At another sale on the B. Minine place near Westport, 50 head of grade Holsteins and Durhams averaged $81, and another sale held on the W. A. Halley place near Houston, 27 head of grade Durhams and Holsteins averaged $84.

J. F. Snover, Ceres, recently sold a four-year-old registered Jersey cow for $250, a two-year-old registered Jersey for $150, and a three-year-old grade Jersey for $100, all going to E. Peterson of Ceres.

DAIRY NOTES.

The Ceres Creamery during 1910 paid $200,000 to patrons for butter-fat. It ships over a ton of butter to market daily.

At the next meeting of the dairymen of Princeton, Glenn county, cows are to be subjected to a two days' competitive butter-fat test, the prize for the owner of the best cow to be $75, offered by W. F. Perry of Meridian.

The creamery of Sonora, Tuolumne county, has commenced operations under the direction of J. P. Grimes of San Francisco. Most of the product will be marketed in the cities of the southern mines.

Two arrests were made at Visalia recently when dairymen refused to clean up their places upon demand made by State Dairy Inspector J. S. Canham. One dairyman was fined $75.

F. L. Morris and son of Woodland returned last week from the East with two carloads of Holstein-Fresian cows and two bulls, which they will add to their dairy herd.

Robert Wilde, manager of the Crows Landing branch of the Gold Nugget Creamery Company, reports shipment of butter-fat for January as 11,551 pounds; February, 11,384 pounds, and March, 17,836 pounds. The company has also leased the creamery building on the Sattler Brothers' dairy farm and began using the same on April 5 as an up-to-date pasteurizing plant.

John Silva & Co. have leased the Sattler Brothers' ranch of 240 acres of choice dairy land at Crows Landing, taking possession April 5.

Tires 10% Oversize

25% More Mileage—No Extra Cost

If you buy tires for an automobile, let us explain how to cut the cost half—as tens of thousands are doing.

The tires which we tell of—Goodyear No-Rim Cut tires—are now the sensation of motordom.

Last year our tire sales trebled—jumped to $8,500,000 — because we controlled these tires.

This year 64 leading motor car makers have contracted for them. They outsell our clincher tires six to one.

And these are the reasons:

No Overloading

About 25 per cent of the average tire cost is due to overloading.

The tire size is adapted to the car when stripped. But when you add extras—top, glass front, gas tank, extra tire, etc.—the tires have too much weight. And you overload them otherwise frequently.

The result is a blowout.

Goodyear No-Rim-Cut tires, to take care of these extras, are made 10 per cent oversize. The rim flanges flare outward when you use this tire, so this extra size is possible.

We supply this extra size at no extra cost. That means 10 per cent more air, and air carries the load. It means 10 per cent greater carrying capacity. It means, with the average car, 25 per cent additional mileage per tire.

You get the same result as though you paid for a 10 per cent larger tire.

No Rim-Cutting

Then these patented tires end the damage of rim-cutting.

Other tires are ruined when you run them flat. Rim-cutting, on the average, adds one-fourth to one's tire bills.

Note the picture below.



The No-Rim-Cut Tire

This tire is fitted on a Universal rim—the standard rim now adopted by nearly all motor car makers. But the tire fits any rim.

The removable rim flanges are simply set to turn outward, instead of inward, as with the old-type tires.

The tire, when deflated, comes against a rounded edge. You can see why rim-cutting never occurs.

Ordinary Clincher Tire

With ordinary tires these removable rim flanges are set to curve inward, to grasp hold of the hooks in the tire. That's how the tire is held on.



Note how those thin edges dig into the tire. That is what ruins a tire—in a moment—when puncture makes it flat.

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In the base of our tire we vulcanize 126 braided wires. That makes the tire base unstretchable. It can't be stretched over the rim flange—can't be forced off—until you remove the flange.

When this tire is inflated the braided wires contract. The tire is then held to the rim by a pressure of 1.34 pounds to the inch.

That's why the hooks are unnecessary. That's why the rim flanges don't need to dig into the tire.

This feature is controlled by our patents. And there is no other feature ever invented which makes a practical tire of this sort.

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Gadsden, Ala., Apr. 26, 1909.

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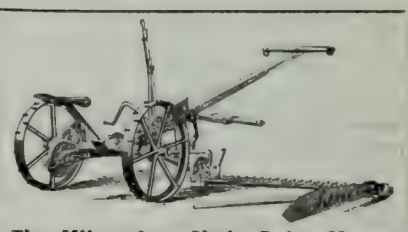
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Poultry Department.

Conducted by M. Russell James.

THE LEGHORNS.

Wherever the large commercial egg-farm is established there will be found the Leghorn hen. Other breeds of fowl may have superior virtues and perform greater stunts, but when it comes to the "long pull" in egg-laying, the "little Leghorn" will always be in the lead. Egg production is her business, and she attends strictly to business.

This faithful hen that always gives value received and makes the largest returns at the least expense, deserves better treatment than she receives, as a rule, at the hands of her breeders—or perhaps "keepers" would be the more fitting word.

Many practical poultrymen who keep Leghorns are so prejudiced against "fancy" stock that they take no pains to inform themselves what constitutes a pure Leghorn fowl, much less to keep their stock up to the standard of pure breeding. This is an injustice to the breed they handle as well as a mistake in profitable poultry keeping.



Good Type of White Leghorn Cock.

With this breed of fowl the recognized standard of beauty in their class is also the standard of utility, except in one or two minor points. The cut on this page, made from an untouched photograph of a pair of White Leghorns, gives an idea of Leghorn shape and beauty.

In the male we see the upright, sprightly carriage, the arched neck, and full-rounded breast, and flowing hackle and saddle feathers, together with the close, smooth feathering of the body, and the finely shaped head and beak, with smooth white earlobes, firm even comb and nicely rounded wattles which are the characteristics of this breed. In his natural colors this bird shows up still better, being of snowy whiteness with bright yellow legs and beak and clear red comb and wattles.

The accompanying female (pullet) presents a rear view, but the width across the full short fluff well represents the egg type of the breed.

SIZE AND SHAPE OF THE LEGHORN.

This breed does not belong in the class of large fowl, and it is a mistake to try to bring it there. Its quicker maturity, its greater activity, and its smaller expense are what constitute it the premier commercial egg producer, and these are attributes of its smaller size. The best results can be obtained from this breed only by keeping it in its purity and breeding true to type and standard requirements. On the other hand, Leghorns should not be bred too small. Such birds lack staying power and are not profitable on the egg farm.

There is no standard weight for Leghorns, but from 3 pounds for pullet to 5 pounds for mature hen, and from 5 to 6 pounds for cock is as large as Leghorns ever should be bred. By breeding only from large, vigorous two-year-old hens mated with strong yearling males, hatching the breeding stock early in the spring and keeping the chicks under the best conditions to produce vigorous growth with no backsets, birds of vigor will be produced and those as large as Leghorns should be.

Points relating to shape of especial importance in breeding are a long, deep body, wide across the fluff, well set up on medium-length shanks with an alert, upright carriage. The Leghorn tendency is to carry the tail more upright than the standard allows, but never should any approach to "squirrel tail" be tolerated in breeding stock.

HEAD POINTS OF THE LEGHORN.

These are important on utility lines no less than from the fancier's standpoint. The short, deep head and strong, curved beak, with full, round, quick-glancing eyes, and well-shaped comb of fine texture set firmly on the head proclaim the utility fowl no less than the pure bred. The comb should have five clear-cut points, but one or two points more or less do not disqualify the bird, even in the showroom. In the female the comb should stand erect in front, with the first point and then turn over gracefully to one side, but it should never droop limply against the head. In our experience we have found the rather large and thick, but not coarse, comb that turns over gracefully and stands firmly away from the eye on that side, indicative of vigor and sustained egg production in the female.

VARIETIES OF LEGHORNS.

There are seven varieties of this breed of fowl, but they differ only in color and in the Rose Comb variety of the Browns and Whites. In the two most popular varieties, the White and the Buff, the former must present a plumage pure white throughout in both quill and plume of the feathers; in the latter the feathering must be a golden buff throughout.

In the White Leghorn the plumage of thrifty young fowls and older ones just at the completion of the molt will show a creamy tinge, but this soon disappears, and must not be confused with brassiness, which is permanent, and not to be tolerated in this breed.

STANDARD-BRED LEGHORNS THE MOST PROLIFIC.

All Leghorn breeders of long standing who have bred their fowls intelligently are agreed on the above, and one of the most noted breeders declares that "the trap-nest is not called for with Leghorns, as the points of beauty in this breed as regards shape and temperament are best expressed in the prolific specimens."

Poultry Notes.

Lyman C. Byce, of Petaluma, has received notice of his election as president of the California branch of the American Poultry Association. This is a deserved recognition of the services of Mr. Byce to the cause of pure-bred poultry in California, no less than of the importance of the northern part of the State in the poultry industry.

A Correction.—We are glad to publish the following letter and incidentally to give the Indian Runners all that is coming to them:

Editor Rural Press: After the many years I have been reading your very valuable paper I have learned that it is always very careful to state facts as nearly correct as possible. It is with this knowledge in mind that I would respectfully ask you to correct a statement made in your issue of April 1 in regard to the egg record of the Indian Runner ducks. By reference to the article mentioned you will notice that you quote me as saying that "the ducks commenced laying on November 4. During that month they laid 108 eggs," etc. The record should have read as follows:

These eleven ducks were hatched in April and May and laid their first egg the 4th of October. During October they laid 108 eggs; in November, 235 eggs; in December, 293 eggs, and the first 28 days of January they laid 268 eggs, and are still laying at the same rate.

Very respectfully yours,
F. L. Hunt.

Napa, April 2, 1911.



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MAMMOTH WHITE HOLLAND TURKEYS—Eggs for hatching, $5 per 13 eggs; fine large vigorous stock, not related; no stock for sale. Mrs. A. R. Sutherland, Santa Barbara, Cal., R. F. D., No. 2.

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DAY-OLD CHICKS—R. I. Reds, S. C. White Leghorns and Barred Rocks; also eggs for hatching; good laying strain. Fairmount Hatchery, Box 29 B, R. F. D., Santa Cruz, Cal.

WHITE WYANDOTTES—221 egg strain. Owner first-prize cockerel, Oakland and Petaluma 1909. Eggs $2 per 15. H. B. WINTRINGHAM, Middletown, Lake Co., Cal.

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The Home Circle.

The Battleship Texas.

A sunken wreck on the bed of the deep,
A battered old hulk, I lie;
For service true the reward that I reap
The warrior's is—to die!
No more my prow o'er the waters may leap,
But round my wreck ocean's denizens creep;
The white-capped waves, looking down where I sleep,
Sing softly a lullaby.

But what you were doesn't count, so men say;
You're valued for what you are.
As time goes on, changes come with each day;
Only the new reaches par.
And I, once new, in the service grown gray,
Make room for those who are born of today;
It breaks my heart, but the world has its way,
And ergo I "cross the bar."

No requiem sung o'er the form of the dead
More fitting than that of mine.
A peaceful end is the warrior's dread:
What for a "ship of the line?"
The scream of shells shrieking past over head,
The salvo's roar and a full broadside sped,
A lurch, a plunge, and I sink to my bed—
Remembered for "auld lang syne."

—C. H. Conkling, in the New York World.

Getting Acquainted With the Country.

"Mother, tell me a story," and Harold threw himself at full length on the piazza floor and looked up at his mother with listless eyes. He had been three whole days in the country and was getting tired of it and wanted to be amused.

"Have you been out to see the calves, Harold?"

"Yes, the pigs and the hens, and down to the pasture to see the sheep. They are all stupid. I thought the country was going to be prime fun, and it is—awful—poky." He yawned and crossed his arms above his head. "I wish there was a boy here to play with."

"I wish so, too, Harold." Mrs. Haines looked down at him with an expression of perplexity on her face. She had been brought up in the country, and loved it much better than the city, and she wished her boy to feel the same. He was such a manly fellow and of such inquiring, sympathetic nature that she was sure he would feel just as she did if only he could be brought into touch with the things around him.

"Have you been down to the woods and along the brook?" she asked.

"Yes; I took my rod and tried to catch some fish, but they wouldn't bite. Uncle Will says I had better wait for a cloudy day."

Mrs. Haines knit her brows thoughtfully.

"See here, Harold," she said, her face brightening with sudden inspiration, "are you willing to help me do something—even if it is considerable trouble and takes a good deal of your time?"

"Why, of course, mother," sitting up with interest, "that's just what's the matter, I've got more time than I know what to do with."

"Good! You remember I've told you how interested I used to be in birds and insects and plants when I was a girl on the farm. I studied about them and watched them until I got to be quite a naturalist. That was quite a good many years ago, but now I am back here I feel as though I would like to take it up again. But I cannot move about as briskly as I could then, and my eyes are not quite as good. I shall need an assistant with nimble feet and bright eyes. Will the job suit you?"

"Indeed it will," cried Harold, heartily. He was on his feet now and all the listlessness was gone from his face.

"If I can find some of the queer things you've told about, mother, it'll be no end jolly. When shall we begin?"

"Not today. I have all these letters to answer. But I'll tell you what. Suppose you take this notebook and walk along the brook and through the woods and back by that pasture where we saw the bluejays yesterday. I would like to know how many of my old friends are still in the neighborhood. Do you know many of the birds by name?"

"I know the crows and bluejays and robins and—and—I guess that's all," replied Harold, doubtfully, "and, oh yes! I know hens and turkeys."

"Well, suppose you watch everything closely; birds and insects and whatever you find that is curious. When you come back you can tell me all about them, and I think I may be able to recognize them from your description. Make notes in your book so you can remember. I will go with you tomorrow."

"All right! Good-bye, mother. I'll be back in half an hour," and disdaining the steps Harold sprang over the piazza railing and hurried away, his own bright self once more, now that there was something definite in view.

There was a tender, unfathomable smile on Mrs. Haines' face as she turned back to her writing. Nor did she seem at all discomposed when a half hour, an hour, two hours, went by and Harold did not return. Indeed, it seemed almost as though that puzzling expression on her face deepened and her eyes grew brighter as she waited.

It was well on in the afternoon when Harold returned—breathless, glowing, excited.

"Oh, say, mother!" he called, before he reached the piazza, "what are those jolly clown birds with bright eyes and funny tails who turn somersaults in the air and do all sorts of fool tricks?"

"Bobolinks, I suppose you mean," answered his mother, trying in vain to keep her face calm.

"Well, they're the biggest show out. Half a dozen of them just spread themselves to entertain me; and I tell you, mother, I almost had to stuff my handkerchief in my mouth. They're regular born clowns."

Mrs. Haines laughed and began to gather up her letters. When she had put them away she came and sat down on the step beside Harold.

"Now I will look at the note book," she said.

The boy flushed and looked embarrassed.

"Why, I—I—really took no notes for a while, mother—about dragon flies and crows and a funny little red squirrel and about a fat, scolding, brown bird who wouldn't help his mate build a nest. And then I ran across those clown birds—bobolinks, I mean—and forgot all about it. I expect the book is down in the field somewhere. I'll go and find it," and he snatched up his cap from the piazza floor and hurried away in search of the forgotten notebook. Mrs. Haines watched him with mirthful eyes until he disappeared; then she entered the house and



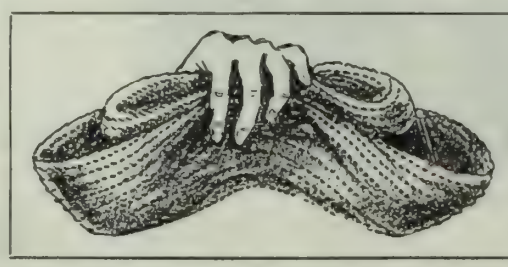
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IN ROUGH STRAW
Choice of Black, White, Tan, Old Gold, Brown, Navy, Alice Blue, Green, Lavender and Red
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hunted up an old collecting box and a microscope and some thick shoes for the morrow's expedition. And it is needless to add that Harold did not find any more fault with the country.

German Pot Roast.

Here is an excellent way to cook beef, which was taken from an exchange:

There is almost as much difference between the genuine German pot-roast and the beef stew that is often called pot-roast as there is between rib-roast and beef stew. The genuine pot-roast is brown and rich and jiucy, being cooked wholly in its own gravy and without any added water. A four to six pound is a nice size to cook properly. Select a piece with enough fat on it to furnish richness. Also add a small piece of beef suet. Heat an iron kettle until it is hot enough to sear the meat at once, then drop the suet and the meat into the kettle and turn over from side to side until the whole is seared so that the juices will not escape. Do not let the roast burn, turn often enough to prevent that, but let it roast to a deep brown. Add no water, for the meat will cook thoroughly in its own gravy. Do not have too hot a fire. Three to three and one-half hours of slow cooking should do the meat to a turn. If it is desired to serve browned potatoes with the roast, remove the meat when cooked, add water to the gravy and drop potatoes (either Irish or sweet) into the gravy and let them cook as usual. Season both meat and potatoes to suit the taste.

Many women do not cook meat in an iron pot, but use granite pans instead. In the latter case, sear the meat as described above, then add a small amount of water and cook slowly. The meat must be watched carefully, keeping a small amount of water in the pan as it cooks. When the roast is nearly done, remove the meat, add thickening to the gravy in the pan, replace the meat and cook for half an hour. This gives the meat a fine flavor. When serving put gravy in usual gravy dish and serve meat on platter. Another method of serving is to place meat on large platter, surrounding it with hot biscuits, well covered with gravy.

The Real Thing.

Fred, aged 3, had been a naughty boy, and his mother had punished him. He felt very much hurt and complained to his auntie about his mamma's spanking him. Auntie said, "It is not you that mamma spanks, but a little devil inside of you who makes you do naughty things." After sitting very still for five minutes he said, "It beats all how it hurts me when that devil gets spanked."—The Delineator.

The Ignorance of Casey.

Casey—Phwat kind av a horse is a cob?

Mulligan—It's wan thot's been raised intoirly on corn, ye ignoramus.—Boston Transcript.

His Diagnosis.

First Physician—Can you make anything out of the patient's trouble?

Second Ditto—I think if we manage right we can make about $500 apiece out of it.—Baltimore American.

Professor McGoozle—"It is astonishing how little the young people of the present day know of mathematics. For example, Miss Tartun—or you, Mr. Sparks—do you remember what the rule of three is?"

Miss Tartun—"Oh, yes, professor; I haven't forgotten that, I think. 'Three is a crowd.' That's right?"—Chicago Tribune.

OUR YOUNG FOLKS' DEPARTMENT.

Conducted by M. Russell James.

A Hint to Gardeners.

A goodly number of your young folks are gardening this spring, and not a few of them obtained free garden seeds from the Rural Press office with the promise to report results. To these young gardeners we will say that the most important point in securing fine vegetables and fruits, and also rich-colored and perfect blossoms from flowering plants, is thorough cultivation of the soil.

Before planting, the ground should be made mellow and free from lumps as meal for at least a foot in depth. After the plants are up and growing, the soil about them should be kept in this mellow condition and free from weeds.

SUBSTITUTE FOR RAIN.

While it has not been possible to make it rain, says a Dakota farmer in Farmstead, something even better has been discovered. Moisture can be bottled up in the soil. When soil is full of moisture, as in the spring, the evaporation is rapid if the soil is compact, amounting to about an inch a week. By stirring the surface, thus forming a soil mulch, this evaporation is stopped, and that moisture saved in the soil. This is better than a good rain in the growing season, and has the further advantage of warming up the soil.

SOIL CAPILLARITY.

The power which hair-like tubes or openings have to draw moisture and liquids is called capillary attraction. This is what causes the oil to rise in the wick of a lamp or a loose cloth or sponge to become saturated if one end is left in a liquid. Soil possesses this power, which is known as soil capillarity.

Soil particles not only have the power of drawing water to themselves, but of holding it as well, explains Inter-Ocean Farmer. By a simple mathematical law the smaller the particle the greater proportional surface it has, hence the finer the particles the more water a given soil is capable of holding. Also, the closer together the soil grains are the more retentive is the soil of moisture. The practical application of the principles of soil capillarity consists in first loosening the soil to as great a depth as possible for creating large surface for exposure that the soil may catch and imbibe as much water as possible, and then stirring the surface frequently to break capillary action at the surface and prevent loss from above.

This is the philosophy of dry farming, and also the secret of successful farming and gardening. Stir the soil and keep it mellow.

A Little Round Garden.

In the outside circle set pansies and candytuft. The little white feathery bloom of the candytuft is especially lovely with the rich-colored pansies. In the second circle plant vari-colored low-growing asters; in the third, mignonette and bluebells; in the very center put tiny moss pinks. This truly is a love of a garden, for it is the plan of my own first garden when I was a little girl, so I know.

Be sure to have some wildflowers in your garden. Go to the woods early, carefully take up the dirt with the roots, and all kinds of native bloomers and ferns. Wildflowers are especially fond of leaf mold, so fill your wildflower baskets with it, and put plenty of it in your garden. The little stranger flowers will feel at home then.

If there are any bare, unsightly places, an old fence corner, a heap of stones, an abandoned pump, or a rubbish heap, plant nearby a few moonflower seeds, scarlet runner, honeysuckle, or nasturtium. You will be delighted with the bunch of bright-colored blossoms in place of an ugly scar. Remember all bright-colored flowers are more effective against a background of shrubs.—Christian Herald.

Letters From Our Young Folks.

(Here is a little girl who sees interesting things to write about and takes time from her play to write them. To be able to express one's self with ease and beauty in writing is a charming talent, and one which may be cultivated the same as any other faculty of mind or body. Our young folks should make a note of this fact, and exercise this talent even if at first they do find it as hard to get ideas out of their heads as to pull stumps out of blackjack clearings. We predict that our little friend Hilda will be a fine writer one of these days.)

Concord, March 20, 1911.

Dear Pacific Rural Press: I enjoyed the Indian story in the Young Folks' Department, and am glad that you are publishing stories for us now. I think "A Comanche Princess" the best Indian story I ever read.

Yesterday, papa took my little brother and me to see the excursion from San Francisco, Oakland, and other places to Concord. The people came part way on the new electric railroad. A lot of land has been divided into town lots, with streets graded, and trees and flowers planted along the streets. The land further in is planted in walnut trees, and wide roads are made through it. A lot of this land was sold yesterday. A big hotel will be built on the land near Concord soon, and many people are going to make homes near here. The valley we live in is called Mount Diablo valley. It is at the foot of beautiful Mount Diablo. I hope you got the last letter I wrote to you. Yours truly,

Hilda Thelma Gehringer.

Kellogg, Cal., April 3, 1911.

Dear Editor: I received the eggs in good condition, and I thank you very much. I will try my best to take care of them good, so that I shall have a good start. I will let you know how I get on with them. I don't know much, but I will keep writing to you and reading your paper, and get all the information I can. I am very much obliged to you for considering my letter worth the prize, as I probably need the eggs as much as any. My very best regards to you. I am your little girl,

Emma Tamagni.

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THE MARKETS.

San Francisco, April 12, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The local market is rather quiet at present, and trading all over the Coast is said to be limited by the prices asked. Shipments from the North, however, are still fairly large. Values in general remain steady, the only change being a slight advance in Northern Bluestem.

California Club	$1.50	@1.52½
Sonora	1.60	@1.65
White Australian	1.55	@1.60
Northern Club	1.50	@1.55
Northern Bluestem	1.57½	@1.65
Russian Red	1.50	@1.55

BARLEY.

Values are still governed largely by speculative conditions, and there has been some fluctuation during the week. There is a good consuming demand for feed grades, however, and all spot barley shows a further advance. The shipping movement, however, is rather light at the moment. Prices in the country range around $1.50 for choice feed.

Brewing and Shipping	$1.50	@1.52½
Choice Feed, per ctl	1.45	@1.47½
Common Feed	1.37½	@1.42½

OATS.

Red and black oats, which are the only descriptions now offered, are still in good demand for feed, and supplies are comparatively light. Choice red oats are quoted a little higher, black oats remaining steady as before.

Red Feed	$1.35	@1.42½
Gray	Nominal	
White	Nominal	
Black Feed	1.35	@1.40

CORN.

Eastern stock continues to arrive in fair volume, and there is some movement of California grain in the interior, though little is offered here. Prices remain as before, bulk shipments from the East being slightly below quotations.

Cal. Small Yellow	$1.70	@1.75
Eastern Yellow	$1.30	@1.42½
Eastern White	1.30	@1.42½
Brown Egyptian	1.50	@1.60

RYE.

There is some cheap stock coming out, but most offerings are held at former prices. This market remains dull, with no demand of any consequence.

Rye, per ctl	$1.40	@1.50

BEANS.

Very little change is noted, either in prices or conditions, and the market is described as steady. According to some reports, the scarcity of Michigan beans is causing a little stronger feeling, especially in the white varieties, but so far the effect produced by this condition is hardly noticeable. The demand is by no means active for most varieties, though there is a little movement all the time, and supplies on hand are light. Bayos are a little easier, but the only other changes are upward, both blackeyes and garvanzos being quoted about 25c. higher. Lima beans remain in about the same position as before, being scarce in all the consuming markets, while the small remaining stock on the Coast and the high prices asked prevent any very active shipping movement. Conditions are satisfactory to holders, however, as it is desired to keep some stock on hand until about the end of the season. A large demand for seed is expected within the next few weeks. Preparations are now being made for planting in southern California, and it is reported that the acreage will be increased considerably. The heavy demand and close clean-up this season has shown pretty clearly that there is little likelihood of overproduction, though imported substitutes may cut into the market to some extent.

Bayos, per ctl	$4.65	@4.75
Blackeyes	6.50	@6.75
Cranberry Beans	4.00	@4.25
Garvanzos	2.85	@3.25
Horse Beans	2.50	@2.75
Small Whites	3.40	@3.55
Large Whites	3.40	@3.55
Limas	6.20	@6.35
Pea		4.25
Pink	5.50	@5.60
Red Kidneys	6.25	@6.50

SEEDS.

The demand for most descriptions has quieted down, and the movement is very light at present. The spring demand for alfalfa seed in some sections has been below expectations. Prices show no quotable change, except for dried peas, which are higher.

Alfalfa	18@	20c
Broomcorn Seed, per ton	$20.00@	25.00
Brown Mustard, per lb		5½c
Canary	3½@	4 c
Hemp	3½@	4 c
Millet	2¾@	3¼c
Timothy	8 @	9 c
Yellow Mustard		5¾c
Dried Peas, per ctl	3.75@	4.00

FLOUR.

Considerable flour is still being shipped to the Orient from the North, but this business seems to be falling off. Local patents, which have been unchanged for some time, are 20c. lower.

Cal. Family Extras	$5.20	@5.60
Bakers' Extras	5.20	@5.60
Superfine	4.30	@4.50
Oregon and Washington	4.40	@4.60

Hay and Feedstuffs.

HAY.

The city market is hardly in as good condition as last week. The amount coming in has increased considerably, and the increased offerings have come on a very quiet market. Dealers state that it has been necessary to shade prices to move the hay from the cars. It is said in some quarters that some improvement is likely, as there appears to be less pressure to sell than for some time past. The showers of the last week have been of great benefit to the crops, which are now in very satisfactory condition. Some seeding is still in progress, and a large yield is expected, though it is believed that the crop will be later than usual, affording a fair opportunity to clean up the old stock remaining on hand.

Choice Wheat	$12.00@	14.00
Good Wheat Hay	10.00@	11.50
Other Grade Wheat	7.00@	10.00
Wheat and Oats	7.00@	11.50
Tame Oats	7.00@	11.50
Wild Oats	6.50@	9.50
Alfalfa	8.00@	11.00
Stock Hay	5.50@	6.50
Straw, per bale	35@	50c

FEEDSTUFFS.

The market continues active, prices for the most part remaining steady, though a few slight changes are noted. Rolled barley shows a further advance, and is extremely firm. Bran is unchanged, but supplies are limited.

Alfalfa Meal, per ton	$19.00@	20.00
Bran, per ton	$25.00@	26.00
Cocoanut Cake or Meal		26.00
Cracked Corn	33.00@	34.00
Middlings	33.00@	36.00
Mixed Feeds	29.00@	32.00
Rolled Barley	30.50@	31.00
Rolled Oats	30.00@	32.00
Shorts	26.50@	30.00

Garden Truck.

VEGETABLES.

The movement of onions is limited by the high prices, but supplies are very light and Oregon stock is higher, while Australian stock is bringing top prices. Garlic is unchanged. Asparagus and rhubarb are receiving more attention than anything else, arrivals of both being extremely heavy and far beyond the local consuming demand. Prices for rhubarb have taken another drop, and only the best lots of rhubarb can be moved. Canners are taking a heavy surplus of asparagus, usually at low prices, though on some days as high as $1.25 has been paid. There is also a lively demand for shipment, and it has been possible to keep the inside price rather higher than last week. Green pears are arriving freely, both from the South and bay districts, and most of the Southern stock can only be sold at low prices. A few string beans from other States have been sold at 20 to 40c. Lettuce is plentiful and easy, while celery is a little higher.

Onions: Oregon, ctl	$ 2.50@	2.65
Australian		3.50
Garlic, per lb	4@	5c
Green Peas, per lb	2@	7c
Turnips, per sack	60@	75c
Tomatoes, per crate	1.00@	1.25
Cucumbers, per doz	75c@	1.25
Cabbage	40@	50c
Carrots, per sack	65@	75c
Celery, large, per crate	1.75@	2.50
Rhubarb, per box	40@	75c
Lettuce, per crate	1.50@	2.00
Cauliflower, per doz	60@	75c
Asparagus, per box	75c@	1.35

POTATOES.

Prices are a little higher for both river and Oregon stock. All old potatoes are quiet, but new potatoes receive a little more interest.

Salinas Burbanks, per ctl	$ 2.45@	2.50
River Whites per ctl	1.85@	2.10
Oregon Burbanks	2.00@	2.25
New Potatoes, per lb	4@	6c

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POULTRY.

While the week opened with liberal arrivals from the East, and some stock held over from last week, there has been an extra demand for large stock on account of the Jewish holiday, and most offerings are cleaning up well at the former quotations. Fryers and squabs are lower, but otherwise the market is unchanged. Local stock is arriving more freely than for some time past.

Large Broilers	$ 4.50@	5.50
Small Broilers	3.50@	4.50
Fryers	6.00@	7.00
Hens, extra	9.00@	12.00
Hens, large	7.00@	8.00
Small Hens	6.00@	6.50
Old Roosters	5.00@	6.00
Young Roosters	7.00@	8.00
Young Roosters, full grown	9.00@	10.50
Squabs	2.00@	2.50
Geese, per pair	3.00@	3.50
Ducks	8.00@	10.00
Turkeys, live, per lb	Nominal	

BUTTER.

There is a good demand for shipment to points up and down the Coast most of the time, but arrivals have been extremely heavy, and the week opened with lower prices. A stronger demand for shipment, however, has brought an advance, and the market is firm at the present level. Below are given the daily quotations of the San Francisco Dairy Exchange for the past week.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	21½	21	20½	20	21	21
Prime Firsts	21	20½	20	19½	20	20½
Firsts	20	20½	19½	19	19½	20
Seconds	19	19	18½	18	18½	18½

EGGS.

There is a heavy movement in the country, both for storage and for the hatcheries, but arrivals at San Francisco still leave a large surplus for the local storage houses, notwithstanding a large consuming demand. Conditions are favorable for storing, however, and the demand for that purpose keeps the market pretty steady. Prices have been unchanged for over a week.

Below are given the daily quotations of the San Francisco Dairy Exchange for the past week:

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	18	18	18	18	18	18
Firsts	17	17	17	17	17	17
Seconds	16	16	16	16	16	16

CHEESE.

The market is fairly active and in good condition, local flat firsts being a little higher. The following prices are quoted by the San Francisco Dairy Exchange:

Fancy California Flats, per lb	13 c
Firsts	12½c
New Young Americas, fancy	14½c

Deciduous Fruits.

FRESH FRUITS.

Apples remain steady at former prices. Offerings are not very large, but the local demand is limited at present. Southern strawberries are arriving in larger quantities, and sell readily as quoted. A few berries have also come in from around the bay, but the amount has been too small to establish any definite quotations. A new feature is the arrival of several small shipments of Mexican cantaloupes. They have been held at about $4 to $5 per crate, but those so far received have not been very attractive and found little demand.

Apples, per box—		
Newtown	$ 1.25@	1.75
Fancy Red, 4-tier	1.25@	1.75
Strawberries, southern, crate		2.25

Dried Fruits.

There has been no further change in quotations on spot goods, and except for raisins and peaches the values are little more than nominal, both prunes and apples being just about cleaned up, while other descriptions have been sold out of growers' hands for some time. There is a moderate but steady consuming demand for all lines, but business is mostly of a jobbing nature, as packers have little to offer. Raisins are moving off gradually, with a tendency to higher prices as the season advances. The outlook for the prune crop is said to be good. Buyers are out for future figs, and are said to be offering 3½c., but growers are not inclined to sell at this figure. A larger crop is expected than last year, but the demand is considerably in excess of the expected production. The New York Journal of Commerce says: "A much stronger feeling has been developed in the spot apricot market during the past few days, and prices have an upward tendency. Some holders will not accept less than 13½c for choice, 14c. for extra choice, or 14½c. for fancy. The improvement in the tone of the market is based on an increasing demand and light stocks, though so far business has been confined within jobbing limits. Hamburg buyers are said to be already in the market for 1911 dried apricots. Some speculative prices have been made based on 13½c., f. o. b. Coast, for choice Royals, but that is considered to be altogether too high. It is said that the German buyers would be willing to buy for earliest shipment at 11½c.

"Rather more interest has been shown in peaches of late, but no great amount of business has been done for immediate delivery or prompt shipment from the Coast, as buyers and sellers seem to be apart in their views on prices. The season of large consumption is near at hand and holders expect a good business.

"A feature of the market is the strong position of California raisins, particularly bleached Thompson's. The stock of the latter on the Coast is said to be nearly, if not entirely, exhausted, and what is there is in few hands. The available spot supply is said to be one of the smallest ever known at this season of the year. There is a rather active jobbing demand from the home trade, and exporters are said to be looking for stock. Everything available on the spot in the fancy grade below 9c. seems to have been absorbed, and some holders have fixed their quotations at 9½c. Loose muscatel raisins are getting into small compass, but as the demand here is light, prices are nominal. Seeded raisins in the fancy grades are going steadily into consumption on jobbing orders at the quoted prices, but there is no call for round lots, either on the spot or for shipment from the Coast."

Evaporated Apples, per lb	10½@	11 c
Apricots	12 @	13 c
Figs, black	4½@	5 c
Figs, white	5 @	7½c
Moorpark, fancy	13½@	14 c
Peaches	6½@	7¼c
Prunes, 4-size basis		9 c
Pears	8½@	12 c
Raisins—		
Loose Muscatels, in sweatbox	3 @	3½c
Thompson Seedless	4 @	4½c
Seedless Sultanas	3¾@	4 c

Citrus Fruits.

Orange shipments continue heavy, and Eastern auctions are holding up well for good fruit. There has been considerable decay shown at Eastern markets which

has caused some fruit to sell on a red-ink basis. However, as the fruit will go forward from now on under ice, and as the rains will no longer interfere, there will probably be much less decay for the balance of the season.

Many districts are cleaning up the navel crop, and this will have a tednency to lessen the number of cars shipped. Redlands has passed all records this season as a producer; up to April 11 there had been sent out from that section 3105 cars, against 1675 to same date last year. It is stated that there are about 1000 more cars there, which will be shipped during the next few weeks.

Though the arrivals in the East have been heavy, yet the prices are holding up well. At the New York auction on Monday, April 10, 50 cars of navels were sold, and good fruit brought as high as $3.15 per box for several cars. Poorer fruit sold as low as $1.90. Lemons sold as high as $3.80, and down to $1.85. On the same day at Boston, 28 cars were sold at good averages, the highest going for $2.85 and lowest for $1.50. Lemons were strong at about $3.50. Los Angeles sales at auction, the same day, showed a range of $1.22 to $1.57, f. o. b. California, for navels. The Cleveland and Pittsburg auctions showed a lower level of prices.

Shipments up to April 10 for the season were 19,289 cars of oranges, and 2271 cars of lemons.

Navel oranges find a good, steady demand in the San Francisco market at present, prices being steadily maintained, with arrivals about equal to the market requirements. A few blood oranges have come in recently, selling at about the same prices as navels. Fancy lemons are a little stronger, but other grades are unchanged. Mexican limes have taken another drop.

Navel oranges—	
Extra choice	$ 2.00@ 2.50
Choice	1.75@ 2.00
Valencias, choice to fancy	Nominal
Choice	Nominal
Standard	Nominal
Tangerines	Nominal
Choice Lemons	2.00@ 2.50
Fancy Lemons	3.00@ 3.50
Standard	1.25@ 1.50
Limes	5.50@ 6.00
Grapefruit	2.00@ 2.75

Nuts, Honey, Hops, Etc.

NUTS.

Prices remain almost entirely nominal, as practically everything is now held by jobbers. There are no large offerings of walnuts, though the supply of almonds is sufficient for current needs.

Almonds—	
Nonpareils	15½@16 c
I X L	14½@15 c
Ne Plus Ultra	13½@14 c
Drakes	11¼@11¾c
Languedoc	11 @11½c
Hardshells	8 @ 8½c
Walnuts—Softshell, No. 1	15 c
Standard	14½c
Softshell, No. 2	11 c
Budded	17½c

HONEY.

Extracted comb honey of desirable grade is entirely cleaned up, and offerings of comb are limited. The market is quiet, prices being steady as before.

Comb—White Sage	12 @ 15c
Extracted—Water White	Nominal.
Light Amber	7 @ 8 c
Amber	5 @ 6 c
Sacramento River Comb	12 @12½c

BEESWAX.

Prices stand as before. The market is quiet, both demand and supply being light.

Light	28 @30 c
Dark	23 @26 c

HOPS.

The market is inactive, both in spot and future hops. There is very little left of the old crop, and growers are inclined to hold for an advance which buyers are not willing to pay. High prices are also asked for the 1911 crop, and while a considerable acreage is said to have been contracted for, there is little business at the moment.

Hops, 1910 crop	18 @22½c
1911 Crop	16 @17 c

Live Stock.

DRESSED MEAT.

Beef Steers, per lb	10 @10½c
Cows	9 @ 9½c
Heifers	9 @ 9½c
Veal, large	11 @12 c
Veal, small	12½@13 c
Mutton: Wethers	10½@11 c
Ewes	9 @ 9½c
Lambs	14 @15 c
Hogs, dressed	12 @12½c

LIVE STOCK.

The market is beginning to show some signs of weakening, though there is little actual reauction in prices. Beef cattle are fairly steady, but arrivals from outside points are increasing. Grass-fed stock brings 1c. below quotations. Live hogs have dropped about ¼c. and are weak at the new prices. Sheep are rather easy, but unchanged as to value. The only lambs offered are spring lambs.

Gross weight:	
Steers: No. 1	6 @ 6½c
No. 2	6 @ 6¼c
Cows and Heifers: No. 1	5¼@ 5½c
No. 2	4¾@ 5 c
Bulls and Stags	2½@ 4 c
Calves: Light	6½@ 7 c
Medium	6 @ 6½c
Heavy	5½@ 6 c
Hogs: Grain-fed, heavy	7 @ 7¼c
150 to 250 lbs	7½c
100 to 150 lbs	7½c
Common Hogs, per lb	4¾@ 5½c
Small prime wethers	5¼@ 5½c
Large prime wethers	5¼@ 5½c
Ewes	4 @ 4½c
Lambs	6½@ 7 c

WOOL.

In the absence of new business former prices are quoted, though everything is nominal at present. Shearing is well under way in most localities, but local buyers have not yet shown any interest, and report a general apathy among consumers throughout the country.

Fall Clip—	
Mountain Free	8 @10 c
Valley Fall and Lamb	6 @ 9 c
Northern	6 @ 9 c
Southern Spring	10 @11 c
Middle Counties	12 @13 c
Northern	15 @16 c

HIDES.

Both hides and pelts are finding a sluggish market, and prices are inclined to weakness, though there has been no quotable decline.

Heavy Steers, over 56 lbs.	10 c
Medium	9 @ 9½c
Light Steers, under 48 lbs.	9 c
Heavy Cows, over 50 lbs.	8¾c
Light Cows, 30 to 50 ibs.	8½c
Kip	10½c
Veal	15 @15½c
Calf	15 @15½c
Dry—	
Dry Hides	17 @18 c
Dry Bulls	16 c
Dry Kip, 10 to 15	17 @18 c
Dry Veal, 5 to 10	16½@17 c
Dry Calf, 7 down	22 c
Sheep Skins—	
Long Wools	$ .85@ 1.25
Medium Wool, 6 to 9 mos.	50@ 80c
Short Wool, 3 to 6 mos.	35@ 60c
Lambs	15@ 50c

HORSES.

Desirable Drafters, 1700 lbs. up	$275@300
Light Drafters 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	200@250
Wagon Horses, 1250 to 1350 lbs.	175@200
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	135@150
Young	200
Old Mares	100@150

PUBLISHER'S DEPARTMENT.

Cunningham, Curtiss & Welch, the big book concern of this city, are selling lots of "California Fruits" and "California Vegetables" these days. Not satisfied, apparently, by beating all records, they are now trying to go themselves one better by using their big display windows on Market street for a two weeks' showing of these books exclusively.

We are pleased to call attention to the addition of the name of A. M. Henry, of the Knob Hill Stock Farm, Farmington, to our Breeders' Directory column. Mr. Henry's herd is composed of medium type P. C. Swine from the herds of F. D. Winn, Randolph, Mo., and J. C. Hanna, Dannville, Iowa, and also the large type from the herd of Peter Mouw, Orange City, Iowa.

ADVERTISING THAT PAYS.

Recently we have had brought to our attention some instances where advertising brought results long after the firm had quit paying for the space used. One instance is, that a stump puller was advertised in an old edition of "California Fruits," and we have every few weeks received inquiries as to the location of this firm, the parties inquiring wanting their implement. Last week two letters of inquiry came to us. As a matter of fact, the stump puller manufacturing company that advertised has been out of business since the fire of 1906. Another instance of paying advertising also occurred last week, when a pump manufacturer received an order from one of our subscribers who must have read the announcement over six months ago, as the ad. had not appeared during that time. Place your announcements in good, established papers and you will lay up treasures not only for this year, but for the hereafter.

NEW BOOKS.

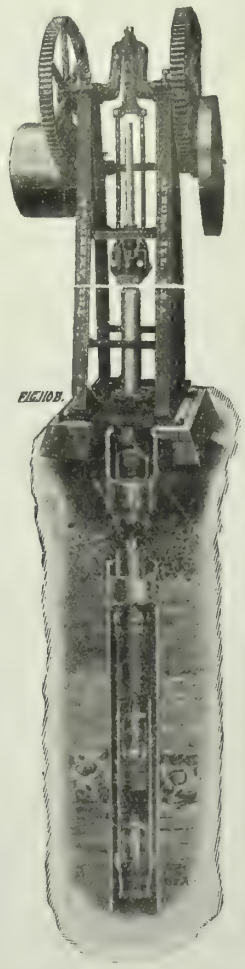
Sturgis & Walton Co., of 31 East Twenty-seventh St., New York, have recently published three books which will prove of interest to farmers. First of these books is the Report of the Commission on Country Life, with an introductory letter by Theodore Roosevelt. This book will be read by many, as it tells the means whereby country life may be redirected, to the end that a better rural civilization may be developed. The book is for sale in cloth binding at 85 cents, postpaid.

Growing out of the discussions of bettering farm conditions is another book, written by Renee B. Stern, entitled "Neighborhood Entertainments," which gives a host of tried and practical suggestions for the increase of sociability. The book tells how to form and conduct neighborhood clubs, gives programs of amusements, and contains a miscellany of matter relative to the subject. The price of the book, bound in cloth, postpaid, is 85 cents.

The third book is called "Home Water-Works," by Carleton J. Lynde, is bound in cloth, well illustrated, and sent postpaid for 85 cents. The obtaining and introduction of water into houses and outbuildings, and the domestic utilization of water-power are the subjects treated in this volume. This thoroughly practical book meets a widely recognized need for information, and is written by a specialist.



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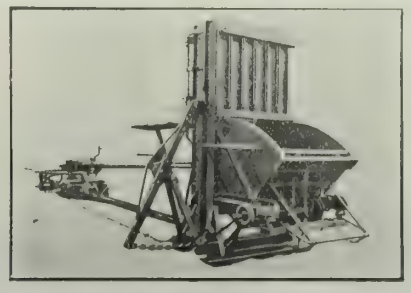
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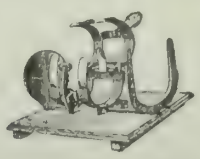
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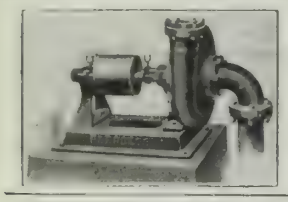
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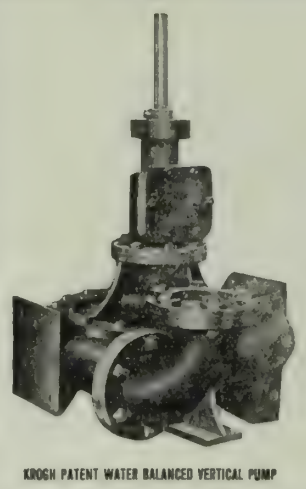
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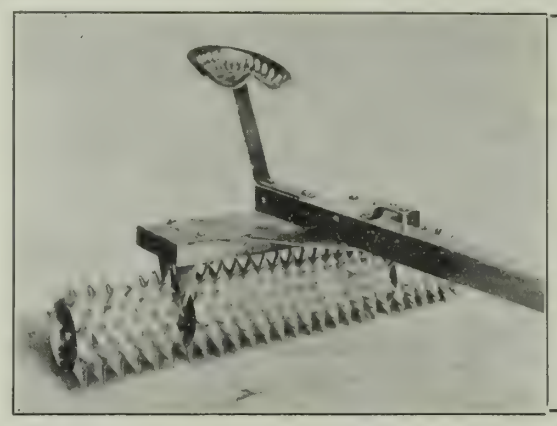
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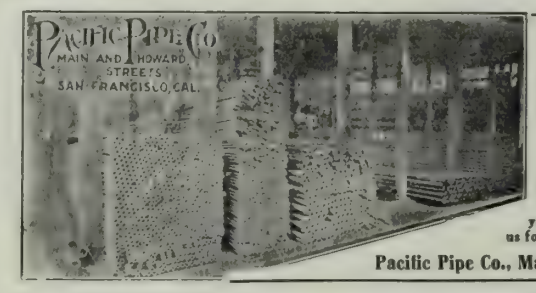
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THE PACIFIC RURAL PRESS

Vol. LXXXI. No. 16. SAN FRANCISCO, SATURDAY, APRIL 22, 1911. Forty-first Year.

CALIFORNIA STATE

What the Grower Can Do to Get More Wheat.

By Dr. G. W. SHAW, Cerealist of the University Experiment Station.

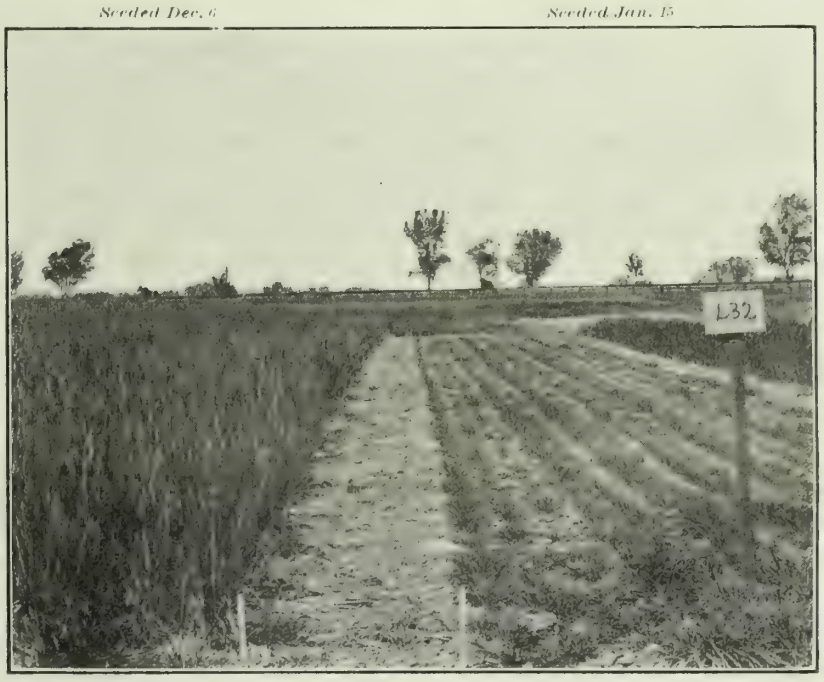
[In the PACIFIC RURAL PRESS of April 1 we made appreciative reference to the last publication by the University Experiment Station, to wit: the bulletin by Dr. G. W. Shaw on "How to Increase the Yield of Wheat in California." In our previous notice we cited particularly cultural matters in the direction of soil handling to secure moisture conservation, which is, of course, the foundation of all efforts to get greater yield by rainfall. This time it occurs to us to emphasize certain other things which the grower can do to increase his product. Incidentally these things are otherwise interesting because they outline the characteristics which must be secured to render the new wheats, which the Experiment Station is seeking through the arts of the plant breeder, particularly valuable and desirable in this State.—EDITOR.]

Considered only in relation to field conditions there are certain special characteristics which are extremely desirable for wheats which are to be introduced into the State. The following are considered the most prominent of these: manner of growth, tenacity, days to mature, character of head (especially with respect to awns), rust resistance, and heavy yielding plants.

In the selection of a variety, climatic and soil conditions must be given consideration, for certain varieties are more suitable for light soils than for heavy soils, and vice versa. Further, some varieties are much more able to withstand drouth than others. This latter condition is of special significance under "dry farming" conditions. Further, there is considerable difference in the ability of varieties to withstand attacks of rust, which, in the coastal regions, is a factor of much importance; in the interior section, however, this is of less consequence.

Early Maturity.—Earliness, as measured by days to mature, is an important point for consideration in the selection of grains for use in California. The wheats should be such as can be planted as late as possible and will have a rapid growth and mature early, before the exceedingly hot weather comes on in the summer. Further, earliness is a great factor in enabling the wheats, and grains in general, to withstand rust attacks, which are very severe in certain sections. This is extremely important for wheats grown in the coast counties, for in that region rust is an omnipresent difficulty, owing to the more moist atmosphere. Further, the early wheats are not as apt to be injured by drouth as the later maturing varieties.

Habit of Growth.—The manner of autumn growth (that is, whether the growth is upright or spreading) is of unusual importance under the present condition of the grain fields as to weeds. Until the farms are in a much cleaner condition than at the present time no wheat is likely to meet with favor unless it will make a reasonably good fight for life among weeds. This factor is not so important in the case of wheats used on summer-fallow land, but in many instances even in this case, it is of some importance, because the continued use of the combined harvester, coupled with generally careless methods, have so seriously scattered the weeds in the grain fields as to make even the summer-fallow land exceedingly foul. In such fields the plants that have a low-spreading growth in the fall and winter have but little chance against the weeds. It is the strong upright growth made by the varieties commonly grown in the State that has been one of the main factors which has enabled them to hold their own in the State despite their low milling qualities. This rapid upright growth enables them to successfully keep ahead of the weeds and finally win in the race. With the farms becoming smaller and being given greater care, and the introduction of the binder, this factor possibly will not be as important. Generally speaking, however, these same spreading varieties require early planting, and for this reason under the conditions of precipitation which hold in large grain-growing sections of the State it is difficult to get them planted, except on summer-fallow land, sufficiently early to have them under favorable conditions for good yield. They must be growing by December 1 to be under even fair conditions, and it is seldom, indeed, except on summer-fallow land, that it would be possible to seed by that date. This will be one of the greatest obstacles in the introduction of these wheats into this State. Our present idea is that varieties whose early growth is of a spreading character are not well suited to the climatic and other conditions which obtain in this State generally, unless it be in those parts of the State where limited areas of wheat are grown by irrigation, where a late summer or early fall irrigation can be given the land, thus enabling it to be put into condition earlier than otherwise would be possible. Such varieties may, however, be suited to the smaller valleys in the mountain sections of the State.



Early and Late Planting of Spreading Winter Wheats: Both Plats Same Variety. Photographed May 1st.



Oat Field on Cherokee Lane, Near Stockton.

Tenacity, or Non-Shattering Habit.—The tenacity with which the chaff holds the grain is also an especially important factor in California, where the combined harvester is so extensively used. Grain frequently stands in the field for a month to six weeks after it is mature, and under the heavy winds which prevail in the Sacramento valley, and certain parts of the San Joaquin valley, unless the chaff is very tenacious of the berry there is serious loss. With the use of the self-binder instead of the combined harvester this loses something of its significance, but it will always be a factor of importance. The wheats which have survived in the struggle for existence here have been of this character, and it is one of the principal points in which the Little

(*Continued on Page 314.*)

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Apr. 18, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.06	28.39	41.15	58	34
Red Bluff	00	23.39	22.57	82	36
Sacramento	00	21.80	18.28	78	42
San Francisco	00	24.17	20.77	74	42
San Jose	00	22.40	11.85	78	32
Fresno	00	11.83	8.52	82	36
Independence	00	7.41	8.43	78	28
San Luis Obispo	00	34.26	18.65	78	42
Los Angeles	00	16.08	14.79	80	44
San Diego	00	11.78	9.32	78	44

The Week.

We have just had the pleasure of reading a booklet by Mr. Charles Cristadoro entitled, "Pocket Handkerchief Farms," which has been published by the California Development Board. It is written in a charming style, full of sprightliness, allurement, incitement, even excitement, for those to whom it is directly addressed—a class which is thus described:

There are thousands of land hungry city men of middle age who, having saved up two or three thousand dollars, would like to own a home, a sort of pocket handkerchief farm, in the country, where they could raise a good living out of the soil, consuming at home and selling the surplus proceeds from the ground, adding even a little to their bank account each year also, from eggs, milk and butter.

Not skilled in extensive mechanical farming, they would depend on their hoes and have no aspirations toward being wheat kings or anything of that kind. They would like to live where the snow and frost was unknown, practically, surrounded by good people and actually living under their own vine and fig tree, to call their surroundings their own and enjoy, in the open air, a reasonable day's manual work that would insure years of health and life.

We resolutely reject the temptation to take the writer literally and to accept his claim as it is written, for that would kill the objections which we propose to file against it. If an awakened city man could by a day's work insure years of health and life, surely it would be inhuman to deny him such productive effort. But of course a single day's work in agriculture does not insure years of comfort—unless it be devoted to selling a tract of land to a lot of land-hungry people like those to whom the quoted paragraph refers. But we will not be so unfair to the writer as to take his declaration literally, although we have a profound conviction that about one day's work is about all the average city man of middle age would care to do, and his wife would be somewhat busy with the liniment bottle for some time afterward.

Of course this delicious paragraph opens wide the opportunity for preaching which we are always falling into, viz: that a sharp turn from city industries to rural industries, without knowledge of the latter, does not include even a reasonable prospect of success and satisfaction. A writer who can prescribe such a turn for average middle-aged city men must have a very low idea of the actual knowledge which agriculture, even in its simplest phases, demands as essential to successful achievement. He must ignore the losses and disappointments which result from ignorance and the patient endurance which it requires to get wise through experience. Of course we know that all these difficulties are surmounted in individual cases. We have a number of personal acquaintances who have made the sharp turn from mechanics and from trade and have notably succeeded. They happened to have the quality of mind and character which made it possible; they might by the same token have become poets, statesmen or military heroes. To urge their careers as a warrant for imitation by average middle-aged city men, without capital or knowledge and with no prompting to a quick turn except a dream of its ease and delights, impresses us as unwise and dangerous.

Naturally Mr. Cristadoro turns to France as an instance of national wealth and individual thrift and contentment attained by prevalence of his "pocket handkerchief farming." He is right, for the agricultural peasantry of France is the wonder of the world. There may be a question whether we desire in an American State a large element of citizenship like the French peasantry. We do not discuss that point, but make this one, viz: that we cannot get such a population by any such process as Mr. Cristadoro implies in his discussion. If France should by chance lose its present peasantry it could not restore it by inducing "thousands of land-hungry city men of middle age" to go out from Paris. The French peasantry has been bred to the land and has first of all knowledge of agriculture which no other common people can equal. It has been bred to the land in the light of independence, free thought and foresight, and it has thrift which no other common people can equal. It has been bred to the land under the warmth of light-heartedness courage and patriotism, and it has persistence, endurance and self-sacrifice as active virtues, not as passive moods. Of course this peasantry was able to restore the country after the downthrow by the Germans. Such a population was not made by subdivision of land; it itself accomplished that subdivision in the development of its own purposes and as the result of its own powers. If it be then granted that such a peasantry be desirable in California and that it could exist under American institutions and American traditions and that it could be developed out of the cosmopolitan heterogeneity of American citizenship, our contention still remains that it could be made in California out of discontented San Franciscans even less than it could be made in France out of discontented Parisians. Such a product must grow upon the land, must know the land, must be born to the life it lives.

Mr. Cristadoro does not address his striking plea for "pocket handkerchief farming" to farmers, and in that respect we admire his wisdom. Those who know farming and catch even a glimpse of the breadth, independence and satisfaction of it as a human occupation, are not likely to be impressed by such a prophecy as this:

In California the immense orange, lemon and grape holdings will disintegrate into 40, 20, 10, 5 and thousands of 3, 2, and 1 acre intensively cultivated farms, where diversified farming will be carried on. It is not the hundred acre range rancher or the thousand acre grape grower who is to carve out California's real golden castle in Spain, but the man with the hoe and the acre of ground, a king in his own principality, monarch of all he surveys, strong, virile, hardy in his work under the energy giving sun, thriving, prosperous, thrifty, living better than he ever did in the city life, getting all that there is to be got out of the earth and living well and abundantly.

Here we see how Mr. Cristadoro's analogy leads him into trouble. We are aware that there are acre-patches in France upon which families are said to exist, but such an area for diversified farming is a joke from an American point of view. Such a thing in Colusa county was, we remember, worked overtime by the old Promotion Committee, but we had supposed it was abandoned as worn out long ago. The writer has inverted terms in speaking of a "hundred acre range rancher and a thousand acre grape grower." Range ranching on a hundred acres is almost as funny as diversified farming on one acre. We are glad that neither of these is to carve out "California's real golden castle in Spain." And then we always supposed that a "castle in Spain" was a sort of chimera anyway, but this is a "real golden castle," and that may be different. But we forget that this is not written for farmers but for city people hungry for the land, and we are silly to object to the style of it. It is probably just right to inflame its intended constituency. A great captian of agriculture, a king, a monarch, a physical giant ordering the sun to stand still with his hoe as did Joshua with his sword and getting everything out of the earth while the orb of day is waiting—this is indeed a picture fit to expand the chest of the floor-walker as he paces the quarter-deck of a department store, or to guild the smile of the barber as he feels expansive ideas flowing into him from the glossy poll of the promoter which he is polishing. Therefore we yield facile loyalty to Mr. Cristadoro while he electrifies the people to whom his scintillating language is intended to appeal. From this point of view his work is admirable, no doubt.

But when Mr. Cristadoro in the course of his argument comes upon ground which we claim as ours, we rise to smite with such strength as is given to us. We arraign him as disloyal to California when he averts the agricultural glory which belongs to Californians to a citizen of another State whose services came later and consist in the application to interior regions of principles which were first applied on this continent to the operation of California rainfall farming. The gratuitous flinging away of a notable California achievement is involved in this paragraph:

There was, a few years ago, a man named Campbell—Professor Campbell now—who learned the secret of sealing up water in the ground, creating a reservoir under the thirsty roots that kept full when the sun was hottest overhead and made a growing combination of plenty of soil—moisture under a warm forcing sun that, when the farmers saw the results, made them regard Campbell much as the Indians would regard their medicine-men. Campbell found out how and what kind of medicine to give the earth. So when, in the first experimental days of dry farming, Campbell's crops flourished under the blistering sun and withering hot winds like a green bay tree, the moisture sealed in under the roots responding nobly to the suction work of the great sun-pump, carrying the crops on to the harvest, going under the wire, as it were, without a break or a skip, everybody marveled.

Oh, no; not everybody; only those who did not know what California farmers had been doing for about half a century before Mr. Campbell's announcement was made. It was the American settlers who took up farming in this State during the first decade of out Statehood who learned the secret that water enough could be conserved by cultivation to secure fruits, vegetables and grains

without irrigation even when the skies were dry for half the year. It was they who stored potatoes from their arid fields in ships for miner's use until the oversupply was so great that the ships burst with the growth of potatoes which would not wait for boiling. It was they who produced forty million dollars worth of wheat in a year without irrigation. It was their successors applying the same methods who founded and have since developed the vast output of deciduous fruits which comes by rainfall upon lands cultivated for moisture conservation. Mr. Campbell has rendered a great public service for the whole plateau region from Mexico to Alaska, perhaps, because he made the demonstration there that the principles which made California famous before our great irrigation enterprises began were applicable to crop-getting with minimum rainfall in the great interior regions of the country. We do not object to glory to Campbell, but the glory to the pioneer dry-farmers of California is greater.

Having thus tried to do the fair thing by Cultivation, California and Campbell, we have to remark that these high seas will not float Mr. Cristadoro's claim that the miniature farms which he contemplates will do anything like what he expects of them on a dry-farming basis. We do not admit that they are farms at all; they are rather gardens, and their maximum of production, even with the fullest knowledge and energy, is conditioned upon irrigation. The dreamiest thing in Mr. Cristadoro's vision is thus described:

The possibilities of semi-arid land, cultivated under Professor Campbell's dry farming methods are far reaching. The sun of prosperity for California is just rising, glinting the mountain tops with Aurora's first smiles. In the spelling of the word "prosperity" California has only got to the first letter. And in the days that are to come the man with the hoe and the acre of ground is to form no small part of the prosperity that is to be ours.

Here again we have the man with the hoe, the king, the monarch and the acre of ground in their final apotheosis—and not a drop of water to cool the burning tongue. We have spoken lightly of all this without malice or ill-will. We cannot rest our conscience, when such well-intentioned but misleading claims are put forth, except by protesting against them. Farming is a serious business, and it takes the best there is in a man even under the most favorable conditions and even in California, where conditions are most favorable. To spread the idea among those whose lives have unfitted them to judge, that a living can be made from land without adequate opportunity in area of land and without special knowledge of how to embrace that opportunity, is not a contribution to the satisfaction of an individual nor to the development of a State. It is rather an influence toward loss, disappointment and hardship, although it may be actuated by an honest desire to benefit mankind.

Queries and Replies.

Where to Invest in Oranges.

To the Editor: I would be much pleased if you will give me the benefit of your judgment on the following: What locality in your State is best adapted to the most profitable production of oranges? Please name other localities in order of preferment. Am going to locate somewhere in your State, and any information accorded me will be strictly confidential.—Investor, Dayton, O.

There is really no best place to grow oranges or any other fruit in California. There are many places which seem to be practically alike in suitability, though there is much difference in price of land, water supply, etc. Even between localities in southern California there is contention as to which is the best on the basis of price attained for the fruit, but there has been no demonstration of this on the basis of averages so far as we know. The counties now producing oranges commercially stand as follows, in number of trees: San Bernardino, Los Angeles, and Riverside counties; Tulare county, which is about two hundred miles north, then back to Orange county which adjoins Riverside, then to Ventura county, west of Los Angeles, then five hundred miles north to Butte county, next to Fresno county which joins Tulare, next to San Diego county, which is south of Orange. So you will see that the first nine orange-producing counties are distributed over about five hundred miles of north and south distance, and conditions suitable for successful production are practically the same in suitable situations and on satisfactory soils all through this distance. Some of the counties are much higher in lemons than in oranges; we merely give them in the order of the latter fruit.

The only way you can get an intelligent idea of the relative desirability of the different orange-producing districts and their choice for investment can be had by personal investigation, and the cost of such an investigation in advance of investment is often the most profitable outlay which an investor can make.

Eucalyptus near Property Lines.

To the Editor: My adjoining neighbor has planted gum trees within two feet of my line of fence. I want to know if there is a law to compel him to move his trees a certain distance from my fence, as gum trees will ruin my land for 75 or 100 feet. I will not be able to grow anything within that distance of the gum trees. When they get 6 or 7 years old the roots will draw all the nourishment from the ground and nothing will grow. It is very good soil and he has planted them 8 feet apart in two rows. My neighbor on the other side has his fence served in the same way by my neighbor, who says he can plant his gum trees wherever he wishes on his own ground; he does not care if he spoils your land so long as he gets his trees to grow. Can he be made to remove the obnoxious trees to a certain distance from my land?—Farmer, Martinez.

So far as we know you have no remedy. Perhaps a sharp lawyer could find some application of the principle that one cannot use his property to the detriment of another without paying for the damage, which would cover the case at some time in the future. We understand that the damage has to be actually realized and proven and nothing can be recovered on the belief that damage will ultimately result. On the basis of decisions now being rendered against those who build high "spite fences" it seems to be possible to recover something for heart sickness, but even that has to be experienced and sworn to as a real and not an anticipated condition of the emotions. You have a right to trench along your side and cut off roots which are intruding into your soils and perhaps you can sue for the cost of that operation when the damage done by the roots is demonstrable by actual loss of crops on your side. These are, however, all rather legal questions than agricultural, and we assume no responsibility for them. Who has had experience which might be helpful to our apprehensive subscriber?

Cut Worms and Nut Seedlings.

To the Editor: On account of the continued wet weather this winter I was prevented from planting almond trees as I desired. I therefore concluded rather than have the plot idle this year, I would plant the nut in the permanent position, so as to not have to take the chances of getting my orchard started another winter. But now I find that as soon as the sprouts appear above ground the cutworms destroy them. I would like to know if there is anything I can use to prevent this. I intend to replant where the plants have already been destroyed, so I wish to use a preventive which will not destroy the tender shoot when it comes through the ground.—Subscriber, Concord.

This is another of many reasons for not trying to start nut orchards by planting the nuts in place. Hoe around the seedlings as they appear and kill all the cut forms you can find in the soil. Then put near the seedling a little of the poison made in this way: Mix eight pounds of bran, one pint of cheap molasses and one pound of arsenic into a paste. Look out for your chickens, dogs and cats. The worms eat this mixture readily.

Lice on Watermelons.

To the Editor: Will you kindly give me a good recipe for lice on watermelons, as I am just a beginner at the business. Have the common ants anything to do with the lice? If they have not, what is responsible for their existence?—Enquirer, Dinuba.

This is the melon aphis which is easy enough to kill when you get it off by itself but very hard to handle in the multitudes in which the insects occur. On a small patch the pests can be kept down by spraying with kerosene emulsion or by tobacco extract washes as prescribed for thrips on fruit trees or even by simple soap solutions if one has a good spraying outfit and nozzles suited to driving the spray upward, under the leaves where the lice congregate. But one spraying will not do it. The lice must be attacked again and again as they multiply. The ants enjoy the lice because they eat the honey dew which the lice exude and are said to carry the lice to new plants. Otherwise they have no connection with them. They are entirely different insects. Ladybirds and some other insects devour plant lice, and if you have enough ladybirds they will save your plants. This remark does not apply to green insects with black spots which are sometimes called "green ladybirds." They are not ladybirds at all.

Wheat to Cut Oat Hay.

To the Editor: To make the best red oat hay should it be cut when in the "milk", "dough" or nearly ripe?—L. M. C., Haywards.

General experience is that it should be cut in the "soft dough" or, as some express it, "between the milk and the dough." This is probably as near an approach in words as can be made to that condition which loses neither by immaturity or by overmaturity from the point of view of hay which is to get as much as can be in the head without losing nutritiveness in the straw. Of course there are other conditions intruding sometimes, like the outbreak of rust or the premature ripening through drouth. In such cases care must be taken not to let the plant stand too long for the sake of reaching an ideal condition in the head—which for lack of favorable growing conditions the plant may not be able to reach.

Teosinte.

To the Editor: Can you tell me anything about "Teosinte", its food value, method of culture, and adaptability to our climate, character of soil required?—W. E. L., Covelo.

Teosinte is a corn-like plant of much lower growth than Indian corn. It may be of value as a forage plant on low, moist, interior lands in the summer season. It is very sensitive to frost and is therefore not a winter grower. It abhors drouth and therefore is not a plant for plains or hillsides. It was grown to some extent in California 25 years ago and abandoned as worthless so far as tried.

Horticulture.

TROUBLES OF THE CHERRY.

To the Editor: I have a fine four-year-old eleven-acre cherry orchard, almost a perfect stand, and the trees have made a wonderful growth and the orchard is the brag of the whole country, and I am very desirous of making it a model orchard. The land is sandy loam with clay subsoil one foot from the surface, and I am told that cherry trees as a rule grow nicely until this age and then a great many of them die, and most all the cherry orchards show that they have died out this way, as I have noticed the irregularity and missing trees of the old orchards, and their owners tell me this is the fact.

It will be a great help to me as well as to the readers generally of your paper if some of your experienced cherry growers will tell us through the columns of the RURAL PRESS why they die mostly from the ages of four to seven years, and how we can prevent it. The prevailing cause is from sour sap or something of that nature. Often half or three-fourths of the tree will die and leave the rest green, and very often the tree will put out its leaves in the spring and come to a standstill and finally the leaves will turn yellow and die. I have been told that potash applied in the soil near the tree so as to allow the rains to wash the substance from it among the roots will prevent it, and others recommend splitting the bark to allow the overflow of sap, but a good write-up from a scientific standpoint, giving causes and treatment of a cherry orchard being subject to this disease, and practical methods of growing a perfect cherry orchard, will be highly appreciated at this time of the year. Also will some of the experienced readers well acquainted with methods of irrigation give the cheapest and most practical way of pumping water from a well 10 feet in diameter, with water 10 feet from the surface and 10 feet deep. I want to irrigate 20 acres and wish to know the best and cheapest methods of doing it from above well.

Sebastopol, Cal. GROWER.

[These subjects are worth discussing and we approve the invitation to our readers to go to them. The causes of distress to the cherry are chiefly two, and they often act together, especially where a shallow soil overlies an impervious subsoil. They are water-logged soil in the winter, which destroys root-hairs by decay, and dry soil in the summer, which kills them by dessication. Both these cause die-back in various degrees, even to the death of the tree. The manifestations which our correspondent describes are due to winter submergence, which under-drainage will prevent. The summer evil is shown by browning of the leaves unseasonably and the death of the tree, the leaves usually hanging on. The prevention of this is irrigation. In other words, the evils of the cherry are chiefly due to wrong moisture conditions in the soil and there is generally no use of applying potash or anything else, nor of slitting the bark, when the soil conditions are not right. There are occasions for using potash and other things, and for bark-slitting, but they are not reasonable cures for what our correspondent describes. Now the question is open for others.—EDITOR.]

EVERBEARING STRAWBERRIES.

We have strawberries largely grown in this State which bring several crops when cultivated and irrigated aright, and we have others which are everbearing because that is their nature when conditions allow them to manifest it. We are in the way of having considerable accessions through crossings by Mr. Burbank of unique characters inborn in many species and varieties. Mr. Burbank's "Patagonia," which he is distributing this year, is the pioneer of this class which is rich in possibilities. As our readers are disposed to try it, and to consider other strawberry characters which are strange to our conceptions of the fruit, we are pleased to find a letter from Mr. L. E. Benton, whom we knew as a Californian many years ago, giving his observations upon everbearing strawberries as he finds them in the City of Mexico, where he now resides. Mr. Benton writes to the Rural New Yorker in this way:

In the City of Mexico we have strawberries every day in the year. In some months of the year they are more plentiful than in others, but in more or less quantity they are always here. They are, of course, from a plant that is practically everbearing, although—and here it is well to make a careful note—at no time during the year do they bear near as heavily as the same plant during its bearing season in the North. They are known here as the strawberry of Irapuato, because it is in that district that practically the entire crop is grown. This place is about 200 miles north of the City of Mexico, and the fruit is sent in by express, and just as it is picked, loose, in about 20-pound baskets. The growth of the fruit is slowly spreading, and some is now grown at Guadalajara and a little at Obregon, farther north. The climate, soil, and water suitable for the growth of the fruit, however, seem to be very limited at present.

The Irapuato strawberry, or the variety thus described, is, as will be seen, one of the so-called everbearers. It throws up flower stems at any time of the year as the plant reaches condition; naturally, the season of the year in which vegetation is more vigorous, and this occurs here during the rainy season of summer, it flowers more abundantly. In no case, it must be noted, does the flowering reach one-third of that which occurs in the same flowering season in the North, and the cost of picking is correspondingly increased. When the fruit is scarce, as at this time of the year, the picking is a big item. The Irapuato strawberry, in leaf, resembles the common northern one. It is distinct in throwing out few runners. It prefers to grow as a bunch or clump by stooling. In this it resembles the Alpine strawberry, and it may be a cross or variety of the two types. It is spoken of here as a "fresa," which means the common running strawberry, and is distinctly understood not to be the "freson," which means the clump or Alpine plant. The "freson" we have here succeeding in one small village near the city, but it does not succeed in the "fresa" or Irapuato district. It is also an everbearer of good quality, but not so productive as the latter.

The better American varieties have been brought here for trial many times, but I do not know of anyone who has made them succeed or even grow well. They dwindle and die off as if lacking vigor or strength to stand the conditions. It may deserve noting here that in the French catalogues are both "fresas" and "fresons," but what relations they bear to the only two varieties that succeed here can only be conjectured. It may be that from France they were introduced.

ASIATIC PEARS AS STOCKS.

We have already stated that the desirability of seedlings of Asiatic pears as stocks for our favorite commercial varieties of European origin, has not been sufficiently demonstrated to warrant some of the claims made for them in blight resistance, etc. Experiments in that line are now in progress on the University Farm. There seem to be reasons to hold a conservative view with reference to the use of these stocks. Mr. J. H. Haynes, an Indiana pear grower, gives his experience in the Rural New Yorker in this way:

"E. S. Black's advice to 'go slow' in using Oriental pear stocks for grafting our varieties on is well given. In 1888 I received through the H. H. Berger seed house at San Francisco one pound of Chinese Sand pear seed, and one pound of seed from Japan. Both were planted and quite a number of young trees resulted. The Chinese Sand were the more thrifty; when three years old several hundred of these were top-grafted about four feet from the ground. For two or three years they grew nicely, but as stated by Mr. Black, the graft grew much larger than the stock. About the fifth year the tops began to show something wrong, and by the eighth year all were gone. Some of the Sand pears not grafted are living yet, and bear every year. One of them is a very fair pear for preserving purposes. I tried grafting on a few Kieffer trees, but with no good results. On the other hand I set some hundreds of grafts on our native stocks (top-grafted) and have nice bearing trees. I grafted some Sand pear scions on the Garber (a hybrid) and these grew well and bear every year. Just why the natives will not do on the Orientals we cannot tell, but our experience was on a scale to tell. The work was carefully done and 90 per cent grew right along for several years. I used scions of quite a number of our better pears, but all were served alike."

This of course does not demonstrate what the behavior of these stocks will be in California, but there is certainly enough to it to warrant the advice to "watch out."

THE FRENCH STIMULATING OLIVE PRODUCTION WITH BOUNTIES.

Consul-General A. Gaulin of Marseilles, France, sends the State Department a very interesting account of France's effort to rehabilitate the olive industry: The French olive growers will receive this year, and every succeeding year until 1912, by virtue of a special act dated April 4, 1910, bounties amounting to 2,000,000 francs, or $386,000. This sum represents approximately 10 per cent of the average value of the crop. One of the results of the law will be the securing of accurate statistical information in regard to this industry.

It is expected that the material aid thus given by the government will lead to better cultural methods and to an increase of the annual yield. Olive growing has been greatly neglected during the last 50 years, and while the olive-oil industry was flourishing in the other Mediterranean countries it steadily lost ground in France. The keen competition of seed oils and the free admission into the country of Algerian and Tunisian products are given as the chief causes of the decline. Numerous plantations were destroyed and converted into vineyards during a period of prosperity enjoyed by the viticulturists of the southern departments.

RIPENING A FACTOR IN GOOD DRIED FRUIT.

An Oregon fruit drier who has been experimenting for many years with machine evaporation reaches this conclusion: "There is a great difference whether you have a strain of fruit (prunes) where the fruit sugar is well developed or not. In the former case, with fair care in the drying, a good heavy, meaty prune of good flavor is produced, and this in a moderate time; while in the latter a prune that is mostly skin and pit, with a disagreeable acid flavor, one that is difficult and tedious to dry, and of little value when dried, is the result. To give a single illustration, a few years ago we had in some prunes of the Petite variety off young trees, their first crop that had been well cultivated, also fertilized, not allowed to overbear and were thoroughly ripe, which made 45 per cent dried fruit of a No. 1 quality. Another lot of same variety from trees having borne for several years, neither prunes, cultivated or fertilized, the trees allowed to bear all that they could carry, but the product made 25 per cent of mostly skin and pits. Both lots were dried at the same time, and in the same drier."

If we mistake not, the same conclusions have been reached widely by Californians curing fruit in open sunshine. It is only good fruit which is worth while for drying or for anything else.

Citrus Fruits.

RUNNING COMMENTS ON CITRUS SOILS.

(By Mr. E. L. Koethen of Riverside at the San Bernardino Fruit Growers' Convention.)

The importance of subsoil in citrus growing was made more vividly apparent than ever to California citrus growers last fall when Dr. King came to the coast and demonstrated with his soil rod the condition of our subsoils. It only took him a few hours to prove to us in a dramatic way, what we already knew in a sort of perfunctory way, but would not allow ourselves to believe. "A prophet is not without honor save in his own

country," so it came about that when Dr. King showed us that recently irrigated orchards were not wet in the subsoil, we believed him. Largely because he had a graphic way of demonstrating it, and largely because he has a great reputation for wisdom.

The Subsoil Prod.—The soil rod which he introduced is an instrument which has come to stay. It not only determines the mechanical texture of the subsoil, but it also shows the character of the soil sampled, at various depths, and condition as to moisture. Its use in recent weeks has revealed some strange conditions, that have not been realized by the majority of growers. Of course at this time, after the copious rains, there are but few if any places where the rains have not penetrated. But "irrigation hard-pan" and "plow sole" are readily detected and are exceedingly prevalent in our orchards. This, then, is the most important feature of the subject before us.

What Is Disclosed.—Let us cite some typical cases of tests made with the soil tester. An orchard which had been fertilized with barnyard manure and a high-grade tankage last year, sufficient to produce vigorous tree growth, was found to be mottled leaved, and though bearing an excellent crop, gave no evidence of the thrift which could be expected. The soil was a quite sandy one, which should be porous, but the tester proved that at the depth of six inches was a layer of compact material so hard that the rod was with difficulty driven through it. At the depth of one foot soft soil was found which admitted of driving the rod readily to great depth without difficulty. This was in the irrigated spaces. In the tree rows there was no difficulty to be found. With this condition there was no longer any reason for looking for the cause of "mottled leaf."

On the other side of the question was a test made in an orchard in good growing condition. The test was made in the middle of the tree rows far from the nearest furrow, the first foot of soil was hard because it was dry, not having had any water since last winter's rains, and yet from that down for four feet it was as sticky as putty. This was a heavy soil, where percolation is difficult, and yet it was moist enough to maintain plant growth.

Another case was that of a test made in very sandy soil which had just been irrigated for four days, and yet at a depth of three feet it was so dry that the tester would not lift the soil up until suction was formed by closing the upper end of the tube, and when brought to the surface was found to be powdery dry. Under such conditions normal tree growth is impossible, and we confidently believe that a very large percentage of the prevalent mottle leaf is due to this cause.

How It Comes About.—As to the causes leading to such a state of affairs we have this to say. They may be summed up as follows: Constant tramping of horses on the soil bed in plowing and cultivation, settling of finer particles on the bottoms of the furrows, handling the soil when too moist, the use of acid phosphates and quick limes, and lack of humus in the soil.

Of the first three of the causes little need be said except to mention them; but about the use of acid phosphates, we can say that we know there is a difference of opinion, and yet the evidence is so strong that we wonder that there should be any doubt in the minds of citrus growers. Wherever such materials have been used for any time on all but a few more porous soils, this difficulty has been aggravated by the practice. Lime when applied to the soil should always be applied on the surface, and never drilled in, as it is when mixed with fertilizers.

Lack of humus is one of the most fruitful sources of this trouble. For this reason the use of the cover crop is one of the most successful elements in combating it.

The remedies lie in the avoidance of all fertilizers that can in any way aid in cementing the subsoil, in varying the depth of plowing from one year to another, and in cultivating a little shallower than the plowing. Thus what crust has been formed each year is destroyed by the plowing. Careful manipulation of the soil by its penetrating roots leave channels for the percolation of water. Will leave a portion of roots in the subsoil to decay and form humus, which also will aid in the dissipation of the crust.

Signs in the Trees.—It is safe to say that no orchard can be considered in good cropping condition unless there is an annual growth of vigorous new wood. Large rich green foliage and plenty of it. Do not be decided when you can see at a glance all the oranges that are on a tree because of the sparseness of its foliage, there is the beginning of trouble. No matter how many boxes it may pick, the conditions are not right, and the prospects for the future are anything but bright. This is the condition of many orchards today, and the trees are giving the warning. In the great majority of cases the cause may be found in some of the causes described above. The epidemic of mottle leaf now so prevalent is more largely due to the unsanitary condition of the subsoil than to any other cause. Remedy the subsoil evils, and the most of the mottle leaf will vanish.

Hilgard's Defective Soils.—To continue further the subject of subsoils, Dr. Hilgard describes six kinds of faulty subsoils, as follows. Loam underlaid with slate; loam underlaid with shale; loam underlaid with heavy clay; with hardpan at various depths; with water level too near the surface, and a coarse gravel bed so near to the surface as to produce a leachy soil. The first three of these are not so prevalent in southern California as to create a problem. Of the hardpan it can be said that in most cases it can be remedied. The operations at Arlington Heights have proved this. They blasted out large holes in the center of the space between the trees, leaving deep holes which were filled up with manure and then the surface soil replaced. The result was that the roots of the trees secured free access to the subsoil, and were promptly redeemed from wreckage, to exceptional thrift and productiveness.

Where the water level is too high, remedy is self-evident. Under drainage by tiling will be found effectual. The most difficult condition to overcome, however, is the leachy subsoil. Much may be done by increasing the humus content of the soil by the use of cover crops and manure. The increased sponginess will serve to retain the fertility to a large degree, and the same condition will prevent water from running off so rapidly. Many portions of orchards go wrong from this unsuspected cause, and being so obscure, is not so readily detected.

PREPARING FACTS TO SUSTAIN THE TARIFF.

Mr. G. Harold Powell, manager of the California Citrus Protective League, is trying to get the Florida growers lined up with the Californians in setting forth facts which shall be indisputable as a basis upon which to claim the maintenance of the present tariff on citrus fruits. Writing to the Florida Citrus Exchange recently, he said:

"It looks as though an attack would be made upon the citrus-fruit schedule when the next Congress opens. The Tariff Board is accumulating data on the cost of production of the different articles that enter into the agricultural schedule, and I look to see an attack made on the present duty on oranges and lemons. If it had not been for the fight to raise the duty on lemons when the Payne-Aldrich bill was passed, the duty on oranges would probably have been reduced to three-fourths of a cent per pound, as that was the intention of those having the bill in charge. We are taking the matter up in California and are preparing to accumulate a large amount of data on the cost of producing both oranges and lemons, and will secure the data along these lines:

"1. Cost of production up to the time of picking.

"2. The cost from the picking to the car.

"3. The freight rates.

"4. The cost of selling and distributing.

"We will make this investigation in two ways: First, we will take the records that are already kept by growers, and will get general averages from these; second, we propose to put on one to two hundred groves at the same time a simple cost-accounting system, and will have the grower keep a daily record of the labor and the expenditures that enter into the different operations. These records will be sent to our office weekly, and the ledger work will be done here. Now it has seemed to me that all the States that are engaged in citrus-fruit growing should begin to accumulate data along these lines, so that if the orange schedule comes up we will have given the matter serious consideration. You may be interested to know that the exports of oranges from Spain last year amounted to 40,000 carloads.

"The grapefruit schedule and the orange schedule affect you vitally, and I am writing you to see whether you would not consider it advisable to put some one in charge of an investigation of this kind. As I see it, you ought to have this data on both grapefruit and oranges, and if you can not do it by making a constructive cost investigation along the lines that I have outlined, some one should take the data that is available from growers in all parts of the State, bring it together, digest it, and from that prepare a general statement of the status of the Florida industry."

THREE YEARS OF FROST-FIRING.

Mr. J. E. Adamson, of Los Angeles county, gives the Rural New Yorker an outline of his experience in firing against frost during the last three years, the last year, 1910-11, covering 300 acres of citrus trees. He says:

The conclusions arrived at as a direct result of the experiences of the season of 1908-1909 were that, to be sure of success, fires must be not more than 20 feet apart, for very cold nights. Also, that the fires must be started before the ground cakes in the least, so as to keep up the heat supply from the earth which practically ceases when the ground is hardened. This is obtained by the blanketing effect of the smoke cloud, preventing the rapid radiation of the latent heat of the earth. Further, fires should be kept going for at least two hours after the sun is up to minimize any damage which may have taken place in spite of the work. The work in the season 1909-1910 was carried on with heavy crude oil burned in paper bags, filling them full and lighting them at the top; the bag burned down regularly from start to finish, was easy to light and simple to handle, the one failure arising from the difficulty in getting a bag that would not leak. The final limitation of the work that season came from the inability to get fuel when it was wanted. However, the following was gained: (1) A good lighting torch was developed by which a live man can light 500 fires an hour. (2) It was positively proved that the result could be obtained. Also, that it was of great importance to have on hand a supply of fuel sufficient for more than the worst ever known.

The season 1910-1911 was entered with the growers owning 300 acres equipping their groves with pots designed to burn a cheap oil (a by-product of the refinery), known locally as 'slop distillate,' and costing us, laid down in the growers' tanks, three cents per gallon. These pots were placed one to each tree, in the body of the grove and two to a tree on the windward side. The lighting was begun at 30 degrees, the windward side being lit first, then as soon as the temperature showed a tendency to drop, every fourth row was lit, and then others as the conditions demanded. With everything in the windward half of my grove burning and three-fourths of the balance lit, I had no trouble maintaining the temperature at 30 degrees, while it dropped to 22 degrees 100 feet to windward of the fires. The first fires were lit at 11 p.m., and the fires were not put out until 8 a.m., and the total expense for 1400 trees was $18 for fuel and $5 for labor, besides my own time, and about four hours for my team hauling oil. From these figures you will be able to compute the expense of the work. The equipment cost us $375 per 1000 fires, for pots, tanks, and oil enough for six nights of the worst we have seen. You know your own conditions and output better than I do, so you will be better able to answer the question, "Is it worth while?" One of the hardest parts of the whole campaign is the organization of the growers for uniform work, or in fact to enthuse them for work at all. There are always the weather-wise who see signs (in the moon or some other place which does not bear on our weather), that we are to have mild weather; others have heard somewhere that somebody tried to fight frost and failed, and so on. Nothing but persistent publication of known facts and keeping everlastingly at them (until several braver than the rest take hold) will win the day.

Cereal Crops.

WHAT THE GROWER CAN DO TO GET MORE WHEAT.

(*Continued From Page 309.*)

Club variety appeals to the farmer, and outweighs the undesirable points of this wheat.

Character of Head. The character of the head as to awns is of greater importance than in most places, because it is a custom here, and one which the fickleness of the climate renders almost necessary, for the farmers to be governed largely by the character of the season as to whether the crop is allowed to mature its grain or whether it is cut for hay. If the season seems to be unpropitious for the maturing of a fair crop of grain it will be cut before maturity for hay. Thus, an awnless variety is much preferable.

Milling Quality.—Perhaps no factor in the selection of a variety is of greater importance than that of the milling quality. Practically no flour is made today anywhere from wheats milled of one variety alone. Practically all flour is the result of a blend of varieties. On account of the low gluten content of the type commonly grown in California an undue quantity of wheat has to be imported from Kansas and other points to build up the gluten content of the manufactured flour to a sufficient quantity and quality. It is highly desirable to find and introduce varieties that will lessen these importations. The milling value of wheat is judged by both the quantity and quality of the flour product. The quality of the flour for baking is determined by its gluten quantity and quality, and its color. It is highly essential that the varieties be grown which will produce more and better gluten per acre.

Other Requisites.—The importance of high yielding plants is too evident to need any discussion. No other characteristic of a plant is so important, and most of those mentioned above have a bearing upon this quality. The possession of a stiff or a weak stem, and resistance to bunt, are all factors that should be considered by the grower.

Seed Improvement by the Grower.—The farmer can do much toward the improvement of his own seed by attempting to bring it to a high standard of perfection and purity of variety by proper methods of selection and culture, which is far preferable to the constant and indiscriminate change of seed practiced by so many. It has long been the practice of farmers to make a sort of selection of seed corn, and to some extent of seed potatoes, but the fact that seed grain is as capable of improvement by such selection seems to have been wellnigh overlooked. The practice of indiscriminate seed exchange precludes the possibility of any permanent crop improvement by careful culture and seed selection.

Maintain a Seed Plat.—The maintenance of a seed plat for the improvement of seed should be the practice of every grain grower in California. This plat should be located at different parts of the farm every two or three years. The location should always be where the soil is of uniform quality, but one should avoid areas of special fertility. It is important that the seed plat should be located on clean land, and particular care should be taken that the land be free from other varieties of grain. It is best, then, that the land should have been under clean culture the preceding year, or that some cultivated crop should have been grown in the preceding year. Just before harvest go through a field of a good, hardy, standard variety that has given the best results in the locality and mark plants that exhibit to the highest degree the special quality which it is desired to increase, such as freedom from rust, fertility of head, or otherwise, and which are at the same time at least as good as the average in other respects. At harvest time cut with a sickle enough of these marked plants for sowing the plat, and, after threshing them, select the largest and most vigorous seed for this purpose by means of a screen, or, preferably, gravity grader. Sow the plat early, drilling it at the average rate of about 80 pounds per acre. From this seed plat select as above seed sufficient to reseed a similar plat the following season, and harvest and thresh the remainder of the crop from the seed plat separately from the main crop, care being taken that the machinery used is free from all other grains which might cause a mixture. The first portion threshed should be rejected, as it is most likely to contain such a mixture. The grain from the seed plat should be used, as far as it will go, for the general crop the succeeding year. If there is a considerable acreage it may be necessary to continue the seed plat for a second year in order to obtain sufficient seed for the main crop. In this way seed is never taken from the general crop, which can not be given the same care as the small plat, and there is a constant selection of seed, which is more and more rigid every year. Moreover, there is no extra labor involved, except the small amount required for seed selection each year.

WIRE WORMS IN BARLEY.

To the Editor: Enclosed you will find a sample of growing barley infested with an insect that is working on the kernel of the growing plant. Also enclosed you will find a few of the insects or worms. I would like to know what it is and how to control its action and prevent it from destroying the barley.

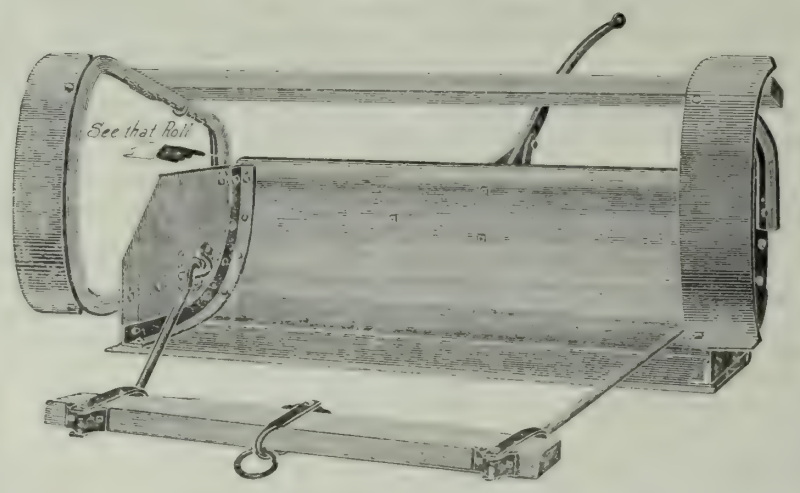
I am having this trouble on some of my most fertile land—land formerly planted to apple trees, but sowed to barley for the past ten years, the apple trees having been removed at that time. The land is sandy loam, very fertile and is well drained. It has always produced a large yield until the last few years, when a change has taken place. The first I noticed was a small patch dying out when about three inches high three years ago. Each year the piece is getting larger, until this year several acres seem to be affected and is dying out as before, until almost bare now.

This piece of land I have sown to barley in January of each year for three years and put stock on it in April and let them feed it down and stay on until summer, not harvesting it at all. I do not work it except in January, when I plow wet and sow to barley. The barley comes up well and seems to die back and leave the land almost barren.

Colusa. Farmer.

[The trouble with your grain plants is an attack of wire worms which probably are forced to work near the surface because of the wet condition of the soil at the time you sow. We should try summer fallowing the land and putting in the crop earlier, so that it will get considerable growth before the ground becomes so wet, and then these insects, even if present, would not have so ruinous an affect upon the crop. There might be applications which one might make to the soil to kill such insects, but the cost would be greater than the product of the land would justify. We think, however, if you summer-fallow thoroughly and give the grain a good start of the worms it will be likely to pull through.—Editor.]

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Agricultural Engineer.

AGRICULTURAL ENGINEERING AND THE DEMAND FOR AGRICULTURAL ENGINEERS.

By SAMUEL FORTIER, Chief of Irrigation Investigations, U. S. Department of Agriculture.

Half a century ago engineering attracted little attention. Then only a small number of men followed this vocation and there were few institutions which gave instructions in this subject. It was not until after the people of the North were pitted against those of the South in a war to the death that man began to recognize the value of technical training and to question the wisdom of compelling all college students to spend so large a part of their time in a study of languages and a dead past.

The widespread demand for an education differing from that given by the classical colleges culminated in the passage by Congress of the land-grant act of July 2, 1862. This act gave to the several States and Territories public lands for the benefit of instruction in the arts and sciences relating to agriculture and the mechanic arts. In 1909, 67 of these land grant colleges had been established.

The importance of these institutions may be gathered from a few statistics taken from the annual report of the office of experiment stations for 1909. From this it appears that the permanent funds and equipment of these colleges amount to $112,000,000 and the revenue from all sources, State and Federal, to over $18,000,000 a year. In regard to the courses of study and the number of students in each, one finds a larger percentage of students in the preparatory, special, and short courses than in the four-year courses. In 1909 there were enrolled in the four-year courses 27,579 students, of whom 24,930 are grouped as follows:

Engineering	17,892
Agriculture	4,999
Household economy	1,443
Forestry	223
Veterinary science	215
Horticulture	158
Total	24,930

According to the report of the Commissioner of Education for 1909, the total number of engineering students in all the universities, colleges and technical schools of the United States was 31,748, or 17,892 were found in the land-grant colleges and 13,856 in the State institutions other than land-grant and the private technical schools.

The foregoing statistics disclose two facts that are not generally known. These are, first, that the land-grant institutions are engineering rather than agricultural colleges, and, second, that they are training more than 56 per cent of all the engineering students of the Nation.

So great is the preponderance of engineering students and engineering courses in these public institutions that it would seem proper to review briefly the character of the instruction given and the courses offered in this subject. I do so on the ground that it is a matter which deeply concerns both the Nation and the States and Territories of the Union. The Nation donated 10,500,000 acres of its public lands for the benefit of "instruction in the arts and sciences related to agriculture and the mechanical arts," and last year both State and Federal aid, exclusive of tuition fees, amounted to nearly $17,000,000. I shall not attempt to discuss the right of the land-grant colleges to instruct by means of State and Federal aid, nearly 18,000 students in engineering and only 5000 in agriculture. This is not germane to my theme. I merely wish to call attention to the fact that the kind of instruction given and the courses offered in engineering do not seem to me to be in full accord with the act under which they were organized and the purposes for which they are maintained. One has but to scan the list of courses to find that nearly all are classified under civil, mechanical, electric, and mining, with a scattering pertaining to sanitary, structural, and other branches of engineering. This shows that the main activities of agricultural colleges are concentrated upon the training of civil, mechanical, electrical and mining engineers in competition with a large number of State universities and private technical schools. Nor is this all. In their eagerness to train civil engineers for railroad corporations, mechanical engineers for manufacturers, and hydro-electric engineers for water-power companies, they are neglecting to train men for the engineering work on the farm. Only one out of the 67 institutions—the Iowa State College of Agriculture and Mechanic Arts—offers a degree in agricultural engineering and few devote much time or attention to this phase of engineering.

Now, in the brief time allotted to me I shall endeavor to outline the scope of agricultural engineering and to indicate the need and the demand for this kind of training. As I view it, the general course may be subdivided into six branches, three of which relate to the farm and three to agricultural communities. This tentative division is as follows:

1. Farm machinery and farm motors.
2. Farm structures, including rural architecture.
3. Rural water supplies and sanitation.
4. Public roads.
5. Drainage.
6. Irrigation.

These six major studies would of course be supplemented by instruction in English, mathematics, drawing, agricultural chemistry, physics, soils, surveying, and elementary engineering.

One or more of the subdivisions of this course as outlined is now taught in most of the land-grant colleges, but with a few exceptions they are mere side issues to what is considered the more important work of training men to become professional engineers. The institutions of this class located in the West give instruction in irrigation as part of the civil engineering course. Those of the Mississippi valley have more or less complete courses in farm machinery and farm motors, while the subject of roads and pavements is included in a large number of civil engineering courses, but as we shall see later it is chiefly adapted to the needs of the municipal engineer. Rural water supplies, farm sanitation and farm structures are for the most part overlooked. What is urgently needed, in my opinion, is an engineering course in each of the agricultural colleges which would combine into one the course of farm machinery and farm motors as now given in the University of Nebraska and the Iowa Agricultural College, that of irrigation as now given in the University of California and the Agricultural College of Colorado, that of rural architecture and cement work as given in the University of Wisconsin, and that of highway engineering as taught at the University of Kentucky. That there is an urgent need for better and more general training for the engineering work of the farm is evidenced by the facts which I shall give relating to the main branches of such a course as I have outlined.

(To Be Continued.)

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The Apiary

CALIFORNIA BEES FOR UTAH.

Mr. G. C. Matthews, of Morgan, Utah, describes in Gleanings a very interesting bee movement in which he has learned wisdom from experience, as follows:

It is quite a common thing for beekeepers in Utah to ship nuclei from points in California in the spring; and, having engaged in an enterprise of this kind last summer, I think a description of my experience may be interesting. Usually, these ventures turn out profitably unless accidents, bad seasons, or bad management spoils the work.

We had 450 colonies of hybrid bees last year, some in good condition, but all rather short of stores for breeding purposes just before the orange bloom. I did not reach California until March 29; but we had a man there before I arrived. Because teams were hard to find, the bees were not all moved until the orange bloom was ready to open. That was error number one.

My partner, who had shipped several times, remained in Utah and left the making of the nuclei to my management; but because I was told to expect a six weeks' honey-flow, I made plans for too many nuclei. As it turned out, the flow lasted three weeks, so we had to feed nearly 4000 pounds of honey and syrup to get enough stores for shipment. Out of 1250 nuclei over 100 queens failed to mate, and not sufficient brood was reared to make the nuclei strong upon arrival in Utah.

The nuclei were made on six combs in eight-frame and ten-frame single-story hives, the empty space being left for a clustering place. This plan would work if the bees were young; if old, they need a clustering place above the brood, because they worry so much that they generate enough heat to smother the brood.

From two to four frames of brood were put in each nucleus, and brood was afterward added or taken away to secure the proper strength. Then, just before shipment, my partner, who had gone to California, shifted the nuclei to get the flying bees in with the weakest one; and as a result some queens were killed.

We closed the hives at the entrance with lath, and put screens on top of the hives, leaving no clustering place above the bees. But, first, cans for water were nailed to the sides of the hives and filled with excelsior. In these cans water was poured when the nuclei were placed on the car.

The season was a poor one for queen rearing because of the short quick flow of honey, and by taking away queens poor cells were built by the bees. One should not make nuclei until his bees have built natural swarm cells, unless he uses the grafting method.

The nuclei filled two cars; but in one car the entrances were not well closed, and the bottom boards were not nailed with sufficiently long nails. As a conse quence we lost many bees.

When we unloaded we found about 100 nuclei in this car smothered, presumably because they contained too many old bees and had not sufficient clustering space. But, despite all these errors, one car of bees which was unloaded in good territory made some profit, while the other could have done nearly as well under conditions with an equally favorable honey-flow.

I am going to send another car of bees this spring from the same point from which I shipped last year; but I shall wait and tell more about it after judging my methods by results. While I know of shipments of last year which were less successful than my own, I also know of others that have been highly profitable, and believe all of them can be made so.

AN ENERGETIC CALIFORNIA SOCIETY.

Mrs. H. G. Acklin writes to Gleanings about the last California Beekeepers Convention which was held in Los Angeles, and exalts the spirit of California beekeepers in this way:

Our State society expects to occupy the same position in California that the National does in the United States. Provisions have been made for all other societies interested in bee culture in the State to affiliate with the State association on the same basis that the State associations go into the National. When that is accomplished our beekeepers will be nearer a unit than ever before, and better able to demand protective legislation.

The report of the committee on honey adulteration was a revelation. The committee were unable to find spurious honey in this market, and were also unable even to conjecture what becomes of all the glucose that is shipped in, billed as syrup—sometimes as corn syrup. Who is going to be able to ferret out this nefarious business of adulterating honey? This same committee was continued, and we all sincerely hope they will succeed in running down the miscreants.

As usual at such times there was considerable discussion of bee diseases. The sections infected with European foul brood to the north of us are causing much uneasiness in our midst, especially as the claim is now made that those germs are carried by the atmosphere. The disease is coming along at the rate of twenty miles each year.

Great interest was taken in the subject of organization and co-operation. One can easily see that this is the one great object beekeepers are working for. To have an organization similar to that of the orange growers means untold benefits to the bee industry.

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THE FARMING BUSINESS.

To the Editor: In these days of strenuous endeavor to "get rich quick," when gigantic monopolies seem to spring from the ground like mushrooms, when there is such a striving to accumulate wealth without toil, the hard working farmer seems to take a back seat and to cut a very small figure in the world's progress.

But, for the farmer, as well as for other classes of society, the last few years have witnessed continued advancement, and he today occupies a position among his fellows well in the forefront.

In the early history of the Eastern States the farmer's lot was, perforce, one of hard toil, verging upon drudgery. The advent of improved agricultural implements and machinery changed the horizon of the farmer, and now he is, in many instances, "lord of the manor." It does not follow that because farmers know nothing but to toil early and late, despising all book learning, foregoing all needed and necessary recreation and, to a great extent, all intellectual progress, that he is a sample of his class. Yet here in our progressive California we have not a few ranchers who are practically farm machines.

Happily the day of farm drudgery, in the house, as well as in the field, is passing, to a great extent. This was revealed to the observing eyes of ex-President Roosevelt during his recent Western tour, and he voiced his views by saying that, with the passage of one generation there will be four large cities on the Pacific coast, each having over one million population. But, he added, he was more concerned as to the growth of the farming districts; the cities would take care of themselves. He was much gratified at the progress made all over the Pacific slope during the years that elapsed since, as President of the United States, he had traveled from end to end of the coast.

Secretary of Agriculture Wilson, in his fourteenth annual report, recently issued, takes a very optimistic view of the farmer's condition in the land. "Nothing short of omniscience," says he, "can grasp the value of the farm products of the country for 1910. At no time in the world's history has a country produced farm products within one year with a value reaching $8,926,000,000, which is the value of the agricultural products of this country for 1910. The amount is larger than that of 1909 by $305,000,000, an amount of increase over the preceding year which is small for the more recent years. The value of farm products for 1899 to the present year has been progressive without interruption."

That is not uninteresting reading for our farmers.

"During this period of unexampled agricultural production, a period of twelve years during which the farmers of this country have steadily advanced in prosperity, in wealth and in economic independence, in intelligence and a knowledge of agriculture, the total value of farm products is $79,000,000,000."

One item we must not lose sight of is the wonderful value placed upon the poultry products of the country—$70,000,000. Can the small farmer who ridicules the keeper of fowls on a large or small scale, and who begrudges his wife the grain she takes on the sly—for her hens—can he grasp the value of those figures?

Yet what shall we of California, we who have every advantage that one could wish for for the successful prosecution of poultry culture, what shall we say when we are told that millions of dollars go out of this State every year, to States not so very far removed from us, as far as distance goes, and whose natural advantages cannot compare with ours for eggs and poultry production? Not a spasmodic outgo, but a regular, continuous drain upon our resources. Not confined to one section of the State, but this good, yellow California gold goes from the southern counties as well as from the northern. The Chamber of Commerce of Los Angeles says: "Los Angeles imports from the East about 125,000 cases of eggs and about 125 carloads of poultry during the year." The assistant in charge of the Division of Poultry Husbandry of Missouri, writes me: "I doubt very much if more than one million dollars worth of eggs and poultry is shipped every year to California from this State." One million dollars is sufficient. That sum of money will go far toward paying the running expenses of the State mentioned. And beside Missouri, there are Oklahoma and Nebraska to reckon with. Why do we sling our hard earned money around the country so recklessly?

Santa Cruz. A. WARREN ROBINSON.

The Field.

FIRE-BALLS FOR SQUIRREL KILLING.

A Stanislaus county farmer who believes in fireworks for squirrels gives this account of his practice to the Business Farmer of Stockton:

A quantity of distillate No. 3 was poured into an empty coal oil can, to which had been attached a wire handle, to carry it by.

A large number of horse-droppings and broken corncobs were carried in a gunny sack, and a small iron rod, narrowed to a sharp point, and a long-handled shovel were taken along also.

When the first burrow, into which a rodent had been seen to "duck," was reached the owner of the place lit a match and set on fire the distillate in the can, which was about two inches deep, with the inflammable liquid. It set up a gentle smoky blaze, without giving off much heat.

Into this blazing distillate a number of "spheres" were tossed, which readily ignited. Then the operator stabbed one of them with his iron rod and carried it well into the burrow before releasing it from the rod, asking his helper, in the meantime, to rush the loose dirt, left by the squirrel, into the hole, taking care not to cover the blazing liquid carrier at once, and thus extinguish it too quickly.

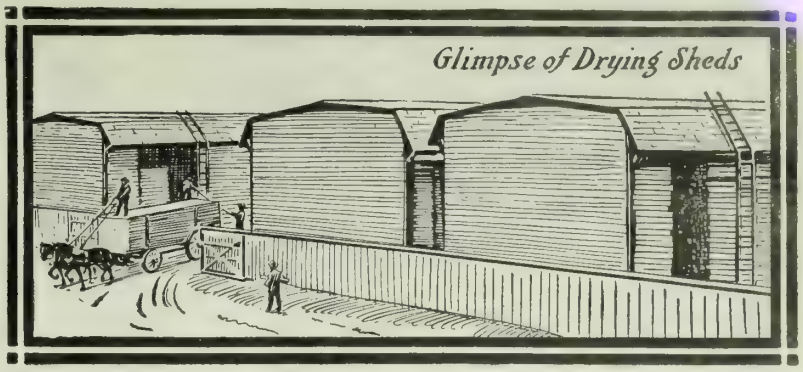
To prevent this being done the helper secured a clod, stone or small chunk, which he put in ahead of the shoveling-in process. This went on until the hole was filled up to the level of the land on the surface, the finishing being done by trampling the loose dirt with the feet of all hands present, or rather, all feet present. This concluded the operation, which finished every squirrel in the field in short order. An observer visited the field two days after the work described, and found, to his delight, that not one squirrel had disturbed the tramped-in dirt.

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AGRICULTURAL REVIEW.

With the Fruit Men.

The Fruit Growers' Union of Cohasset, near Chico, at their annual meeting, elected officers and passed a resolution to finish the packing-house there in time to use this season. Several thousand apple trees have been planted in that district this spring.

Fifteen thousand fruit trees have been planted in the vicinity of Paradise, Butte county, this season. Over 60 per cent of the trees were pears, the balance being mostly almonds and apples. More pear trees would have been set out but for the scarcity of nursery stock.

Just before the frost of last week a fruit grower of the King's river district predicted about a third of an apricot crop and a heavy yield of peaches. Now the peach and apricot crop is known to be hurt some by the freeze, but still there will be lots of peaches.

A trip through the Walnut Creek district, Contra Costa county, the first of this week, showed the writer a beautiful valley with a grand prospect for good crops. The recent frost apparently did little or no damage. Almonds will make an average crop, pear trees were in full bloom, lots of land has been set out to walnut trees this spring, and the grain and hay crop will be extra large.

A suit was tried before Justice Cox at Santa Ana last week, in which the Santa Ana Valley Walnut Growers' Association secured judgment for $100 against R. Paine for selling his walnuts outside the association. Paine was a member of the association and under the by-laws was fined $100 for not delivering his crop to the organization, and by law he must now pay the fine.

It is stated that wine grape growers around Marysville have been offered $15 for Zinfandel grapes for the coming season. It is also reported that wineries there will contract for a number of years to pay from $11 to $13 per ton delivered.

The Record states that Hendry Bros. will set out 13,500 citrus trees on their land three miles east of Delano, Kern county, this spring. A good supply of artesian water has been secured for irrigating the property.

The Redlands Fruit Growers' Fumigation Association has been incorporated, and has for membership nearly every citrus grower in that district. This organization will do the fumigating for the district, making the work thorough and systematic.

L. C. Rice of Lindsay will set out 302 acres to navel and valencia oranges this season. He has already planted 80 acres this spring.

Holding that cement dust is doing permanent damage to surrounding orange groves, Judge B. F. Bledsoe of the Superior Court of San Bernadino county has granted a permanent injunction against the operation of the California-Portland Cement Co. at Colton and awarded complaining growers damages for loss of crops. If the decision is upheld by the higher courts the corporation will be compelled to buy the orchards within a radious of two miles or remove its plant.

From the daily press we cut the following dispatch, which is good news: "Though the grapevines are just beginning to bud, most of the coming crop of the Flaming Tokay grapes in the Lodi section have been sold. The large shipping companies have had agents in that section purchasing every ton of the best quality of shipping grapes to be grown. From $18 to $25 per ton has been paid for the grapes. The shippers have agreed to take all of the risk outside of the 10 per cent off for culls, which the growers will assume. The grapes must be delivered before September 1 at the nearest shipping point in what are known as lug boxes, and the companies will do all of the packing, icing and pay all costs."

The first shipment of ripe California cherries for the present season was made from Sacramento Tuesday, the fruit coming from the trees of E. Gammon of Sacramento county, a short distance below Sacramento. This shipment consisted of one box and went to New York. It will be auctioned there, and if the usual price for the initial box is paid it will bring $1 or more per pound. The first shipment of strawberries went from Placer county last week to Portland, Ore.

At the regular meeting of the San Jose Grange last Saturday, reports were made concerning fruit prospects and frost damage. County Entomologist Earl Morris reported that apricots in the lower end of the valley had been severely injured. The peach crop sustained but little damage, and cherries were scarcely touched. The French prunes sustained a loss of less than 20 per cent, which will prove a benefit, as it will save thinning. It was reported that buyers were in the field and that many orchards had been contracted for at prices ranging from 3½ to 4½ cents, and that it was thought the price would go to 5 cents shortly.

The Crop Reporting Board of the Bureau of Statistics of the United States Department of Agriculture estimates, from the reports of correspondents and agents of the Bureau, that the average condition of winter wheat on April 1 was 83.3 per cent of a normal, against 80.8 on April 1, 1910, 82.2 on April 1, 1909, and 86.9 the average condition for the past ten years on April 1. There was an advance in condition from December 1, 1910, to April 1, 1911, of 0.8 points as compared with an average decline in the past ten years of 4.4 points between these dates. The average condition of rye on April 1 was 89.3 per cent of a normal, against 92.3 on April 1, 1910, 87.2 on April 1, 1909, and 90.2 the average condition for the past ten years on April 1.

Agricultural Notes.

Work of erecting a $25,000 alfalfa-meal mill at Corona is to start at once.

It is stated that 1000 acres will be planted to watermelons in the Dinuba section this season. Such a large acreage means that a big marketing organization must be formed if the sale of the crop is to prove successful.

The grain on summer-fallowed land in the Poplar, Tulare county, section is reported to be lodging badly. The grain is very tall and as it is just heading out, there is a chance for it to straighten up by harvest time.

Crops growing in the new section beyond Mecca, Riverside county, will be fine. Grain has headed out and is being harvested; squash are nearly ready to ship; melons look well and promise a fine yield.

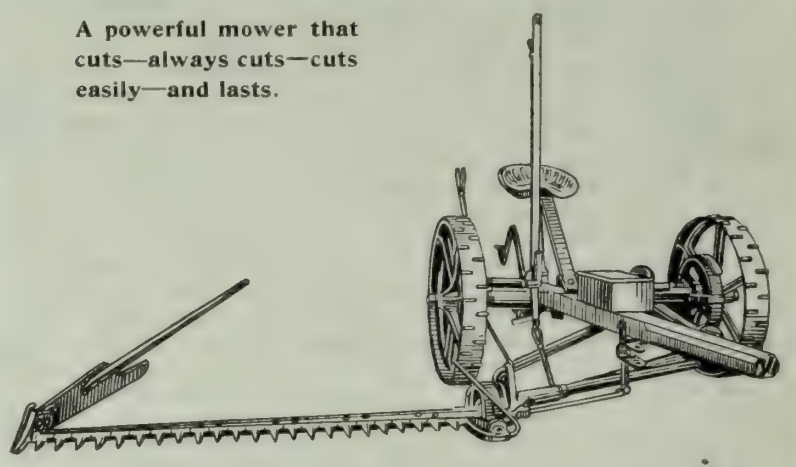
Grain farmers around San Jacinto, Riverside county, will be a fine crop. Beemen also expect a big crop of honey, as wild flowers are more abundant than for years.

A meeting of alfalfa growers was held at Arlington last Friday evening, to form an organization for the proper marketing of their hay crop. A large acreage has been signed up from the various sections in Riverside and San Bernardino counties.

The Packer is authority for the following figures regarding the cantaloupe crop: It states that from Nevada, Arizona, Mexico and California will be shipped over 1200 cars more melons than last year. In the San Joaquin valley there will be about 1600 acres set out, while from Mexico the output will be small. Nevada will have a smaller acreage than

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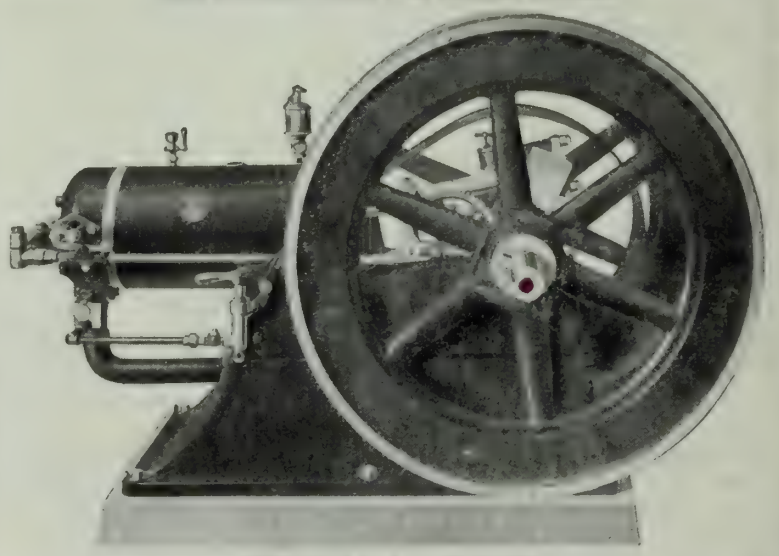
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last season, while Arizona will have a larger and is expected to ship 400 cars. The Imperial valley will have about 5800 acres of melons, which are expected to produce 2000 cars, being an increase of 600 cars over last year's crop, and 100 cars over the 1908 output, when the market went smash and nearly everybody lost money. Practically the whole acreage is already contracted to brokers who will endeavor to handle the crop that markets will not be glutted.

Asparagus is being shipped to Los Angeles from San Joaquin river points at the rate of 25,000 pounds daily.

Heavy Frost Damage.

The central and northern valleys of the State were visited by a heavy frost on the nights of April 12 and 13. Damage resulted particularly to grapes and vegetables, as the frost seemed to lie close to the ground.

Around Fresno the damage was very great to the grapes. Thompson Seedless and Malagas were badly damaged, as were wine varieties, but as the wine and Tokay grapes will have a second growth, the damage will not be felt so much. Young alfalfa was also injured considerably. Peaches and apricots in Tulare and Kings counties were frosted to some extent, but less doubtless than the first reports indicated. In the foothill section of Tulare county, citrus fruits were not touched.

In the section east of Sacramento, plums and peaches are reported heavily damaged on the lower ground. In the Napa and Vaca valleys considerable damage is reported to grapes and apricots. Some losses are also stated to have been sustained in the Santa Clara country, but prunes and cherries were not hurt much. In the Walnut Creek valley no damage is noticeable. In Ukiah and Sonoma counties very little harm was done. In the northern portion of the Sacramento valley reports come of considerable damage, especially to grapes.

As growers had ample warning from the U. S. Weather Bureau, many growers saved their crops by smudging. Had the covers been in general use, which are recommended by Professor McAdie, most of the loss could have been averted.

The frost was an unusually heavy one for this time of year, and more damage was done than at any time for several years past.

As a result of the freeze the dried-fruit market is at a standstill. Brokers are waiting to see what the effect on the crop will be before selling for future deliveries. Prices ill be sure to go higher as soon as trade is resumed, which will be very soon.

Annual Picnic and Stock Show.

The Twelfth Annual Picnic, given by the citizens of Lockeford, will be held in the grove May 10, 1911.

One feature of the many will be a Stock Show and Parade. No entrance fee is required, and the awards will be suitable ribbons for first, second and third in each class. So far as practicable, provision is made for all classes covered by the Premium List of the California State Fair, 1910, and State rules will apply as far as possible. Competent persons will be provided for judging in the several classes.

All animals exhibited must be on the grounds and ready to parade at 10 a. m. Entries can be made at any time previous, but an early entrance is respectfully solicited.

Stock listed for show and parade:

Horses—Thoroughbreds; standard trotters and pacers; carriage, road teams, single and double; novelty, double and single; draft, coachers; hackney; work teams, in harness; saddle horses, gaited and lady's, California stock; ponies; jacks, jennets; mules.

Cattle—Beef; milk.

Sheep, goats, swine, poultry.

The Mokelumne German Coach Horse Association offers $10 first award and $5 second in a show of colts, any age, by their horse Heinz, No. 3777.

Other associations are invited to offer specials on their line of stock.

H. N. Locke,
Chairman Stock Show Committee.

Miscellaneous.

The Crocker-Huffman Co. is at work laying off about 1000 acres into small tracts to be colonized. The land lies immediately north of Bear Creek, adjoining Merced, and will be irrigated. Part of the tract is now planted to trees and alfalfa.

A company has been incorporated at San Francisco to take over 35 acres of land near Vacaville, and to mine and place on the market a great deposit of nearly pure Fuller's earth, found upon it.

A $25,000 olive oil and pickling factory is to be built at Old Town, San Diego, by Akerman & Tuffley. The new mill is to have every modern convenience for the proper handling of the olives raised in that county.

A big tract of land in Trinity county, which will be crossed by the California Northwestern railway, has been purchased by San Francisco parties. The tract is said to be fine apple land and is to be subdivided for settlers.

L. C. Converse has set out 36 acres of land near Corning to eucalyptus this season.

C. E. Miles has purchased 40 acres of land near Tulare, which he will seed to alfalfa and make into a dairy ranch.

About 1000 acres have been seeded to alfalfa in the Dixon section this spring.

Santa Clara county has commenced a war on squirrels, under the direction of Government men.

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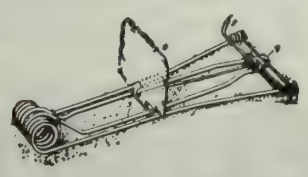
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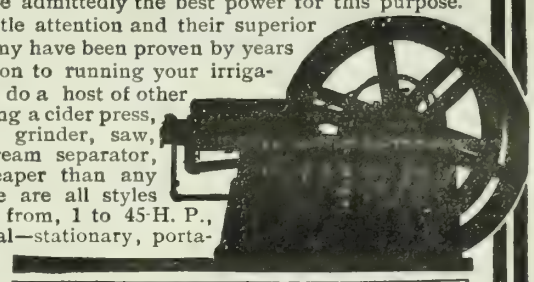
Now they have the most practical kind of crop insurance and they are independent of the irrigating companies.

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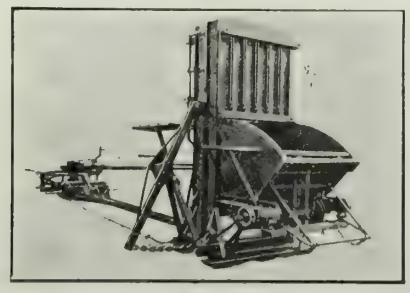
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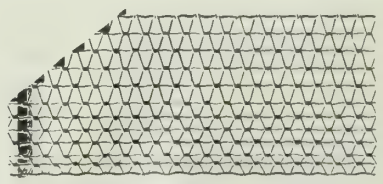
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INTERESTING EXPERIENCE WITH SHROPSHIRES.

Mr. Forrest Foote, of Stockton, who has written many interesting things for the PACIFIC RURAL PRESS in past years, gives the Business Farmer a wise statement of his experience with a combination of live stock and grain farming. He writes:

My farm consists of 200 acres, which I have divided into three fields, one of which is pastured each year, the other two are sown to grain or hay.

I keep from thirty to forty-five head of full-blood Shropshire ewes, bred always to good, standard Shropshire rams of good type. These ewes weigh from 150 to 175 pounds, and nearly two-thirds have twin lambs.

The lambs are dropped from December to March, and are shorn in September of from four to six pounds of wool, bringing from 12 to 15 cents per pound in October or November.

These lambs are sold at from 4 to 5½ cents per pound, and they weigh from 90 to 140 pounds apiece, always keeping out a few of the very best ewe lambs to keep the flock up.

The old ewes also yield wool twice in a year from four to seven pounds each shearing, bringing from 12 to 15 cents, according to the market.

What I consider the best profit of all, is the enrichment of the soil. I consider my farm in a better condition, the soil richer and less weeds; and certainly will produce more grain per acre than before I kept the sheep. The droppings are distributed over every foot of the land, and I find no trouble in keeping a few milch cows of the Holstein breed on the same ground, feeding with the sheep every day in the year; and they are always in good milking condition, giving rich milk and a good quantity.

My rules in keeping sheep:

First, get good Shropshire ewes;

Second, keep only full-blood rams that are vigorous and blocky-built, even if they cost more to get, as a few pounds on each lamb's weight soon pays big interest;

Third, don't overstock, and be short of feed, but take particular good care of those you have. Be with them often in lambing time. Don't inbreed; keep your best ewe lambs; the best are none too good, and you will always have a good income on your investment, and your land will yield more, plow easier, and you will never be bothered with foul weeds, as a sheep eats almost anything and will return you good money.

THE ASCENDANCY OF THE GUERNSEYS.

Although Guernseys have been known in California in rather a small and scattering way for many years, the breed seems about to cut a much larger figure in the future. Mr. C. S. Rasmussen of Loleta, Humboldt county, has published a catalogue of his herd which we believe is the first publication of its kind in this State. Mr. Rasmussen is well satisfied with his enterprise in establishing a Guernsey herd and we would like to promote recognition of his undertaking.

Guernseys have just taken the bovine cake in Iowa. The records have been completed on the first year's work in the Marsh contest to determine who owned the best cow in Iowa. The following accounts of the deeds of the winners are believed to be correct by the secretary of the Cow Culture Club, as well as by the Extension Department of the Iowa State College.

Dairy Maid of Pinehurst, a Guernsey cow, owned by W. W. Marsh, of Waterloo, with a production of 852.8912 pounds of butter-fat for the year and a credit with her allowance for age according to the rules of the contest of 1066.1138 pounds, wins first place and the accompanying prize of $250. This cow will also receive a silver cup from the American Guernsey Cattle Club.

The second prize of $150 is won by Jedetta of Pinehurst, a Guernsey cow also owned by W. W. Marsh, of Waterloo. Her total production of butter-fat for the year was 774.2837 pounds.

The third prize of $100 is won by Mollie W., a grade Jersey owned by Chas. B. Kirby, of Griswold, Iowa. She produced 466.2180 pounds of butter-fat with a total credit on account of her age of 638.7186 pounds. Glencoe's Bopeep, a Guernsey, owned by W. W. Marsh, of Waterloo, had fourth place with a production of 622.5653 pounds, but the rules of the contest provide that no single breeder can receive more than two of the cash prizes of the Marsh fund. Therefore, no money is awarded this cow.

The balance of the $1000 cash prize fund was divided among the next ten cows of various breeds and grades in accordance with the amount of butter-fat produced by each.

CALIFORNIA EARLY WITH RAMBOUILLETS.

We had brief reference recently to the excellence of Bullard's French merinos at Woodland, Yolo county. Our readers may not know that California figured in the very early introduction of this breed to the United States. Mr. Roscoe has this interesting sketch in the Breeder's Gazette:

The first introduction of Rambouillet sheep in the United States was in 1840, and again in 1846, but neither importation proved of much value. During the '50s several importations were made, the most important of which were those of John D. Patterson [whose ranch was in Alameda county, California. — EDITOR.], which were the foundation of the so-called French Merino flocks on the Pacific Coast, and those of A. P. Howard, which were the foundation of many Ohio flocks. But the conditions of the general industry were not favorable to these sheep, and the Merinos which were brought direct from Spain to America and developed entirely along the lines of fleece improvement were for many years the popular sheep, and the ones that brought the money. Not until the great depression in wool values and the development of a mutton market did any Rambouillet sheep find favor. Men who had bred Merinos opened their eyes to the value of such sheep as were the Rambouillets from Germany shown at Chicago in 1893, while in a short time general flockmasters who felt the value and necessity of some of the essential characteristics of a Merino sheep in their flocks turned to what to them was a new breed. For while there had been several small flocks in Ohio and Michigan, they had made little improvement and attracted practically no attention for many years, although they had effected an organization, and made one or two importations which later proved very valuable.

The distinguishing characteristic of the Rambouillet has been its size, combined with the other natural inherent qualities of a Merino sheep. The idea of the original founder of the breed was large sheep, and the development of mutton as well as wool, and he wished to scure as much of both as possible. This general idea has been carried out in the development of the breed, with natural variations toward either the mutton or wool consideration, produced by the conditions of the general sheep industry and

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are given the preference by 80 per cent of California stockmen because they give better results than others do.

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TULARE LAKE STOCK FARM.
REGISTERED
Jacks and Jennets For Sale.
We breed the Best. Don't write—come and See. We can show you.
JAS. W. McCORD, Hanford, Cal.

the ideas of the individual breeder. The chief objection made to them at the time of their first introduction to America was the lack of oil and weight of fleece, and their bad form. Coming at a time when wool was practically all that a sheep was grown for, they naturally found little favor. But in the '90s mutton was becoming an important consideration, while extreme weight of fleece and heavy wrinkly pelts were becoming objectionable. Further, the German breeders seemed to have made the great improvement in the fleece, especially as to oil and quality, with a natural increase in weight, although by no means approximating the density and weight of fleece that had been developed by American breeders of Merinos. They had also produced improvement in head and leg covering, and some refinement of carcass that had been unknown in previous Rambouillets. The result of all this was that many of the old-time breeders of Merinos took up the Rambouillets, while the sheepmen of the Northwest were strongly impressed with the value of this mutton Merino.

GET THE LICE OFF THE HOG.

To the Editor: If the farmer could only see the dollars and cents that goes out of his pocket to feed the lice that feed upon his hogs there would certainly be something doing. He meets this expense as he meets the payment of an indirect tax without realizing what he is doing.

The farmer will sooner or later have to meet lower prices for his market hogs. To break even and live at lower prices he must produce pork at the least possible expense, and this cannot be accomplished by feeding myriads of lice and feeding unhoused hogs in cold weather to keep them warm.

It is not expensive, neither is it laborious, to rid a herd of lice, and when once rid of them they can be kept down at very little expense and but little work.

We have tried several methods and found nothing that equals crude oil for economy in material and labor, and having been born poor and tired we have adopted it.

The cost of crude oil here (125 miles north of San Francisco) is 4 cents per gallon in small quantities and 3½ cents in large quantities.

We use this oil in "any old way" that we can get it on the hog. All one has to do is to get the oil there: the oil will do the rest. If the hogs are gentle, rub it on with a flat paint brush. They will stand still while the operation is being performed. If they are not gentle enough for this wrap some old burlap or gunny sack around some posts about the hog lot and saturate the sack with oil and the hogs will do the work. This is about all the work that we were ever able to get out of a hog.

The oil can be poured on the fresh bedding in winter, and in this way works like a charm. In summer pour it on the ground with a little water. You will immediately see business begin.

One hundred gallons at a cost of $4 will, if properly handled, keep a herd of 100 head of hogs free from lice for a whole twelve months. What is cheaper and easier?

If the oil becomes too thick, as it often does, it can be thinned to the proper consistency by the use of a small amount of low-grade distillate which is quite cheap. The dipping tank and any of the coal-tar dips will kill the lice, but it requires a second and sometimes a third dipping to make a clean job. The expense of the tank is considerable compared to a flat paint brush and a few old sacks. And then the dip at more than a dollar a gallon, high-priced fuel to steam up, and all hands and possibly the cook to complete the job, make it costly.

To immerse hogs in a vat of hot dip on a cold day and turn them out in the cold wind is not always the best for the animals.

By all means get the lice off the hog and give him a chance to grow. All that we expect to get for this article is a "cuss" from the vendors of dips and a raise in the price of oil by the Standard Oil Co. CHAS. GOODMAN.

Williams, Cal.

DEEDS OF DAIRY SHORT-HORNS.

Referring to our recent comments upon "Short-horn Supremacy" we add some figures of dairy products of individuals of the breed as given by Mr. W. A. Simpson, secretary of the American Dairy Short-horn Association:

The year record champions of the breed in each class at present are: Mature form, Rose of Glenside, 18,075 pounds of milk, 735 pounds of butter; four-year-old, Mamie Clay 2d, 13,233 pounds of milk; three-year-old, Doris Clay, 10,617 pounds of milk; two-year-old, Juliet, 10,395 pounds of milk. These will compare favorably with any breed; in fact, in some cases surpass the records in the same classes in some of the breeds, and it is only within a few years that such records have been accomplished. Rose of Glenside, the champion, has at a little over nine years of age a record of seven calves and an average of 9417 pounds of milk per year for seven years in succession. She has two daughters, Bessie Buttercup, 11,536 pounds milk in one year, and Rose Buttercup, 9158 pounds in one year from three teats. The champion four-year-old, Mamie Clay 2d, 13,232 pounds milk in one year, has, beginning as a two-year-old, a record of five calves and averaged 10,640 pounds of milk per year for five successive years. She is a granddam of the champion three-year-old and two-year-old, Doris Clay and Juliet. Juliet won second in the butter-fat contest open to all breeds at the 1909 New York State Fair, and her record of 10,395 pounds milk in one year as a two-year-old was a fine achievement, as she was with calf during the last six months of her test.

Of herd yields the following are notable: One herd in 1910 had 13 cows and heifers that made an average of 10,054 pounds milk each. The entire herd of 38 cows and heifers, one-half of them two and three-year-old heifers, and including several old and farrow cows, averaged in 1910 7812 pounds of milk each. There are numerous illustrations of the merit of the dairy Short-horns as dairy cows. We have bulls of the breed whose dam and sire's dam have averaged 15,623 pounds milk each in one year, something I believe no breed except the Holstein can show. The dairy Short-horn is an existing fact, has won many friends, and is worthy and moreover destined to occupy a prominent place in our agriculture.

ALFALFA NOT A MISSION PLANT.

We notice a Colorado writer mentions alfalfa as having been "grown in California since the advent of the missions." This is a great mistake. There was no alfalfa at the missions, which made their advent in 1769. The plant was introduced by Americans in the '50s, the seed being brought from Chile.

The supervisors of Imperial county are seriously considering the adoption of an ordinance making compulsory the testing of all milk cows for tuberculosis within the county.

Warranted to Give Satisfaction.

Gombault's Caustic Balsam



Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

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PERCHERONS AND BELGIANS

Los Altos Stock Farm, established for breeding with a choice selection of pure-bred, imported, registered stallions and mares with pedigrees running into the best blood lines. All of the big draft type, first class in every way. Some of the stallions and mares reach a ton in weight.

Now ready for sale, a few selected, coming three-year-old and one coming four-year-old stallions. All registered. These colts are fine in conformation, size, bone, and disposition, and give great promise. They can be seen at the barn near the station at Los Altos.

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LOS ALTOS, CAL.

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Grape Wild Farm. Mayhew, Cal.

SHEEP AND CATTLE DOGS IN AUSTRALIA.

(From Vice Consul-General Henry D Baker, Sydney.)

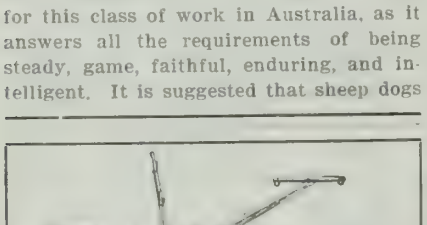
Much attention is being paid in Australia to the breeding of sheep dogs and cattle dogs. At the recent sheep breeders' show held in Sydney, one of the most interesting exhibits was of sheep dogs, which, with remarkable efficiency, performed their work of driving the sheep steadily into the yards without harassing them.

The Department of Agriculture of New South Wales has recently issued a bulletin for farmers on the subject, "Cattle dogs and sheep dogs," in which occur some interesting observations. It states that in New South Wales the order of merit as regards sheep dogs are as follows: Barbs and kelpies, first; smooth-haired collies, second; mongrels and crosses, third; rough collies, fourth. Barbs and kelpies are placed together, as they are both equally good, though of two distinct breeds. The barbs originated in Scotland from a cross of fox and smooth collie, made by gypsies for poaching purposes. Both of these breeds of dogs have, it is supposed, while in Australia gotten a cross of dingo through them.

VARIOUS WORKING CHARACTERISTICS.—It is stated that for wild sheep in big paddocks, especially with merinos, a very wide-working, silent dog is required, with great speed and stamina, lightly built, and, if possible, a little on the small size. For quieter sheep, in smaller pad docks, a dog which works fairly close and barks a little is the best. For yard work, penning up, and trucking, a thick-set, lively dog, with any amount of voice, is essential, one that will run over the sheeps' backs and force them about with plenty of barking and snapping. To be a good worker a sheep dog should be able to work either side and the tail of a mob, or both sides if the drover minds the tail; should be able, if the drover has to go ahead to open gates or slip rails, to bring the mob along after him; to keep a mob rounded up anywhere if the drover wishes to leave them for any purposes; or to draft.

The varieties of cattle dogs recommended in the order of their merit are as follows: The merlin or blue heeler, erroneously known as the Smithfield, first; the Welsh heeler or merle, erroneously known as the German collie, second; the red bobtail, often called by drovers Timmins' breed, third; the black bobtail, apparently the old English cur dog, fourth; mongrels and crosses, generally the bull, fox terrier, or dingo, crossed with the collie, fifth.

The merlin, or blue heeler, was imported about 40 years ago from Wales, but being unsuitable on account of barking too much, was crossed with the dingo of Australia, which never barks, and is now considered the best breed of dogs for this class of work in Australia, as it answers all the requirements of being steady, game, faithful, enduring, and intelligent. It is suggested that sheep dogs should not be used to work cattle, as cattle dogs must be prepared to bite, though they must not be unnecessarily rough in their treatment of cattle.



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Catalogues mailed on request

A MODEL CITY SUPPLY DAIRY NEAR SACRAMENTO.

"Quality cows" is the slogan of the Pennant Dairy, one of the new industries of the State which began operation the first of this year. M. H. Diepenbrock, owner, and W. A. Forbes, manager, are expending intelligent effort and well directed energy in making the Pennant the model and ideal dairy of California. The dairy is situated on the Diepenbrock ranch of 600 acres, ten miles from Sacramento on the Riverside drive. Its proximity to the thriving city permits of tne marketing as sweet cream of the output of the 45 milkers now producing. Only Holstein blood of the highest grade is permitted within the tile-drained corrals of the Pennant, in which have been built hay-storage barns so designed and constructed as to permit the cows to eat hay at any time while under shelter of the extensive roof. The hay is put into the barns at either end and carried to the center by means of mechanical carriers. This method allows the cows to have all the hay they want, lessens the work of feeding, and does away with all drudgery attendant upon feeding stock in bad weather. Alfalfa is the only feed given the Pennant herd.

In the milking shed, 38 by 170 feet, where is also located the engine and dairy rooms, green alfalfa is fed at milking time only. In this shed, which has a floor of concrete kept thoroughly wet down to prevent dust, room for 80 cows has been provided, and as the milk is tested and separated in the dairy room, the skim-milk is pumped to the hog lot, which is provided with cement troughs and feeding floors.

The calf shed is a novel arrangement, providing a model hen-house at each end, separated from the calf run in the center, all being under one roof.

A silo will be erected near the milking shed next spring, and other improvements made as rapidly as possible.

The herd at present comprises 156 cows and heifers, 30 calves, and 3 registered Holstein bulls. Heifers are freshening at the rate of two and three a day, and the herd will be further augmented this week by the arrival of a car of heifers from Wisconsin. No cows other than Holsteins of the highest grade will be put into the dairy herd, although, through their Eastern connections, the ranch can supply any desired breed, as particular attention is to be given to importing and breeding as well as to dairying.

LIVE STOCK NOTES.

What threatened to be an epidemic of hog cholera in the section around Lodi, has been entirely overcome by the use of vaccine. Fully 1000 hogs were inoculated and the disease has been stamped out.

The moving of sheep in the Sacramento valley to summer pastures in the mountains has begun. The season promises to be a prosperous one for the flocks.

M. Bassett, of Hanford, reports sales of registered Poland-China hogs to the following parties: Dr. Geo. K. Frink, San Francisco, 19 sows, 1 boar; H. Johnson, Tulare, 10 sows, 2 boars; University of Nevada, 1 boar; John Cubby, Tacoma, Wash., 1 sow, 1 boar; H. C. Rornes, Patterson, 1 boar; J. S. Nesbitt, Lemoore, 1 boar; W. E. Adkinson, Boyd, Ore., 2 sows, 1 boar; Ross Starr, Hanford, 1 boar; W. H. Ginn, Corcoran, 2 sows; Hamburger, Polhemus Co., San Francisco, 1 boar; G. C. Otis, Doyle, 1 boar; W. C. Floto, Modesto, 1 boar.

H. H. Wallis, Crow's Landing, is a new man who has just started breeding registered O. I. C. and Berkshire hogs, Holstein-Fresian cattle, and Black Minora chickens. He bought his Holsteins from L. A. Hall of Modesto.

DAIRY NOTES.

J. E. Davidson, of Long Beach, recently purchased the Nouissiton ranch, north of Tulare. There are now 50 cows on the place and the number is to be increased as the new owner will go into the dairy business on an extensive scale.

Plans for the new creamery have been accepted and work on the building is to be commenced soon.

Nicholas Masskant has secured an alfalfa ranch near Hanford, which he will soon stock with dairy cows and will conduct a certified milk business.

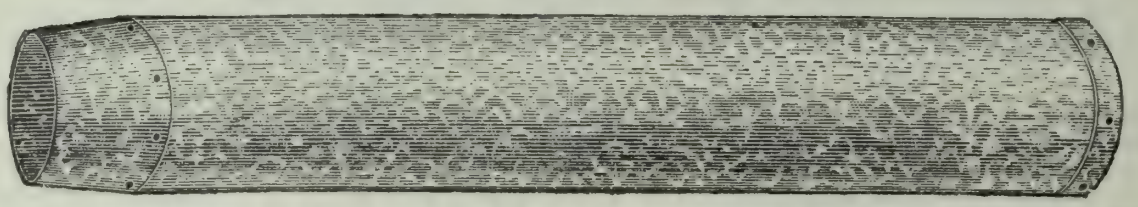
An Associated Press dispatch says that New York City uses daily 2,000,000 quarts of milk, which is secured from 45,000 farms scattered over six States.

George Trowbridge expects to establish a creamery at Wheatland soon, with capacity sufficient to handle all the milk that is produced in that section.

F. A. Patchett, manager of the Crow's Landing branch of the Oakland Cream Depot, reports shipping 25,000 lbs. butterfat for January, with cash returns of $8750; February, 25,000 lbs., $8000, and March, 30,000 lbs., $9000.

Leopold Cauzda, manager of the Los Banos branch of the Western Creameries Co., reports an average of $450 per day returns on butterfat shipped from his station during January, February, and March.

SAVE YOUR TIME WATER AND GRADING BY IRRIGATING WITH AMERICAN SURFACE IRRIGATION PIPE



The **PIPE RECOMMENDED BY ALL USERS.** It is the **ONLY SCIENTIFICALLY CONSTRUCTED SURFACE IRRIGATION PIPE** on the market. **THERE'S NO ROUND SEAMS TO LEAK,** retard the flow of water or weaken the pipe. This pipe is easily handled and cheaper than flumes. It will last a lifetime. For irrigating alfalfa it is the only pipe to use. We make **RIVETED PIPE AND TANKS.** Write for Illustrated Catalogue also **SPECIAL IRRIGATION FOLDER** which may mean much to you.

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$50 PER ACRE AND UP. FIVE YEARS TO PAY

IRRIGATED SACRAMENTO VALLEY LAND

35 miles north of city of Sacramento. Fine soil, well drained, no overflow, right at railroad station, schools, churches, stores, etc. Very healthful climate. Especially adapted to poultry raising, dairying, vines, berries, etc., but all sorts of fruit and crops can be raised. Irrigation by pumping; most satisfactory method of all; cased wells with plenty of water included in price. Fruit, however, requires a long wait, while dairy and poultry products pay from first day. Don't pay $150 per acre and a high water rent until you investigate this. You will make a mistake if you do. Send for circular and investigate now. Land has only been on market for a few weeks, but is selling very rapidly. For your own good, don't delay.

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You pay no freight. Pay nothing in advance. Do not haul it or unbox it. Take no trouble or responsibility. If you want The World's Best set up and started in your home, for thorough, free trial, just tell us so. We will do the rest.

No disks or other contraptions. Twice the skimming force of others. Skims faster and twice as clean. Wears a lifetime. Guaranteed forever by America's oldest and world's biggest separator concern. You can afford a Tubular—for it lasts a lifetime. You cannot afford to risk money on any "mail order" or other (so called) cheap machine that lasts one year on the average. Your present separator, no matter what make, taken in part payment for a Tubular.



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Poultry Department.

Conducted by M. Russell James.

QUESTION DEPARTMENT.

Eggs of Poor Quality.—F. H., of Colfax, Cal., writes: "I get an occasional addled fresh egg; that is, white and yolk run together on breaking; yolk seems lumpy. Have 350 White Leghorn pullets in one house 16 by 72 feet; curtain front. Feed dry mash (by weight), 2 bran, 1 midds, 1 cornmeal, ½ linseed meal, 1 alfalfa meal, 1½ beef scrap. Scratch feed in litter; wheat, corn, broom corn, oats. Greens: sprouted barley, cut grass, mangels about once a week. Grit, shells, and charcoal. Fresh water twice a day; pans cleaned once a day. Eggs gathered twice a day—no chance for stolen nests. Death loss about 1 per cent in 5 months at long intervals. Have found two eggs as described above; have had no complaints from trade, and of course don't want any. I sell all eggs at 1 to 3 days old; a buyer would call eggs as described stale."

We judge that our inquirer is keeping his fowls on the Corning "system." If so, and he allows no outside range, he is certainly "crowding the mourners" with only 3 square feet floor space each for 350 hens. If this is the case, our first advice would be to let them out, if only for a half-hour each evening just before roosting time. There never has been and never will be anything quite so good for man, bird, or beast as contact with the good brown earth and the unobstructed sunshine and air of heaven. It is evident that our inquirer is faithfully carrying out the "system" and that the poor quality noticeable in some of the eggs comes through no fault of his, but is due to the latter.

As before suggested, we would give this flock of layers a little outside run each day, and, in addition, would make a change in the feeding. We would cut out the dry mash, also the linseed meal and beef scrap for awhile. Instead we would get fresh plucks and cracklings from the butcher. When using the plucks for the given number of fowl, we would put three of them into a boiler containing about 4 gallons of boiling, salted water, and on top of them put any potatoes or other fresh vegetables on hand, and some 6 quarts of cracked corn and 12 quarts of rolled barley. When these ingredients are all in the boiler, there should be enough water to wet the whole to the top; if not, more should be added. The boiler should be covered and set over a slow heat until the plucks are tender; then the contents should be emptied into a mixing box or tub and all chopped fine, after which some six quarts of alfalfa meal may be stirred in. When the latter is thoroughly moistened, enough shorts should be mixed in with the hands to make the whole as dry as light bread-crumbs. This should be fed at noon or a little before in clean shallow boxes with a strip across to keep the feet out. About 5 p.m., or later at this season, we would give the fowls all the wheat and cracked corn they would eat, with some left to be scratched out for an early breakfast. After the grain feed we would give them all the fresh, tender grass or leaves, cut fine, that they would eat. About 8 o'clock in the morning, or as soon as they had cleaned up all the grain left in the litter, we would give a light feed of sprouted barley (not tough, matted stuff, but barley in which the sprouts have just started), after which a few stock beets split open and the halves hung up on large-headed nails would be in order to keep the hens busy and out of mischief. These fresh beets are especially necessary if the sprouted barley is not on hand and dry scratch feed has to be used. When fresh plucks cannot be obtained for the mash, about a quart of pounded or ground cracklings for each 75 hens may be used instead.

This method of feeding we have used in our yards for a number of years with most satisfactory results. Crop-bound, indigestion, and liver complaint practically unknown among our fowls, likewise imperfect eggs or those with pale yolks and watery whites. To assure eggs of perfect quality as well as shell, the fowls must be full of vigor and kept under normal conditions and fed plenty of sound corn and every day an abundance of fresh, tender, green food.

Tables on Chick Feeding.—H. H. D., of Wright, Cal., has worked out quite an elaborate table giving his estimate of amount of feed necessary and growth of chick each week until three months old. He says:

"It seems to me there ought to be a table telling the amount of feed the average chick should have from its début till of broiler age; but I have not seen one, and being just a beginner, I write to ask you for that help. I herewith make a guess and ask you to correct it. My guess is based on the supposition that chicks eat about one-third their weight in a week."

Charles A. Cyphers, Buffalo, N. Y., in "Eggs, Broilers, and Roasters," has given complete and authentic tables upon these subjects, which booklet it would be well for our inquirer to send for.

Such tables are of much interest to poultry raisers in estimating the approximate cost of feeding young chicks, but when it comes to the actual feeding of the chicks one cannot be entirely dependent upon weights and measures. The chicks should be fed what they will eat, be it more or less, and at the same time fed so that they are kept in keen appetite. Here is where the person of quick observation gets ahead of the one dependent upon weights and measures.

Depluming Mites.—M. M. C., of Clovis, Cal., writes: "My chickens are losing the feathers from their necks, some three inches down the front and then extending around the neck. I have Rocks and White Leghorns, but only the Rocks seem affected. They are bright and active, with red combs, but now are falling off in egg production. The house is open in front, well whitewashed, and the inside is sprayed with distillate, and roosts painted with lice killer. The chickens seem to be clean as far as I can see. They are only shut in at night; are fed wheat, rolled barley, shorts, thick milk, and cooked meat three times a month; have plenty of charcoal, grit, shell, and running water. Can you tell me the trouble and what remedy to use?"

The loss of feathers is probably due to the depluming mite. Dust well with buhach through the feathered portion of the bird and apply carbolated vaseline to the bare skin and the edges of the feathers where the insects work. Do this daily as long as needed. When vaseline is not on hand, a mixture of coal-oil and sweet oil applied with a soft sponge squeezed nearly dry does as well. We would advise that you make a general cleaning and spraying of your poultry quarters, nest boxes, etc.

POULTRY.

PIONEER POULTRY YARDS—Standard bred Light and Dark Brahmas, Buff Cochins, R. I. Reds, Houdans, Black Minorcas, Cornish Fowls, Brown Leghorns Bronze turkeys, peacocks, guineas and Rouen ducks. Address W. A. FRENCH 545 W. Park St., Stockton, Cal.

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FOR GOOD, HEALTHY CHICKS in large or small lots, try Penn Grove Hatchery All chicks guaranteed. Incubators brooders and supplies. E. W. Spring, Prop., Penn Grove.

WHITE WYANDOTTES—221 egg strain Owner first-prize cockerel, Oakland and Petaluma 1909. Eggs $2 per 15. H. B WINTRINGHAM, Middletown, Lake Co. Cal.

CHICKS, 10c.—Shipped anywhere; 30 varieties; thoroughbred chickens and eggs; free circular. Ingleside Hatchery, 807 Mt. Vernon Ave., San Francisco, Cal.

OAKLAND POULTRY YARDS, 149D, California St., San Francisco.—Est. 40 years. Standard bred poultry. White Orpingtons, R. I. Reds, Brd. Rocks, White Leghorns.

INDIAN RUNNER DUCKS—Eggs for hatching, $1 per setting; $2 for 30; for 50 or more, 5c each. F. L. HUNT Lincoln Ave., Napa, Cal.

DAY-OLD CHICKS—Barred Rocks; also eggs for hatching; good laying strain. Fairmount Hatchery, Box 29B, R. F. D., Santa Cruz, Cal.

WAYSIDE YARDS—A few settings from special S. C. White Leghorn matings, at $5 for 30. Carl Gregory, Petaluma, Cal.

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WHITE LEGHORNS—Chicks, eggs, cockerels. Fine stock. Reasonable. O. B Morris, Lodi, Cal.

BRONZE Turkeys and Eggs. Ed Hart Clements, Cal. Large size, good plumage early maturity

TWIN OAKS FARM—W. H. Bissell, Proprietor, Livermore, Cal.—Buff, White Orpington.

INDIAN RUNNER BABY DUCKS. T. M. Alexander, 460 33d Ave., San Francisco.

ORPINGTONS—White, Buff, stock, eggs Ellen Jacque, 3117 School St., Fruitvale

HATCHING EGGS—White Leghorns. Circular 164. A. H. Gregory, Fruitvale, Cal.

F. BALDWIN'S WHITE LEGHORNS



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1st Pullet, A. Y. P. Ex. 49 Washington Ave., San Jose, Cal.

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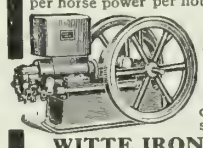
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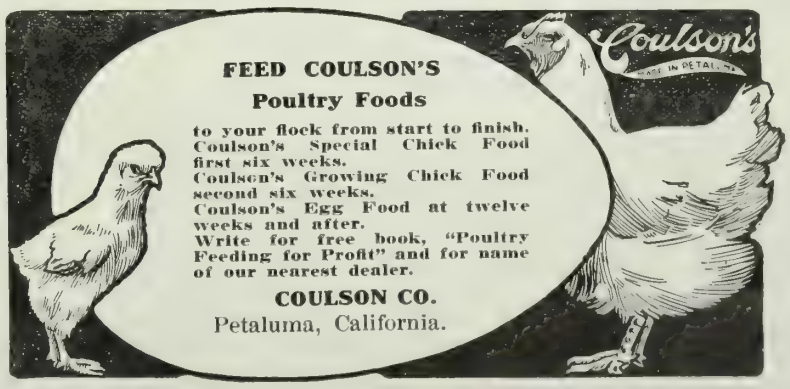
comes from that spot, and the analysis shows they contain the properties.

ANALYSIS

Bone Phosphate	0.74%
Calcium Carbonate	94.30%
Moisture	0.37%
Undetermined (iron, alumina, silica, etc.)	4.59%
	100.00%

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Indian Runner Ducks lay eggs that sell as "firsts." They don't mind cold feet and they lay in winter. They eat cheap feed and lay upwards of 200 eggs a year They mature at five months. They are well called "mortgage lifters."

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The Home Circle.

On File.

If an unkind word appears,
File the thing away.
If some novelty in jeers,
File the thing away.

If some clever little bit
Of a sharp and pointed wit,
Carrying a sting with it—
File the thing away.

If some bit of gossip come,
File the thing away.
Scandalously spicy crumb,
File the thing away.

If suspicion comes to you
That your neighbor isn't true,
Let me tell you what to do—
File the thing away!

Do this for a little while,
Then go out and burn the file.

—John Kendrick Bangs.

Dering's Choice.

"Oh, Harley, this is nearly the last of our jolly excursions!" sighed Betty Willoughby, looking at the young man opposite with suddenly clouded eyes.

"Yes," agreed her companion. "As Kipling says, 'There ain't no buses running in Rucota,' wherever that particular item of South American geography is situated. No more bus rides out into the country, with these jolly little teas at the end of the excursion. Betty, I wish I could take you with me."

But the girl laughed teasingly.

"Now, Harley, if you could take any girl at all, you know you wouldn't choose me."

It was Harley's turn to look serious, and a deep frown furrowed his brow.

"Perhaps she wouldn't have come, after all," he said sadly.

"You—you have never asked her?"

"No." Harley's tone was emphatic. "I asked the head of the firm if I should be allowed to take—er—my wife with me, if I married, or to send for her after a few months, but he replied through the secretary that it was impossible. Now, I've seen too much unhappiness caused by long engagements between couples where one has to be abroad ever to tie up a girl for years of waiting. So I've never told Vera how I—just what I think of her, and when I go away she'll probably forget me easily enough and marry some other chap."

"Not if she cares," murmured Betty. But in spite of herself the sentence was hardly convincing. Secretly Betty felt quite sure that beautiful Vera Maitland's interest in handsome young Harley Dering was merely vainly flattered by his own obvious admiration.

"You will write and tell me all about her, won't you, Betty?" begged the young man.

And Betty agreed willingly.

"Ten thousand a year and a handsome husband," added Dering, handing her the plate containing a solitary cake. "No? Well, I suppose we must get home again; I must be at Lord Densmore's reception in good time. You will be there, of course?"

"In my official capacity," assented Betty. "Will she be there?"

"I hope so," he answered eagerly. "Betty, I wish you'd watch her for me. I shall have to be civil to all the old man's friends tonight on account of this Rucota post. Tell me how she looks, and —and if she's specially nice to anyone, and all that. O, Betty, to think that all this winter she will be the center and life of everything, and I shall be miles away, unable to get even a smile."

"Poor boy!" said Betty softly. "I will do my best for you. I only wish I could put things just as you want them."

"That's all right, Betty; you're a brick!"

But the careless good fellowship of his remark brought a sudden pang to the heart of the courageous little girl, who would have given anything she possessed for one of the longing thoughts lavished on the pretty society butterfly, to whom they were worth nothing.

Their common profession of journalism had brought Harley Dering and Betty Willoughby very much together, and their acquaintance had developed into a long comradeship very precious to both of them. A born mothering angel, Betty soon became ambitious for her friend and with tact and perseverance directed his attention to a career more stable and brilliant than that of quill driving.

When it came to her knowledge that a certain much sought after post in Rucota, a rising little place in South America, was to be vacant, she determined that Harley Dering should obtain the post, and the young man himself never realized the untiring energy Betty had expended, and how completely he owed the promotion to her efforts. The one crumpled petal in his rose was the fact that he could not obtain permission to marry, and so he dared not speak to Vera Maitland of his love for her and ask her to share the new home.

Before the reception that evening he was Lord Densmore's guest at dinner, and here for the first time he met the head of his new firm, a kindly, white-haired old gentleman who was evidently favorably impressed with his subordinate. In the course of conversation Mr. Chetwynd genially inquired whether Mr. Dering intended to take out with him a young wife, and was amazed to learn Harley's reason for not doing so. "The matter was never referred to me," he assured Dering. "I am a strong believer in a young man marrying before going out there, so long as his income is adequate—as your is. Keeps him out of mischief," he added wisely.

Then he turned abruptly to Harley.

"I will see that you have full official permission," he said. "The fact that you asked leave proves there's a lady in the case. If she cares for you, my boy, she'll consent to a special license and a condensed trousseau. Marry her and take her with you, and my blessing also."

Harley Dering lost himself in a whirl of blissful dreams. He would see Vera within a few hours, and he could speak at last. If she would consent—

Mr. Chetwynd chuckled good humoredly to himself at his neighbor's abstraction, and refrained from troubling him with talk.

How pleased Betty would be, mused Harley, and he remembered her little speech that afternoon.

"If you could take any girl at all, it wouldn't be me," she had said, and, of course, she was right. But what a pity Betty couldn't come, too!

Leave Betty behind? Why, he couldn't do without her! In a flood rushed over him memories of all she had done for him—how she had coached and instructed him and interested him in the new work he was to take up. He knew that, without her assistance, he could never have satisfied the firm of his fitness for the post. Life without Betty would be——. Dimly Harley realized that the men were rising from the table, and he strode off to a quiet corner to think hard.

* * * * *

In her simple evening dress of black Betty Willoughby mingled with the guests at Lord Densmore's reception, taking the rapid observations and mental notes that would furnish the required column for next day's society news. At first she looked in vain for Harley Dering, expecting to see him in the throng surrounding Vera Maitland. He was not there, but presently he confronted her, and there was a new expression in his eyes as they met hers that startled the girl.

"Betty," he said, "I've something to tell you. Come with me." And wonderingly she followed into a quiet little room where no one would disturb them. Here the young man turned swiftly and caught both Betty's hands in his own.

"Betty," he said tensely, "will you marry me and come to Rucota with me? Could you care for me enough? Or do you only just think of me as a chum?"

Her cheeks went suddenly white and she needed the support of his strong grasp to prevent her from swaying.

"What do you mean?" she gasped.

"Sit down, dear, and let me tell you."

He told her of Mr. Chetwynd's promise and the revealing thoughts it had inspired.

"Then I thought, somehow, of the journey across the ocean, Betty, and I understood. If—if Vera would have come with me I should have been happy in getting her the finest stateroom on board and surrounding her with pretty things. I should wrap her up in the most comfortable deck chair, and delight to be her knight, to fetch and carry at her command. But I realized that if you were with me, Betty, how different things would be. We would explore everything together, enjoy the splash and spray, however cold, just as we have enjoyed so many adventures together. Then, instead of the glare of the brilliant salon, we would steal away to a dim corner of the boat, where no one would see if I put my arm around you to draw you close, and we should be happy just to be together. At least," he ended his eloquence abruptly, "I should be happy. And the very thought of such joy tells me quite plainly that my admiration of Vera was only a superficial fancy, after all. How could it be otherwise, when my heart was filled with you, Betty, though I didn't know it?"

He got up and put a hand gently on Betty's downcast head.

"There, dear, I didn't mean to startle you. Look here; don't try to answer now. I'll leave you a little while and when I come back perhaps you can decide better whether, even if you could care for me, you'd be willing to venture out to the wilds of South America."

Betty raised her head quickly and her eyes shone with happiness.

"I would go to the wilds of anywhere, if we could go together!" she said simply. —Evening Sun.

"Let's go to the theatre."
"I've nothing to wear."
"Then we'll go to the opera."

McCool—What's my bill?
Clerk—What room?
McCool—I slept on the billiard table.
Clerk—Fifty cents an hour.

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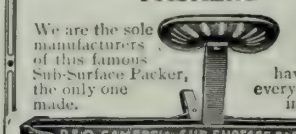
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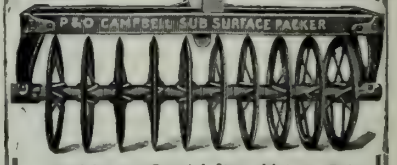
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OUR YOUNG FOLKS' DEPARTMENT.

Conducted by M. RUSSELL JAMES.

Knowledge.

So many Aprils went away
Before I learned one little part
Of all the joy each fragile day
Hid in its heart.

So many summers hastened by
Before I caught their secret spell,
And read in bloom and leaf and sky
Life's miracle.

Would that Youth's eye could see the grace
And wonder of the drifting years.
Grown old, their loveliness we trace
Through blinding tears.
—C. H. Towne in Providence Journal.

Poultry Courses for Our Young Folks.

Our domestic fowl undoubtedly had their origin in the jungles of India. When or by whom the jungle fowl was first domesticated was forgotten before history began. Even the cave-dwellers were poultry keepers, scientists have discovered. In that long ago man is not credited with much intellect, but he had enough to see a good thing in the poultry business. He found nests of large delicious eggs in the rank grasses of the jungle, and tender broilers hiding among the thick herbage, while the jungle cock crowed and the hen cackled in the thickets. To capture the chicks was not difficult, and to tame and rear the small ones for larger growth or to furnish delicious eggs would naturally follow and be easy in that warm climate. Quite as naturally the value of these tamed fowls increased as their worth became known, and they were carried to other countries and propagated until they spread over the inhabited earth.

SOME OF THE OLDEST KNOWN BREEDS.

The game fowl is said to be as old as time. We first hear of them among the ancient Romans, Greeks, and Persians, all of whom produced game breeds of renown. This breed was introduced into the British Isles by the Romans, and the English took mightily to the fighting cocks; in fact, they are the originators and breeders of the finest breeds of Games at this day. The English people were natural fanciers from the start, and kept fowls for pleasure alone at that time, as their Druidical laws prohibited the eating of the flesh of fowl.

The Dorking is another very old breed of fowl. It was described by Pliny, the Roman author, in 61 A. D., more than eighteen hundred years ago. This breed is still the utility fowl of England. The name was taken from the village of Dorking, where it was first largely bred, but the breed undoubtedly came from Rome, as Columella, a Roman writer, described it more than two thousand years ago as the common fowl of Rome. This breed is about the size of the Wyandotte with a broad low-set body and distinguished by having five toes.

The beautiful breeds known as Hamburgs were royal birds ages ago. In Chaucer's Tales, written in the fourteenth century, there is a tribute to the Gold Penciled cock:

"His comb was redder than the fine corall,
Embattled as it were a castel wall,
His bill was black, and as the jet it shown,
Like azure were his legges and his tone (toes),
His nails whiter than lily flour,
And like the burned gold was his color."

The Polish fowls belong to another old breed and are found in many countries and those that are widely separated. In times past many of these beautiful breeds of fowl were kept only by royal persons or others of distinction, and not allowed in the hands of commoners even if the latter could have afforded such costly birds.

The breeds of fowl of the Mediterranean class, such as the Leghorns, Minorcas, etc., are of the old and common fowls of Italy and Spain, and still retain their breed characteristics as egg producers, non-setters, and wide-awake rustlers, but so improved and so changed in other respects through careful breeding in the hands of the fancier as to bear little relation to their ancestors.

The Mission of the Beautiful.

In his proclamation changing Arbor Day from the spring to the autumn, the Governor of Kentucky calls upon the children of the State to help not only in planting trees and protecting the birds, but by beautifying their homes, schools and localities to make their State a pleasant place in which to live and a glory to the whole country.

"THE DUTY OF CHILDREN."

"Love your home, beautify it; keep it nice and fresh. Love your road or street you live in. It is part yours. Help make it is a nice road to see, to live in and to walk on and to ride on. Love your place, your village, your town, your county, your State, your Country. Learn their history and what they need. Say your prayers for them and then back up your prayers by thinking for them and working for them."

To begin at home and working outward make the world a more pleasant and kindly place in which to live is the Mission of the Beautiful, which is but another name for the Mission of the Good. And none are too young or too poor to help in this mission.

Order and cleanliness and a few common but well-cared-for vines and plants can make the humblest dwelling a pleasant spot on the landscape, and smiles and kindness can fill it with the real wealth of home.

"Scatter the gems of the beautiful,
By the wayside let them fall,
That the rose may spring by the cottage gate
And the vine by the garden wall.
Cover the rough and rude of earth
With a veil of leaves and flowers,
And mark with the opening bud and cup
The march of the summer hours."

One-Legged Navy Vet.

The report of the gun-firing tests when the old battleship San Marcos was sunk gives the story of the cat and the rooster left aboard for the purpose of testing the fate of live things on the target battleship.

The test shots seemed to tear the vitals out of the ship, yet after the practice when Secretary Meyer went aboard the dismantled San Marcos, the cat walked quietly out from one of the turrets, rubbed against him, and meowed softly. Suddenly a great crowing was heard from the upper tower, and there Robinson, the rooster, was standing on one leg crowing valiantly. The other leg had been snapped off by the bursting of a shell.

The cat was purring and the rooster crowing when taken to the flagship. The ship surgeons dressed Robinson's wound and later made a small wooden leg with a rubber flange at the base for the rooster. A box was placed on deck as a rooster's hospital, and every care given to the patient by both officers and men.

At 4 o'clock in the morning while the crew slept and the sun had not yet peeped over Chesapeake bay, a clarion "Cock-a-doodle-doo" sounded and brought the crew half-clad on deck. Robinson, survivor of the sunken San Marcos, was stumping across the deck on the first wooden leg ever worn by a navy rooster. The veteran has been adopted by Secretary Meyer.

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ALL KINDS OF MACHINERY REPAIRS ON SHORT NOTICE.

DIXON, CAL.

THE MARKETS.

San Francisco, April 19, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

There has been little feature to this market for the last week. Prices remain at the firmer level, being rather firmly held, though there is no buying movement of any consequence. Northern prices are now as high as in San Francisco, and there is little buying for export, remaining supplies being comparatively light.

California Club	$1.50	@1.52½
Sonora	1.60	@1.65
White Australian	1.55	@1.60
Northern Club	1.50	@1.55
Northern Bluestem	1.57½	@1.65
Russian Red	1.50	@1.55

BARLEY.

Considerable barley is still being shipped out, notwithstanding the high prices, and buyers are apparently anxious to pick up anything still in growers' hands. Values here remain about as before, but are firmly held, with a few sales above quotations. Sales in the Sacramento valley are reported at $1.25 to $1.50. The local movement of feed is limited.

Brewing and Shipping	$1.50	@1.52½
Choice Feed, per ctl	1.45	@1.47½
Common Feed	1.37½	@1.42½

OATS.

The high price of barley is causing quite a general demand for feed oats, and as offerings are not excessive prices are comparatively high, a slight advance in both red and black oats being noted.

Red Feed	$1.37½	@1.45
Gray		Nominal
White		Nominal
Black Feed	1.37½	@1.45

CORN.

California small yellow is moving fairly well in outside markets, though little is offered here. There is a little more firmness as to prices. Eastern corn has advanced sharply, and is firm at the new figures, but the local movement is light.

Cal. Small Yellow		$1.75
Eastern Yellow	$1.35	@1.45
Eastern White	1.35	@1.45
Brown Egyptian	1.50	@1.60

RYE.

Rye remains quiet and featureless, the demand here being very small.

Rye, per ctl	$1.40	@1.50

BEANS.

Prices on all descriptions stand exactly as before, the market in general remaining steady. While there is no particular activity in any line at present, the situation is highly favorable to sellers, all the leading lines being in a strong statistical position, and some further advance is not unlikely before the end of the season. Eastern markets are already pretty well cleaned up, and supplies held here are limited. Lima beans are now being taken for seed, and conditions in southern California are favorable for a large crop. While some decline from present figures is to be expected when the new crop is marketed, the price is expected to remain comparatively high, as the demand throughout the country seems to be larger than can easily be supplied. Shipments have been fairly large in the last few weeks, and while the present movement is only moderate supplies are steadily decreasing. The spot market in New York is in a strong position, sales having been made in car load lots as high as $6.60, with $6.70 as the price generally asked for small lots.

Bayos, per ctl	$4.65	@4.75
Blackeyes	6.50	@6.75
Cranberry Beans	4.00	@4.25
Garvanzos	2.85	@3.25
Horse Beans	2.50	@2.75
Small Whites	3.40	@3.55
Large Whites	3.40	@3.55
Limas	6.20	@6.35
Pea		4.25
Pink	5.50	@5.60
Red Kidneys	6.25	@6.50

SEEDS.

Millet is quoted a little higher, as there is hardly any stock here at present. Alfalfa is hardly worth quoting at present, as there is hardly any demand. Other lines are unchanged, and nothing is moving except in a very small way.

Alfalfa	18@	20c
Broomcorn Seed, per ton	$20.00@	25.00
Brown Mustard, per lb		5½c
Canary	3½@	4 c
Hemp	3½@	4 c
Millet	3 @	3¼c
Timothy	8 @	9 c
Yellow Mustard		5¾c
Dried Peas, per ctl	3.75@	4.00

FLOUR.

The local market remains steady at former prices, with a fair demand here, though there is ..ttle outside movement. Northern export prices are firmer, and some advance has been made in patents by the Portland mills.

Cal. Family Extras	$5.20	@5.60
Bakers' Extras	5.20	@5.60
Superfine	4.30	@4.50
Oregon and Washington	4.40	@4.60

Hay and Feedstuffs.

HAY.

Hay has been coming in on quite a large scale for the last week, and under present conditions here the market is hardly in a position to absorb all that comes in. Prices are accordingly a shade lower than last week, and as many dealers have more on hand than they can easily move the market is still easy. The country market is in better condition than in the city, prices being well maintained in most places, and there is no noticeable pressure to sell. Most of the hay arriving at San Francisco is on recent purchases by local dealers. An improvement in prices between now and the appearance of new hay on the market is expected in some quarters, but well-informed dealers here do not look for any material change.

Choice Wheat	$12.00	@13.50
Good Wheat Hay	10.00	@11.00
Other Grade Wheat	7.00	@10.00
Wheat and Oats	7.00	@11.00
Tame Oats	7.00	@11.00
Wild Oats	6.50	@ 9.50
Alfalfa	8.00	@11.50
Stock Hay	5.50	@ 6.50
Straw, per bale	35	@ 50c

FEEDSTUFFS.

Prices are firm on all descriptions, with a further advance on both rolled barley and oats. Cocoanut cake is also higher. Bran is unchanged, but very strong, as there is a fair demand and offering are light, the production in the north being smaller than for some time past.

Alfalfa Meal, per ton	$19.00	@20.00
Bran, per ton	$25.00	@26.00
Cocoanut Cake or Meal	26.50	@27.00
Cracked Corn	33.00	@34.00
Middlings	33.00	@36.00
Mixed Feeds	29.00	@32.00
Rolled Barley	31.00	@32.00
Rolled Oats	32.00	@33.00
Shorts	26.50	@30.00

Garden Truck.

VEGETABLES.

The scarcity of onions is something of a feature at present. Oregon stock is nominal, being entirely cleaned up, and Australian onions are held for higher prices. Some outside stock has been moving, Nevada onions at $3.50 per ctl. and Texas Bermudas at $2.50 per crate. Arrivals of asparagus are running about as heavy as before, but in addition to a heavy local demand there is considerable shipping business, and the canners are in the market for all surplus lots, offering fairly good prices. Quotations are accordingly somewhat higher than last week. Rhubarb is also bringing better prices than last week, the market having been strengthened by a temporary shortage, though arrivals at present are heavy. Southern peas are no longer coming in, and local stock, though plentiful, brings very fair prices. Mexican tomatoes and cucumbers are a little higher. A few string beans from other States have been selling at 12½ to 15 cents. There is nothing new in local garden truck.

Onions: Oregon, ctl	Nominal	
Australian	3.50@	4.00
Green, box	50@	90c
Garlic, per lb	4@	5c
Green Peas, per lb	5@	7c
Turnips, per sack	60@	75c
Tomatoes, per crate	1.25@	1.60
Cucumbers, per doz	1.00@	1.25
Cabbage		50c
Carrots, per sack	65@	75c
Celery, large, per crate	2.00@	2.50
Rhubarb, per box	65@	90c
Lettuce, per crate	1.50@	2.00
Cauliflower, per doz	75@	1.00
Asparagus, per box	1.00@	1.75

POTATOES.

Prices on all lines have been sharply advanced this week, owing to the close clean-up in both local and Oregon markets. Only a few more cars of Oregon stock are available, and there has been a general rush to get supplies, while offerings are closely and firmly held. New potatoes are dull, but bring slightly higher prices. Quite a bit of Eastern stock is arriving and sells at high prices.

Lompoc Burbanks, per ctl	$ 2.75@	3.00
River Whites, per ctl	2.00@	2.15
Oregon Burbanks	2.50@	2.75
New Potatoes, per lb	6@	6½c

? ? ? ? ? ?
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For Top Market Prices—For Prompt Remittance
For Daily Quotations on request
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A. GALLI FRUIT COMPANY
SAN FRANCISCO STORE, Washington and Front OAKLAND STORE, 11th and Harrison
Reference—Any Bank or Mercantile House

Dairy Produce.

POULTRY.

A number of changes are noted in the poultry market, owing to the increased offerings of local stock. All descriptions, however, are still in good demand, and all arrivals are readily disposed of. Large hens and roosters from the East are rather scarce, and accordingly higher, while quotations on broilers and fryers have been reduced.

Large Broilers	$ 4.50@	5.00
Small Broilers	2.25@	3.50
Fryers	6.50@	7.50
Hens, extra	9.00@	12.00
Hens, large	7.00@	9.00
Small Hens	6.00@	6.50
Old Roosters	5.00@	6.00
Young Roosters	8.00@	9.00
Young Roosters, full grown	9.50@	10.50
Squabs	2.00@	2.50
Geese, per pair	3.00@	3.50
Ducks	8.00@	10.00
Turkeys, live, per lb	Nominal	

BUTTER.

In addition to a lively local consuming trade, butter has been in strong demand for shipment and storing, and the market has been pretty steadily maintained. A little oversupply caused a decline on Tuesday, but the former firmness has been recovered. Exchange quotations for the week were as follows:

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	.21	21	21½	21½	20½	21½
Prime Firsts	20½	20½	20½	21	20	21
Firsts	.20	20	20	20½	19½	20½
Seconds	18½	18½	18½	18½	18½	18½

EGGS.

After standing unchanged for nearly two weeks, extra and first grade eggs opened the week with an advance. This was due to the fact that storage operators had control of arrivals, making it difficult for the consuming trade to get supplies. Extras are now a shade lower, but firm as quoted. Exchange quotations for the week are as follows:

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	.18	18	18	20	20½	21
Firsts	.17	17	17	17	19½	19½
Seconds	.16	16	16	16	16	16

CHEESE.

Supplies at present are quite large, and prices on all local descriptions are lower. Y. A.'s are steady, but there is still some weakness in flats.

Fancy California Flats, per lb	11½c	
Firsts	11	c
Ne Young Americas, fancy	12½	

Deciduous Fruits.

FRESH FRUITS.

There is no feature in the apple trade, prices remaining steady with a fair demand, and prospects of a good clean-up of storage stocks. The first cherries were shipped East from Yolo county this week and a small shipment has appeared in the San Francisco market, being held at extremely high prices. It will be a couple of weeks at least before the arrivals amount to much. Strawberries are now being picked in several parts of the State, and some are being shipped north, though offerings here are still small and good lots being high priced. Quotations are given, but the market is unsettled. Quite a lot of Lodi Tokays are being bought for shipment in advance.

Apples, per box—		
Newtown	$ 1.25@	1.75
Fancy Red, 4-tier	1.25@	1.75
Strawberries, southern, crate	1.25@	2.50
Longworths, drawer		1.50

Dried Fruits.

The only lines of which there is anything worth mentioning in first hands are higher. Apples, apricots, prunes, etc., are practically nominal, the growers being entirely sold out, while stocks held by packers are extremely small. An apparent revival of the consuming demand has caused considerable excitement in the market on peaches and raisins, and there seems to be some competition among packers to get possession of the remaining stocks, in view of the probability of a close clean-up. Some of the local packers believe, however, that this excitement will subside in another week, leaving some stock still controlled by growers. An advance of ¼ cent is quoted on peaches and all descriptions of raisins, but the price is not very definitely established, as buyers are actively in the field and some are said to be offering about ¼ cent above quotations at the moment. It is hardly expected that from now on anything will be obtainable below the present figures. As for the new crop, it seems pretty certain that apricots will be scarce again, and some growers are talking about a price of 13½ cents. About 6 cents is expected for new crop peaches. Business in future prunes is of a purely speculative character, as nothing definite can be known about the crop at this time. The New York Journal of Commerce says:

"The market for prunes is very firm. Only small sales are reported, big ones presumably being out of question owing to the small supply and the disposition on the part of holders to protect their clients by reserving goods for them. Prices of course are top notch. Owing to the fact that the blossoming season this year has been delayed by unfavorable weather, packers are not at all anxious to accept future orders with specified early deliveries.

"Apricots are in fair demand, small lots being cleaned up rapidly. No great interest is shown in raisins. Loose muscatels are offered at 4½ cents for 3s and 4¼ cents for 2s f. o. b. coast."

Evaporated Apples, per lb	10½@	11 c
Apricots	12 @	13 c
Figs, black	4½@	5 c
Figs, white	5 @	7½c
Moorpark, fancy	13½@	14 c
Peaches	6¾@	7½c
Prunes, 4-size basis		9 c
Pears	8½@	12 c
Raisins—		
Loose Muscatels, in sweatbox	3½@	3¾c
Thompson Seedless	4¼@	4½c
Seedless Sultanas	4 @	4¼c

Citrus Fruits.

Reports from Eastern auctions show that oranges are bringing good prices, and the season is now far enough along to practically assure the successful marketing of the whole crop. Up to April 17 there had been shipped from California 20,742 cars of oranges and 2458 cars of lemons.

On the local auction at Los Angeles fancy navels sold for $1.57½ on Monday, and orchard run brought $1.52½ f. o. b. California.

At New York, the 17th, 51 cars of navels were sold on a strong market. Prices realized were around $2.25 on the average. Specially good fruit sold as high as $3.40 and poorer lots as low as $1.40. Lemons brought from $2.40 to $3.35. On the same day at St. Louis the prices were some lower, though the market was gaining. At Philadelphia the prices were well maintained on both California navels and Florida fruit. The latter sold for $1.15 to $3.40. Boston also showed a strong demand for citrus fruits, the prices being about the same as New York.

On Tuesday, April 18th, the New York auctions included 27 cars of navels, 4 cars of Thompsons, 2 cars of seedlings, 1 car of Jaffas, 2 cars of bloods, and 2 cars of lemons. Ideal weather prevailed, the attendance was large and the demand active. The fruit was good, being 5 to 10 cents higher. Poor fruit sold low. Lemons remained unchanged. Quotations: Navels, extra fancy, large, $2.85 to $3.55; regular, $3 to $3.50; small, $2.60 to $3.50; fancy, large, $2.30 to $2.95; regular, $2.50 to $3.25; small, $2.30 to $3.30; choice, large, $1.75 to $2.65; regular, $2.10 to $3.05; small, $1.75 to $3.05; orchard run, large, $2.15 to $2.35; regular, $2.50 to $2.60; small, $2.35 to $2.75; standard, large, $1.20 to $2.45; regular, $1.60 to $2.50; small, $1.90 to $2.45; fancy, large, $2.55 to $2.80; choice, $2.35 to $2.50; seedlings, orchard run, $1.70 to $2.50; Jaffas, orchard run, $1.45 to $2; bloods, fancy, $2.50 to $2.80; lemons, fancy, $3.15 to $3.35; choice, $2.20 to $2.90.

Navel oranges have been in exceptionally strong demand in the San Francisco market for the last week, and while supplies have been coming forward at a good rate the market has been cleaned up much of the time. Dealers are accordingly quoting an advance on the top grades. Grapefruit is also a little stronger, finding a good demand at an advance of 25 cents. Choice lemons are higher, but Mexican limes are fairly plentiful and the price has again been cut.

Navel oranges—	
Extra choice	$ 2.50@ 2.75
Choice	1.75@ 2.50
Valencias, choice to fancy	Nominal
Tangerines	Nominal
Choice Lemons	2.25@ 2.75
Fancy Lemons	3.00@ 3.50
Standard	1.25@ 1.50
Limes	5.00@ 5.50
Grapefruit	2.25@ 3.00

Nuts, Honey, Hops, Etc.

NUTS.

It is reported that some of the walnuts in northern California were damaged by the recent frost, and there is apparently a general anticipation of a small crop of almonds. Spot business in both lines is confined to narrow limits, as supplies are light and few buyers care to pay the current prices.

Almonds—	
Nonpareils	15½@16 c
I X L	14½@15 c
Ne Plus Ultra	13½@14 c
Drakes	11¼@11¾c
Languedoc	11 @11½c
Hardshells	8 @ 8½c
Walnuts—Softshell, No. 1	15 c
Standard	14½c
Softshell, No. 2	11 c
Budded	17½c

HONEY.

All grades are now pretty closely cleaned up, business being entirely of a jobbing nature. Trading is quiet, prices standing as before. A large crop is expected, but will not be marketed for some time.

Comb—White Sage	12 @ 15c
Extracted—Water White	Nominal.
Light Amber	7 @ 8 c
Amber	5 @ 6 c
Sacramento River Comb	12 @12½c

BEESWAX.

The movement is not of much consequence at present. Supplies are not excessive, and prices remain steady at last quoted.

Light	28 @30 c
Dark	23 @26 c

HOPS.

No further change in prices. Trading continues rather quiet, the little remaining of last year's crop being held above the present views of buyers, while contracting of the new crop is still rather slow.

Hops, 1910 crop	18 @22½c
1911 Crop	16 @17 c

Live Stock.

DRESSED MEAT.

Beef Steers, per lb	10 @10½c
Cows	9 @ 9½c
Heifers	9 @ 9½c
Veal, large	11 @12 c
Veal, small	12½@13 c
Mutton: Wethers	9½@10 c
Ewes	9c
Lambs	14 @15 c
Hogs, dressed	12 @12½c

LIVE STOCK.

All descriptions of live hogs are lower, and dressed pork is weak, though prices remain about as before. Some hogs are coming in from the East. Sheep are easy, and dressed mutton is lower, as a good many stockmen are now sending their sheep to market. The movement of beef cattle in this direction is still rather light, though larger than it was a month ago, and some reduction of prices is expected before long.

Gross weight:	
Steers: No. 1	6 @ 6½c
No. 2	6 @ 6¼c
Cows and Heifers: No. 1	5¼@ 5½c
No. 2	4¾@ 5 c
Bulls and Stags	2½@ 4 c
Calves: Light	6½@ 7 c
Medium	6 @ 6½c
Heavy	5½@ 6 c
Hogs: Grain-fed, heavy	6½@ 6¾c
150 to 250 lbs	7 c
100 to 150 lbs	7 c
Small prime wethers	5¼@ 5½c
Large prime wethers	5¼@ 5½c
Ewes	4 @ 4½c
Lambs	6½@ 7 c

WOOL.

Quotations are entirely nominal, as buyers here are taking no interest in the market, and as far as can be learned none of the new clips have been sold. A little movement is reported in Oregon, but the market there also is dull and weak.

Fall Clip—	
Mountain Free	8 @10 c
Valley Fall and Lamb	6 @ 9 c
Northern	6 @ 9 c
Southern Spring	10 @11 c
Middle Counties	12 @13 c
Northern	15 @16 c

HIDES.

The market is dull for all descriptions, with a rather easy feeling as to values, though there has been no quotable decline in prices.

Heavy Steers, over 56 lbs.	10 c
Medium	9 @ 9½c
Light Steers, under 48 lbs.	9 c
Heavy Cows, over 50 lbs.	8¾c
Light Cows, 30 to 50 lbs.	8½c
Kip	10½c
Veal	15 @15½c
Calf	15 @15½c
Dry—	
Dry Hides	17 @18 c
Dry Bulls	16 c
Dry Kip, 10 to 15	17 @18 c
Dry Veal, 5 to 10	16½@17 c
Dry Calf, 7 down	22 c
Sheep Skins—	
Long Wools	$ .85@ 1.25
Medium Wool, 6 to 9 mos.	50@ 80c
Short Wool, 3 to 6 mos.	35@ 60c
Lambs	15@ 50c

HORSES.

Desirable Drafters, 1700 lbs. up.	$275@300
Light Drafters 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs.	200@250
Wagon Horses, 1250 to 1350 lbs.	175@200
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	135@150
Young	200
Old Mares	100@150

MULES.

1200 lbs	$250@300
1100 lbs	200@225
1000 lbs	150@175
900 lbs	125@150

PUBLISHER'S DEPARTMENT.

Dr. J. W. Henderson of the Bella Vista Stock Ranch of Martinez is to be congratulated on the safe arrival of his second consignment for breeding purposes, of some splendid specimens of those thrifty, prolific, early developing Hampshire hogs, which showed champion class at the recent Chicago fat stock show. They are all pedigreed and are from the best herds of Kentucky and Indiana. The doctor has already booked orders for prospective boars.

Have you noticed the Roos Bros. advertising in the PACIFIC RURAL PRESS? This San Francisco firm has one of the largest and most reliable clothing stores in the West. It has been established for many years and we can assure our readers of square treatment if they order goods from this house.

Beaver Board takes the place of lath, plaster and wall paper for walls and ceilings. It is warm, durable and as cheap as plaster. See the ad. of the Lilley & Thurston Co., 82 Second St., this city, on another page of this issue. Write them for booklet which describes this newest building material.

To appreciate the extent and importance of the poultry industry in California, one must visit the establishment of the Geo. H. Croley Co., 629 Brannan St., San Francisco. Two floors, each 100 by 250 feet, contain the most efficient milling, grading and mixing machines to turn out large quantities of the different poultry foods and products the company handles. Mr. Croley informed the writer that on a recent business trip to Petaluma, he booked orders for no less than 25 carloads of mixed supplies from the large dealers of Chickenopolis. Although a busy man, Mr. Croley or one of the staff will always find time to show a visitor the different methods by which the various products are handled. In the rear the S. P. Co. has a spur track right into the building where three cars were being loaded and one unloaded. The poultry shells advertised by the Croley company in this issue is one of the important articles they handle, Mr. Croley remarking they found it necessary to carry a stock of from 500 to 600 tons all the time, their shipments going as far East as Denver, while for years they have supplie Oregon and Washington. Anyone interested in poultry should write for the Croley company's price list and samples. They have everything for everybody interested in poultry.

THE COSMOS.

There is no flowering annual that shows up so largely in so short a time and with so little work as the cosmos. There are two types of this flower, the early flowering and the late flowering. The former is of small growth and blossoms in the summertime: the latter, with proper treatment, will grow to five and six feet in height with wide-spreading branches and with blossoms from three to five inches across. These large shrubs, with their fine feathery foliage and lovely blooms in white, pink and crimson, are wonders of grace and beauty, while as a cut flower for large effects there is nothing that can equal them. Their graceful foliage interspersed with just the right amount of bright blossoms is one of Nature's artistic triumphs.

The seed should be sown in a mellow sheltered place and transplanted when the plants are some four inches high. The mistake is pretty sure to be made of setting them too close together, which will stunt their growth and give smaller blossoms. The plants should be set some four feet apart, and as they increase in size some support should be provided, as the heavy foliage causes the brittle branches to split off from the main stalk. The ground should be rich and well cultivated and plenty of water and sunshine allowed. If there is a lack of good soil, water or cultivation, even the giant late-flowering cosmos will become but a stunted specimen that puts out abortive blooms early and then dies away. The person who really loves flowers, loves to care for them and feels as conscientious about providing them with proper nourishment and care as though they belonged to the animal kingdom. We are sure our young folks will not neglect their little gardens and leave their pretty flowers to starve and wither away.

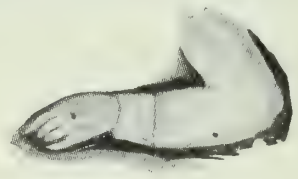
The cosmos seed should be planted in March, but it is not too late yet to start them. By sending 10 cents to any of the seed companies advertising in the RURAL PRESS a package a package of the choice giant varieties may be obtained.

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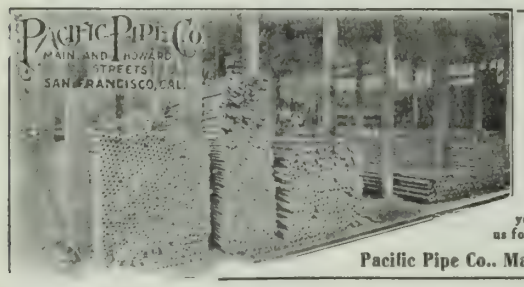
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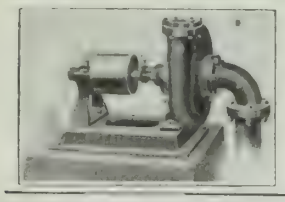


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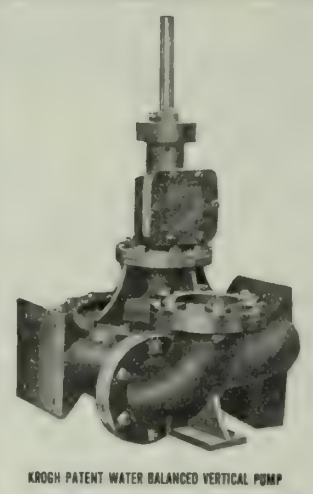
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THE PACIFIC RURAL PRESS

Vol. LXXXI. No. 17. SAN FRANCISCO, SATURDAY, APRIL 29, 1911. Forty-first Year.

Agricultural Tractors in California.

If we mistake not, California has led the world in some forms of field work by moving motors. The broadcasting of grain by a scattering device fitted to the axle of a wagon was, if we remember correctly, a California invention; certainly it was used in our grain fields at an earlier date and to a vastly greater extent than elsewhere. In the cutting of hay and grain we borrowed service, of course, from the development of mowers and reapers by inventors and manufacturers in the Eastern States, but in the use of headers we went farther than any other State and country, in size of teams and breadth of cut, and in due time California inventors perfected that wonderful cheapener of grain gathering and sacking, the combined harvester. It was this achievement which enabled our State to continue in grain production with some profit in the face of reduced yield, lower prices and high wages. These harvesters were operated at first by a score and more of horses or mules; more recently traction engines have largely displaced draft animals. More recently, too, these powerful motors have gone from California to many other large-farming countries of the earth and have demonstrated the high standing of the State in this great line of agricultural invention and manufacture.



The Best Tractor Showing Capacity in Field Plowing.



The Best Gas Tractor in Use in Orchard Plowing.

We are disposed to insist upon California honors in this line because our machinists proceeded resolutely at a time when such tractors were not so popular as they are now, and they assisted materially in demonstrating the superior desirability of the direct work-as-you-go tractor in field plowing and harrowing, over the cable systems of headlands, anchors, etc., which is commonly spoken of as the English type. It was, in fact, probably due to the objections to this type of heavy, slow and inflexible affairs, as they appeared when the first English steam plows were introduced in this State more than a third of a century ago, which awakened California inventors to the opportunity for better adjustment of weight to required strength and of both to higher speed and wider adaptability. However that may be, English steam plowing plants lay rusting in this State while our inventors began their work, and soon afterward large areas of grain were being both put in and taken off by the same engines operating either cultivating or harvesting machinery as the season required. It is interesting also to note that while this was being done another importation of English outfits was made by the beet growers because this type was conceived to be better for the heavy, deep work which they contemplated, and we understand that the importers have used it largely and with satisfaction. There is, of course, no reason why this heavier work should not also be done by the local type of tractor, and, if we mistake not, it has been done, not only for beet planting, but in preparation of lands for trees and vines in various parts of the State. It would be an excellent and profitable task for some one with a taste for mechanics and history to undertake to trace in detail the development of agricultural tractors in this State and to award discriminating honors to those who have participated therein. We can only say that the starting point seems to be in 1871 when the first traction engine, known as "Thompson's Road Steamer," was brought into the State over the newly opened overland, from some point not stated, to Oakland and then taken to Stockton for trial. This is described in the Pacific Rural Press of January 15, 1871, as the "first steam engine of this kind to arrive on this coast, and what kind it was and what it was for is shown in the issue of our journal for February 18, 1871, which records that "a public trial was given this traction engine at the agricultural grounds with a gang of five plows attached. The plows were set 4½ inches deep in hard packed adobe. The engine moved one mile in less than half an hour, and the plowing was pronounced excellent. It was estimated that eight horses would have been required to accomplish the result." In the autumn of the same year it was put into wider use at Stockton, plowing 25 acres a day with two gangs of four plows each. It would be very interesting now to know whence this machine came and what became of it and its relation, if any, to California inventions which followed it. Possibly some reader of ours in the Stockton district can recall this machine, its performances and its subsequent history.

Of course one who traces the history of local invention in the line of steam motors will come upon the exceedingly interesting straw-burning threshing engine which appeared in the seventies and served such an excellent purpose when the only other fuel was high priced coal or wood. The straw-burner seemed a wonderful advantage in threshing what the header had gathered, and the two lived together and largely died together as the combined harvester passed over them. Thus the local historian whose effort we have invoked will be able to trace progress in an evolutionary way; primal forms passing into secondary, tertiary and beyond, as conditions here demanded change. The course of trade will also demonstrate to him that as California inventors have risen to changing needs their achievements have attracted wider

(*Continued on Page 334.*)

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E. J. WICKSON - - - - - - - Editor
FRANK HONEYWELL - - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Apr. 25, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	00	28.39	41.90	64	38
Red Bluff	00	23.39	22.99	86	46
Sacramento	00	21.80	18.76	76	46
San Francisco	00	25.17	21.12	72	46
San Jose	00	22.40	12.13	72	40
Fresno	00	11.83	8.74	84	44
Independence	00	7.41	8.59	78	32
San Luis Obispo	00	34.26	19.14	72	46
Los Angeles	00	16.08	14.98	66	50
San Diego	00	11.78	9.46	64	52

The Week.

While we were indulging ourselves last week in so many words against "pocket-handkerchief farming" a la Cristadoro, we, of course, had nothing in mind against rational subdivision of land of good quality among those who know how to use it or have the spirit and industry to learn. The man with the hoe as depicted by Millet may make a living to satisfy a French peasant, but the man with a hoe, from an American point of view, must not lean upon the hoe nor gaze upon the ground, but must manifest alertness and have an upward and onward glance, and be ready to throw down the hoe and jump to the platform of a tractor as opportunity may offer. It was such a thought of the "man of the hour" for California agriculture which led us last week to urge objections to Mr. Cristadoro's thesis. We were also led to the attitude in order that some of the thousands who are now coming to California to take possession of the good land which is to be had in subdivisions may have the hint that they should get enough land to give them some chance for enterprise, and for the exercise of their agricultural spirit and understanding. We are meeting such people every day, and are glad to declare that they are not coming to do California farming on the basis of a hoe and an acre of ground—except those, of course, who come for the delights of California suburban residence, to get joy from dilettante farming, and their income from other undertakings or investments, and not from their hoes. The report is that during the period of reduced railway rates for one-way travel this spring, 85,000 persons traveled from the East, North, and South to the western edge of the continent—a number which exceeds by fully 15,000 the total of last sping, when colonist rates were offered throughout a longer period. It is estimated that fully 50,000 of all those who traveled on colonist tickets this spring went to California and extreme Western States other than those classified in the Pacific Northwest group. These were not "pocket-handkerchief farmers." These were men who demand land enough to swing a calf by the tail if the glorious climate impels them to such friskiness; or to break a colt without falling off their own land; or to keep a hundred hogs without having their squealing disconcert the parlor gramophone, or to have a decent ride on a gang-plow without gee-hawing every five minutes at the turnings. It was the glory of the old regime that a man could light his pipe and start his riding plow out over the landscape after breakfast and get back in time for lunch. It was a bad old way, of course, but there was a picturesque greatness in it which cannot go all at once out of California farming.

But if these old-time joy-rides of the pioneer plowman have to be given up, there is nothing in the line of rational agricultural development to prevent a man from keeping a good bit of land for some respectable farming, or from buying it, for that matter. Is it not better that our old Californians should stay with the land and learn how to use it better, than to sell out to enterprising subdividers and try to restore the old regime on some blooming desert? An account comes from Colusa county that three once well-to-do residents of Arbuckle have returned from their Mexican "plantations" with the story that thousands of acres upon which a gila monster could hardly find a living have been sold to the unsuspecting of Colusa and other northern California counties and to scores of Eastern farmers who invested their all in the Mexican property. Several neighbors in Colusa county have had the same misfortune. They say that the lands looked well enough, but the representation that water could be found at from 25 to 50 feet was untrue, and at least 200 persons have gone to the land, found that no white man can live upon it, and cleared out, losing their investments and having just enough money left to get home and start life over again. We hope this will be an effective warning to Californians not to sell good land and blow the proceeds into distant schemes. If one has too much land to work by a better system and needs capital to get into a better system, let him sell part of his land and improve the balance. This will give him progressive neighbors and an inspiration to a better rural life perhaps. It will also give him a chance to make money enough to live a better life with—more money from fewer acres, if he knows how to do it. This will be better for the family and better for the State, and vastly safer than to sell out because of dislike for better things—hoping to revive the old slack conditions by recourse to expatriation, but returning plucked of accumulations and reduced to service in a good land where a different course might have given leadership and prosperity. We desire to emphasize this point, for it is so easy, if a man has the proper sense and spirit, to build better farming upon a foundation of local experience than to try to enter better farming from other occupations. But, of course, if our born farmers will not seize their chances and desire to stand aside, we shall have to work for and with the new, and drop a tear for those who do not know good things when they see them.

But we cannot forget that the agriculture of the world is going two ways toward progress. If one is the handkerchief the other is the blanket, and those who remember only the former way keep their features bright but have a chill in their extremities. There are many wise men who claim that farming progress will really come from large areas, large ideas, large processes, and appliances like the tractors, for instance, which are discussed upon other pages of this issue. There is certainly a movement in the world toward greatness in farming as well as toward littleness. In older States, small farms which have bred starvation by exhaustion and expensive hand labor are being combined into large farms which favor economies in production by increased efficiency. In California we are moving in the other direction—from the large toward the small—and it will be fortunate if we stop at the rational in area, instead of coming back to it by reaction and hardship to disappointed people who have been persuaded that there is some particular virtue in small farming because it is small. It is interesting that this issue is now rife in England and they are trying to settle it by their usual ponderous machinery of a Parliamentary investigation. The London Standard recently called attention "to the fact that while 6,600 new holdings have been taken up recently, curiously enough an area greater in extent than all that of the new small holdings has been aggregated into larger holdings, and one Parliamentary paper alone chronicles a decrease of 11,000 in the returns of small holders. Even if in this number the new holders are not taken into consideration, the figures still show a net decrease of 4,400 small holdings; and if this really represents the actual state of things it is a curious commentary on the attempt to set back the clock, which has been the aim of recent legislation." That is, we take it, England has been trying to promote small farming by favoring laws, and in spite of the laws farms are increasing in area. Evidently there is a higher law at work, and we suspect it is one of the science of economics.

But they really seem to have had a "pocket-handkerchief farming" propaganda in England, and the result seems to have been just the reverse of that aimed at. As we go along reading the London Farm and Home on the same subject, we find that California is apparently sharing in a world movement. The following is the English of it:

Everybody who has been brought in contact with agricultural journalism is aware of the fact that there is a very keen desire felt by townspeople to get on the land, and that this desire is in by far the majority of cases accompanied by an absolute lack of knowledge of the existing conditions. Townspeople generally see the country during their brief summer holiday, and are charmed with the beauty and apparent comfort and pleasantness of the work, and having the idea, which seems to be very widely held, that agriculture requires very little in the way of special knowledge and training, they are possessed with a belief that their condition, if they take small holdings, will be far preferable to that in which they live in towns. While it must be admitted that a large number of the new small holders are people who have some acquaintance with the land, the townspeople described constitute a very large proportion of the applicants for small holdings, of whom we have heard so much during the last year or two. The statement of the Standard that the stream of agricultural tendency is against small holdings affords a testimony, we fear, to the truth of the contention that the endeavour to foster artificially such changes in our farming conditions as would be brought about by the wholesale creation of small holdings is destined to fail.

This looks as though the "average middle-aged city man with a hoe and an acre" would not stand his ground. The question then arises, Is it wise to do anything to promote human disappointment and discontent? We put our handkerchief to its normal uses as we ponder this sad, sad question.

But we must have some relief from this depression. If we remember correctly, the expression "full as a goat" indicates a condition of bibulous plenitude. But were there ever goats as full as these goats? The story is that one day last week a squad of New York policemen was out searching for a billion disease germs lost from the research laboratory of the Willard Parker hospital. The germs had been injected in the course of an experiment into the bodies of four goats, which were then tied up to browse in the back yard of

the laboratory. An hour or two later the goats disappeared. One of the goats, according to the police statement, was loaded with smallpox germs, another with diphtheria, a third with scarlet fever, while the fourth was loaded with whooping cough. The whole medical faculty was paralyzed lest some one should milk one of those goats.

But talking of animals, four germy goats are a small sensation compared with what Los Angeles is planning. They propose to have one of the most natural and novel geological gardens in the world. It will be in the heart of the 3000-acre Griffith Park, and there the big-game animals from every part of the globe will roam in a wild state, hemmed in by unscalable precipices and picturesque crags, with forests, caves, streams, and a virtual wilderness of vegetation to sustain them. The beasts will be confined to a heavily wooded tract of about 500 acres, with precipies entirely encircling it, and spectators will look down from the hills and see elephants, elk, deer, camels, zebras, giraffes, and bear grazing below. A herd of elk and hundreds of wildcats, foxes, coyotes, and a number of deer are already there. Several bear also make their homes in the caverns at the base of the cliffs. All this will be great to see, but for the life of us we cannot understand what is to prevent the greatest fights the world has seen since the colosseum was turned into a nickelodeon. It used to be considered brutal to turn wild animals into a closed area to see what they would do. The wicked San Francisco might be suspected of liking such a show—but Los Angeles!

Queries and Replies.

Thrips on Various Plants.

To the Editor: How long do the thrips last in the spring? Do they ever attack melons and canteloupes; that is, do they work on the blossoms? They are on practically everything else this spring and I wondered if there was any danger of their working on the melons when they came along. How long do they work on the new growth of the trees, and do they do serious damage to the trees themselves? They have practically blasted all the blackberry blossoms. Will the blackberries throw out another crop of blossoms this summer or would you advise mowing the old growth off close to the crown?—E. H., Phoenix, Ariz.

You are likely to find thrips wherever you can find blossoms of any kind. We have shaken them out of nearly every flower we have tried in our garden from the early spring blossoms to the withering chrysanthemums in the late autumn. There are, of course, several kinds of thrips besides the two which are now caught doing so much damage to our deciduous and citrus fruit trees, as stated on page 293 of our issue of April 15. The thrips on deciduous fruit trees are out of business except in the spring; the thrips on the orange works at intervals all summer, and has to be watched for and sprayed whenever found abundant. Neither of these may strike your canteloupes, although the orange thrips may, if you have that one, for it takes almost every green thing in sight. But there are plenty of others, therefore you should watch for them. As for the berries, there may be a later break of laterals from the old wood lower down, and if so these are likely to bear fruit. If the upper parts of such canes have largely broken buds and lost fruit, they may be topped to induce the start of lower laterals.

Cutting Back Frosted Vine Canes.

To the Editor: All through this district the vines have been badly injured by the late frosts, especially the young vines which were out the most. Is there anything to be done with the injured shoots now on the vines so as to help the prospects of a crop? On the vines about seven years old the buds were out about ½ inch, and were frozen brown and crisp. Will they come out and bear first crop, or go to second crop?—Enquirer, Morgan Hill.

If shoots are only lightly frosted they should be cut off at once as low as you can detect injury. This may save the lower parts of the shoot, from which a later growth can be made. Frosted parts ferment and carry destruction downward, and therefore should be disposed of as soon as possible. Nothing can be expected from such buds as you describe. Later growth must come from new buds. The product of such buds will depend upon how far the injury has gone, and cannot be very definitely predicted. So far as fruit comes upon the first effective cane growth, it will be first crop, even though belated. Second crop comes on laterals from the first growth of canes. Where vines have run out considerably and badly frosted, the best practice usually is to strip off the frozen shoots so as to get rid of the dormant buds at the base, which often give sterile shoots. A new break of canes from other buds is generally more productive. One may, however, expect some irregularity in the behavior of the later cane growth because of various conditions following the frost injury.

Arsenic and Alfalfa for Morning Glory.

To the Editor: Will you kindly advise me if, after an application of the lye and arsenic solution, the ground can after a time be used for crops, and if so, how long? I have wild morning glory in my alfalfa, scattered here and there. Will alfalfa kill out the morning glory or hold it in check, or will the morning glory kill out the alfalfa?—Farmer, Santa Rosa.

Arsenic is one of the most destructive substances to plant growth and one likely to endure longest in the soil. The measure of its destructiveness, of course, will depend directly upon the amount which is applied and the mass of the soil through which it can be distributed by cultivation and moisture movement. We would not think of using arsenic for the destruction of weeds in any place except on roads and walks where permanent freedom from vegetation is desired.

Alfalfa will probably come nearer to the reduction of morning glory than any other plant with which it can be associated. It will keep it down so that its presence will be practically negligible if the land is permanently occupied with a good stand of alfalfa. If, however, lack of moisture or some other unfavorable condition should cause the alfalfa to decline, the morning glory will reassert itself and it will patiently watch for such an opportunity.

Irrigating Alfalfa.

To the Editor: I am making parallel ridges for alfalfa, sending a full head of water down to the end of the field between each ridge. Should I calculate the lands to be mowed one at a time in even swaths, the mower being 5-foot cut, would you count on cutting a 4½ or 5-foot swath? This soil is sandy, water percolating rapidly. The fall is 8 feet to the mile. How wide, then, would you advise making the ridges to suit the mower, and to flood economically, using from 2 to 4 cubic feet per second? The length of the lands is across 40 acres.—Farmer, Wasco.

The growing of alfalfa in long parallel checks, to be flooded between the levees, is the way in which much alfalfa is being put in at the present time where the land has such a slope as you indicate. It is calculated, however, to seed the levees as well as the check bottoms, and to run the mowers across the levees, thus leaving no waste land and mowing across the whole field. For that purpose these levees are made low, not over a foot in height, calculating that they will settle to about six or eight inches, which is sufficient to hold the water and direct its flow gently down the slope. There is, however, a limit to the distance over which water can be evenly distributed in this way, the difference being dependent upon the character of the soil, slope, etc. A length of nine hundred feet is sometimes found too great for an even distribution, and, for this reason, supply ditches at shorter intervals are introduced. You will have to look into this matter by the experience of people running water on soil similar to yours in your locality.

Storage of Seed Potatoes.

To the Editor: We need potatoes for late planting and have found a good lot which is being held in cold storage at temperatures from 34° to 36° F. They have not been there long, however. Will you kindly advise us if you think that would hurt them for seed, and also how long they could be safely left there now before planting. We cannot get our land ready before the 15th of May. Do you think it would be safe for us to buy this lot and let them remain where they are for three or four weeks more?—Planter, Stockton.

We apprehend that potatoes would not be injured in storage, providing the temperature is not allowed to go below the freezing point. They should not, however, be allowed to remain longer in storage, but should be exposed to the sun for the development of the eyes, even to the sprouting point being desirable before planting. The greening of the potato by the sun is no disadvantage. We would not think of planting potatoes directly from storage, because, owing to the lack of development in the eyes, decay might get the start of germination.

Branch Failure in Hungarian Prune.

To the Editor: Last fall my young four-year-old "Hungarian Prune" tree shed only the leaves on only one half side; the remaining leaves on the other half side did not fall off till almost springtime. Now this side is not leafing out at all, while the other half side is full of healthy leaves; still the whole tree looks healthy. I noticed when I pruned it that that side which the leaves clung to so late, appeared to look a trifle brown in the center of the wood, similar to the lead in a lead-pencil, only brown. Do you think the tree will die, or is there a remedy?—Suburban, Oakland.

You will have to keep watch of your tree to see what happens. The branches which are not starting may start growth later, or may die back. Reduce them in length somewhat, and allow them to remain in place as soon as the inner bark shows good color. If they fail later, these limbs should be removed. It is not likely that the balance of the tree will die, and you will have to do the best you can to restore the shape from those parts which remain in active growth.

Cow Stable Drainage for Fruit.

To the Editor: I have been told that the drainings from a cow barn make an excellent fertilizer for orange and lemon trees, in fact anywhere on plants where manure is considered beneficial. Do you know this to be true? If so, ought it to be diluted with water? Is it better than the cow manure?—Grower, Maxwell.

The drainage from a cow barn is excellent for fertilizing almost any crop unless it is used in too large quantity. If it should be combined with a considerable amount of water used for cleaning out the stable, it would be excellent for the irrigation of all kinds of fruit trees. Care should be taken, however, not to oversaturate the ground, which would be the case if the washing of the stable was allowed to run continuously alongside a single row of trees. The water should be changed from row to row in succession, cultivating the ground meantime to promote aeration and to prevent too great compacting of the soil.

Horticulture.

HOW MUCH MOISTURE DOES A FRUIT TREE NEED?

By Mr. R. L. ADAMS, of Salinas.

California has more effective agencies at work demonstrating results from actual experimentation in agriculture than are commonly recognized as such. First, the California farming population has a higher percentage of those competent to define an experiment and draw time deductions from it than can be found in most Ctates. Second, many of our counties have well trained research men, as horticultural officers, as we have recently noted in connection with accounts of their work which we have published. Third, there are a number of private experiment stations in operation on lands handled by capable individual or corporate owners which are also equipped with good observers and thinkers. One of the first of these to be estabished was undertaken by the Spreckles Sugar Company in connection with their operations in the Salinas valley. For a number of years this station has been conducted by Mr. R. L. Adams, who was brought to California by the University Experiment Station for plant disease work and who has maintained his connection with the University through post-graduate study which won him a Master's degree in May of last year. Mr. Adams has recently written for the Irrigator a popular account of what his observation teaches him of the needs of the fruit tree for adequate soil moisture, which our readers will find very timely and suggestive at the beginning of the dry season.—EDITOR.]

How Deep Is the Soil?—Knowledge of the exact nature of the soil is the first requisite for the proper application of water to orchards. The gathering of data regarding the composition of the soil is as easy as it is necessary. By means of a shovel, a post-hole digger, or better still a soil auger, the exact nature of the soil can be determined. For large tracts of land the amount of fall of both surface and subsoil is important. The former, however, will be determined when planning the irrigating system. The latter will develop from a study of the layers of soil which make up the field, as gained by borings.

In order to apply water right it is necessary to know the depth of the soil, the depth the roots go (as well as the depth they can go), and the capacity of the soil for holding water. When the water is actually put on it is necessary to know how deep the moisture goes.

How to Find Out.—In order to know the soil it is important that frequent borings be made to depths where it is possible for the roots to go. These borings should be made at intervals of two hundred feet, and down to a depth of ten feet, if it is possible to send the roots that deep. Extended layers of sand or gravel having a tendency to dry out will stop root growth as effectually as layers of lime or cement hardpans, very stiff clays or adobes. Water in quantity is another effective barrier to root development. Therefore, in determining the nature of the soil it is important to bring up successive layers when boring and carefully examine them, keeping notes, and later laying out the field on paper according to the results obtained, for careful study and comparison.

A good tool for boring can be easily made by welding a 1½-inch or 2-inch ordinary carpenter's bit to a 10-foot round ½-inch iron rod. An adjustable handle, similar to that on a post-hole digger, is then fitted on. The rod can be made in two 5-foot pieces if desired, having a screw joint to fasten them together. A hole should go through the joint and be fitted with a removable pin to prevent the joint tightening or loosening when the soil auger is in use. For moist land this will give very good results. For use in dry soil the portion of the bit above the cutting edges should be ground down and a brass collar fitted on to retain the dry soil. In dry soils by pouring a little water into the hole and letting it stand until well soaked up, boring will be greatly facilitated.

To Understand What You Find.—When the character of the soil is known, then and only then can a man irrigate intelligently. If the soil is of a fairly open structure with a deep water table and no obstructing layers of soil, it can be irrigated as deep as it is desirable to send the roots, ten feet or more. In such land the only precaution which need be used is to be sure that the water reaches the required depth.

But when layers of gravel or coarse sand exist, these will effectually shut off the rise of water from below and irrigation water carried into them will be wasted.

Layers of hardpan form effective barriers. Often these break up under the action of the water, so that roots will readily penetrate them. If the water has no effect, care must be exercised in using the water to guard against an oversupply with a consequent expulsion of the air, thus producing an oversaturated condition anything but favorable for plant growth.

When the water table exists at a depth of six feet or higher, irrigation need not be resorted to, provided no impervious layers exist above it. The presence of the water table will of course be determined in the preliminary survey for irrigation.

Usually Moisture Is Shy.—In nearly all orchard irrigation work too little water is given. When only a small quantity is applied it keeps the roots near the surface. Much of the water is held in the mulch and is again lost when the mulch dries out. In the first foot of soil practically seven inches is open space, and into this the air and water enters. If we consider that four feet at least, in general, is required for root development, there will be twenty-three inches of space in this depth. In order to completely fill this, a corresponding amount of water is needed. This, however would result in saturating the soil. In actual practice ten inches of water applied to sandy soils and eighteen inches to clay lands will give the best results. Not all the moisture is available for the crop's needs. Part of the moisture is held closely to the soil grains and will not be given up to the trees even under very dry conditions. This hydroscopic water amounts to an immense sheet in the aggregate. It is this water in which most of the plant foods are being dissolved. This unavailable moisture is greater in clay than in sandy soils, as the amount of surface of the smaller grains is vastly larger for small grains than for coarse ones, just as marble has a much smaller surface while whole than when broken into a thousand fragments. For this reason the percentage must be maintained at a higher point for moisture in clay soils than for that in sandy lands. On the other hand, sand soils will dry out much quicker than clays. An illustration of the clay particles withholding water can be seen by placing slips of plants in tumblers containing clear and clay charged water. The ones in the clear water remain fresh and vigorous, while those in the clayey waters will wilt and droop.

Why Too Much Is Bad.—Excessive irrigation is to be condemned, as it carries off the soluble plant foods. If these go into layers of sand or gravel, or into the water table, they will be carried off in the natural drainage of the country. If the irrigation water goes deep, although still remaining in the soil, it will carry these salts below the reach of the roots and the chances of their being returned within range will depend on the character of the soil in its relation to its capillary power, and the depth to which they are taken. The layers of gravel and coarse sand effectually cut off capillarity and the water carried below such layers, with its attendant supply of plant foods is lost. Therefore, sufficient moisture to just reach the desired depth is all that need be given.

Signs of Thirst.—The need of water can be determined by both the appearance of the trees and the soil. A slackening in growth and a darkening in color of the foliage are indications. But as the water should not fall below a point to create appearances in the tree a careful watch must be kept on the soil itself. When on being pressed together, a handful holds its shape without coaxing it is sufficiently moist, and no water need be given. Care, however, should be exercised to see that the proper degree of moisture exists to the full depth of thesoil.

To Save Moisture.—Land should always be handled at the right degree of moisture whenever possible. In handling dry land the compound granules of clay are broken down, and the finer particles work into the open space below, clogging them up, and thereby working badly as regard irrigation and aeration. This is a point which should be borne in mind when making a mulch. The efficiency of the mulch depends on the fineness of the texture, and the degree of nonunion with subsoil below. The soil should be worked only when it is at the right degree of moisture to secure the desired results. And when they are accomplished the land should be left alone. Further cultivation is liable to be detrimental. It will pulverize the soil into a fine dust which, in turn, will carry off the moisture. A two to four inch mulch is the best. The aim should be to have as small a mulch as will properly conserve the moisture. A greater depth may reduce evaporation, but the greater loss of water from the larger mulch and its attendant placing out of commission of the soluble plant foods in that layer will more than offset the possible saving in moisture. Once the mulch is made it should be left alone. This is especially true in clay soils, for the particles are in danger of being broken down, as just outlined. In sandy soils this is not so important, but even here the value of the cultivation is small after the mulch is loose and open. Of course it is necessary to create a new mulch after each irrigation or rainstorm.

The proper use of water means the supplying of the optimum amount for tree development. This means the proper guarding against an oversupply as well as an under supply. To be properly posted on what constitutes the right amount a knowledge of the soil is necessary. With a combination of a soil auger, a little careful observation and common sense, proper irrigation offers no very intricate problems. Each orchard, however, must be worked out individually, for from only a study of the soil both before and after irrigating can the proper amounts and times for applying water be determined.

A STEAM STERILIZER FOR SEED BEDS.

Many of the troubles of the seed bed arranged for starting seeds of trees or vegetables for transplanting can be lessened or escaped by sterilizing the soil—that is raising the temperature or the soil mass to a degree fatal to the germs of parasitic plants or insects which cause disease or otherwise injure the seedlings. Mr. A. D. Shamel, whom we recently mentioned as conducting a very interesting line of work in critic pomology in this State, worked very successfully at soil sterilizing before coming to California, and the following is an outline of his undertaking in this work. He finally decided upon using a solid pan for confining the steam, preparing the soil of the bed ready for steaming, then setting the pan over this loosened soil and forcing the steam into the soil under pressure. I made an experimental pan of this sort, and prepared a section of a seed bed for its trial. A small upright engine was used to supply steam, and the soil temperatures determined at different depths with standardized thermometers. Even with the small engine available for the trial it was found possible to heat the loosened soil under the pan rapidly and up to 185° F. and higher, holding the soil temperature at this point as long as desired.

The pan is made of galvanized steel or iron, of such size as to fit the seed beds to be sterilized. The original sterilizers were made six feet wide by ten feet long, and six inches deep. The edges of the pan were supported by angle iron so as to protect them, and in the middle of the bottom of the pan a one-inch iron tube was soldered to the pan so as to attach onto the steam hose at one end and admit the steam into the pan at the other end when it was inverted upon the soil ready for work. A steam hose 50 feet long was used to convey the steam from the engine or generator to the pan, and to admit of moving the pan the length of a 100-foot bed without moving the engine or steam generator.

The first trials of this method were conducted with a small upright steam engine of about three horse-power as steam generator. In later trials similar engines, to be found in every neighborhood, have been used with success. It is necessary when sterilizing soils to have enough fuel

on hand, and desirable to have one man devote most of his time to keeping up a hot continuous fire. Wood is a very satisfactory fuel, although oil and coal have both been used.

PHENOMENAL BLOOMING OF APRICOTS.

To the Editor: The twelve-year-old apricot orchards here, when in full bloom (about April 1) were caught by a heavy shower followed by a week of cloudy, damp weather. As a result they set a very light crop. At the end of this week of showery weather the trees were apparently all through blooming and were leaving out considerably. Now, after a week of sunshine, with trees well in leaf, many of the trees which apparently had no fruit buds on them, are quite well covered with very large blossoms, many with a double corolla. They came from what seemed to be growth buds, these buds first disclosing a few leaves and then this enormous flower, some nearly two inches in diameter, and with a calyx of green leaves. Do you think these blossoms will set fruit. They have all the parts of a true flower and seem to be setting. It will make a great difference in the crop if they do. These blossoms are most abundant on the inside trees of the orchards, trees of poor vitality, and where moisture was most scant last summer. Irrigated orchards bloomed early set little fruit, and have very few of these large, late and unexpected blossoms.

In regard to deep plowing two weeks previous to the blooming of the orchard, cutting many roots: would this hasten or retard blooming; make fruit set better or worse?

SUBSCRIBER.

Santa Susana, Cal.

[We reserve decision, as the judges say, until we have time to think it over and find out whether we know anything about it or not. Just at the moment it occurs to us that if we should see such large, green-bordered blossoms on an apricot we should conclude that we had been out too late the night before. However, others who have grown more apricots than we may have seen such things and speculated about it. If so we would be very glad to hear from them. As for the effect of root-cutting at the time stated, we would guess that it would retard blooming; also, that it would increase the set on a young tree and reduce it on an old tree—if it had any effect at all. Others readers can have a guess at this also.—EDITOR.]

DELAWARE GOING OUT OF THE PEACH BUSINESS.

The whole south seems to have been stricken hard in the peach belt by this spring's frosts, and it looks as though there should be full prices for the moderate crop which is all that can be expected from California this year. A note in the New York Fruit Trade Journal from Georgetown, Delaware, is as follows:

Because of the uncertainty of the peach crop and the failure to realize anything from their orchards for the past few years because of change in climatic conditions, many of the farmers throughout the county are pulling out their trees and supplanting them with apple. Farmers of Sussex county have almost to a unit come to the conclusion that so far as this county is concerned that Delaware will no longer be styled the "Peach State," for scarcely any orchards are being set out, and most all the extensive ones are to be taken out to make room for other fruit trees or for the production of crops of wheat, corn, etc.

QUARANTINE AGAINST HONOLULU PEPPERS.

Importers of fruits and vegetables have recently suffered heavily because of the condemnation and destruction of bell peppers from the Hawaiian Islands by the horticultural officers in the port of San Francisco. Several recent shipments were found infested with the larvae of fruit flies which resemble closely the Hawaiian melon maggot or the Mediterranean fruit fly. Many of these maggots were collected, and the real name of the insect can be determined after mature fles have developed. The maggots live entirely within the peppers, and those which appear perfectly sound on the outside may contain many maggots feeding within. No methods of sorting or fumigation therefore would be sufficient to assure the complete destruction of the pest so that the sound peppers could be admitted. All of these consignments were destroyed immediately after landing and importers were advised to stop future shipments. The last lots which arrived on the steamer Honolulan on April 19 numbered about 400 boxes and were valued at several hundred dollars.

Citrus Fruits.

THE CALIFORNIA CITRUS INDUSTRY.

(From a paper prepared by Prof. E. J. Wickson of the University of California for the American Pomological Society.)

Growing of citrus fruits in California is still rapidly advancing in acreage and in product, each year receiving greater investment and effort and each year reaching a greater aggregate gross return for the product marketed. There has been gratifying progress made in meeting the problems and difficulties which are bound to arise in the development of an industry involving so many novel situations and affecting so many interests—individual, corporate and political. In preparing such brief statement as I can fairly claim attention for, I shall endeavor to indicate what seem to me the most salient features of the California citrus industry, chiefly from the commercial point of view, and I shall site recent data from those who may be regarded as original sources of information rather than indulge in reflections of my own.

California Citrus Census.—The report of the California State Board of Equalization, which represents the figures gathered by the assessors in all the counties of the State, shows that there were growing in the spring of 1910 the following totals of citrus trees in California, viz:

	Trees bearing.	Not bearing.
Lemon	1,522,875	287,541
Lime	1,611	608
Orange	9,370,198	1,433,023
Pomelo	13,448	5,548
Totals	10,908,132	1,726,720

These figures show the leadership of the orange, the rather remote second of the lemon, and the fact that the two show about the same rate of increase through recent plantings. They also indicate a greater rate of increase in the pomelo, though the total is still insignificant, and that the lime is only a curiosity. Other citrus fruits are too small in number for enumeration.

Taking the orange and lemon as a measure of the citrus geography of California and choosing counties having more than 100,000 trees, bearing and non-bearing, the following statement results:

Counties.	Orange trees.	Lemon trees.
San Bernardino	3,295,200	222,200
Los Angeles	2,756,623	510,915
Riverside	1,908,400	220,480
Tulare	994,004	72,270
Orange	952,900	123,400
Ventura	250,500	240,500
Butte	181,551	1,522
Fresno	99,700	30,500
San Diego	60,462	188,704
Santa Barbara	960	135,600

These counties are distributed through a north and south distance of about 550 miles and the interest is concentrated toward the south and widely scattered toward the north, with much intervening land as good for citrus fruits as that already planted. Citrus fruits are equally safe throughout the whole distance, and it is clear that California has a capacity for citrus production far beyond present attainment if greater amounts of fruit can be profitably sold, as it certainly promises to be, if current protection is maintained.

Mr. C. Harold Powell, Secretary of the Citrus Protective League of California estimates that California citrus plantings now occupy about 150,000 acres of land and represent in lands, trees, buildings and operating property of all kinds a value of from $150,000,000 to $175,000,000. He also estimates the fruit likely to be produced in 1910-11 at 50,000 carloads. The largest product hitherto was that of 1908-9, which reached 40,516 carloads, the product for 1909-10 being 33,099 carloads.

California Citrus Problems.—Cultural problems connected with growing citrus fruits are many. Some of them have evidently reached a basis of settlement. For instance, nearly all insects are controlled by fumigation, and remaining requirements are to do the work more effectively and economically. The problems of the development of irrigation water from streams or from underground sources and the distribution thereof have been well worked out, but the ministration of water to the tree so that its greatest vigor and producing efficiency shall be maintained is not yet satisfactorily mastered. The desirability of soil improvement, chemically and physically by the growing and covering-in of legumes in the orchard has been fully demonstrated, but choice of particular plants and cultural policies are still to be demonstrated. The use of fertilizers is constantly increasing and their indispensability recognized, but their relations to tillage, moisture distribution and to the vegetative functions of the tree are still matters of conflicting opinions. Good work is being done in all these lines and others like them, and the reason for mentioning them is to make record of the fact—lest distant readers might think that horticulture and pomology were forgotten because of the supremacy of commercial considerations.

The Citrus Protective League.—And yet the problems which California citrus growers wrestle with most successfully are commercial problems, and they have created unique organizations to labor for their solution. On January 1, 1910, Mr. G. Harold Powell, who rendered the fruit interests of the country such distinguished service through his fruit handling researches in connection with the Bureau of Plant Industry of the United States Department of Agriculture, was engaged as secretary and manager of the Protective League and in January he issued a general statement of the character and work of the organization. [We omit this, as it was published in full in the PACIFIC RURAL PRESS of February 4, 1911.—EDITOR.]

The California Fruit Growers' Exchange.—The greatest co-operative undertaking in fruit marketing in California is the California Fruit Growers' Exchange organized in 1895 by the citrus fruit producers and systematically developed since that time until in scope, methods, mastery of the shipment and distribution, in development of markets and in reduced cost of placing the product therein, there is nothing comparable with it in the broad field of commercial agriculture. In March, 1911, Mr. B. A. Woodford, general manager of the Exchange, prepared a careful statement of the standing and accomplishments of the organization containing facts, significant to producers of all kinds of fruits. [We omit this, as it was pubished in full in the PACIFIC RURAL PRESS of March 25, 1911.—EDITOR.]

Pomological Points.—While the chief activities in the California citrus industry are commercial as indicated, pomological points are receiving systematic attention. Although the types of orange and lemon varieties which best suit our growing conditions and trade requirements are quite definitely agreed upon, all the varieties which are being largely planted can be counted upon the fingers of one hand, including the navel and valencia for oranges and the Eureka for a lemon—leaving two more fingers to be contended for by half a dozen minor varieties to be individually or locally contended for. It is, however, quite clear that there is a great chance for advantage in selecting variations within the types which may be in many ways better than those now generally grown. The relative desirability of different stocks is also being observed in plantations made for the purpose and the choice of buds is included. The California Experiment Station at its branches in Riverside and Whittier and in general orchard studies has several experts constantly at work. The Bureau of Plant Industry of the Department of Agriculture also has men continually employed in California. It will naturally require several years to reach trustworthy conclusions in these lines.

AGRICULTURAL TRACTORS IN CALIFORNIA.

(Continued From Page 329.)

attention in distant places. The unique agricultural implements and machines of California origin do really constitute an important item in the claim of the State to the attention of the world.

It is an interesting coincidence that as the first steam tractor to appear in California made its first stands in Alameda and San Joaquin, so these two counties have stood to this day as the leading counties of the State in the invention and construction of tractors for agricultural use. During the last third of a century old forms have passed away and old firms have followed them into history. Continual change is the secret of life and ability to make changes is the promise of continuation thereof. The forms and duties of tractors which are shown in the engravings on the front page are not only new and broader than could have been forseen one or two decades ago, but they are the surety that the future will show still wider uses and more striking novelties.

As has already been claimed, tractor engines have in recent years become a very important factor in California farming. This has been brought about largely through the perfecting of the gas tractor. The engravings given herewith represent the six-cylinder three-speed tractor manufactured by the C. L. Best Gas Tractor Co. These machines are designed for all kinds of farm and orchard work and are built in sizes ranging from 25 horse-power up. They have met with great favor and we are assured that sales already made will tax the capacity of the company's large plant until at least August 1 of this year. Believing that our readers will be interested in the details, we have requested Mr. Best to furnish us a statement regarding the company and its gas tractor, as follows:

"The C. L. Best Gas Traction Co. was organized in March, 1910, and immediately erected a plant at Elmhurst, Oakland, Cal. We started our factory June 1, 1910, and up to the present time have marketed 22 gas traction engines, principally of our six-cylinder, 60-70 horse-power type, as well as perfecting and building at the present time six electric driven combined harvesters, and manufacturing from the pig, by converter process, 90 to 100 tons of steel castings per month. Owing to the fact that we manufacture our own steel, we are very liberal in the use of this in the construction of our tractors. The lower cut shown is our 25 horse-power working in an orchard, pulling eight 10-inch plows at a speed of 2¼ miles per hour, and taking two swaths to finish a round between the trees. This little machine is doing the work of 16 head of animals at a cost of less than 50 cents per acre. A cut also shows one of our 60-70 horse-power tractors pulling 16 disc plows at a speed of 2¼ miles per hour on the ranch of Frank Goodall, Chatsworth, Cal. This machine worked steadily for 55 days, and Mr. Goodall states he was out 30 cents for extras, and made an average of 35 acres. He averaged about 50 gallons of 48½ degree distillate. His son ran the engine, and they had a plowman hired at $2 per day and used about a gallon and a half of lubricating oil per day. With these figures, one can readily calculate what his plowing per acre cost him.

"The engines used upon a 'C. L. B.' tractor are of the heavy duty type Buffalo engine, especially built with very liberal bearings, extremely heavy crank shaft, dust-tight crank case, and very large plates on the side so that the motor can be looked after properly, as well as being arranged to suit conditions the tractor must meet. The 'C. L. B.' gas tractor can be built of no better material or workmanship. Each machine is tested thoroughly at our works and is sold on absolute guarantee.

"The electric combined harvester is the latest production of this company, and this, together with the gas tractor, certainly promises to revolutionize farming by power. The tractor has a generator mounted on the rear of it driven from the fly-wheel of the engine. The forward motion of the machine is controlled by a clutch, so that the engine may stop or back up, and the motion of the generator remains constant. The electricity is carried back to the combined harvester and connected with a series of resistance and variable speed motor that drives the harvester, eliminating the danger of fire, taking less men, and above all, giving a steady motion to the combined harvester, so essential in threshing and cleaning grain. The harvester will be put in the field and demonstrated this season.

Don't wait for an opportunity, son. Keep hustling and you will never need the opportunity.

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Here are tires that can't rim-cut. Here are oversize tires which cost nothing extra. The 500,000 which we have sold have saved motor car owners many millions of dollars. They'll cut your tire cost half.

Goodyear No-Rim-Cut tires make rim-cutting impossible.

We have run them flat in a hundred tests, as far as 20 miles. We have sold enough to fully equip 125,000 cars. They have been six years in use. In all this experience there has never been a single instance of rim-cutting.

The ordinary tire, when punctured, may be ruined in a moment by running flat on the rims. And the damage is beyond repair.

Goodyear No-Rim-Cut tires avoid all this worry, all this expense. They have done it for tens of thousands.

Our No-Rim-Cut feature is controlled by our patents. Others cannot make it. That is the only reason why the old-style tire—the clincher tire—is now recommended by anybody.

Tires 10% Oversize

The removable flanges on your rims will be set to curve outward — instead of inward — when you use Goodyear No-Rim-Cut tires. You simply move them to the opposite sides. There is nothing else to do. The extra flare lets us fit the rim and still make the tires 10 per cent oversize. And we do it without extra cost.

That means 10 per cent more air to carry the load. It adds 10 per cent to the carrying capacity. With the average car this adds 25 per cent to the tire mileage. Yet it costs you nothing extra.

We say 10 per cent, but late comparisons with standard clincher tires show the average actual oversize to be 19.9 per cent, measured by air capacity. And it is the air that carries the load.

This is a vital fact.

Nine times in ten, tires are overloaded by the extras one adds to a car. And all cars at some time are overloaded with passengers.

That is what causes blow-outs.

It would pay you to pay for this extra size. It certainly pays to accept it when oversize tires cost the same as ordinary tires.

These two features together—No-Rim-Cut and oversize—will cut the average tire bill in two.

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The demand for Goodyear No-Rim-Cut tires seems like a sudden sensation. Last year our tire sales trebled—jumped to $8,500,000. Yet, until a few months ago, these patented tires cost one-fifth more than other standard tires. This year 64 leading motor car makers have contracted for Goodyear No-Rim-Cut tires to equip their latest models.

But back of this all lie twelve years spent in tire making. During that time we have tested out 200 separate fabrics. We have made comparisons of forty formulas for use in Goodyear treads.

We have had experts and inventors constantly studying how to improve these tires. And our tires of today—which have become the sensation—are the final result of all these years of effort.

Tire Book Free

If you buy tires it is wise to know what a difference there is between one tire and another.

If one tire will carry you twice as far as another, you ought to know that tire. This question of tires is important.

Our Tire Book pictures all the facts in the clearest sort of way. There are scores of facts good for you to know.

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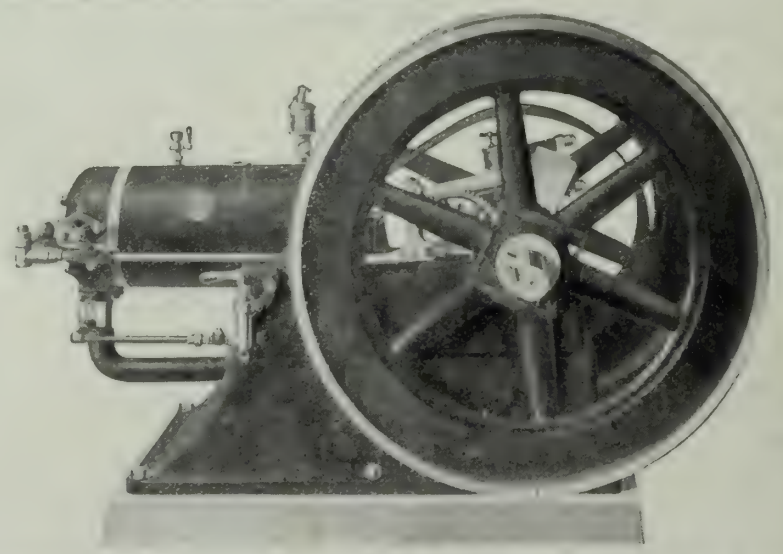
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The Garden.

THE CASSABA AND OTHER WINTER MELONS.

To the Editor: I think it was in the spring of 1890 that I wrote my first article for your valued paper in regard to this remarkable melon. I have also written you, since then, several short articles about it, as well as a number of articles for three other agricultural papers of this State. If this melon is not now generally well known, it is certainly not my fault. I shall not go into detail as to how this melon was first introduced into this State, nor by whom, as I did this in former articles. I raised my first crop near Calistoga in 1883, and have been raising them ever since, with great success. I still consider it one of the most valuable melons ever introduced into the United States, taking everything into consideration.

THE LONGEST KEEPER.

It is, as far as I know, the longest keeper of any muskmelon grown, as it is at its best in November and December, when all other varieties of muskmelons are gone. I have kept a few late into January, and one until April first. But very few ripen on the vines, and they are premature. They should be picked as soon as the frost nips the vines pretty badly, and handled as carefully as eggs, and stored in the coolest and driest place to be found. They should be examined every few days after they commence to ripen. None but the largest and finest should be saved for table use, and they will be found to be very delicious, but the smaller sizes are most generally very inferior as to quality.

FINE FOR ALL KINDS OF STOCK AND POULTRY.

This valuable melon is at its best when most kinds of succulent feed are very scarce, and it cannot be excelled for feeding to all kinds of stock, and for poultry it is equally as valuable. Eight large-sized melons contain over a pound of seed, which is equally as good if not superior to wheat. The poultry always eat the seeds first, and afterward eat the flesh completely, down to the extremely hard shell. On rich land these melons will produce from 15 to 20 tons on one acre.

IMPROVED HYBRID CASSABA.—This delicious melon is of a late introduction; I understand it became hybridized with the Montreal muskmelon. It grows to a large size, often from 12 to 18 pounds each. The flesh of the largest size is fully three inches thick and is of a most delicious flavor, superior, many think, to the Winter Pineapple. It is very prolific and is at its best the last part of September and through October, and later, if the frost does not kill the vines. When it does, pick the largest ones that are nearing maturity and store in a cool place; they will very gradually ripen and be fit to eat in a week or more. I am fully satisfied that this luscious melon is but very little known, as only a few California seedsmen advertise it, and only two Eastern seedmsmen. My partner and I sold 300 pounds of this variety of melon seeds last season. I have no doubt this melon will be raised to a much greater extent the coming season than ever before. Everybody that has a small piece of land ought to raise some of these melons for family use, if nothing more.

THE SANTA CLAUS.—This melon is also of a late introduction. We raised our first crop, for seed purposes, in 1909. Last season we sold 500 pounds of seeds. It is claimed by one seedsman, at least, that "it is of very superior quality, and that it can be kept when stored from three to six months, and when ripe it is unusually delicious." For my own part, I cannot subscribe entirely to his description of it. However, I think it is worth raising for family use, as it keeps very well, some of them until nearly Christmas. But in quality, in my judgment, it is far from being as delicious as the Hybrid Cassaba. It is a long melon with a dark-green rind (which is very hard), marked with yellow streaks lengthwise. When the melon is fully ripe these streaks become more pronounced and the extremely hard rind softens. We sold 500 pounds of seed the past season of this variety of melon. I have never been able to ascertain where this melon originated.

STORING MELONS.—In storing all kinds of melons it is absolutely necessary to handle them as carefully as you would eggs—as before stated—for if slightly bruised they soon commence to decay. Never pile them up. I always put them in single layers, on a little straw, with the stem end of the melon down. I think they keep longer this way, and can be examined easier, as the blossom end always ripens first. This does not apply to the Santa Claus melon.

PREPARING THE GROUND.—The ground for melons should be rich and most thoroughly prepared before planting. It is poor policy to plant the seeds before the ground gets warm. Here we plant them from May 10th to the 15th. Commence to cultivate as soon as the plants appear in the row, and from that time on every week, until the vines interfere. You will find it pays to do very thorough work if you want to get a fine crop of melons.

IRA W. ADAMS.

Potter Valley, California.

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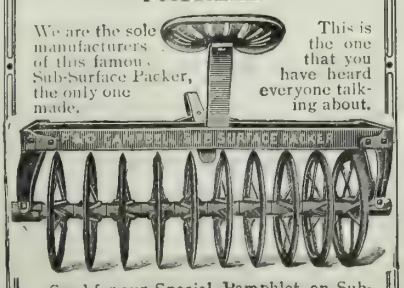
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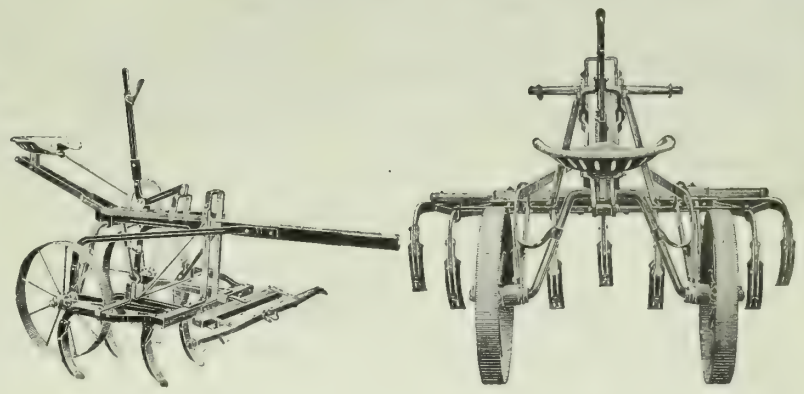


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Note that the frame is level in every position.

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The **BENICIA-ORR** is made in two sizes—seven and nine teeth—which cultivate a width of four and five feet respectively. By the loosening of six bolts it can be changed from one size to the other. Center tooth can be removed, if desired, for cultivating small vegetables, as beets, beans, etc.

Bear in mind that this implement was designed and is built by practical men who understand the need of agriculturists.

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Sevenor	7 teeth	4 feet	283 lbs.	365 lbs.	8
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	Pole		32 lbs.	32 lbs.	1

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Fruit Marketing.

STORAGE IN TRANSIT FOR BOXED APPLES.

To the Editor: As your publication has so wide a circulation throughout the Western States where the box apple industry has reached such astounding proportions, I feel confident you will be glad to co-operate with the International Apple Shippers Association in its effort to secure from the transcontinental railroads a billing permitting of storage in transit on box apples.

The apple season of 1910 and 1911 will always be remembered as remarkable for the extremely high prices paid for barreled apples, which have been the highest in the history of the apple industry, and the extremely low prices for box apples, which have been the lowest in the history of the apple industry.

The demand at all times has been dull and dragging on boxes, and strong and active on barrels. This in spite of the fact that the quality of box apples has always been superior to barreled apples.

What is the reason of this paradox? Can it be possible that the more scientific and careful the growing and packing of apples become, the less they are appreciated? Has the expert packing of apples, which has reached its highest development in the apple-producing sections of the Pacific Slope, only had the result of making the public prefer the rough-and-ready, slap-dash packing of barreled apples, especially when it is known that the great majority of these barreled apples contain, with the exception of those on the face or top of the barrel, apples suitable only for cooking? No, there is a sensible reason for the fact that box apples have not been wanted and have ruled at low prices. The reason lies in the method of distribution of the two classes of apples. The barrels have been shipped to every market in the country, large and small. There has been a strong demand for them in England and Germany. Western New York fruit houses have had a steady demand and drain on them from the West and the South, and from the East, and from lands across the sea. There was about an equal quantity of apples packed in barrels and boxes; the barrels are being consumed in a thousand places; the box crop practically was marketed in two places—Chicago and New York. Of course, there was some small amount of boxes shipped abroad, especially California Newtons and some few cities like Philadelphia and Boston had a small amount of boxes, but the markets of New York and Boston were at all times oversupplied. The newspapers were filled with flashing advertisements on the part of a few dealers stating the hundreds of thousands of boxes that their firm would have the distinction of handling. One Chicago house blazoned forth to the world that they had disposed of a thousand cars. The impression was given that the quantity was so unlimited on the part of every large dealer in Chicago and New York that every smaller dealer shut out the temptation of investing in them.

This absolute lack of intelligent distribution came about through the rigid rules of the railroads regarding freight rates on box apples. One dollar per hundred is the rate on a carload of box apples, whether shipped to Denver, Chicago, or New York, and when stored at one point or the other it cannot be reshipped without paying another freight rate. If a storage in transit privilege should be allowed on shipments of box apples, there would at once develop a system of distribution which would scatter the crop of box apples all over the country; it would place them in consumption where they were most wanted. The crop of box apples, amounting to 20,000,000 boxes, is transported in a month and a half, but it requires nine months to consume it, even though it should be scattered in every city, large or small.

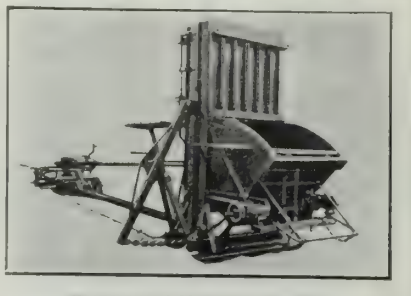
By the storage in transit privilege is meant the privilege to ship the car to any warehouse that is desired, and later on, when the owner desires to market that car of apples, to ship it to its ultimate destination and pay for the total services the through rate from the initial point of shipment to the ultimate destination and a switching charge in addition, because that is the only extra service in addition to the through haul that the railroad has rendered in granting this privilege. It is impossible for the owner of a considerable amount of box apples, whether he is a grower, or the Association of Growers, or a merchant who has invested his money in their output, to tell what market during the coming nine months after the crop is gathered will be a desirable market for his apples. He can tell less because it is a new industry and only cities of the larger size have developed the use of box apples.

With the very great increase in the production of the far Western orchards, amounting last year to 20,000,000 boxes, it is essential for the prosperity of the growers in the Far West, or any person who diserise any part in that industry, whether railroads or warehousemen or merchants to do a lot of missionary work in scattering the crop and introducing it to the cities of smaller size and the European markets. A lot of this missionary work has been done already, and the crop would flow to cities of the second class as well as the first class, if the railroad would see to it that a flexible method of distribution was permitted by granting the storage in transit privilege. The greatest benefit would go to the railroads between Chicago and New York. In that district half the wealth of the country lies, and half the crop of box apples should be there distributed. With the exception of one railroad, the Erie, the other transcontinental lines from Chicago to the East have next to nothing of this traffic. The storage in transit privilege would give to them a very large share of this traffic. It is of the outmost importance, therefore, that all growers and growers' associations, and all apple dealers, should bring this information to the attention of the head officials of railroads—it will help them more than it will help the general industry.

In addition, it is a matter of importance to all persons interested in the apple industry, whether in barrels or boxes, because if the box industry is placed upon a healthy and profitable basis the capital available for investment in apples will flow toward that part of the industry and leave the barreled apples open to a natural competition, but not to the excessive competition that now exists.

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Ortho Arsenate of Lead, the latest innovation in this branch of spray knowledge, is fully endorsed by the best authorities, and its greatest merit is this, that it can be used freely under all conditions, under all climates, and on all kinds of foliage. **In these respects it differs from all other brands upon the market, which cannot be so used.** It has been used all over the West with great satisfaction, and its use is constantly growing wider.

"Ortho 13" Arsenate of Lead is put up in superb steel containers containing 5, 10, 20, and 50 pounds net, of arsenate of lead. These kegs are air and water tight, and there is no danger of evaporation causing the material to become hard and unworkable. We make a liberal allowance for the return of the steel containers, and stand the freight, thus further reducing the cost of the material to the consumer.

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HENRY SHAW

The Field.

FROSTED GRAIN FOR HAY.

To the Editor: The freeze which was general throughout California a few days ago struck us pretty severely in this valley. I had 125 acres of summer-fallowed wheat which I had estimated to make 20 sacks to the acre of grain. It was breast high in places already, and was just heading out. The heads were formed but there was nothing in them yet. It was considered the finest piece in this part of the country.

The frost pinched the stalks of this grain in several places and the heads are now turning white. It is ruined for grain. There is lots of fodder on it, but it will soon be turning yellow. I wish to know several things.

First, to make the best of what is left, we think it should be made into hay. If so, should not it be cut and cured at once. What is the relative worth of such hay as compared with more matured hay? Would not the fact that most of the nourishment is still in the stalks make it good hay, even if the heads contained no grain? Would the fact that it is frozen make it injurious to feed? I want to know what animals would do best on it—horses, or cows, etc. I wish to find out these things so as to know where best to look for a market for it, and what I really ought to get for it in comparison with other hay. I don't want to go at it blindly and get more than it is worth because it looks good, or less than it is worth because the buyer has an exaggerated idea of its damaged condition. In other words, I want to sell with a clear conscience and at the same time not feel that I am the victim of circumstance. The information you can give me will aid me materially in forming my idea of what I ought to hold it for. In the case of grain that is less advanced, wouldn't it be better to wait for a while and see what it is going to do?

Hemet, Riverside county. FARMER.

[One can hardly form an intelligent opinion about the condition which you describe without getting more information from actual observation. If the whole plant seems to be getting white, the sooner it is cut the better. If the head is affected and the leaf growth continued, cutting might be deferred for the purpose of getting more of it. Hay made from such material will not be in any way dangerous, although it would be inferior as containing less nutritive and more non-nutritive matter. Such hay would seem to be most serviceable as roughage for cows or steers in connection with alfalfa hay or some other feed which would supply this deficiency.—EDITOR.]

A CAILFORNIA BEAN IN COLORADO.

We are glad California started Colorado in a profitable bean business, and the way it was done as described by Mr. S. W. De Busk in the Denver Field and Farm is interesting:

The Mexican or Pinto variety of bean was brought into the Sunflower valley of southern Colorado a short time prior to 1870 by William Hoehne. He imported a sack of seed from California and distributed it among the Mexican farmers who were cultivating his land on shares. Mr. Hoehne made numerous importations of plants, seeds, and machinery, but nothing that he introduced benefited the country so much as this prolific and popular legume. The seed catalogues often say that this speckeled variety is termed the Mexican bean because the Mexican people esteem it so highly. This statement would seem to fit the facts perfectly. I cannot find that this particular speckled bean is now grown in California. A former farmer of this valley who has resided near Los Angeles for twelve years past has observed carefully, but has never been able to note this favorite in any market or seed house on the Coast.

The culture of the plant is simple, but thorough, and very much as corn is grown. Thorough preparation of the seed bed and complete eradication of all young weeds at planting time are considered essential. Our farmers plant in June—late June being preferred by many. Later than July 1 is too risky at our altitude of 5800 feet. The yellow bug is usually less harmful to the crops of later plantings. The two-horse corn planter is the machine used for seeding, setting the plates to drop a bean every nine inches in the drill. Twice as many rows as of corn is the rule. Planting is done the same as for corn, and then the ground is gone over again, planting the middles.

Thirty pounds of seed to the acre is the minimum, and sixty pounds the maximum used. Probably two-thirds of our farmers use forty pounds of seed to the acre. The thinner planting appears to give a larger, plumper berry. Harvesting begins as soon as the pods begin to ripen. The vines are often pulled by hand if the crop is small. Some use irrigating shovels ground sharp with which they easily and rapidly cut the vines just under the ground. The vines while yet unwilted are gathered with hay forks and placed in small shocks to cure. After curing sufficiently in the shock, they are hauled in on hay frames and stacked in round stacks, much after the manner of hay or sheaf grain. The old way of threshing was by tramping out with horses. A band of horses is driven around the stack, the beans being thrown off the stack as desired. The tramping process effectively threshes the beans from the pods and with very little breaking of the shelled beans. Afterward the straw is taken out by winnowing in a stiff wind. The final cleaning is through a fanning mill. In recent years steam threshers especially designed for the bean crop have done nearly all the threshing.

One thousand pounds per acre is a normal yield. Very careful farmers have sometimes grown two thousand pounds to the acre. The Pinto beans yield bountifully. It matures in a short season. It is not easily stained and spoiled if some pods touch the ground in damp weather. It probably has no equal as a nutritious soup bean. Our last crop brought five cents per pound delivered on cars at the nearest station. Nearly all the crop went southward to the New Mexico markets.

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THE PERFECT PRODUCT

Combines the highest standard of manufacture with chemical and physical qualities giving sticking power, miscibility and extremely fine division. It meets the most exacting requirements of the modern scientific orchardist.

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AGRICULTURAL REVIEW.

With the Fruit Men.

Since the first of April Sultana raisins have advanced from 3½ to 4½ cents per pound in the sweatbox at Fresno. Most of what is left of the 1910 raisin crop is now in the hands of brokers. It is stated that there is absolutely no price on the future crop, as growers and brokers are unable to tell what the crop will be.

Brokers have been interviewing prune growers in the Santa Clara valley the past week and have offered as high as 4 cents for the 1911 crop. As no one can tell for several days yet the size of the crop—though it is thought it will be about half a normal yield—all deals must necessarily be a gamble other than it is known that there is no holdover and the demand is good.

Horticultural Commissioner Bowman reports fruit prospects in Placer county as encouraging, in spite of the fact that many orchards were badly nipped by the frost two weeks ago. Ranchers in the lowlands were the heaviest losers. Around Colfax pears and apples were hard hit.

The Orange County Preserving Co., which has a cannery at Los Angeles, had a representative at Anaheim last week trying to buy 800 tons of tomatoes and offered $7.50 per ton, which is 50 cents more than was paid last season. This company also wishes to contract for apricots, peaches, and berries.

W. J. Pattee, of Acampo, stated to the writer this week that he would have a large crop of apricots and a fair crop of Muir peaches on his forty acres of trees this year, though the apricot crop especially would be very light in that section. He has been offered 11½ cents for his apricots.

The La Habra Walnut Growers' Association expects to ship double the quantity of walnuts this year over what they did last, as the prospects are good in that part of Orange county.

In the Santa Clara valley the apricot crop will be very light this year, as it will be in most sections north of the Tehachapi. In southern California the 'cot crop promises to be unusually heavy, especially in parts of Ventura, Orange, and Riverside counties.

Reports from Butte county are that practically no damage was done to fruit by the frost. Prunes, peaches, pears and apples all promise a good yield. Wheat and barley also promise a bumper crop.

The cherry crop in the Suisun valley will be a large one and will soon be ready for market. Other fruits in that section are also reported to be in good condition, practically no damage having been caused by frost.

Fruit men of Sutter county expect to have a successful year. Peaches have set well, prunes promise well, though it is yet too early to tell definitely what the crop will be, and grapes were practically uninjured by the frost. Other varieties of fruit are in good condition.

Work is in progress to organize the St. Helena Vintage Festival Association, with a capital stock of $10,000. The object of the organization is to make permanent the holding of an annual vintage festival at that place.

A. V. Reynolds, the owner of a 40-acre vineyard in Sutter county, is credited with stating that he has been offered $16 per ton for his seedless raisin grapes. This is a great advance over the early price of last year, and doubtless the price will be higher before the crop is ready to harvest.

The Hanford Journal states that the Muscat grape crop was damaged fully 50 per cent by the frost which visited Kings county two weeks ago.

According to the Los Angeles Express, most of the navel oranges have been shipper from Orange county and from the districts around Highland and Redlands. Riverside, Pomona, and Ontario have lots of navels yet to ship. In the eastern Tulare district some valencias have already been picked and shipments will soon be made.

Fruit prospects around Knightsen, west of Stockton, are reported fine. Apricots, peaches, and cherries all promise well. There has been a large acreage set out to English walnuts in that section this spring.

A lemon grove of 20 acres of 16-year-old trees, belonging to Henry M. Nelson, near San Diego, was sold last week to a Seattle man for $35,000 cash.

Horticultural Commissioner Sharp reports mildew on grape vines in alarming amount in Kings county. He advises the growers to sulphur the vines freely when in bloom.

A meeting of the Fruit Growers' Alliance has been called for El Dorado City, Saturday, May 6.

George W. Allen, of Selma, and J. P. Marsch, of Marietta, Ohio, have patented a new peach cutter and pitter which is said will cut 400 boxes of fruit per day, either freestone or cling. The machine to do this work requires the help of four people. A demonstrating machine is to be operated in an orchard near Selma this season.

The recent frost caused more damage in Tehama county than was first thought. Peaches and figs were damaged most, and the first crop of strawberries was frostbitten.

Tabor Bros. have set out 25 acres to Muir peaches on their ranch near Red Bluff this season.

A meeting was held at Ukiah last Saturday by the Farmers' Club, to discuss the feasibility of establishing a winery there to handle the crop from the 1500 acres of grapes raised in that section.

The meeting of the Citrus Chamber of Commerce held at Lindsay last Thursday, was attended by 125 fruit growers. As a result of the meeting it is now proposed that all fruit shipped from that section which has been packed under certain restrictions shall have a label stating the fact, that buyers will know what they are getting.

Agricultural Notes.

Large quantities of string beans are now being shipped from Coachella valley. Good prices are being obtained.

It is stated that thousands of acres have been planted to corn this season in the Huron sink on the west side of Kings county.

Owing to the cutting up of grain lands in Sutter county and planting them out to orchards and alfalfa, the grain crop will be less in that district than heretofore. All crops promise well there this season.

The shipment of asparagus from the section around Stockton is assuming big proportions. Over 1000 cars have been shipped already this season, and the output will be much larger next year. The California Vegetable Union, with headquarters at Stockton, handles most of the crop.

Growers have completed the planting of 6000 acres to sugar beets in the district around Anaheim. The beet-sugar mill now being built there is to be ready for crushing in time to handle the crop.

Within the last two weeks over 10,000 bales of hops have been shipped East from California, mostly for export. It is stated that there are now left on this Coast less than 8000 bales of former crops, which is less than at any time for years. Hop growers should receive good prices for the coming crop.

By the establishment of local agencies and the study of local conditions, American wheat has almost driven Australian wheat from the Malayan Peninsula. Up to a few years ago Australia furnished practically all the wheat and flour consumed on the peninsula, but last year, out of a total of 38,000 tons consumed, only 5767 tons came from Australia, and



IHC WAGONS HAVE STOOD THE TEST OF ALL LOADS AND ROADS FOR YEARS

THE real proof of the strength, durability, and value of I H C wagons is what they have done and are now doing for thousands of farmers throughout the country. Light loads and heavy loads have been carried by I H C wagons, over good roads and bad roads, for so many years that there is hardly a farmer who is not familiar with the high quality that these names on wagons represent—

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The reputation gained by these wagons is not due to any one particular feature but to all-round perfection and superiority of the design, the material, and the workmanship used in their construction. They are built especially for the western country and every feature that will increase their wearing life is incorporated in their construction.

WEBER wagons have been leaders for sixty-six years. All the wood is carefully selected and straight grained. It is air-dried for at least two years—so that the sap is retained, giving the wood wonderful stamina. Hickory is used for axles, single-trees, double-trees, and neck-yokes. Oak is used for hubs, hounds, bolsters, reaches, and sandboards. Oak and hickory are used for spokes. The New International stake is also furnished. This is one of the greatest conveniences ever added to a wagon.

NEW BETTENDORF is a steel gear wagon of standard quality with carrying capacity unexcelled. It is the only gear having an axle with removable malleable sleeve which can be replaced when worn.

STEEL KING has the only perfect adjustable stake; hollow steel axles and bolsters made to resemble the old wooden type; skeins are cast and can be easily replaced; wheels are A-grade; wagon box of best quality and construction.

I H C WAGON BOXES have long-leaf yellow pine bottoms, box-board sides, protection for the bottom over the front and rear bolsters, and the best box binders ever furnished. A tool box is attached to the front end.

Do not buy any wagon until you see the I H C local dealer. It you prefer, write nearest branch house for literature in which you are most interested.

WESTERN BRANCH HOUSES—Denver, Col.; Helena, Mont.; Portland, Ore.; Spokane, Wash.; Salt Lake City, Utah; San Francisco, Cal.

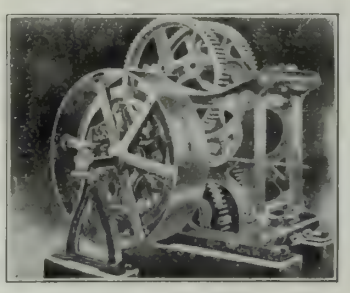
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I H C Service Bureau

The purpose of this Bureau is to furnish farmers with information on better farming. If you have any worthy questions concerning soils, crops, pests, fertilizer, etc., write to the I H C Service Bureau, and learn what our experts and others have found out concerning those subjects

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2335-ACRE RANCH
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PRICE, $18 PER ACRE

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WINTERS
Yolo County, - Cal.

of the balance over 24,000 came from America and Hongkong, most of which was the American product. With the rapid increase of population on the peninsula a still greater increase in the consumption of American wheat is expected.

Miscellaneous.

The Farmers' Union of Santa Clara county is to hold their annual picnic at Congress Springs on May 20.

A fire at the California Chicken Co.'s plant near Los Altos, Santa Clara county, last Monday, destroyed all the buildings, 150 incubators, and about 10,000 chickens.

The Santa Clara County Fair will be held at the driving park in San Jose, the week of August 21. An attempt will be made to hold a real fair and not horse races alone.

The Governor has signed the bill organizing Reclamation District No. 831, which lies principally in Sutter but laps over into Butte county. The district runs south from Gridley Ridge through the Snake river country to the tule lands. When completed the district will reclaim a large body of fine land.

On the 40,000-acre Naciemento ranch near San Miguel, San Luis Obispo county, a large number of artesian wells are being drilled to secure enough water to irrigate the land, preparatory to colonizing it.

San Benito county has taken up the work of squirrel extermination under direction of the Government.

The 18,000-acre grain ranch belonging to James D. Phelan, which is located near Chico, is said to have been sold last week to Chicago parties for colonization purposes.

The supervisors of Contra Costa county are expending $6000 per month in an effort to free that section of squirrels, which carry the bubonic plague. Already it is declared that 50,000 squirrels have been poisoned or shot.

The supervisors of Yolo county have appointed district inspectors to help the farmers, and to see that the work is properly done in the effort being made to kill off all the squirrels in that county.

Under the direction of the San Francisco Board of Health, an examination is being made of the milk produced at the various dairies which supply the city. The object of the investigation is to learn who is responsible for the poor grade of milk which is sold, and then to have an ordinance passed regulating the amount of butterfat which must show in all milk offered for sale in the city.

The Simon Newman Co., Modesto, has begun breeding Herefords on an extensive scale.

The directors of the Sutter-Butte canal system are preparing plans for the extension of laterals and for the replacing of wooden weirs along the line of the main ditch with cement structures.

Rio Oso will be the name of the new town to be located on the Natomas project, which is reclaiming and preparing for colonization 54,000 acres of land north of Sacramento.

The 55,000-acre ranch belonging to Henry Pratt, lying in the Clover valley, 30 miles from Golconda, Nevada, has been sold for colonization purposes. This property owns fine water rights, and already a large acreage is seeded to alfalfa.

A movement is on foot to establish a ramie manufacturing plant, to cost $350,000, at Sacramento. The raw material is to be grown in adjoining districts.

Bee Inspector R. B. Herron reports that the honey crop will be short in San Bernardino county this season, owing to many of the bees dying.

Woodward & Sons have sold their 100-acre alfalfa rach and big grain warehouse near Perris, Riverside, county, to William Short of Idaho for $50,000.

A large shipment of soy-bean meal direct from Manchuria was received at Petaluma this week. This is the first large shipment of this meal that has arrived and will be used for chicken feed.

The International Land Co. has increased its capital stock to $3,000,000, preparatory to starting in on the big job of planting and farming the 6000 acres it has secured near Clovis, Fresno county. It is stated that the company will set out 2000 acres to figs.

Farmers of Kings county are to work under the new State law in an effort to kill off all the ground squirrels in that section.

REMEDY FOR COLLAR GALLS.

To the Editor: Please publish in your columns what is considered the best remedy for collar galls on horses and oblige me and many others.

Modesto. J. E. UPTON.

ANSWER BY DR. CREELEY.

Have the following prepared:

Zinc oxide (Hubbuck's)	½ oz.
Bismuth subnitrate	1 oz.
Litharge	½ oz.
Vaseline	4 oz.

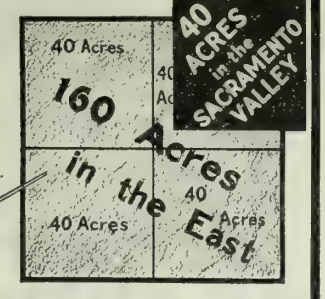
Mix and apply once daily after washing.

DR. E. J. CREELEY.
California Veterinary College,
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The most profitable returns to be realized, however, is to feed it to your stock. One acre of alfalfa will support one cow, two hogs and a calf. Each cow should produce on an average $75 to $100 worth of butter-fat in a year. The calf should be worth from $7 to $10 at the end of the year and the two hogs should weigh from 200 to 250 pounds, giving an income for the year of from $90 to $130 per acre.

One of the attractive features of dairying on this plan is that the revenue is coming in every month of the year. This estimate can be very materially increased by raising a flock of poultry.

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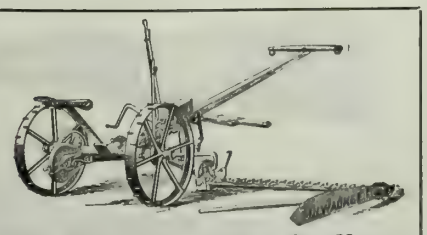
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Live Stock and Dairy.

DAIRY CALF FEEDING.

In the PACIFIC RURAL PRESS of February 4 we gave quite a detailed account of the successful use of milk substitutes for calf rearing. We undertake now to give with the aid of a recent Farmers' Bulletin, the results of calf studies and experiments recently reported by the Wisconsin Agricultural Experiment Station, and reported by Mr. D. H. Otis. In the first place Professor Otis calls attention to the herdsman's responsibility in feeding and caring for the dairy calf. If the dams have been properly nourished the value of the calves at birth depends largely, if not entirely, upon the intelligence and skill exercised by the owner in their breeding. The future possibilities of the newborn calf, however, rest on the thought and skill that the owner puts into its feed, care, and management. Mistakes at this period of the calf's life are probably of lifelong influence, while a mistake in feeding and caring for a mature animal may be only temporary in its effects. Calf feeding requires skill and good common sense, as there are no hard and fast rules that can be laid down.

Young calves need whole milk for the first few days. The calf should always have the first or colostrum milk of the cow and be allowed to nurse the cow until the eighth or ninth milking, when the milk is suitable for human food. Feed often with small amounts to avoid overfeeding. Teach the calf to drink and feed whole milk for at least three weeks, changing to a skim milk diet gradually.

By good feed and care, or the lack of it, it is easy to make a variation of $1 to $5 or even $10 per head in the value of the calf the first year.

FEEDING MILK.—Skim milk is a cheap feed for calves, but should be fed carefully in limited quantities and only while it is warm and sweet. Skim milk may form the principal diet of the calf for eight months or a year. Factory skim milk should always be pasteurized to avoid the spread of tuberculosis. The best skim milk is that which is fresh from the separator and still warm. Experiments show that it is only one-fourth as expensive to raise a calf on skim milk as whole milk. Two pounds grain with the proper amount of skim milk equals one pound of butter-fat. Buttermilk or whey may profitably be fed to calves.

Milk that is too rich may cause serious trouble from scours, and in feeding such milk care should be exercised to give limited amounts at the proper temperature. The feeding of whole milk should be continued for about three or four weeks, when the number of meals may be reduced to two per day. From one-half to a pint of skim milk may now be substituted for an equal quantity of whole milk. The amount of skim milk may be gradually increased and the amount of whole milk correspondingly decreased until, at the end of a week or ten days, the calf is getting all skim milk. Feed the milk sweet and at blood temperature.

Not over 10 to 12 pounds of milk daily should be fed until the calf is 5 to 7 weeks old. Later the amount may be increased to 14 or 16 pounds, and at three months may, though not always, go to about 20 pounds. The amount fed, however, must be carefully regulated by the ability of the calf to handle it without scouring.

FEEDING GRAIN.—The grain for calves should be fed first while the calf is quite small with a little bran to aid the calf in learning to eat. High-priced concentrates are unnecessary and give no better results than cornmeal, oats, and bran, ground barley, etc., when fed in proper combinations. At four to six weeks a calf has good teeth and can grind his own feed. A variety of feeds is advantageous and best results will usually be secured from mixtures.

The roughage for calves should first be fed at two or three weeks of age when the calf begins to eat grain. Good clean hay, either timothy, blue grass, clover, or alfalfa, may be used. Corn silage is an excellent calf feed when fed in moderate amounts. Good pasture is an essential after four to six months of age, and if the calf is turned out for only a few hours each day at first scours will be avoided.

FEEDING WHEY.—Whey has the casein as well as the butter-fat removed, and hence is a much less valuable feed than skim milk; a good grain ration must be carefully selected as a supplementary feed. The calf to be fed on whey should receive whole milk for the first week or two; it can then be changed to skim milk. If this is not available it should be continued on whole milk. A calf will do better not to receive whey for five to six weeks. It will take ten days to two weeks more to complete the change to whey. Calves will handle about the same amount of whey as skim milk, namely, 14 to 16 pounds daily per calf. An excessive amount may cause undue largeness of the paunch. The feeder will need to give more care and attention to calves fed on whey than to those fed milk.

WATER AND SALT.—Calves, like other farm animals, get thirsty, even though milk forms a large part of their ration. Calves three months of age will drink as much as 5 quarts of water daily per head. They like to drink often, sipping a little at a time. A half barrel, cleaned and replenished twice daily, will serve nicely as a water trough. Another good device is an automatic waterer, which may be easily cleaned, situated a little above the floor to keep out the litter. Salt is essential to the development of the calf, as of other animals, and should be kept continually available.

The management of the calf during the first year has much to do with its later usefulness. Plenty of water and salt should be given in clean vessels. Avoid sudden changes of diet and practice regularity in feeding. Provide warm, dry quarters in damp weather. Give plenty of roughage and not too much grain so as to develop a large capacity for handling food as is desirable in dairy animals. When the calf is six months to a year old milk may be omitted from its ration and a full roughage and grain diet substituted.

OTHER FEEDS.—When the skim milk diet is stopped at any time from 6 to 12 months of age, it should be remembered that the calf is deprived of a nitrogenous feed and its place should be taken by some nitrogenous grain or roughage. The tendency of the dairy calf to get too fat depends not only upon its temperament but also upon its feed. Avoid too much corn. For grain, oats and barley are good; for roughage, bright clover or alfalfa hay with corn silage to give succulence and variety.

Size depends much upon heredity, but even more upon liberal and judicious feeding. It is impossible to starve good dairy qualities into a growing heifer, but many a promising heifer has been starved into a poor cow.

The intelligence that the herdsman puts into his calf feeding will have a great influence upon the future cow. There are great possibilities in the production of good cows, but these are seldom if ever seen, appreciated, or attained except by an intelligent, thoughtful feeder. The earmarks of an intelligent feeder are seen in his herd. The calves are thrifty, active, with bright eyes, smooth, glossy coats, always hungry, and playful and lusty.

NEW CHANCES ON A FAT-TAIL BASIS.

Those who have started to do something with the Persian Fat-Tail sheep under the leadership of the late C. P. Bailey of San Jose will be interested in some new frills which seem possible with them according to the points made by Dr. C. C. Young in the March 10 issue of the Shepherd's Journal. These sheep were introduced from Persia by Hon. Truxton Beale, who seems disposed to settle down in California on his ancestral estate in Kern county after a career of world-wide activity. Mr. Beale has accepted a place upon the Board of Regents of the University of California and will thus have a chance to concentrate enterprising efforts for progress which he has been making for so many years.

So far as our observation goes the Persian Fat-Tails have chiefly figured as State Fair exhibits, although their usefulness in crossing was demonstrated in this State before C. J. (Buffalo) Jones made his almost dramatic display of Persian crosses in Kansas as described in the PACIFIC RURAL PRESS of February 13 and March 20, 1909. Mr. Jones got his

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stock from California and he crossed it above and below with nearly all the quadrupeds he found in Kansas, but for all that he did not strike such high lines as Dr. Young aims at in the cross with Karakule sheep, which also come from the Persians, and of which he describes the chances in this way:

The so-called astrakhan fur obtained by crossing the Karakule with the long-haired common sheep in the vicinity of Astrakan, that resemble the American Cotswold, has given us what is known in the market as astrakan fur.

The Tartars of Crimea having found it extremely difficult to obtain Persian Broad-Tail rams with sufficient Karakule blood in them, have confined their efforts to the production of the gray Krimmer, which generally is about an octoroon, obtained by crossing a half or quarter-bred Karakule with Merinos, previously crossed with long-hairs.

The United States consumes nearly fourteen million dollars worth of this class of fur, the basis of which is Karakule blood, its beauty and price depending upon the percentage of Karakule strain it contains.

There is practically no full-blood Karakule fur sold on the American continent, but the so-called Persian lamb, which generally contains from 50 to 75 per cent of Karakule blood, is very popular and in great demand.

The reasons why the average so-called Persian Broad-Tail lamb raised in this country does not produce a skin pretty enough to be used as fur, is due to the fact that the few Persian Broad-Tails imported into the United States as a rule do not contain the required amount of Karakule blood, and it takes but one cross with a full blood Karakule to produce a skin that will sell for from $10 to $20.

As the common non-Karakule sheep of Asia are much inferior to our native sheep here, especially when one considers such sheep as the Leicester, Lincolnshire, Cotswold and Black-Face Highland, who possess a luster almost equal to that of the Angora goat, it must be evident, even to the skeptic, that we ought to be able not only to compete with Asia in quality and beauty, but we should and actually are able to produce a superior class of commercial fur, as experiments in the last two years have proven without any question of doubt, and it is the firm belief of the writer that it is only a question of a few years when we will be able to keep the fourteen million dollars which now go into the land of heathens in Asia, at home, where it will benefit not only the sheep men, but the public as well, as it will reduce in time the price of this class of fur, which now is very high, to say the least.

Ladies' fur coats made from Persian lamb skins often, with no more than 50 per cent of Karakule blood, sell from $150 to $250, and there is certainly no reason why the millions of people living up north, who cannot do without fur, should pay such an enormous price for it.

In the past ten years, half, three-quarters and full-blood Karakule rams have been taken into almost every section of northern Russia, and from official reports issued by the department of agriculture of St. Petersburg, it is evident that the Karakule sheep will stand the coldest kind of climate, without apparently any effect upon the quality of the fur whatsoever. This is rather strange, as the Karakule sheep comes from a country with approximately the same climate as the Southwest and is classified as a desert animal; that is, able to withstand any amount of hardship and deprivation, often going for days without water and food.

It has been noticed that the curls of the skins are more pronounced in a Karakule raised up North; which, however, does no harm, on the contrary produces a warmer fur. It is safe to state that a raw skin from a three-day-old half-bred Kara-Merino will certainly bring not less than $3 a skin, and as there is no serious objection especially in the Southwest to two lambings yearly, and as one ram would ordinarily cover from 150 to 300 ewes annually, one can easily compute the actual value of a Karakule ram to a sheep breeder. It must be remembered that the lambs are killed three to ten days after birth, which explains why two crops of lambs can be obtained yearly.

The best fur is obtained by crossing the Karakule with the long-naired sheep, such as Lincolnshire, Cotswold and Black-Face Highlands, but as this class of sheep is very expensive, and as the Shropshire seems to stand between the tight-wool Merino and the long wool family above mentioned, it will probably be more ecenomical to breed the Kara-Shrop. Experiments at Holliday, Texas, have proven that a 50 per cent Kara-Shrop skin obtained from a three-day-old lamb makes a fairly pretty and serviceable fur, even though it does not contain near as much luster as the Kara-Linc or Kara-Cotswold, and, of course, produces a much cheaper fur.

I am absolutely convinced that we can produce a more superior fur in this country than Persia can, but in order to excel them we must confine ourselves to crossing the Karakule with our long-haired family, on account of them having more natural luster than the longhaired sheep used in Asia from which cross the best Persian lamb skins are obtained.

CALIFORNIA HOG FEEDS APPROVED BY AN EASTERN AUTHORITY.

A Colusa county hog grower recently wrote to Hoards Dairyman as follows: "Please give me a ration for hogs based on the following: Bran, $27 per ton; middlings, $30; barley, $25; alfalfa hay, $7, own raising; skim-milk from 30 cows, less what we use for young calves, but with 150 hogs, or more, the milk would not cut much figure. We can pasture the hogs about six months in the year. At the above prices for feed, would there be any profit in hogs at $7 per cwt.?"

The following answer was given:

When hogs sell for $7 per hundred, there will be a profit in raising them when feeds are worth the above prices. It will be found that the alfalfa hay is a very valuable feed for the brood sows, and they can be kept almost entirely upon it, if it is of good quality. Perhaps a little barley and middlings now and then would not be out of place, but we have been very successful in keeping brood sows entirely upon alfalfa hay. The pasture is also a good place for brood sows and young pigs, and should be made good use of, especially in the early development of the pig.

It has been found by experiment and practical experience that barley is a most excellent feed for pork production, as it produces a sweeter and firmer meat than corn. It is used almost entirely in Denmark for producing choice bacon. The best results, however, are obtained by feeding it with some other feed, and we suggest that a mixture be made of one part middlings and three parts rolled barley for feeding the fattening hogs. Skim-milk will also supplement this mixture very nicely, and if possible we should feed 3 lbs. of skim-milk to one pound of the mixture. If this much cannot be spared, use as much as the supply will permit. The amount of the grain mixture to be fed daily must be governed altogether by the appetites and ages of the animals. We know that, as a rule, rapid gains are the most profitable. Therefore feed all the hogs will eat without leaving any to become stale or spoiled.

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Grape Wild Farm, Mayhew, Cal.

HAMPSHIRE HOGS.

The Four Oaks Stock Farm at Woodland is making quite a stir with one of its specialties—the Hampshire hogs, of which we have a picture upon this page. The following is an interesting short history of the breed:

The Hampshire hog was an original importation into Pennsylvania about 1830. In 1835, Major Joe Garnet, of Kentucky, learning of their good points, and believing that they had marked advantage over other hogs which he was extensively raising, sent an agent to Pennsylvania and purchased fifteen of these hogs. They were driven on foot to Pittsburg and transported down the Ohio river on a steamboat. He was not disappointed in the characteristics which he believed them to possess. They are distinguished for hardiness of constitution and proper development of the vital organs and free from genital or hereditary tendencies to disease. It is claimed for them unusual constitutional vigor, with organs of digestion, circulation and respiration superior, with enough bone and muscular action to warrant a healthful amount of exercise, and hence greater freedom from germs of disease transmitted by heredity. It is claimed by its breeders to be an ideal hog, possessing all the hardiness, vitality, and prolificacy of the unrestrained animal of pioneer times and one that is peer to any other breed in symmetry, docility, early maturity and fattening qualities. In tracing the history of these through Canada back to England, it is found that they were natives of the Hampshire district of England. It went from Kentucky into the corn-growing districts of Ohio, Indiana, and Illinois, and marked an improvement in the "Elm Peelers" of pioneer times wherever it went. It was known as the "Belt" breed, because of the encircling white belt that characterized the breed. They are said to be the most prolific of all breeds. It is not unusual for a "gilt" to produce nine to eleven well-developed pigs, and they are uniformly good mothers and bear more "litters" than sows of other breeds. It is said that in hunting their own living in the woods, or in the fields, they stand without a rival. They are hardy, responsive feeders of stately carriage, free from broken-down, disjointed limbs. The Hampshire easily attains a weight of 300 pounds at twelve months, and produces more meat and lard in those 300 pounds than other hogs. In the hog section at the World's Fair they received admiring attention.



Hampshire Hogs of Four Oaks Stock Farm, Woodland.

DAIRY NOTES.

The output of the Visalia Co-operative Creamery is now about 2500 pounds of butter daily. In order to handle the business more advantageously, an ice plant and a second big churn have been added to the equipment.

At an auction sale held recently at the Mitchell ranch, near Visalia, four high class cows brought $465, and the entire lot of 59 cows averaged $118 per head. Horses and hogs also brought good prices at the sale.

Several farmers of Shasta county, in the Whitmore section, are preparing to go into the dairy industry. John Hamilton, one of the big land-owners of that section, will seed a large acreage to alfalfa preparatory to installing his dairy plant.

The Shuey Bros., creamery men of Berkeley, have leased the 160-acre alfalfa ranch of Howard E. Kirk, near Dixon, on which they will establish a certified-milk dairy.

A committee of the Board of Trade of Modesto, recently made a report on the amount of cream shipped from Stanislaus county for the year ending October 1, 1910. This report shows a total of 5,915,454 pounds, and does not include some shipments that could not be vouched for. The committee believes that during the present year the above amount will be increased fully 25 per cent. Stanislaus county doubtless is now the largest producer of dairy products in California.

LIVE STOCK NOTES.

A letter from G. A. Murphy, of Perkins, states that business in stock lines has been very good with him this spring. He has recently secured from the East fifty head of young Berkshires with which to fill orders and some for his own herd. Among the latter is Dora's Duke, a grandson of Premier Longfellow, from a fancy strain imported on the dam's side. This is a fall pig and weighs 225 pounds in breeding condition. He has a perfect head and is good in every way.

The wild-oat hay crop in eastern Tulare county is reported to be short this season, but the alfalfa crop will be unusually heavy.

A letter from James W. McCord, of Hanford, states that he has sold his herd of Ayrshire bulls and cows at good prices. He says that the dairy and stock business never promised better, and that the Durock hogs are painting Kings county red.

Stock is being marketed in larger quantities this year than last. According to the records, the total receipts at Chicago Stock Yards for 1911 to April 15th, as compared with the corresponding period of 1910, are as follows:

	1911.	1910.	Inc.
Cattle	830,827	829,653	1,274
Calves	158,263	122,635	35,628
Hogs	2,310,427	1,745,418	565,009
Sheep	1,246,099	906,551	339,548
Horses	43,900	35,976	7,924
Cars	81,703	69,090	12,613



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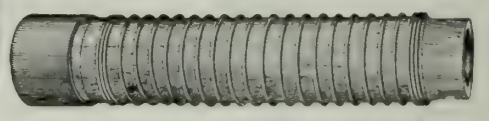
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Poultry Department.

Conducted by M. Russell James.

ODDS AND ENDS OF SPRING-TIME WORK.

VERMIN.

These pests are never out when opportunity calls, and at this season many opportunities present themselves in the poultry yard for the increase and multiplication of mites, lice, fleas, and all sorts of vermin. If allowed to get headway, their extermination seems almost impossible. The only chance for the poultryman is always to keep right on their track and never give them standing room.

At all seasons the perches should be gone over every week or two with distillate, and the nest boxes treated with the same and furnished with fresh straw, while the old straw and trash about the premises should be burned. Careful attention to this one point would go far toward keeping the quarters free from vermin at all seasons.

BROODER CHICKS AND VERMIN.

It is asserted by persons of authority on such subjects that poultry vermin can only spring from parent stock, in which case incubator and brooder chicks should be exempt from lice and mites, no matter how filthy their condition. As a matter of fact, we have seen the worst infested bunches of chicks among those that had been artificially hatched and brooded and had never been in contact with other fowl. Where they come from, this writer is not prepared to say, but if there are filthy incubators, brooders, and runs, the vermin will get there all the same, even if there has never been other poultry on the place. It can be laid down as a hard and fast rule that wherever there is filth there will be vermin, and the warmer the weather the more rapid will be its increase.

Keep the brooders clean and dry. Do not let the chicks nest on steaming filth. After scraping out the brooders and runs sprinkle with air-slacked lime, then cover the lime with dry dust or sand and put a little clean chaff or litter for them to nest on. After they are two weeks old they may usually be shut out of the nesting portion of the brooder during the day and so have a fresh dry place to sleep on. Cleanliness and lime will keep the brooder dry and sweet, and prevent the breeding of vermin. To make matters doubly sure, it is well to sprinkle a handful of Persian insect powder over each bunch after they are cuddled together for the night, and to do this every few days.

Do not let the chicks pile up on each other in corners after being turned out of the brooder. This breeds vermin, causes sweating which results in colds and roup, and stunts the chicks on general principles.

By having low, wide perches in comfortable quarters the chicks can soon be taught to perch, after which their plumage is improved and they do better in every way.

SPADE THE POULTRY YARDS.

Do not neglect to plow or spade the poultry yards and runs while the ground is in fine condition for the work. It will soon be hard baked and dry. Even where the fowls are not closely yarded, the soil should be thickly covered with lime about the poultry houses, and where the poultry stand, and then turned under and mellowed. This will be found a great preventive of the various intestinal worms; it also keeps down lice on fowl by giving them nice mellow places for dusting, and prevents bumble foot which comes mostly from hard-baked soil injuring the soft cushion of the foot.

THE BROODY HENS.

The time is at hand when broodiness becomes pretty general among the hens. The poultryman who a few weeks back was disgusted because "cluckers" were few and uncertain will now be even more disgusted because they are plenty and persistent. Such birds are often treated with downright cruelty. This is not only inhuman, wicked, but it is unprofitable. The hen is worn out and feverish. She needs to rest and recruit. To crowd her with others in small, dirty coops, often without food or water, or throw her into cockerel yards, or treat her in any other of the cruel ways so often practiced is poor policy even from a business point.

The poultry keeper should have a comfortable house and fair-sized yard for broody hens. Here they should be placed as soon as they take to the nest. Plenty of pure water and tender green food should be supplied them, and only light feeds of grain and no mashes. With comfort and rest, and no nests in sight they soon lose the broody idea and in a short time the bright color returns to their combs and they begin to sing instead of cluck, and should be returned to their laying quarters. Thus the hen is recruited for laying and the nerves of both hen and owner are saved the wear and tear of the usual "breaking" process.

A PROLIFIC CAUSE OF VERMIN.

With many poultry keepers—and this is especially the case on the farm, broody hens are simply thrown off the nests and no further attention taken until the next egg gathering. By this means one or more broody hens are continually occupying the nests of the layers. This is a fine method for breeding lice and mites, but it is poor poultry keeping. By having regular quarters for the broodies, a hen found clinging to the nest may simply be transferred, and there the trouble ends.

Another cause of vermin is allowing hens used for hatching to sit in their old nests in the laying quarters, or to sit anywhere without a thorough "lousing." The former also causes fighting among the hens, broken eggs, and general disaster. It is a little trouble to remove the sitters to some shed or outbuilding, but it pays largely. After treatment for lice a new box may be slipped in place of the old nest, and at night a sack can be thrown over this and nest and hen removed to the new location without any disturbance.

Question Department.

"Discoveries." — A bright newspaper woman who keeps poultry as a side line, has been making discoveries in poultry culture which rather take away the breath of more plodding poultry folk. She has decided that there is entirely too much "fuss and feathers"—otherwise work and expense—attached to ordinary poultry keeping.

Her first discovery is that barley may be made almost the entire grain for poultry, and alfalfa meal the entire green feed; her next, that the trouble of either soaking or sprouting this grain is quite unnecessary, that the whims of appetite and relish may be disregarded, and whatever costs least may be fed fowls; thirdly, that this chat about the "deadly draft" is all talked through the poultry writer's hat, and the more cracks on the more sides of the poultry houses, the merrier for the poultry—in short, that "it does not pay to pamper chickens. It makes soft, runty stuff that easily succumbs."

These discoveries are all great in their way, but we fear they may result as did that of the man who decided that eating is a mere habit, and successfully demonstrated his theory in the case of a calf experimented upon. Unfortunately, just as he had the calf well broken of the eating habit, the inconsiderate beast up and died.

POULTRY.

PIONEER POULTRY YARDS—Standard bred Light and Dark Brahmas, Buff Cochins, R. I. Reds, Houdans, Black Minorcas, Cornish Fowls, Brown Leghorns, Bronze turkeys, peacocks, guineas and Rouen ducks. Address W. A. FRENCH, 545 W. Park St., Stockton, Cal.

SULLIVANS' BUFF ORPINGTONS—1000 birds to select from. Trios, $7.50 and up. Eggs for hatching, $2 and $3. Special selection. Prices on application. Mr. and Mrs. W. S. SULLIVAN, 25 Market St., Agnew, Santa Clara Co., Cal.

S. C. B. MINORCA EGGS for hatching at $6 per 100; can fill large orders; 12 yards large beautiful hens, excellent layers; a few young roosters left at $3 each. Black Beauty Poultry Yards, Dixon, Cal.

FOR GOOD, HEALTHY CHICKS in large or small lots, try Penn Grove Hatchery. All chicks guaranteed. Incubators, brooders and supplies. E. W. Spring, Prop., Penn Grove.

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CHICKS, 10c.—Shipped anywhere; 30 varieties; thoroughbred chickens and eggs; free circular. Ingleside Hatchery, 807 Mt. Vernon Ave., San Francisco, Cal.

OAKLAND POULTRY YARDS, 149D, California St., San Francisco.—Est. 40 years. Standard bred poultry. White Orpingtons, R. I. Reds, Brd. Rocks, White Leghorns.

INDIAN RUNNER DUCKS—Eggs for hatching, $1 per setting; $2 for 30; for 50 or more, 5c each. F. L. HUNT, Lincoln Ave., Napa, Cal.

DAY-OLD CHICKS—Barred Rocks; also eggs for hatching; good laying strain. Fairmount Hatchery, Box 29B, R. F. D., Santa Cruz, Cal.

WAYSIDE YARDS—A few settings from special S. C. White Leghorn matings, at $5 for 30. Carl Gregory, Petaluma, Cal.

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Winners from Seattle down; 33 out of a possible 35 prizes in 3 shows this season. Bred as layers first. Stock, any age, for sale at reasonable prices. Eggs $6 and $10 per 100. Settings $2 up. Send for new free folder and prices.

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The Home Circle.

Reflections on the Dandelion.

The dandelion now observe,
The freshest plant of all.
It has the most exalted nerve,
The most colossal gall.
'Get all you can," so runs its creed,
"And give a blame sight less;
These are the simple rules that lead
To glittering success."

When other flowers have closed their eyes
The dandelion labors,
And everlastingly it tries
To overcome its neighbors.
The bluegrass and the clover flee
Before its competition;
It has no social sympathy
To check its fierce ambition.

Although its harm is something great,
Its worthlessness sublime,
It gets a lot of real estate
By rooting all the time.
So nerve and front and diligence
Will surely take us far.
It makes no special difference
How no-account we are.

—Newark Evening News.

Let me live in my house by the side of the road,
Where the race of men go by;
They are good, they are bad, they are weak, they are strong,
Wise, foolish:—so am I.
Then why should I sit in the scorner's seat,
Or hurl the cynic's ban?
Let me live in my house by the side of the road,
And be a friend of man.

—Sam Walter Foss.

Kitchens in Olden Times.

In olden days the size of the kitchen seems to have been of more importance than its fitments in detail. At Hurstmenceaux, for instance, there was a kitchen 28 feet high, with three huge fireplaces, and a bokehouse with an oven 14 feet in diameter; then there is an old Welsh kitchen at Penrhyn Old Hall, near Llandudno, dating from the fifteenth century, which has many primitive culinary contrivances, now obsolete or superseded by more modern devices, a meat-jack with a flywheel, a steel toasting stand, and a fan bellows. A wonderful old kitchen is at Battle Abbey, and that at St. Mary's Hall, Coventry, is remarkable for the famous "knave's post," to which possibly recalcitrant scullions were temporarily attached. There is a medieval kitchen in Westminster Abbey, although nowadays little remains whereby to identify it save the rubble flooring, the buttery hatch and an adjoining cellar, now or lately the dining room of the resident canon. Hampton Court Palace, too, has its "great kitchen" with a vast vaulted roof and sets of antlers on the walls.

Our ancestors fully recognized the advantages of having a large kitchen. An order dated April 19, 1206, commands Hugh de Nevill to have the king's kitchen at Clarendon roofed with shingles, and to cause two new kitchens to be erected, one at Marlborough and the other at Ludgershall, to dress the royal dinners in; "and it is particularly directed that each kitchen shall be provided with a furnace sufficiently large to roast two or three oxen." —London Times.

Sleeping Out of Doors.

Some devotees of this innovation declare that to get the best out of outdoor sleeping one should use a sleeping-bag. The bag puts the sleeper more at the mercy of the weather and lacks the comfort of springs and mattress, but it has charms of its own, which to many more than make up for its disadvantages. It is portable and can be pitched wherever there is a bit of ground to hold it. The bags are made of wool with an interlining of rubber between this and the canvas cover. A series of inner bags serve to regulate the amount of covering. These inner bags unbutton into blankets which can be spread out and aired daily. Regular sleeping-bags cost from $15 to $50, but less expensive substitutes can be improvised. An ample rubber blanket can be bought for a dollar, and army blankets that have seen service can be purchased for two dollars. With the rubber on the ground it is only necessary to wrap up in enough blankets to keep warm. In folding blankets into a bag they should be arranged with one thickness under the sleeper and two over.

The Helpful Visitor.

When you visit your friends try to pay for your board by being a helpful visitor. I do not mean that you are to pay in dollars and cents. Your entertainer gives you that which cannot be measured or handled.

I know there is joy in giving, hoping for nothing in return; and a hostess, if she be one in the fullest sense, bestows far more than food upon her guests. She gives to them free entrance to one of the most sacred shrines upon earth, the home. You are, in a measure—you can hardly help being—a tax upon her physical strength, for there are certain extra labors which she must perform because of you being there, and from the fact that her servant or servants are not wholly to be depended upon, for although the American woman as a rule is well equipped in this matter, yet there are many who are less fortunate and who have, at best, incompetent ones.

Do not fail to show that you are appreciative of the efforts made for your comfort and pleasure. If you do this in a sincere and pleasing way, it will carry you far into the good graces of your entertainers.—Ex.

Habits Are Formed Early.

Mothers are primarily to blame for a good deal of spinal trouble in very young infants, whom they are in the habit of sitting up on their arms, in chairs, or standing in a little apparatus that is supposed to aid a child's efforts at walking. As soon as the spine is strong enough to support the child's weight, it will assume the erect posture voluntarily; until then the structures that make up the spinal column are too tender; it can be likened to a green bough that bends under the weight it is forced to sustain.

To Check Nose-Bleed.

Nose-bleed is sometimes annoyingly persistent and the best remedy is the vigorous motion of the jaws as if in the act of chewing. In the case of a child, a wad of paper should be inserted and chewed hard. It is the motion of the jaws that stops the flow of blood. The remedy is very simple, but it has never been known to fail in a single instance, even in the severest cases. In very obstinate cases, soaking the hands and feet in water as hot as can be borne never fails to check the bleeding.

Cough Syrup.

Put one quart hoarhound to one quart of water, and boil it down to a pint; add two or three sticks of licorice and a tablespoonful of essence of lemon. Take a tablespoonful of the syrup three times a day, or as often as the cough may be troublesome. The above recipe has been sold for $100. Several firms are making much money by its manufacture.

Wheat bran placed in coarse flannel bags is excellent for cleaning dust from delicate wall-papers.



THIS SUIT—the most stylish 1911 model, perfectly built, tailored and finished. Your choice of exclusive new patterns in hair-line stripes (which are extremely fashionable) Blue Serge, Bannockburn Tweeds or Smart Cheviots and worsteds; square, medium or natural shoulders, high or low cut vest, and the new collar for

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Roos Bros. INC.

Market and Stockton
San Francisco

Household Hints.

Boiling water in which has been dissolved sal soda, a pound to the gallon, will usually free a sink drain of obstruction. Open trap, clean it, and the drain to the sink, then close trap and pour in the boiling liquid. Keep pouring in more as it gradually eats its way down. It will take some time, but persevere.

When putting away crochet work, much trouble will be saved and danger averted if the end of the crochet-hook be inserted in a small piece of cork.

Save your leftover coffee and tea and mix them with your stove blacking. It will give a bright and lasting polish to your stove or range.

OUR YOUNG FOLKS' DEPARTMENT.

Conducted by M. Russell James.

Poultry Courses for Young Folks.

The Fancier.—This term when used in poultry keeping distinguishes the breeder of pure-bred poultry constantly working to bring it nearer the perfection of its type, from the poultry raiser keeping fowls of any or all kinds with no attention to the standard of pure breeding.

The Standard of Perfection.—This is the fancier's text-book. It gives illustrations and descriptions of all recognized breeds of poultry, and also the rules governing the showing and judging of fowls. The illustrations present the breed in its perfection, and as the ideal for the attainment of the fancier, hence the name, "Standard of Perfection."

Classification of Fowls.—Chickens are divided into eleven classes which are named mostly from the country where the particular kind of fowl originated.

1. American class: Plymouth Rocks, three varieties; Wyandottes, eight varieties; Javas, two varieties; Rhode Island Reds, two varieties; Buckeyes and Dominiques, one variety of each.

2. Asiatic class. Brahmas, two varieities; Cochins, four varieties; Langshans, two varieties.

3. Mediterranean class: Leghorns, seven varieties; Minorcas, three varieties; Black Spanish; Blue Andalusian, Mottled Anconas, one variety of each.

4. English class: Dorkings, three varieties; Orpingtons, ten varieties, though not all admitted to the American Standard; Redcaps, one variety.

5. Polish class: eight varieties.

6. Dutch class: Hamburgs, six varieties.

7. French class: Houdans, Crevecoeurs, La Fleche, one variety each.

8. Game and Game Bantam class: Eight varieties of each.

9. Oriental Games and Bantams: Indians, two varieties; Sumatras; Malays; Malay Bantams, one variety of each.

10. Ornamental Bantam class: Seabrights, two varieties; Rose Comb or Hamburg, two varieties; Booted; Cochin, four varieties; Brahma, two varieties; Japanese, three varieties; Polish, three varieties.

11. Miscellaneous class: Silkies; Sultans; Frizzles, one variety each.

The other standard breeds of domestic poultry come under the following classes:

Class XII.—Turkeys, six varieties.

Class XIII.—Ducks, Pekin, Aylesbury, Rouen, Cayuga, Call, East India, Crested, Muscovy, Indian Runner, Swedish.

Class XIV.—Geese, Toulouse, Embden, African, Chinese, Wild or Canadian, Egyptian.

Besides these, thirty-nine standard breeds and over ninety varieties of chickens there are many non-standard varieties. Thus it may be seen that there are fowls of every character, shape and color to appeal to every taste and fancy; also the waterfowls and turkeys and the many varied and beautiful classes of pigeons. The poultry fancier has, indeed a wide and interesting field for his fancy, and the further he explores it and the more he devotes himself to the work, the more fascinating he finds it, and the more wonderful the possibilities and beauties of the feathered world appear.

The First Member of the Poultry Club.

Kenneth Miller, a five-year-old lad of Chico, comes in ahead of all the other boys and girls, and has the honor of being the first member of the Young Folks' Poultry Club. This is something for a little boy to be proud of, and when Kenneth becomes a man, whether he is a farmer or a captain of industry or the president of the United States, he will look back with pride and be glad that he started life in the class of those ho "get there" first. We hope that all the Rural Press' young folks will get in that class. It will help them to many of the best things in life. They can gather the "first fruits" and not have to take the culls and leavings which fall to the tag-end of the procession.

We also hope that every one of these young folks under eighteen years of age will become members of the Rural Press Young Folks' Poultry Club. They will gain a good deal at little cost, for it will cultivate a taste for and an interest in the wonderful works of nature as seen in the feathered world. The boy or girl who gains this taste and interest will be a better and kinder boy or girl, and therefore a happier one. These things will give them pleasure always, and they will return to them with delight after they become men and women, and many of the things which seem more important have palled upon them. Send in your names at once, young folks, that we may all be interested together in the coming poultry shows this season.

Chico, Cal., April 9, 1911.

Dear Editor: I am a little boy, too little to write, and I am having my brother write for me. I want to tell about my little hen, Peggy. She laid all winter and this spring set and hatched fourteen chicks. Mamma raised the chicks in a brooder coop. She has fireless brooders. She gave the hen to me and I took care of her and she soon began to lay. She laid 22 eggs in 22 days, and now she wants to set again. Mamma has given me a setting of nice eggs. I am going to put them under Peggy, and I will care for Peggy and her chicks, and when they lay, I will sell the eggs and put the money in the bank. I already have $2.35 in pennies, nickels and dimes, which I have saved, and papa is going to put them in the bank for me.

I have a little bunnie that papa caught for me. He is getting real tame and drinks milk out of a dish.

I am just five years old, but would like for you to enter my name as a member of the Young Folks' Poultry Club.

Yours truly,
Kenneth Miller.

Next week we shall have something interesting to say in regard to prizes for our young folks.

Garden Hints.

There are many plants in the vegetable garden which require transplanting. Cabbage, lettuce, onions, tomatoes, etc., besides many flowering plants and vines are the better for being transplanted. The transplanting causes the plant to develop a larger root system and become more sturdy. Thus plants like cabbage and lettuce will produce finer and larger heads after being transplanted.

When the seedling is some two inches high or the first true leaves are formed, lift the clod in which it grows by placing a fork under it so as not to break or injure the rootlets of the plants. Have the ground ready to set the plants in. If to be planted near together in rows make a straight trench and mellow the soil well, then remove a couple of inches for such plants as cabbage and deeper for larger plants, and fill with water. As the water soaks away lay the plants carefully in with the rootlets spread out on the wet soil and the stalk resting against one edge of the trench; now cover them and fill the trench with the fine, moist soil taken out, straightening up each plant and pressing the mellow soil close about the stem. When completed see that the ground is smooth with a mulch of fine dry dirt covering the top. Do not water again till the plant begins to grow and sends out new leaves. The water you have put into the trench before setting out the plant will be retained by the dry mulch and will be sufficient. If watered too much before the rootlets take hold of the soil, the plants are likely to rot. Also, if soaked from the top after the plant is set in the dry ground, a hard crust forms and the soil bakes, while the constant watering to soften it causes the plant to rot.

This method of supplying plenty of water from beneath with a fine dry mulch of dust on top should be followed in setting out trees and large shrubs. A bucket or two of water may be put in the large hole made for the roots of a tree or shrub, then by filling in with mellow soil and covering with a dust mulch, little or no watering will be required the entire season.

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SAN FRANCISCO, CALIFORNIA

THE MARKETS.

San Francisco, April 26, 1911
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

There is no quotable change in prices, though the tendency has been upward in nearly all grades, in sympathy with an advance in the Northern markets. Choice milling grades are especially strong, as milling interests are coming into the market in a larger way than for some time past.

California Club	$1.50	@1.52½
Sonora	1.60	@1.65
White Australian	1.55	@1.60
Northern Club	1.50	@1.55
Northern Bluestem	1.57½	@1.65
Russian Red	1.50	@1.55

BARLEY.

The market on futures is strong and active, and the spot grain is also very firm, though there is less trading than for some time past. The shipping movement has subsided, as supplies on hand are very light, and will probably be needed for the regular routine trade. Prices have advanced about 2½c. and are expected to remain firm until new grain comes on the market.

Brewing and Shipping	$1.52½	@1.55
Choice Feed, per ctl	1.45	@1.50
Common Feed	1.40	@1.45

OATS.

Quotations stand about as before, but there is a rather easier feeling than for some time past. There is a fair demand for feed, but no very active movement, and offerings are coming out freely.

Red Feed	$1.37½	@1.45
Gray	Nominal	
White	Nominal	
Black Feed	1.37½	@1.45

CORN.

California corn finds a good demand in the interior, but the local movement is small. Prices on Eastern corn have taken another jump, and are firm as quoted, though trading here is on a very moderate scale. No change in Egyptian.

Cal. Small Yellow		$1.75
Eastern Yellow	$1.45	@1.50
Eastern White	1.45	@1.50
Brown Egyptian	1.50	@1.60

RYE.

There is no movement of any consequence, quotations being nominally about as before.

Rye, per ctl	$1.40	@1.50

BEANS.

Few changes in values are noted, but the tendency in most lines is upward, a few varieties being advanced nearly every week. Pinks, however, are a little easier at the moment. Dealers report a quiet market, but no great activity is to be expected under present conditions, and offerings in most lines are small. The demand for some varieties has been a little stronger in the last few days, and it is expected that everything will be pretty well cleaned up by the end of the season. Local dealers have again made quite a sharp advance in their quotations on lima beans, which are in short supply everywhere. The consuming demand is fairly good, though it has been considerably curtailed by the high prices. The requirements for seed are larger than usual this season, and by the time planting is over the remaining supply will be extremely small.

Bayos, per ctl	$4.65	@4.75
Blackeyes	6.50	@6.75
Cranberry Beans	4.00	@4.25
Garvanzos	2.85	@3.25
Horse Beans	2.50	@2.75
Small Whites	3.40	@3.55
Large Whites	3.40	@3.55
Limas	6.35	@6.45
Pea		4.25
Pink	5.35	@5.50
Red Kidneys	6.25	@6.50

SEEDS.

Quotations are very largely nominal at present, the demand being of a small jobbing nature, with no general inquiry for anything. All prices stand as before.

Alfalfa	18@	20c
Broomcorn Seed, per ton	$20.00@	25.00
Brown Mustard, per lb		5½c
Canary	3½@	4 c
Hemp	3½@	4 c
Millet	3 @	3¼c
Timothy	8 @	9 c
Yellow Mustard		5¾c
Dried Peas, per ctl	3.75@	4.00

FLOUR.

Northern millmen have made an advance on patents, as well as export grades, and Northern grades are a little higher locally. Local interests are buying quite a lot of flour in Portland for delivery in San Francisco. Trading here is more active than usual, with a fair amount of business for export, though prices on California grades are unchanged.

Cal. Family Extras	$5.20	@5.60
Bakers' Extras	5.20	@5.60
Superfine	4.30	@4.50
Oregon and Washington	4.50	@4.70

Hay and Feedstuffs.

HAY.

Arrivals in San Francisco have been much smaller than last week, but the consuming trade is well supplied, and the demand has been so light that there is little difficulty in disposing of the arrivals. Prices are not quotably changed, but concessions are frequently made. This condition is said to be purely local, as holders in the country are asking firm prices, refusing to sell at former figures. The demand in the interior has been unusually heavy of late, and the crop outlook in many places is not as good as it was a few weeks ago. Owing to this condition, some dealers look for considerable improvement in the local market before the new crop appears, though the present excessive supplies may not be disposed of before that time.

Choice Wheat	$12.00@	13.50
Good Wheat Hay	10.00@	11.00
Other Grade Wheat	7.00@	10.00
Wheat and Oats	7.00@	11.00
Tame Oats	7.00@	11.00
Wild Oats	6.50@	9.50
Alfalfa	8.00@	11.50
Stock Hay	5.50@	6.50
Straw, per bale	35@	50c

FEEDSTUFFS.

The only quotable change is an advance in bran. The consuming demand is still active, and the production is not so heavy as a few weeks ago. Rolled barley is very strong, but is still moving at former figures. Other lines are steady to firm, with about the usual demand.

Alfalfa Meal, per ton	$19.00@	20.00
Bran, per ton	26.00@	28.00
Cocoanut Cake or Meal	26.50@	27.00
Cracked Corn	33.00@	34.00
Middlings	33.00@	36.00
Mixed Feeds	29.00@	32.00
Rolled Barley	31.00@	32.00
Rolled Oats	32.00@	33.00
Shorts	26.50@	30.00

Garden Truck.

VEGETABLES.

Onions are still extremely scarce, and it will be a couple of weeks at least before any large quantity of new stock can be offered. The first arrivals of local onions are pretty sure to bring good prices. Oregon stock is about used up, and high prices are asked for yellow stock from various points. Australian onions are also higher, though Texas Bermudas are rather plentiful. Asparagus has been coming in at the rate of 4000 to 6000 boxes daily, and prices have been considerably reduced, as a large part of the arrivals has to be turned over to the canners. The latter are now paying about 75c. to 85c. Rhubarb is higher, with a good demand and smaller supplies than for some time past. Green peas are lower, and with increasing supplies it is hard to clean up the market at present values. Mexican tomatoes are higher, while cucumbers are more plentiful. String beans are again coming forward in fair quantity, but show a wide range of prices, according to quality. A little summer squash is also arriving from the South, selling at about $2 per box. Other lines stand about as before.

Onions: Yellow, ctl		$4.00
Australian	$ 4.00@	4.25
Bermuda	3.75@	4.00
Green, box	50@	90c
Garlic, per lb	4@	5c
Green Peas, per lb	4@	5c
Tomatoes, per crate	1.50@	1.75
Cucumbers, per doz	1.00@	1.25
Cabbage		50c
Carrots, per sack	65@	75c
Rhubarb, per box	65@	1.25
Lettuce, per crate	1.50@	2.00
Cauliflower, per doz	75@	1.00
Asparagus, per box	50@	1.25
String Beans, per lb	10@	20c

POTATOES.

Prices are a little higher on all descriptions. There is still a little local and Oregon stock to be had, but supplies are small and very closely held. The high prices have brought in some Eastern potatoes, which are selling about on a level with the best river stock. New potatoes are offered more freely, and prices are lower.

Lompoc Burbanks, per ctl	$ 2.85@	3.00
River Whites, per ctl	2.00@	2.25
Oregon Burbanks	2.60@	2.75
New Potatoes, per lb	4@	5c

? ? ? ? ? ?
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POULTRY.

Prices stand as last quoted on all lines. Large Eastern hens are coming in rather freely for this season, and arrivals from State points have been increasing for several weeks. The local market is accordingly well supplied, and there is an easier feeling as to values, with some prospect of a decline.

Large Broilers	$ 4.50@	5.00
Small Broilers	2.25@	3.50
Fryers	6.50@	7.50
Hens, extra	9.00@	12.00
Hens, large	7.00@	9.00
Small Hens	6.00@	6.50
Old Roosters	5.00@	6.00
Young Roosters	8.00@	9.00
Young Roosters, full grown	9.50@	10.50
Squabs	2.00@	2.50
Geese, per pair	3.00@	3.50
Ducks	8.00@	10.00
Turkeys, live, per lb	Nominal	

BUTTER.

Butter is still arriving in larger quantities than the market can absorb, and as the shipping business is only an occasional feature large quantities are going into storage. There is, nevertheless, sufficient demand to keep prices fairly firm, extras and firsts being a little higher than last week. The Exchange quotations for the week are as follows:

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	22½	22½	22½	22	22	22½
Prime Firsts	21½	21½	....	....	21½	22
Firsts	21	21	21½	21½	21	21½
Seconds	18½	18½	18½	18½	18½	18½

EGGS.

There has been more fluctuation this week than for some time past, though the first grade is unchanged. Extras are a little lower, but firm, as there is an active demand for storage at present prices, while seconds are higher. Selected pullets' eggs were added to the list this week. The Exchange quotations for the week are as follows:

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	22	21	21½	20½	20	20
Firsts	19½	19½	19½	19½	19½	19½
Seconds	16	16	17	17	17	18½
Selected Pullet	....	....	....	....	17½	18

CHEESE.

The market is a little stronger at the moment, both fancy flats and Y. A.'s being higher than last week.

Fancy California Flats, per lb	12	c
Firsts	11	c
New Young Americas, fancy	13	c

Deciduous Fruits.

FRESH FRUITS.

Apples remain without feature, being in little demand, with very moderate offerings. The best lots are higher, other lines remaining as before. Cherries are not yet quotable, and no large arrivals are expected for a couple of weeks. The berry market is still somewhat unsettled, owing to varying arrivals from different points, but with larger offerings prices are gradually declining. No definite quotations can be given on other fruits, though scattered shipments of several descriptions are arriving. A few blackberries have arrived, and while not very attractive they sold around $1.50 per crate. Southern canteloupes are also coming in, and are held at $4 per crate, but find very little sale.

Apples, per box	$ 1.25@	2.00
Strawberries, southern, crate	1.75@	2.00
Longworths, chest	13.00@	15.00
Large varieties, chest	12.00@	15.00

Dried Fruits.

Fancy Moorpark apricots are no longer quoted, as there are none to be had. Prunes are again higher, though it is believed that supplies in growers' hands have been entirely cleaned up. Peaches and raisins, the only descriptions of which growers still hold any supplies worth mentioning, have taken another jump. Peaches are in fair demand in the East, and in anticipation of a close clean-up the packers are endeavoring to get control of supplies. Estimates of the output of both peaches and raisins this season have been very greatly reduced, owing to frost damage, and it is certain that large supplies will not be ready for market as early as usual. The greatest loss is said to be in the seedless varieties. Packers are accordingly willing to pay a material advance over former quotations, and growers are extremely firm in their views. Little is being done in futures, as there is still much uncertainty regarding the outlook, and packers are unwilling to pay prices sufficiently high to bring out any large offerings. It is reported at San Jose that buyers are actively in the field for future prunes, and have already closed contracts for many orchards, at prices of 3½ to 4c. A great many growers, however, are determined to hold out for 5c.

New York reports are of little interest this week, the market there being greatly upset by reports of frost damage. Prices there for apricots, peaches, and raisins have been sharply advanced, but there is no great amount of trading, and few dealers care to touch anything in the way of futures, owing to the uncertainty of the outlook. Sales for exports are reported, however, of new apricots for July shipment at 14c. f. o. b. Coast at 14c., and new peaches for early delivery at 7¼c.

Evaporated Apples, per lb	10½@11	c
Apricots	12 @13	c
Figs, black	4½@ 5	c
Figs, white	5 @ 7½	c
Peaches	7¼@ 8	c
Prunes, 4-size basis	9½	c
Pears	8½@12	c
Raisins—		
Loose Muscatels, in sweatbox	3¾@ 4	c
Thompson Seedless	4½@ 4¾	c
Seedless Sultanas	4¼@ 4½	c

Citrus Fruits.

The orange markets in the East are holding up remarkably well. Shipments are going out in good quantity, and as a rule are arriving in fair condition. Up to April 24 there have been shipped for the season 19,543 cars of oranges and 2675 cars of lemons.

At New York on Monday 47 cars of navels were sold on a strong market. Prices ranged from $2.25 to $3.55 per box. Lemons were higher, bringing from $2.70 to $3.75 on auction. On the same date at Pittsburg, 16 cars of oranges were sold at about the same prices, with lemons a shade lower. At Philadelphia five cars of navels brought from $2.10 to $3.30, while lemons sold for $2.75. Eight cars of Florida oranges brought from $1.60 to $4 per box, and grapefruit averaged $2.80 per box. The Boston market on the 24th was higher and prices were better than those of New York on the average.

A dispatch from New York dated April 25 says: Today's sales of California fruit included 27½ cars of navels, 2½ cars of Thompson's, 2 cars of seedlings. The weather was ideal. The fruit was good, with fair attendance and demand. The market was easier, being a shade lower. Quotations: Navels, extra fancy, large, $3.30 to $3.55; regular, $3.25 to $3.65; small, $2.85 to $3.70; fancy, large, $2.50 to $2.80; regular, $2.80 to $3.25; small, $2.60 to $3.35; choice, large, $1.75 to $2.50;

regular, $2.25 to $3.10; small, $2.40 to $3.15; standard, large, $2 to $2.40; regular, $2.30 to $3; small, $2.50 to $3.15.

The demand in San Francisco is hardly keeping up with that of last week, though there is still a very active movement in the local trade, and liberal arrivals of oranges are readily disposed of, prices having been advanced on the better descriptions. Choice and fancy lemons are also higher, and other lines are firm at the former quotations.

Navel oranges—	
Extra choice	$ 2.50@ 3.00
Choice	2.00@ 2.50
Valencias, choice to fancy.	Nominal
Tangerines	Nominal
Choice Lemons	2.50@ 3.00
Fancy Lemons	3.50@ 4.00
Standard	1.25@ 1.50
Limes	5.00@ 5.50
Grapefruit	2.25@ 3.00

Nuts, Honey, Hops, Etc.

NUTS.

A local packer has taken over the remaining stock of almonds from the Association, and there is nothing of any consequence left in growers' hands. Trading in a jobbing way is quiet, but all offerings are expected to clean up before the end of the season. Southern California growers look for a large crop of walnuts, though it is too early to form any definite estimate. It is believed that the price will be about the same as last year. Spot walnuts are closely cleaned up, the price being nominally as before.

Almonds—	
Nonpareils	15½@16 c
I X L	14½@15 c
Ne Plus Ultra	13½@14 c
Drakes	11¼@11¾c
Languedoc	11 @11½c
Hardshells	8 @ 8½c
Walnuts—Softshell, No. 1	15 c
Standard	14½c
Softshell, No. 2	11 c
Budded	17½c

HONEY.

Except for a few small lots of comb honey, there is nothing of any consequence on the market, and nothing new is expected for several weeks. Conditions are said to be very favorable for a large output this season.

Comb—White Sage	12 @ 15c
Sacramento River Comb	12 @12½c

BEESWAX.

There is no special feature to the market, both demand and supply being light, and prices standing as for some time past.

Light	28 @30 c
Dark	23 @26 c

HOPS.

Local prices are quoted as before. There is not much business at present, the old crop being pretty well cleaned up, while contracting for the new crop is proceeding slowly.

Hops, 1910 crop	18 @22½c
1911 Crop	16 @17 c

Live Stock.

DRESSED MEAT.

Beef Steers, per lb	10 @10½c
Cows	9 @ 9½c
Heifers	9 @ 9½c
Veal, large	10 @11½c
Veal, small	11½@12 c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Lambs	12 @13 c
Hogs, dressed	11½@12½c

LIVE STOCK.

Several lines of dressed meat are lower, and there is an easier feeling in all lines, though live stock quotations show very little change. Spring lambs, however, are considerably lower, as stock is coming in quite freely. Sheep are also more plentiful, and some decline is expected, while hogs are very weak. Good beef stock is still scarce.

Gross weight:	
Steers: No. 1	6 @ 6½c
No. 2	6 @ 6¼c
Cows and Heifers: No. 1	5¼@ 5½c
No. 2	4¾@ 5 c
Bulls and Stags	2½@ 4 c
Calves: Light	6½@ 7 c
Medium	6 @ 6½c
Heavy	5½@ 6 c
Hogs: Grain-fed, heavy	6½@ 6¾c
150 to 250 lbs	7 c
100 to 150 lbs	7 c
Small prime wethers	5¼@ 5½c
Large prime wethers	5¼@ 5½c
Ewes	4 @ 4½c
Lambs	5¾@ 6 c

WOOL.

A few of the finest clips of southern California wool have been sold, but no business has been done in other localities, and buyers are very reluctant to enter the market. Eastern consumers are buying practically nothing, the entire market being disturbed by the uncertainty in regard to the tariff.

Spring Clip—	
Choice Southern, Year's staple	9 @12 c
7 months	8 @11 c

HIDES.

Hides continue dull and rather easy as to value, though prices have shown no change for some time.

Heavy Steers, over 56 lbs.	10 c
Medium	9 @ 9½c
Light Steers, under 48 lbs.	9 c
Heavy Cows, over 50 lbs.	8¾c
Light Cows, 30 to 50 lbs.	8½c
Kip	10½c
Veal	15 @15½c
Calf	15 @15½c
Dry—	
Dry Hides	17 @18 c
Dry Bulls	16 c
Dry Kip, 10 to 15	17 @18 c
Dry Veal, 5 to 10	16½@17 c
Dry Calf, 7 down	22 c
Sheep Skins—	
Long Wools	$ .85@ 1.25
Medium Wool, 6 to 9 mos.	50@ 80c
Short Wool, 3 to 6 mos.	35@ 60c
Lambs	15@ 50c

HORSES.

Desirable Drafters, 1700 lbs. up.	$275@300
Light Drafters 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs.	200@250
Wagon Horses, 1250 to 1350 lbs.	175@200
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	135@150
Young	200
Old Mares	100@150

MULES.

1200 lbs	$250@300
1100 lbs	200@225
1000 lbs	150@175
900 lbs	125@150

PUBLISHER'S DEPARTMENT.

BACK TO THE FARM.

J. T. Whedon, of San Gabriel, writes us to send him our paper. He says: "I took the RURAL PRESS for several years thirty years ago, but having gone out of the ranch business, dropped the RURAL. Am now back to the farm and want to see my old friend." Mr. Whedon is president of the San Gabriel Poultry Association.

A writer in an exchange states our belief about placing advertising exactly, and as it is worth reproducing, here it is: "In placing an advertisement almost all advertisers want to know about the circulation of the paper they are contemplating using. A few want to know what kind of people are reached by the publication, whether they are, as a rule, educated or not, and their general financial standing. If I was going to place a large advertising order, I would want to use, first, the medium that went to the class of readers it was intended for. I would carefully scan its columns to see what kind of reading matter it was carrying, and would weigh this matter to see, if, in my judgment, it was such as to closely interest the class of readers it was intended for, to see if the matter was put up in an engaging manner, and should judge on these general grounds whether the editor and his readers were in sympathy with each other. If they were, I should consider that the medium to use, regardless of the circulation, if the rates were right."

We always consider it part of our duty to investigate, as far as possible, any new advertisement that appears in this paper, and with that object in view, one of our men called at the office of the Oakland Poultry Yards, whose advertisement appears in this issue. The Norwich Automatic Exerciser and Feeder which they advertise is a poultry-feeding device for which they have secured the Pacific States agency. It has been sold extensively in the East, 20,000, it is claimed, being in actual use. The U. S. Government experiment stations gave the machines a 12 months trial and reported a 50% saving of labor, 25% saving of grain feed, and an increased egg production of 18%. A personal inspection of the machine itself satisfied our man that it was capable of doing all that was claimed for it, and the points that most impressed him were its tendency to discourage rats, mice, and sparrows from frequenting a chicken ranch, its adaptability for small chicks as well as grown fowls, simple construction, and absence of danger of getting out of order. Readers interested in poultry culture would do well to write the agents for their circular.

Prospects for a good crop of pears in Lake county are fine at this time.

Fruit men in Tulare county report a great scarcity of labor.

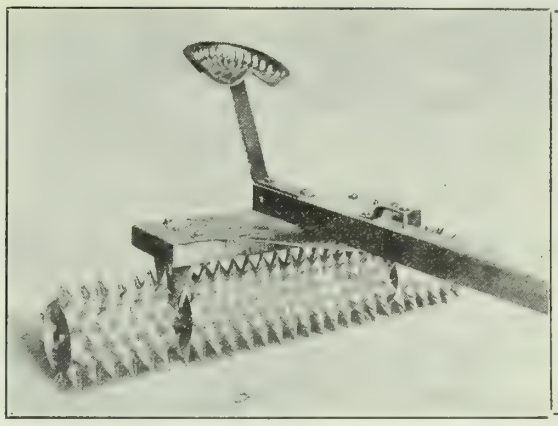
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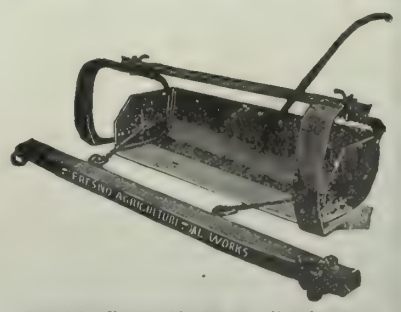
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Will sell on green tonnage basis delivered at the dry house, giving purchaser free use of my dryer, trays and equipment.

WM. BAKER, Piru, Cal.

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Send for Raisin Machinery Catalogue.

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FRESNO, CALIFORNIA.

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More for the money than any tool on the ranch.
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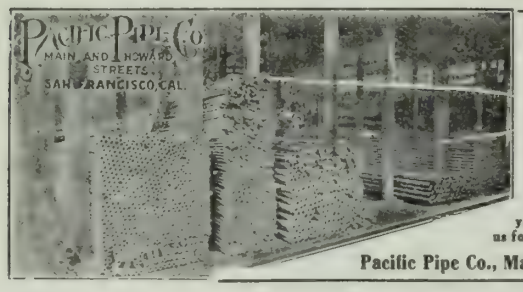
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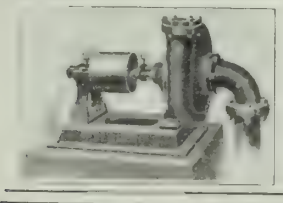


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We can supply you with any size and quantity of **Standard Pipe or Casing**—all new threads and couplings—all stock guaranteed first class.

If thinking of buying any kind of pipe, your best interests will be served by writing us for prices and particulars.

Pacific Pipe Co., Main and Howard Sts., San Francisco



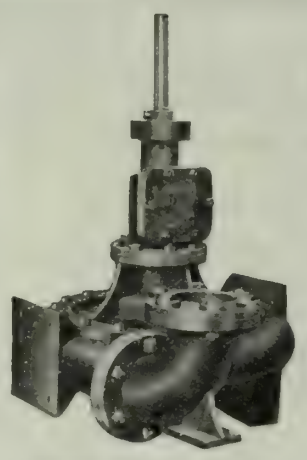
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The Krogh New Water Balanced Vertical Pump contains many new and valuable improvements, same being fully explained in our Bulletin R-10, which will be mailed upon request.

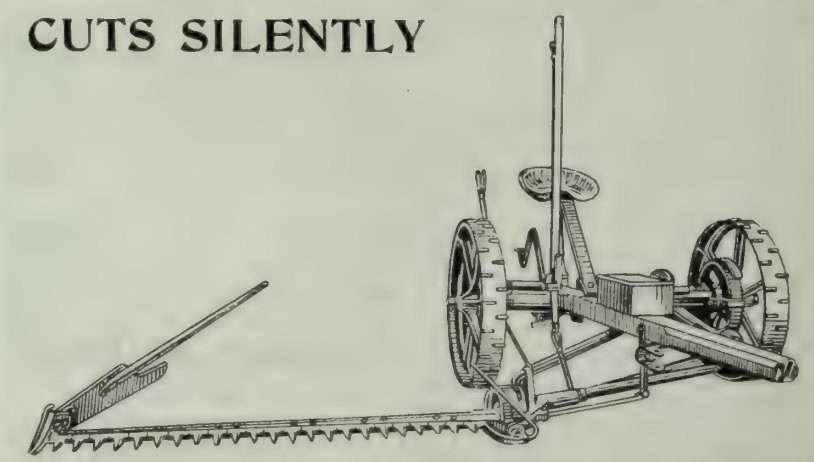
We have a branch in Los Angeles at 206 N. Los Angeles Street.

The pump can be seen in operation at our place of business.

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THE PACIFIC RURAL PRESS

Vol. LXXXI. No. 18 SAN FRANCISCO, SATURDAY, MAY 6, 1911. Forty-first Year.

A Tilt With Thrips in Alhambra Valley.

Written for the PACIFIC RURAL PRESS
By Mr. THOMAS R. HANNA, of Martinez.

Practically the entire pear crop of Contra Costa county was destroyed by the thrips in 1908, and that year the Board of Supervisors appropriated $1200 to secure Mr. S. W. Foster, of the Department of Agriculture, to find a way to control this new pest. Mr. Foster carried on this work for three years, the Department of Agriculture defraying the expense for 1909 and 1910. No money expended by this county ever returned more good than the $1200 appropriated for Mr. Foster's work.

The spraying campaign carried on by the orchardists of Contra Costa county under the direction of Mr. Foster have demonstrated that the thrips can be controlled by the methods advocated by the Department of Agriculture, and that the oil and nicotine spray recommended by them is not an experiment but a proved remedy for controlling this pest.

I am sending you a series of nine pictures, all taken on the same day, that will illustrate more clearly than anything that I can write, just what we have suffered in the past from the thrips, and what we have done to better our condition by following closely all that Mr. Foster and Mr. Jones, in Santa Clara county (co-authors on the Government bulletin on thrips) have told us. To them belong the credit of showing the orchardists the way to combat a most insidious pest.

All the orchards that I mention as sprayed were sprayed according to the directions given in the bulletin mentioned. The spray is a 3% emulsion of petroleum distillate (28 to 35°B.) and nicotine. For nicotine, the weaker form of blackleaf tobacco extract is used in the ratio of 1 to 70, and when the stronger "Black Leaf 40" is used, the ratio is 1 to 1500. Both mixtures contain the same amount of the active killing agent, nicotine. Power sprayers were used in all orchards shown in the pictures, and a pressure of 200 pounds was maintained. The tops of the trees were sprayed from a tower attached to the rig.

Fig. 1. Rancho de Martinez. A view of the pear orchard on the home ranch. This orchard was thoroughly sprayed last year for both the adults and larvae. A heavy cover crop of barley was raised last winter and the trees were sprayed with a 10% emulsion of crude oil early this spring. The cover crop delayed the emergence of the thrips and postponed the infestation of the blossom buds until they were in the best condition for effective spraying. This orchard was sprayed once for adults before this picture was taken. The blossoms are long stemmed and show no damage from thrips that will scar the fruit.



Fig. 1. Pear Trees in Bloom on Rancho de Martinez.



Fig. 2. Old Pear Orchard, Rancho de Martinez.



Fig. 3. Hill Orchard, Rancho de Martinez.



Fig. 4. Old Pear Orchard, Rancho de Martinez.

Fig. 2. Rancho de Martinez. Old orchard, planted by Dr. J. Strentzel about 1855. These trees are from 20 to 24 feet high and very large. They were sprayed from the tower of the rig. This orchard had the same treatment for thrips last year as the home orchard (Fig. 1), with the exception that no cover crop was sown and that only a portion of this orchard was treated with crude oil this spring, previous to the swelling of the blossom buds. The thrips emerged in this orchard, or at least infested the trees in appreciable numbers much sooner than in the home orchard, where a heavy cover crop was raised. The trees in this orchard that were sprayed with the crude oil were somewhat delayed in coming into bloom, but from careful examination of the bud-clusters on these trees there is no doubt that the trees so treated were distasteful to the thrips and that they avoided them to such an exent that it was possible to delay the first spray for adults until the buds were sufficiently open to spray thoroughly, and kill a high percentage of the adult thrips present. This orchard was sprayed twice for adults.

Fig. No. 3. Rancho de Martinez. Hill orchard on home ranch. This orchard is on a hillside, so steep that it is impossible to drive a wagon where this picture was taken. The thrips have taken the crop on the upper part of this hill every year because it could not be sprayed. This year a line of ½-inch pipe (shown in the picture) was laid through the orchard and stopcocks placed at convenient intervals. The engine was attached to one end of the pipe at the road and the hose lines connected to convenient stopcocks and the whole orchard sprayed. This orchard was treated with crude oil, and when the blossoms were in the right stage they were sprayed once for adults. A Sunday intervened before this orchard was finished, and the end that was last sprayed suffered some from damage from thrips scarring.

Fig. 4. Rancho de Martinez. Same orchard as shown in Fig. 2. This picture shows the damage that may result from delaying the first spraying for a few days. The trees as far as arrow No. 1 were thoroughly sprayed with a 10% crude-oil emulsion just before the swelling of the blossom buds. Those trees back of the man in the picture were sprayed for adults as soon as the blossom-buds had burst on

(*Continued on Page 352.*)

Pacific Rural Press

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., May. 2, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.22	28.61	42.65	62	40
Red Bluff.....	.09	23.48	23.37	72	44
Sacramento.....	.00	21.80	19.07	68	40
San Francisco ..	.01	25.18	21.37	61	46
San Jose.....	.07	22.47	12.37	70	38
Fresno.....	.24	12.07	9.01	80	42
Independence...	.00	7.41	8.85	76	36
San Luis Obispo	.08	34.34	19.66	68	42
Los Angeles	.03	16.11	15.15	70	46
San Diego	.04	11.82	9.62	64	50

The Week.

Hay rains have been threatening, but not doing much up to this writing on Wednesday. Perhaps the clouds have not thought that it might be a better thing to drop a little water on the growing crop than to loaf around the sky just for the sake of soaking the cut crop; and in that respect clouds may be like people who get set for certain things when they might be doing a lot of better things without waiting at all. And so the rains linger to fall upon the new-mown hay, which is late this year, and the only consolation is that by cumbering the sky the soil moisture has been conserved and there will really be more hay to get wet presently. The same kind of weather has helped the trees to broaden their leaves and to wake up their roots, so that some greater measure of recovery has come from the irregularly starting and expanding which some deciduous trees have manifested as the result of too little water last fall and too much frost last winter and other things which have distressed them, and for which growers may have to take part of the blame to themselves. The University plant disease experts have been continuously in the field for the last few weeks forcing the trees to tell them what is the matter, and probably they will tell us in due time what growers have to do to increase their chances of getting what is coming to them from the glorious climate of California. There is naturally much confidence in fruit values this year, and the attitude is right, because our crops will be moderate, and competing supply regions for the great Eastern and foreign markets have been hit much harder than we by adverse conditions. In fact, there was much more injury anticipated than realized in many districts, and there will be a good aggregate of good fruit to receive the good prices which are to be expected. The down-trodden grape, by which we mean the wine grape, speaking anciently, is showing much buoyancy. Wine makers are hunting for grapes and incidentally advising newly opening fruit districts to take a hand at planting more vineyards. This year's prices are likely to be promoters in the same line. The raisin situation is likely also to clear this year by moderate output, clean-up of reserves, and increased demand through the wise advertising which is now being done. The festivities of Raisin Day were unusually wide and significant. Unless the tariff should get revised to death, the outlook for all our fruit industries is very bright.

Thripsical.

If the fruit growers of California do not know the line of battle against the thrips, it will be no fault of the PACIFIC RURAL PRESS. This issue is thripsical all through, and we are much indebted to the expert writers who make the proclamation of results through our columns a labor of love because they can in that way best help the fruit growers to down this most pernicious enemy. It is humiliating to think that such great guns of research and experiment should have to be trained upon such very small game, for the thrips is not as large as the smallest letter "i" which the reader can find on this page, and as for hatefulness, it resembles, before it gets its frills on, that small nameless beast which the doting mamma is paralyzed to find ensconsed in the curly locks of her darling when he comes home from his first day at school. We descend to these details because frightened readers are sending us all forms of life from a sow-bug to a mole-cricket, asking if they are the thrips we are talking about so much. They should understand that the thrips is ridiculously small in everything except the evil it does; that it takes good eyes and a little knowledge of how to look to find them at all, and that they do not yell at you like a katydid that they are on the job. Still, everyone should learn to find them and learn how to knock them out of their cosy corners in the fruit blossoms. The treatment which is described upon other pages is based upon the work of the men in the employ of the United States Department of Agriculture, sent here by Dr. Howard because of the appeal of growers through the State Board of Trade and the California representatives in Congress. They have done good work. Whether their results will stand as best in the long run, experience alone can tell. As our readers know, there are other thrips fighters upon whose banners victory seems now inclined to perch. Among these is Mr. Earl Morris, county entomologist of Santa Clara county, whose use of lime wash was first noted in the PACIFIC RURAL PRESS of April, 1910, and the satisfaction of it, to one grower at least, was noted last month. Since then we have heard other good things of the Morris method. Trial and investigation must go on until we have a treatment which is effective beyond question, and the cheapest and easiest also. The last legislature made an appropriation to go on with the work on behalf of the State, the provision being assured by the zealous effort of Assemblyman R. L. Telfer of San Jose. In this matter of the efficiency of thrips treatments, the San Jose prune growers are from Missouri—they must be shown, and it is to be acknowledged that some of them are not satisfied with the demonstrations they have had so far. We take the liberty of suggesting to Horticultural Commissioner Jeffrey that the best thing he could do first, under this appropriation, or in anticipation of it, would be to have some unprejudiced experts like Professors Kellogg of Stanford and Woodworth of the State University follow up the sprayings which have been done this spring and see what the results actually are. There is now just a little too much disposition among the advocates of different treatments to turn their nozzles upon each other. The public does not care a thrips about that issue, but it does need to know just which treatment kills most thrips.

A New King of Beasts.

Since the commercial standard is coming to be the measure of everything, we have to suggest a reorganization of the animal kingdom and nominate the black fox for the king of beasts. We take it the lion is not in the same class at all, judged by effective service to mankind and commercial value aforesaid. We have just been reading in a consular report that the sum of $2300 has been paid to a breeder of black foxes in Prince Edward Island for one medium-sized, flawless skin of exceptional beauty and luster. The average prices per belt, according to color and quality, run from $300 to $500. The business of domesticating and breeding foxes has been carried on in this island for about twenty years; it is now past the experimental stages and promises to develop into a paying industry. In more than one instance the proceeds of the sale of a pure black fox skin has paid off a farm mortgage. The fox reaches full growth in from eight to nine months. The fur is at its best when the animal is from two to three years old.

The consular report says that the black fox can be bred in confinement in all portions of North America north of the forty-third degree of latitude. By the application of the methods which have proven so successful in Prince Edward Island this industry could be carried on with profit in the northern sections of Maine, Vermont, New York, Michigan, Wisconsin, and in the States bordering southwestern Canada. To this exclusive statement we naturally demur. We doubt if a black fox needs a cold winter any more than a black sheep does, and even if he does, California can fit him out in our mountain valleys, and he could be more cheaply supplied with grapes in this State—either sweet or sour, as he may choose. We commend black-fox growing to our pocket-handkerchief promoters. It ought to be a relief to them to have something on the live stock side to figure on, and there has not been much available since Belgian hares went to the asylum and skunks came under the game laws. A pair of black foxes and an acre of ground, and nothing to do but chuck liver to them, and a $2300 crop every other year, or every year after the business is well under way—why, we have to admit that even a middle-aged city man could do this and arrive with reasonable surety at the high estate of a foxy grandpa.

A Reorganized Board of Agriculture.

One of the first fruits of the new State administration seems to be a reorganization of the executive work of the State Board of Agriculture. The new president, Mr. A. L. Scott, of Alameda county and a prominent business man of San Francisco, is leading the new board in reforms which ought to commend themselves strongly to the agricultural interest. In the first place, the exhibition is to be put upon a proper educational basis for the advancement of agriculture. Fake attractions and sensations, and all other catch-penny affairs which have no connection with agriculture are to be rejected. As a surety of this, the directors at their meeting last week, declined the offer of the citizens of Sacramento to assist in providing features for the State Fair as they have done heretofore. Last year the Dawn of Gold Committee provided a Wild West and an aviation meet, for which the citizens of Sacramento contributed $50,000, but which proved of no profit and much disrepute to the fair—no matter how much it may have promoted local trade. The Board is assisted toward its higher standard of fair holding by the State law against racetrack gambling. It expects to promote the old lines of racing as clean sport, and this will not only be a great public pleasure, but of service to the

horse-breeding interests. The Board also proposes to secure something commendable in the way of statistics of resources and productions, for which the last legislature made special appropriation, and has appointed Mr. George Robertson, of Fresno, statistician. Mr. Robertson was highly commended by us for his late appointment of county statistician in Fresno, but he had a short shrift of it, because some one else had better politics or more of them, we never knew which. He will now have a chance to show what he can do for the State in a line for which he has earnestly qualified himself. Mr. C. H. Telfer, of Fresno, has been chosen secretary, and his record is for sharp, systematic business management which is essential to the new life of the organization for which the last legislature provided as liberally as the funds of the State would admit. We are glad to see that our old friend, Col. J. A. Filcher, is to be charged with the promotion of interest in the State Fair in all parts of the State. Colonel Filcher is one of the best informed men in the ways which minister to the success of expositions and the only man who can measure up as a glad-hander with Col. Frank Wiggins of Los Angeles. And so the State Fair will be better than ever this year, and we wish all our readers to chalk that down on the barn door.

Country Boys and City Boys.

We believe in country boys because they are in our class, or rather, perhaps, we are in theirs; but we doubt if a victory which they have recently gained in a comparison does them justice. The current statement is that students from the country districts show up better physically than those from the cities, according to a compilation made by men in the department of history and political science at Cornell University. From the measurements of 1723 students who entered in 1908 and 1909 the statistics were obtained. There were 991 men from the country and 732 city-bred students. For the purpose of the tables, every place with a population of 25,000 was considered a city. The statistics show that the country-bred students were half an inch taller, three and a half pounds heavier, and had slightly greater chest expansions. These seem to be merely physical tests, unless chestiness may be considered a moral attribute. It seems to us that the measurement should have been accompanied by some fair test of effectiveness in college work. After a man has been in college two or three years he comes to be measured by his instructors as more or less worth while. That does not go upon marks alone, but upon attitude toward life, morals, alertness, and efficiency in undertakings, etc., and is more significant than numerical standing. If we could have had these young men scored by their instructors upon a rational scale of points, the country boys would, we believe, have shown superiority much more marked. But this comparison shows that they are a little bigger, and we apparently have to be content with that for the present.

A Great Valley Event.

We are glad the upper end of Glenn county is going to celebrate its successful entry into the irrigated district of California. Early in June there will be a grand jubilation at Orland, and we shall be there, if we have to walk. It will commemorate the completion of the Government's Orland reclamation project. The affair will be under the auspices of the Orland Water Users' Association, assisted by the Chamber of Commerce and Improvement Club. Speakers from all parts of the State will be present, and invitations will be extended to the Secretary of the Interior and the President. Representatives of the Reclamation Service from Washington are expected to be present. The big reservoir is now full of water and ready to be turned into the canals and laterals that will furish water to irrigate 14,000 acres of land. This is the initial project, and will be eventually extended and enlarged to cover a territory of 40,000 acres. The State should take off its hat to the enterprise of the people of Orland.

Giving Uncle Sam a Rotten Lemon.

Readers who have kept run of the issues between the lemon growers of California and the lemon importers of New York have heard of the high-minded public service of these importers in keeping the American people from being imposed upon by American lemon growers. They have been taking fifteen or twenty million dollars a year for fruit which this country can better grow for itself, and have claimed that the price of lemons to consumers has been kept down by their importations, which has been clearly proven to be untrue. It is, in fact, just the other way round. But while they have been doing this alleged humane service to the American people, they have been swindling Uncle San out of what was coming to him in duty on imported lemons by working a scheme of rebates for decay which went far to cancel the duty which was coming from them. The California Citrus Protective League has been busy trying to establish this fact for some time by an actual determination of the amount of decayed fruit in the boxes. The test came last week when the steamship Delphine from the Mediterranean unloaded a cargo of 13,000 crates on the New York dock. Inspectors delved into the open boxes and took out all the decayed fruit. Then the box and solid lemons were put on scales and weighed. Six hundred and fifty crates had been treated this way. It was found that less than 1 per cent of the cargo taken at random was affected by rot. This demonstration justifies the contention that the importers have been giving Uncle Sam rotten lemons and selling the same fruit as sound to the American people to an extent greater than anyone imagined. This fact will not help them in their effort to destroy the lemon-growing industry of this country.

Queries and Replies.

Almonds on Creek Banks.

To the Editor: Will you kindly advise me if almonds are successful planted in sediment land bordering creek and what variety is best adapted to that kind of soil?—Reader, Oakley.

So far as we know, there is no particular difference in the adaptation of the varieties of the almond to different soils. All almonds are grown upon seedling roots, the nuts for the growth of seedlings being taken without reference to varieties and being generally of the hard-shelled type. So far as the soil goes, then, we have practically all our almonds on the same roots, and therefore different behavior of varieties budded upon these roots would not be expected. There is more difference in the behavior of the varieties of almonds under different atmospheric conditions than with differences in soil. The almond root accepts a deep sediment soil, even if rather light in character, providing moisture conditions are satisfactory. Standing water in the soil is generally injurious to them, and for this reason the creek border might be bad. When the soil and moisture are right, good results could be expected from almonds except where untimely frosts destroy the crops.

There is also a difference in bearing according to successful pollination, the Texas Prolific and Drake's Seedling being the best bearers, the Nonpareil and others being more productive when planted so that the blossom can be pollinated from one of these prolific varieties. The best way to determine which varieties for you to plant would be to determine by observation and inquiry which are found most satisfactory by older growers in your locality.

Vetches in San Joaquin.

To the Editor: In Michigan I was familiar with the use of the sand vetch as a forage plant, for hay, for green manure, and as a nitrogen producer. In western Michigan, on the loose sandy soil, I sowed in September or October 20 pounds per acre for a seed crop and 40 pounds per acre for pasture, hay, or green manure. Tell me, please, can I expect good results in Fresno and Tulare counties without irrigation? Will fall seeding the same as wheat produce a seed crop? Will sand vetch grow on soil having one-half of one percent alkali? I have some hog-wallow land to level and fertilize preparatory to planting oranges, and I have some black silt soil with some alkali I want to get ready for potatoes. Will vetch help out on such soils without irrigation?—F. J. E., Dinuba.

Most of the vetches grow well in the California valleys during the rainy season; the common vetch, Vicia sativa, and the hairy vetch, Vicia hirsuta, are giving best results. The proper time to plant is at the beginning of the rainy season. Nothing but an experiment will tell you whether they will grow on the land which you say has alkali. They will stand some alkali, especially during the rainy season, when it is likely to be distributed by the downward movement of water, but it is very easy to find land which has too much alkali for them. These plants seed well in some parts of the valley, but a local trial must be made to give you definite information.

The Hoplia on Oranges.

To the Editor: Can you identify for me the enclosed bugs, which seem to be working on the blossoms of some of my orange trees. I note them upon the blossoms only, and erosion of the petals, although in several samples enclosed, I note erosion of the young fruit as well. I have seen no sign of thrips, and feared that bugs enclosed might be causing the damage to young fruit.—C. W. K., Bakersfield.

The insect is a leaf-chafer, Hoplia sackenii, which is found every year on grape vines here and there in the valley, but never becomes numerous enough to attract wide attention. It can be poisoned by spraying the foliage with lead arsenate. Probably hand picking or shaking off, by jarring the tree, upon sheets placed underneath would be less difficult than spraying. These beetles are only a short time—say two or three weeks—above ground: the larvae spend the rest of the year on the roots of weeds, grasses, etc. The insect will do to watch, but not to get alarmed about, considering what has been learned about it thus far.

No Nurse-Crop for Alfalfa.

To the Editor: Please advise me as to the advisability of using oats with alfalfa seeds in seeding for alfalfa. Some growers of alfalfa here advise it strongly, others advise against it. I am a newly arrived Eastern man starting a ranch here, and any information will be thankfully received.—C. W., Yuba City.

The general experience in California is decidedly against using oats, barley, or any other nurse-crop with alfalfa. Get the land in the best possible condition and let the alfalfa have the full benefit of it. The ripening of the grain crop will do the young alfalfa plants more harm by robbing them of moisture than any protection which the taller plant can afford.

Horticulture.

A TILT WITH THRIPS IN ALHAMBRA VALLEY.

(Continued From Page 299.)

the ends and before there was any appreciable infestation of thrips. Three days later the whole orchard was sprayed for adult thrips, and this was at the same time that most orchardists did their first spraying. This orchard was sprayed twice afterward for adults. The difference in the bloom on these trees can be seen from the picture. Some flowers on the block of late-sprayed trees were killed and many are short a strong, healthy bloom that promises a good crop.

Fig. 6. This is a portion of the same orchard shown in Fig. 5, but the thrips have done their work. This small piece of orchard was sprayed forty-eight hours after the main orchard shown in Fig. 5, and the delay cost the crop. Mr. Swett is a strong advocate of early and efficient spraying.

Fig. 7. An Alhambra valley orchard that was not sprayed until the bloom was totally destroyed. This is not an exceptionally hard-hit orchard, but is a fair sample of all the unsprayed orchards. It will not yield ten boxes of merchantable fruit to the acre this year.

Those orchards shown in Figs. 1, 2, 3, and 4 were in the same condition in 1908 and 1909 as this orchard now is, and would be in the same conditions now, except for the benefits derived from spraying during the last two years.

A vigorous campaign against the larvae in these badly infested orchards, before they go into the ground, with timely and efficient spraying next year, would insure a full bloom.

Another lesson is to be learned from Figs. 8 and 9. Many orchardists in this State have tried plow-plowing for thrips in the winter and have negative results.



Fig. 5. Dwarf Pears Sprayed. Hill Girt Orchard.



Fig. 6. Dwarf Pears Sprayed Too Late.



Fig. 7. Pears Total Loss. Spring Hill Farm.



Fig. 8. Sprayed and not Plowed. Marguerite Orchard.



Fig. 9. Plowed in December and Sprayed.

stemmed and distorted from the rasping of the adults before the last two sprayings.

Mr. Frank Sweet, my neighbor, had the same experience this year on one of his orchards, and has kindly consented to allow me to use pictures from his ranch to illustrate the need of timely spraying. Mr. Swett was very successful in his spraying operations last year. An account of the results obtained by him apeared in the PACIFIC RURAL PRESS in the spring of 1910. He has sprayed again this year, and is extremely well pleased with the results obtained, his trees set a heavy bloom of long-stemmed, vigorous blossoms.

Fig. 5. Dwarf-pear orchard on the ranch of John Swett & Son. These trees are young and were not allowed to set many fruit buds. They were properly sprayed at the right time and have

Fig. 8 shows the Marguerite orchard. This orchard was well sprayed in 1910 and doubly well sprayed this year, at least three applications being made for the adults. The picture shows a good stand of bloom as far down the row as the man is seen standing in the picture.

Fig. 9. This is the same row of trees in the same orchard as Fig. 8, and the picture is taken from the spot the man is standing at in Fig. 8. The trees had identical treatment for the last two years in regard to spraying, but that end of the row shown in this picture has but a few scrubby blossoms, the rest being killed by the thrips, despite the fact that they were thrice sprayed this spring.

The damage to these trees can be attributed to only one thing, and that is the fact that the damaged portion of this orchard was plowed in December 1910, and the undamaged portion allowed to raise a volunteer cover crop of weeds. At the time this picture was taken, the line of demarcation between the plowed and unplowed trees was very marked, and showed plainly at the very tree where the plowing ceased. December plowing on heavy sedimentary lands like we have in this valley does not kill the thrips, as it does in some soils, in any appreciable numbers, but only places them nearer the surface of the ground, whence they emerge much sooner than if they had not been disturbed, and attack the blossoms at an early stage of their development when the tender blossom succumbs to their attack sooner than a mature blossom would and when it is impossible to reach the thrips in the bud with the spray.

Adult thrips were found in the plowed portion of this orchard a month earlier than they emerged in the unplowed part, and the buds were eaten out before a single adult was found in the neighboring orchard (Fig. 1).

From observations and experience gained from active spraying operations for the last two years, the following points are clearly proved and are worthy of attention to any orchardist who has a thrips-infested property:

1. That the oil and nicotine spray advocated and recommended by the U. S. Department of Agriculture will control the thrips in Bartlett pears.

2. That the benefits of spraying are accumulative. Orchards thoroughly sprayed one year will show marked improvement over unsprayed orchards the next year.

3. That a heavy cover crop is very advantageous for the purpose of retarding the emergence of the thrips and preventing the puddling of the orchard if it is necessary to spray while the land is in a wet condition.

4. That a late winter spray of crude oil will kill all kinds of scale and red spider, remove moss and lichens, and promote the general health of the whole tree, besides acting as a deterrent to those thrips that attempt to enter the blossoms before they are fully open. The retarding of the opening of the blossoms I attribute wholly to the adhesive action of the heavy oil upon the winter scales surrounding the bud, ad it has no deleterious effect on the bloom.

5. That orchards that are too wet or that are planted on hills too steep to spray, can be cheaply piped and efficiently sprayed at nominal expense.

6. That the first spray be applied at exactly the right time is important.

7. A few hours will sometimes lose or make a

crop, and every orchardist should provide himself against any chance of breakdown or delay.

8. That an unsprayed thrips-infested orchard is a poor piece of property.

9. That winter plowing on some lands is absolutely disastrous to next season's crop.

10. To be effective, spray must be properly applied in generous quantities at high pressure.

THE OUTBREAK OF THE PEAR THRIPS DURING 1911 AND METHODS USED IN ITS CONTROL.

By Mr. Dudley Moulton, Deputy State Commissioner of Horticulture.

The reappearance of the pear thrips this year brought with it again numerous inquiries and continued discussions as regards how much damage the pest would do and what spray formulas or other methods of control would prove most effective. Adult thrips have now mostly disappeared and the larvae (the new brood) are rapidly maturing and dropping to the ground, where they will remain hidden until February and March of next year. Also, the results of many of the experiments of both practical orchardists and others are already apparent. It seems, therefore, that the outbreak of the pest and the progress made toward its control can be opportunely discussed just at this time. The thrips are gradually spreading, and it is to be hoped that fruit growers who reside in newly infested districts will try to control the pest before it gets firmly established.

The pear thrips has been newly reported in Sonoma county and has become more widely distributed in the Sacramento valley. It appears to have been as prevalent as usual in Contra Costa and Solano counties, but careful spraying has almost eradicated the pest in many of the larger orchards in these districts, which condition will greatly lessen the danger from injury next year. A large mortality among last year's brood of larvae and their later appearance as adults in orchrds in the Santa Clara valley, prevented the early injury in buds; but the wide distribution of the species and the present numerous larvae indicate that the pest will be as harmful as ever next year. The infestation in San Benito county has been reported as not very serious. Outside of California the pear thrips is known only in one other place in the world—in southern England. It should be remembered that the prune thrips and the pear thrips are the same insect (Euthrips pyri), but that the orange thrips (Euthrips citri) is an entirely different species. The orange thrips attacks citrus trees mostly and differs from the pear thrips especially in that it has several broods during a single year.

The life history of the pear thrips this season has varied only slightly from previously published accounts. They were considerably disturbed by the severe rains during March and April of 1910, and the subsequent long dry season, and again by the heavy rains in February and March of the present year. The rains of last spring washed many larvae which were not fully grown to the ground, and being without wings they were unable to get back onto the trees. Many must have died immediately, while others could mature, although as adults they would be unusually small. These already weakened larvae were subject to the long continuous dry season. It has been observed that the thrips' bodies are always full and plump when they are located in soil which contains ample moisture, but that they are shrunken and drawn if the ground becomes too dry. They seem to be able to shed the larval and pupal skins with difficulty, if at all, if this abnormally dry condition occurs during the period of October and December, when they are passing through the later larval and pupal stages. The long dry season of last year favored these conditions, and must have caused a heavy mortality among those thrips which were located close to the surface.

The pear thrips is at its best during normally wet seasons. Adults appear during the very rainy period of February and March, and the new brood reach their full development before the spring rains are over. The bodies of both larvae and adults are noticeably oily and are easily able to shed water or the weaker contact sprays which may be thrown on them.

The thrips larvae penetrate into the ground to a depth of from 4 to 9 inches in the heavy clay and loam soils, and as deep as 12 to 24 inches or more in light or sandy soils. The present year's brood was extremely light in the Santa Clara valley where the former conditions were prevalent, while in the Sacramento valley, where the thrips locate deeper and the underground waters are nearer the surface, the brood was as strong as ever. This would seem to indicate that the unusual mortality in the Santa Clara valley was due, in part at least, to the effect of the dry season.

Methods of Control.—The failure to kill the thrips and the injury to trees following the burning of sulphur in orchards, the failure of the lime and lime and crude carbolic sprays, the successes and failures following the application of the oil-tobacco spray, and the successes and failures subsequent to plowing, are now thoroughly appreciated after the experiences of the past season.

Sulphur Treatment.—Last year a fruit grower near San Jose experimented to kill the thrips or to drive them away by burning sulphur in his orchard. He reported the method successful, and his proof was a crop of prunes in that part of the orchard which was treated. The method was tried extensively this year, but with most disastrous results. Under certain conditions we can suppose that such a treatment might be helpful; for example, when the atmosphere is dry and clear and possibly warm, and when the thrips are hovering in flight over the trees, they then might be driven away. By numerous recent trials it has been shown that sufficient fumes cannot be generated in the open air to kill the thrips, and also that the insects cannot be driven away. The fumes remain suspended in the air for a considerable time when the atmosphere is damp and heavy, and the gathering dew absorbs some of the gas and forms sulphurous acid. Both the sulphur dioide (the sulphur fumes) and the sulphurous acid are extremely harmful, and in most cases much injury followed the treatment.

Lime and Crude Carbolic Spray.—The mixture of crude carbolic acid in a heavy lime wash has also proven unsuccessful as a spray for thrips, and after a thorough trial by many growers it became suddenly and decidedly unpopular. The cauticity of the mixture soon became unbearable to the laborers, the nozzles were worn out quickly because of the numerous hard particles of lime which cut through them (under high pressure the nozzles would last about two days), the spray cost about the same per gallon as the oil-tobacco mixture, but it required fully twice as much liquid to properly cover a tree, and, lastly, the spray killed only those thrips on the outside of the buds and did not penetrate to reach those within. When used with a hand pump and under a low pressure it had no insecticidal value at all. For a successful control of the thrips one application must be made to kill the larvae during March or April when the trees are in leaf. The lime-crude carbolic spray cannot be used on trees in foliage, and therefore cannot be recommended for this application under any conditions. The lime spray also seems to hasten the period of blooming, which is not desirable because it offers the insects an easy, early access into the buds.

Oil-Tobacco Mixture.—The success of the oil-tobacco mixture is shown in an accompany illustrated article by Mr. Hanna. He has demonstrated that results can be obtained by applying the mixture at the proper time, by spraying thoroughly, and by not being afraid to use plenty of the liquid. The benefits are accumulative and are more apparent from year to year. The success of numerous orchardists who have used this spray rightly, demonstrates clearly that it will effectively and economically control the thrips.

Many growers have heretofore contended that the ground is too wet and soft to draw spraying machinery over at a time when the sprays should be applied, that the mixture will not penetrate into partly opened buds, and that the recommended formula is too expensive. These hindrances can usually be overcome by a real desire on the part of the grower to control the thrips, and after all, the expense is only nominal. More rain fell during the months of February and March of this year than during the same period for many years previous, and consequently the ground was more unfit than ever to work on. The rains also hindered in the exact timeing of the sprayings. Mr. Hanna overcame these hindrances, as indicated, by laying a pipe-line and connecting the spra, pump at the side of the orchard with the leads of hose and rods in the center. This is only one of many striking examples, and we are impressed with the fact that one of the most important factors in controlling the thrips is the determination on the part of the grower to meet his problem fairly. A willingness to be not just ready to spray or to work carelessly or to experiment with untried formulas, are fatal to good results.

Plowing.—The continued successful plowing in certain large orchards in Santa Clara valley indicates that this treatment is an important factor, if, like spraying, it is done carefully and at its proper time. The principle of plowing is to pulverize the soil to a depth of 8 or 9 inches by thoroughly plowing, cross-plowing, and harrowing during the period from October to November, inclusive. The thrips at this time are passing through the pupal stage, and their new legs, wings, and antennae are developing each within its delicate sack. These sacks project freely from the sides of the body and are extremely susceptible to injury. Often the least disturbance will deform them so that the pupal skin cannot be sloughed off and the insect must remain in the ground to die. Careful plowing at the time indicated has actually lessened the numbers of thrips which are able to mature from 50 to 70 per cent. Late summer irrigation, whenever it can be practiced, is most desirable, because it conditions the ground for plowing later.

Plowing during the period of December to February will do the thrips only little harm, and it actually places them nearer the surface and opens their way out, so that they appear all at once and are able to get into the earliest opening buds.

The following are formulas for various sprays for thrips:

The Oil-Tobacco Formula.

FISH-OIL SOAP.

Water, 6 gallons.
Lye (98%), 2 pounds.
Fish oil, 1½ gallons.

Place the water in a clean caldron or boiler and add the lye. When this is thoroughly dissolved and the water is boiing, add the fish oil, and boil slowly for two hours. Stir the mixture when the fish oil is being added and almost continuously during the whole time when it is boiling.

STOCK SOLUTION, DISTILLATE OIL EMULSION.

Hot water, 12 gallons.
Fish-oil soap, 30 pounds.
Distillate oil, 20 gallons.

The boiling water is put in the spray tank and the soap is added while the agitator is runinng at a good speed. When the soap is thoroughly dissolved, pour the oil in slowly. Agitate for about five minutes and then pump out through the nozzles into a storage-tank, keeping up a pressure of not less than 175 pounds. No one should attempt to make the stock emulsion without a power spraying machine. This stock solution contains about 55% oil.

TOBACCO EXTRACT.

The tobacco extract is put up in two forms, namely, "Black Leaf" which contains about 2.75% of nicotine, and "Black Leaf 40," which contains 40% of almost insoluble nicotine. The first is diluted at the rate of 1 to 75, and the second, the "Black Leaf 40," at the rate of 1 to 1500.

THE DILUTED FORMULA.

Distillate oil, stock emulsion, 11 gallons.
Water, 200 gallons.
Blackleaf "40", 1 pint (and a little over).

To dilute, first put the stock emulsion in the spray tank and then add the water. Keep the agitator running all of the time. Add the tobacco extract after the oil emulsion has been diluted to the desired strength. This formula contains about 3% of oil and is used against both adults and larvae and can be applied at any time except when the trees are in full bloom.

Time of Spraying.—First application: As soon as the thrips can be found on the trees in numbers; this will usually be during the first few days in March. The first and second applications are for adults.

Second application: Four to ten days after the first spraying.

Third application: Soon after blossom petals

have fallen from trees, about April 1 to 15. This application is for the new brood of larvae.

RECOMMENDATIONS.—Use a power spraying machine, if possible, and keep the pressure up to 150 pounds or more.

Spray thoroughly, directing the spray downward into the buds during the first two applications for adults and direct the spray downward to get the larvae around the newly forming fruits and upward to reach them on the under sides of the leaves, during the third spraying.

PUBLICATIONS ON THE PEAR THRIPS.—The pear thrips was described as new to science in Entomological News in November, 1904, by Miss S. M. Daniels, who collected the first specimens in pear blossoms near San Leandro, Alameda county, and who called it pear thrips.

The first published account of its life history appeared as a bulletin published by the State Commissioner of Horticulture, in 1905, by Dudley Moulton. This report was later corrected and published as Bulletin No. 68, Part I, by the Bureau of Entomology, U. S. Department of Agriculture.

"The Pear Thrips and Its Control," by Dudley Moulton, Bulletin No. 80, Part IV, of the Bureau of Entomology, which appeared in September, 1909, contained new observations on the life-habits of the insect and the results of two years experiments. Methods of control are recommended.

"How to Control the Pear Thrips," by S. W. Foster and P. R. Jones, is published as Circular No. 131 (January 9, 1911), Bureau of Entomology. It contains the more recent results of experiments and demonstrations.

All of these bulletins except the first can be obtained by writing to Dr. L. O. Howard, Chief of the Bureau of Entomology, Washington, D. C.

MAKING GOOD IN FARMING.

To the Editor: Your editorial of the 22nd is one of the best articles I have read in a long time. I have had the pleasure of reading the RURAL PRESS for several years, and sometime, of course, wanted a farm. I am not going to give any reasons for this desire, for there is nothing to sell or boom when a man locates on a brush and rock homestead and divides up with ground squirrels, skunks, coyotes, and grasshoppers. He does not always overstock the market. My first move was to war on squirrels, build fences for chickens and traps for "varmints." As the land was hardly fourth-class cow pasture, I hauled ashes, fertilizer from barns and other waste materials. I cultivated, though people laughed at me for going on a high knoll to make a garden: they advised me to get into the bottoms.

I had observed the method of the gardeners around Denver. I knew this soil wanted humus. Burr clover is two feet high and I see the nodules on the roots are going to enrich the soil. My principal crop this year is potatoes. I covered the tops with dirt before the last freeze and uncovered them again afterward. Even with experience and capital, grubbing land and making it produce is up-hill work.

Since your article some time ago by Mr. Femmons (who I am well acquainted with and was a neighbor years ago) the mountain section has been located. It is good fruit land, I admit, but look at the task one has of putting it in shape. The land fever is one thing, the business side of making a farm pay another. I don't knock or boost. I say to some, find out for yourself. I have all the vegetables I want to use the year around, and of good salable quality. I have also a henyard to keep up the soil. A. O. NELSON.

Raymond.

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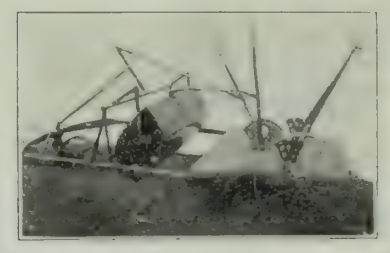
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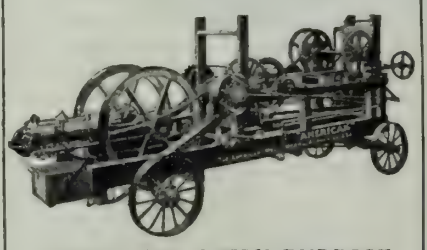
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Agricultural Engineering and the Demand for Agricultural Engineers.

By SAMUEL FORTIER, Chief of Irrigation Investigations, U. S. Department of Agriculture.

(*Continued From Issue of April 22.*)

FARM MACHINERY AND FARM MOTORS.—According to the report of the Secretary of Agriculture, the crops of corn and cotton, wheat and oats, for the past season, aggregate a value of over $3,400,000,000. All four are annual crops requiring the preparation of the soil and subsequent operations of seedling, cultivating, harvesting, and marketing. When one tries to estimate the large number of implements, machines, and motors required for a task of this magnitude, he begins to have some realization of what is annually expended by American farmers in the purchase and maintenance of this necessary equipment. The census of 1900 estimated the value of farm implements and machinery at $761,000,000, and the annual expenditure for new implements and new machinery at over $100,000,000. This was ten years ago, and since then not only the number of implements and machines, but more particularly the number of motors, has been greatly increased. The simple, inexpensive implements used by our fathers has been for the most part replaced by more complicated and more expensive machines. Out of the hand flail of the fifties has been evolved the steam thresher of today. The modern harvester does the work of a large number of men, women, and children, equipped only with the sicle; and motors, trolley cars, and railroads have relegated the saddle-bags to the museum. These great changes during the lifetime of men still living, and more particularly the substitution during the past decade of motors for horses and mules, has created a widespread demand for young men possessing a knowledge of motors and machines and the principles which underlie their construction and use. Studies of this character are now as essential to the ambitious farmer as anatomy is to the embryo doctor. The simple arts of mending a flail, whetting a scythe, or harnessing a team have grown into a complicated business, demanding not only experience and skill, but special training as well.

FARM STRUCTURES.—Some colleges now give instruction in rural architecture, others in farm architecture, and still others in cement and concrete. I have attempted to combine these under one head and to make the subject broad enough to include such types as the design and construction of concrete drinking troughs, silos, barns, and country residences. A number of the land-grant colleges give a course in architecture, but, like many others, it is designed to draw men away from the farm. Undergraduates who are taught to design and supervise the erection of the palatial homes of the rich, find the city or its suburbs the most convenient place to practice their profession. Nearly fifty years ago the Nation provided for instruction of a kind suitable to the boys and girls on the farm, but the millions of poorly designed farmhouses which still mar the landscape are mute evidences that the instruction did not include rural architecture. The improvement in farm buildings so urgently needed does not call for money so much as a knowledge of how to do things. Out of the same materials and with very little extra labor may be built a pleasant, convenient, healthy, and durable country residence, or the reverse. The main difference is one of plan and execution.

RURAL WATER-SUPPLIES AND SANITATION.—The contrast between rural and urban residences is still more strongly emphasized in relation to the water-supplies and sanitation of each. Skilled engineers are employed to provide an ample supply of water for cities and equally skilled biologists to determine its purity, while but little attention is given to farm water-supplies and sanitation. Most of the laborious work which falls to the lot of farmers' wives and daughters is due to the lack of proper facilities for providing a plentiful supply of fresh water and for removing the waste. Day after day, and year after year, the old oaken bucket is pulled up out of the open well by means of a wet, dirty rope, and later on the same water may have to be carried by tired hands from the kitchen to pollute the dooryard.

Farmers procure water for their needs from the same sources which supply water to the residences of cities. These are springs, wells, cisterns, reservoirs, lakes, and rivers, but the training and experience necessary to utilize such sources for the benefit of the one class differ in many essentials from those of the other. The civil engineer may succeed in building a distributing reservoir for a city and yet fail in his effort to build a cistern for a farmer. His computations for a high water-tower may be correct and those for a windmill wholly wrong in principle. It is true, both belong to hydraulic engineering, but so long as engineers are trained to solve the problems of the city and to neglect those of the country, we need not expect a high class of engineering on the farm.

Farm sanitation is of even greater importance, for on it depends in no small degree the health of the farmer and his family, and to a less extent that of the dweller in cities. The milk-can washed in polluted water from the farm well may carry disease to thousands.

The farm water-supplies of Minnesota have recently been investigated by Messrs. Kellerman and Whittaker of the Department of Agriculture, in co-operation with the Minnesota State Board of Health, and after making a careful examination of 79 typical farm water-supplies of that State, they concluded their report as follows:

1. Both farm and city are suffering from the careless management of rural sanitation.

2. Exhaustive data upon 79 carefully selected and typical rural water-supplies show that 20 were good and that 59 were polluted, the chief cause of the polluted wells being careless or ignorant management.

3. During this investigation 23 of the farms examined showed a record of typhoid fever.

4. The protection of farm supplies by common-sense methods obvious to anyone who will try to discover the danger incident to his own water supply would render safe the majority of farm supplies which are now polluted.

PUBLIC ROADS.—In 1904 the Office of Public Roads of the U. S. Department of Agriculture collected and compiled from every county in the Union the data pertaining to the mileage, revenues, and cost of country roads; this information was condensed in Bulletin No. 32 of that office, from which the following facts are taken:

The total road mileage of the United States is classified as follows:

	Miles.
Improved roads	153,664
Unimproved roads	1,997,906
Total	2,151,570

The improved roads are further classified as:

	Miles.
Roads surfaced with gravel	108,233
Roads surfaced with stone	38,622
Roads surfaced with special material	6,810

In the same year the total expenditures for public roads and bridges was nearly $80,000,000. This was furnished by counties, townships, and districts, and included poll taxes, labor, bond issues, and State funds.

The most striking feature of these statistics is the enormous extent, comprising nearly 2,000,000 miles, of unimproved roads in the United States. The same authority estimates the cost of macadam roads at $4500 per mile; of gravel roads at $1500 per mile; and of other surfacing materials at $1000 per mile. It is thus obvious that an expenditure of something like $3,000,000,000 will be required to convert the common earth roads of this country into even good gravel roads. That this change is desirable few will gainsay; that it is necessary under modern conditions and the relations now existing between producer and consumer is also quite generally admitted. The rapid increase in urban population has greatly multiplied the demand for the perishable products of the dairy, truck farm, and orchard, and the value of such products depends to a large extent on their speedy transportation from the country to the city. For this and other reasons the auto truck and similar product-carrying motors are taking the place of the horse and cart and the farm wagon. Public sentiment in favor of better roads is rapidly spreading to each farm and hamlet. As a result of this awakening our 2,000,000 miles of earth roads cannot much longer remain in their present condition. American farmers cannot afford to pay on an average of 23 cents to haul a ton a mile when 10 cents would suffice if the highways were improved. In casting about for ways and means to bring about a change, one of the vexing problems which now confronts the States which have decided in favor of better roads, is the honest and efficient expenditure of road funds. The citizens of California recently voted to bond the State for $18,000,000 for the construction and maintenance of State highways. The majority of those who opposed the measure did so on the ground that no definite plan had been worked out to show where the highways were to be built and what method of construction should be followed. Furthermore, that there was no provision in the act for the maintenance of these roadways when built. I am of the opinion that California would receive much more benefit from the expenditure of this special fund and that of the $2,000,000 which the State annually expends for highways if her agricultural colleges had seen fit to establish years ago a good course in highway engineering. The State engineer and other State and county officials would not now have their best efforts impaired by the lack of men competent to plant and locate, construct and maintain the public roads of the State. It is true, the University of California for a number of years has given instruction in highway engineering as part of the civil engineering course, but the main purpose of such instruction is evidently designed for the benefit of the municipal engineer in the construction of city streets and pavements, since the time given to the subject is wholly inadequate for a comprehensive study of both city streets and country roads.

(*To be Continued.*)

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See my article in Covina Argus, March 25th, on this subject.

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Treatment of Logged-Off Lands.

This question is of much interest in some parts of California, as well as farther up the coast, and our readers may like to speculate upon it, for it is a problem of considerable difficulty, unless the district is ready for a complete subdivision and clearing up and there are people enough to cover the land for this purpose. Mr. N. B. Coffman recently addressed the Washington Development Association along this line:

The unoccupied logged-off and burned-over lands that are suitable for agriculture and which are not now owned by farmers, present the greater problem. It is one that cannot be so easily undertaken. It is beset with complications and difficulties. Its solution calls for general co-operation among holders, for organization on a large scale, for the enlistment of men of extensive business experience, for large capitalization, and for extensive floating of credit.

Owners of timber will not consent that their logged-off lands shall be parceled out to small purchasers until they are satisfied that their operations will not be hampered or endangered. The risk from fires spread by clearing the land cannot be assumed. Settlers would want roads and schools; taxes would increase; opportunities for damage suits would be multiplied. When the mill-man, logger or timber-holder sells his logged-off lands he will ask that the purchaser be prepared to protect him from these dangers and burdens. These requirements call for financial responsibility and high executive ability on the part of the purchaser. It is apparent that there must be a holding company to stand between the seller and the settler.

An Analogy in Irrigation Development.—The irrigation systems east of the Cascade mountains may point the way to the solution of this problem. They have converted the desert wastes of two decades ago into fruitful orchards and green fields supporting densely settled rural populations, occupying prosperous and happy homes. This modern miracle that has been wrought out under our observation was the result of co-operation and combination of capital applied to the construction of irrigation canals. The assessments against the watered lands pay back the investment. No less a miracle can be wrought on this side of the mountains. Instead of a desert we have a wilderness. The soil is as rich here as there. The problem east of the mountains was to obtain the water. Ours is to clear the land of stumps. The amount of capital that co-operated to bring the water to their lands did not exceed that which we will need to clear our fields ready for cultivation. They bonded their holdings to raise the cash funds for construction. Our holdings will furnish as good security against which we may likewise float bonds to obtain the cash for clearing operations.

Co-operative Organization.—If the parallel is a correct one it indicates that the logged-off land problem can find its solution in the formation of a large holding corporation into which may be merged the larger individual and company holdings. Such individuals and companies could sign up for their holdings to go into a corporation, leaving it to a duly constituted committee of appraisers to accept and reject acreage, classify it and determine the schedule of prices at which acreage should be accepted in exchange for capital stock. The owner should have the right of appeal to a chosen board of arbiters, should the price fixed for his acreage not be satisfactory.

The plan might require a land office in each of the large cities of the Northwest, as well as agencies in every town within the district boundaries. The classification and handling could be patterned after that of the land-grant railroads. The land should be sold only in small tracts to actual settlers on long time annual payments and at a low interest rate. A proportionate part of each tract should be cleared before it is offered for sale. The cost of clearing should be assessed to the land and the assessments distributed to mature with the annual payments. All clearing should be done by contract, a restriction being suggested against the employment of foreigners who are not looking forward to citizenship, family life and the ownership of homes.

It is believed by many that it will be found easier to organize numerous holding companies rather than one great company. The plan must be one that will appeal to the large land owner, otherwise he will not part with the control of his holdings. The first step in any plan will be to induce the owners to pool their holdings. The individual logger or mill-man cannot successfully market his own logged-off lands. It calls for expert handling apart from the field of work to which he is accustomed. It calls for a great amount of detail, for new methods of bookkeeping and for systematic exploitation.

How to Get Settlers.—The problem of making a living off of the small farm but partially cleared of stumps is one that cannot be successfully worked out by every class of people. Frugality, patience, perseverance, hard toil, temperance, a habit of staying close at home, family life where all members, old and young, put their hands to the daily task—these virtues must characterize the successful occupant. Only such people should be urged to come and purchase who have been reared to humble, patient, hand tilling of the soil. Efforts should be directed to found communities from Holland, Belgium, Denmark, Switzerland, Scandinavia, Finland and the German empire.

We need have no fear of the foreigner who is born with the instinct for home and family, and is seeking a new home. The foreign man and wife who do not look upon children as a burden, but count them the blessings that makes life worth while are the people we want. The fathers and mothers who welcome the increasing family, counting its members as more precious than the increasing herds, are the very salt of this round old earth. They are needed to save this country the degeneracy that follows so closely upon the heels of over prosperity.

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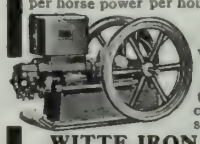
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Irrigated Onions at the North.

Mr. George Biehn of Selah, Washington, gives the Irrigator his way of growing onions with irrigation, which is suggestive:

I take old land, not too foul with weeds, fertilize it with a good coat of well-rotted manure, plow the ground in the fall and then leave it until spring. As early in the spring as the ground can be worked I thoroughly pulverize the soil two or three inches deep, use the leveler, and then roll if the soil is dry. The leveler is made as follows: Take two pieces of 2 by 8 inch, 16 feet long, spaced five feet apart, putting them on edge with three cross-pieces of the same material, also placed on edge, one at each end and one in the middle, and the center piece was vertical, but about half an inch higher than the two side pieces. Nail a 12-inch board across the top over the center to stand on, after having nailed and braced all the pieces firmly in place. Two horses will handle this rig easily; the amount and quality of work it does will be a surprise to the novice. The leveler should not be used when the soil is very wet, as the dirt will pile up.

When the land is in shape I set my drill to run about one inch deep and space the rows 14 and 30 inches apart. The main difficulty in growing onions is to get the seed to sprout and get up before the dry weather sets in and before the water is turned on in the irrigating canal. A large share of the success will be due to good seed. Get the best. In this locality get the Yellow Globe Danvers, as it seems to bring the most satisfactory results. Sow two and one-half to three pounds to the acre, and as soon as the plants are up so that the rows can be seen, run the wheel-hoe through the narrow space and use the horse in the wide rows, being careful to keep far enough away from the onions not to cover them up. I use a Planet Junior horse cultivator with narrow teeth.

A very important thing in onion growing is not to let the weeds get the start of you. When they are three or four inches tall, hand-weed them. The first weeding is usually the biggest job. You may have to go through a second time, and maybe a third. During the second weeding thin the onions out to stand about two inches apart.

When the time comes to irrigate, make two ditches in the wide space, about 4 inches away from the onion row, turn on the water and let it run 36 to 48 hours, according to the condition of the soil. A couple of days after the water is turned off, cultivate to retain moisture. In my section three or four irrigations during the season are sufficient. Be sure to irrigate well after the bulbs are about as large as walnuts, and don't keep the water on too late into the season. Onions respond strongly to clean and thorough cultivation.

When the tops begin to fall over, pull promptly, throw into windrows and when thoroughly dry, top and store under well ventilated shelter before the fall rains set in.

The best way to keep onions is to sell them.

RABBIT REPELLANTS.

The New Mexico Experiment Station says that injury to trees by rabbits may be prevented by painting the trunks with washes prepared according to any of the following formulas:

FORMULA No. 1.—Slake in water over night the quantity of unslaked lime needed for the work. In the morning add enough water to make a good thick wash. Stir the mixture well and to each 2½ gallons of the wash add 2 tablespoonfuls of paris green. Take care to mix well in the wash. Apply to the trunk of the tree with an ordinary paint-brush; keep the wash stirred up so the ingredients will not settle to the bottom of the pail.

FORMULA No. 2.—Slake the lime as above and stir in just before using in place of the paris green from ½ to 1 pound of arsenate of lead to each pailful of the wash. A handful of salt added to the wash will make it stick better to the trunk of the tree. Apply this wash in the same manner as in No. 1.

FORMULA No. 3.—Take equal parts of unslaked lime and cow manure and add enough water to make a thick wash, and apply with a brush. This makes a cheap and effective remedy to keep rabbits from gnawing young trees.

FORMULA No. 4.—Make a wash of equal proportions of sulphur, stove soot, and unslaked lime. Put in enough water with these ingredients to make a thick paint. Apply with a brusn in the ordinary manner.

It takes no extraordinary skill or practice to make and use any of the washes given in the above formulas. All the care that will be necessary will be to mix them carefully and apply in a workmanlike manner. In formulas 1 and 2, two ounces of strychnine may be added instead of the paris green or arsenate of lead.

A new alfalfa mill is being constructed in Hollister by the Hollister Warehouse Co. The product of the factory is expected to be consumed locally.

THE CALIFORNIA LIVE OAK.

Throughout the Coast region, except in the extreme North, the live oak is the most common and characteristic tree of the Coast range valleys, which it beautifies with low, broad heads whose rounded outlines are repeated in the soft curves of the foothills.

Disposed in open groves along the bases of low hills, fringing the rich valley lands along creeks, or scattered by hundreds or thousands over the fertile valley floors, these trees were of signal interest to the first pioneers, and so the eyes of the early Spanish explorers dwelt on the thick foliage of the swelling crowns and read the fertility of the land in these ever-green oaks which they called Encina. The chain of Franciscan missions corresponded closely to the general range of the live oak, although uniformly well within the margin of its geographical limits both eastward and northward. The vast assemblage of oaks in the Santa Clara valley met the eye of Portola, discoverer of San Francisco bay, in 1769, and a few years later Crespi, in the narrative of the expedition of 1772, called the valley the "Plain of Oaks of the Port of San Francisco."

Then came Vancouver, Englishman and discoverer. Although he was the first to express a just estimate of the bay of San Francisco, which he declared to be as fine as any port in the world, nevertheless it is his felicitous and appreciative description of the groves of oaks, the fertile soil (of which they were a sign) and the equable climate that one reads between his lines of 1792 the prophecy of California's later empire.—From "The Trees of California," by Professor Jepson of the University of California.

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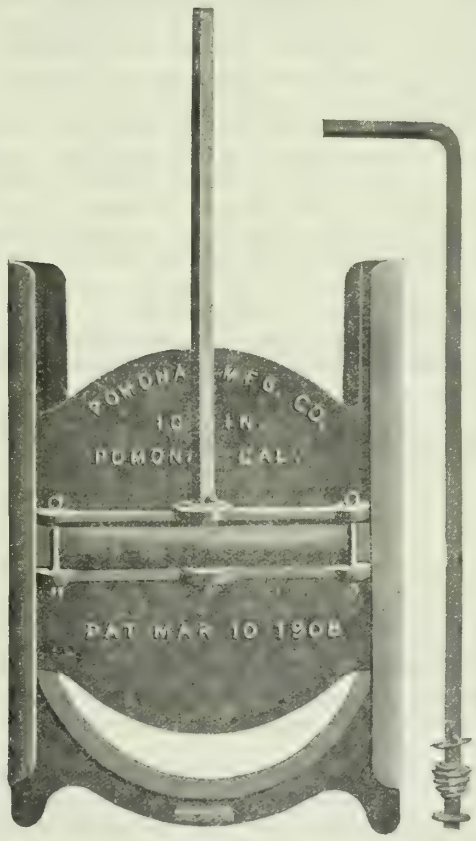
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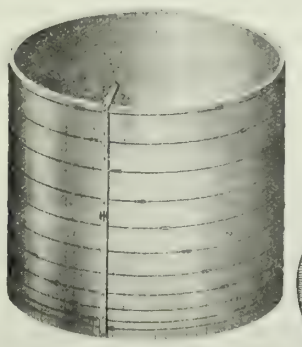
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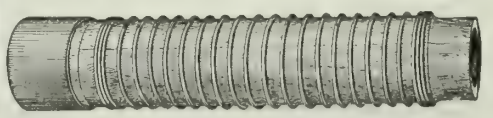
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AGRICULTURAL REVIEW.

With the Fruit Men.

Experiments are to be carried on at Brawley by the Bureau of Plant Industry of the U. S. Department of Agriculture to determine the best variety of grapes for the Imperial valley. About 210 varieties are now being tested. Particular attention is to be given to Persian grapes, which promise well in the valley, but have not been a success in other parts of California. Large shipments of grapes will be made from the valley this season, as crops are in very good condition and many new vineyards are coming into bearing.

The question of packing prunes and other dried fruits in large boxes that will not have to be faced is to be brought up before fruit packers in Santa Clara county in order to do away in large part with the expense of facing and packing in small boxes. It is thought that as good prices can be obtained as in the 25-pound box, as the fruit is usually sold in bulk at retail and no advantages are gained by expensive packing.

An Eastern dispatch states that if no further frost comes that the fruit crop in Michigan, Illinois, Iowa and Wisconsin will be very large this season. Apples, peaches, plums and pears all promise good yields.

Nearly 23,000 cars of navel oranges have been sold this season from southern California, or almost as many as the total orange crop of last year. Prices throughout the season have been good, making an extremely successful season. It is thought that there are about 20,000 more cars yet to be snipped, mostly from the coast sections. Some valencias were sent out from Glendora last week, but the bulk of this variety will not move till June and July. In the Highland and Redlands sections most all the navels have been marketed, and only seedlings, St. Mikes and valencias are on hand. In the Ontario and Upland sections a large part of the navel crop is to be shipped.

The almond crop in the central part of California will not be much over a half crop this season. Early rains is the cause of most damage. A letter from a correspondent says that on account of so much rain and a strong north wind the almond crop around Davis will probably not be half of the ordinary.

The packing of apples, pears and other fruits in boxes instead of barrels is said to have caused Pacific Coast shippers to have received lower prices last season in Great Britain than they should. Owing to the comparative failure of the fruit crop in the United Kingdom last year prices were higher than usual and more fruit was imported than is customary. The trade in England, however, is accustomed to having apples packed in barrels and refused to pay as good a price as the quality of the fruit demanded on account of it being packed in boxes.

A new method of inspecting imported lemons was tried out in New York last week which it is thought will be satisfactory both to importers and American growers. Importers of foreign fruit are entitled to a rebate on the duties for spoiled fruit, and it is claimed that the rebates granted were often out of proportion to the amount actually spoiled. Rotten fruit was taken out of a large number of crates being imported and the sound fruit and boxes weighed. It was found that only 1 per cent of the fruit was unsound. The tests were witnessed by Collector Loeb and Mr. Moulton of the Citrus Protective Union of this State.

Some of the ill effects of the frost in the lower San Joaquin valley have been removed by the recent rains which visited that portion of the State. The rain is expected to encourage the growth of new wood in the vineyards and make a better second crop of grapes.

A stand has been taken by the San Jose Grange against the selling of either apricots or prunes at this time, in the belief that the prices will be higher. Apricots in the valley will be very short and the size of the prune crop is still in doubt, although much of the fruit has reached a size sufficiently large to give expectation of maturity.

The Italian-Swiss colony has just added to its holdings the 1100 acres of vineyards owned by the California Consolidated Vineyard Company in Contra Costa county. This new purchase includes the well-known Mount Diablo vineyard, consisting of 600 acres; the Brookside vineyard, 240 acres; the Bernard vineyard, 150 acres; the Portola vineyard, 70 acres; and the Theresa vineyard, 40 acres.

Only a 25 to 30 per cent crop of apricots is expected in the lower San Joaquin valley, according to present indications. The prune crop will probably be less than normal, although the quality will be good.

As indicating the increase in fruit growing in El Dorado county recently, Horticultural Commissioner J. E. Hasler reports that he has inspected and given a clear bill to 23,025 pear trees, either budded or grafted, in this county during the past planting season; 1550 apple, 750 cherry and 870 assorted trees, all of which were planted in orchards. In addition he inspected 12,000 seedling pear trees, 5000 seedling peach and 3000 seedling apple trees grown in the county and planted with the view of future budding or grafting.

Along the river section near Anderson, Shasta county, the fruit crop was badly hurt by the frost. Fruit will not make more than one-third the usual yield. Elberta peaches stood the cold better than Muirs.

An effort is to be made to clean the trees of peach aphis in the Lankershim section. The Horticultural Commissioner of Los Angeles county states that the trees must be cleaned or taken out.

A dispatch from Houston, Texas, states that 12,000 acres have been set out in that section to Satsuma oranges this spring. A large acreage has also been set out to figs.

Miscellaneous.

The Imperial Bee-Keepers' Association hs reorganized upon a co-operative basis. El Centro will be the principal place of business and a new honey warehouse will be erected by the association at that place.

The students of the Central Union High School at El Centro recently held a tree-planting bee on their 18-acre campus. In two mornings 1000 trees were set out.

An irrigation system is being projected for Big valley, Lake county. The company promoting the project will require $10,000 acres to be signed up before commencing work.

Considerable shipments of early vegetables have been made recently from Imperial county to San Francisco and other markets and good prices have been received. Among the products shipped are string beans, squash, okra and similar crops.

The Imperial valley cotton growers are planning to enter exhibits of cotton in the Land and Irrigation Exposition to be held in New York next November, in the expectation of winning the 200-ounce silver cup offered for the best yield per acre of short-staple cotton.

A number of sugar-beet growers of southern California have organized for business purposes, under the name of the National Beet Growers' Association. Several branches have been formed and others are in process of organization.

The campaign inaugurated against the ground squirrel has caused a great demand for information concerning the best method of eradicating this pest. C. M. Coe of Hanford has devised a torpedo which is easy to make and effective in operation. A common barley sack is cut in two, generously sprinkled with sulphur and wrapped around sticks, two torpedoes being made from the sack. This is tied with string to keep them from unrolling, dipped in a can of kerosene and set on fire. The torpedo is then shoved deep into a squirrel hole, and it is claimed that the fumes will permeate the ground and kill all rodents in the colony. This device is said to be especially valuable at this time, when squirrels are fat and well fed and will not take poison.

Water has been turned into the Glenn canal from Stony creek for the first time this season, and it is believed that 10,000 acres will be irrigated by it before the close of the year. With the opening of the irrigating season in the valley many pumps are being installed. Along the electric power lines many motors are being used.

It is reported that the plant introduction station at Chico is to be enlarged, owing to the fact that the work has outgrown present facilities. It is said that an option has been secured for 60 acres adjoining the present gardens.

A large shipment of incubators to South Africa was made recently by the Petaluma Incubator Co. Another good-sized snipment was made to Italy at the same time.

A big concrete winery is to be erected in Healdsburg this summer by M. Scatena. The plant will be in operation next fall.

A corps of engineers are at work surveying for an irrigation system in Stanislaus county in the Dry Creek valley, and if feasible an irrigation district may be formed. It is proposed to construct a diverting dam on the Tuolumne river about nine miles east of LaGrange. A large reservoir to store about 6,000,000 acre-feet of water is also projected. The land under the proposed system is now used for grain and stock grazing.

A first annual poultry show is to be a feature of the Merchants' Carnival to be held in Merced from May 16 to 20. A large number of premiums will be offered and entries are invited from all parts of the State.

N. N. Eddy of Oakland has filed upon 45,000 inches of water in the Feather river, to be diverted at a point east of Biggs and used for irrigation purposes. The water will be used, according to the filing, in Butte, Sutter, Colusa and Glenn counties.

A Pure-Bred Sire League has been formed under the leadership of Dr. A. S. Alexander, professor of veterinary science in the University of Wisconsin. The object of the League is to encourage the use of pure-bred, registered sires in the production of farm stock.

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Land Clearing With Angoras.

At a recent goat breeders' meeting in Portland, Mr. J. R. Springer gave his experience in this way:

In 1892 I settled on a homestead away up in the foothills in Linn county, about 1000 feet above sea-level, where the timber and brush were so thick that the only way I could look out was up and many places the sky was obscured. It was a pretty big undertaking to hew out a home at the age of forty, but I was home hungry; therefore I slashed timber and brush and went to burning logs and stumps to clear a place to grow something to live on.

I followed this plan to clear the land for several years, but made slow headway, until I finally saw that the sprouts that came up were going to smother out what grass I had sown, and I was about to give up in disgust and sell to the first buyer when two of my neighbors went over to Dallas, in Polk county, and bought some Angora goats and brought them into the neighborhood.

I watched their work for that season and liked it. I then bought ten of the first kids that one man raised—five does and five wethers—for which I paid $30, brought them home at weaning time and put them to work. They and their progeny have cleared over forty acres clean and I have part of that under cultivation and the rest seeded to grass. They are now at work on the rest of the ninety acres I have cut and fenced.

I am not so anxious to destroy the brush now, for the goats bring me the easiest money I make. They work for nothing, largely board themselves the entire year, and return a handsome profit in kids and mohair. I find that they eat everything that grows on my place, and it takes from three to five years to kill out any kind of brush if the goats are confined to the one pasture.

A year or two after I got my first goats I bought some Shropshire sheep and kept them two or three years until I saw they woud kill out what grass I had, then I sold them. The sheep had their noses on the ground all the time, and the goats had theirs up in the air after leaves on the brush. My cows could not get along with the sheep, but did and are still doing well with the goats. I was sorry I could not keep sheep, as I like them very much for their wool and mutton.

The goats make about the same round every day and return home at night. They take a little from each bush each day, and finally the bush gives it up and dies for the lack of leaves.

They eat thistles, dog-fennel, flag, ferns of a half dozen kinds, Oregon grape, sallal, buck brush, wild rose (and they are the only animal or anything else that will kill the dewberry, commonly called wild blackberry), chinkapin, hazel, alder, elder, dogwood, squawberry, fir, willow, maple, vine-maple, horehound and catnip, and in fact any living shrub or tree, and grass will grow up with them. The fact is that when the brush is gone it is time to get rid of your goats, and I will say in conclusion that anyone with a patch of brush cannot afford to do without them.

ALFALFA GROWING IN ARIZONA.

In the course of a letter to Hoard's Dairyman, an Arizona correspondent gives the following interesting statements:

Old ranchers laugh at the absurdity of any necessity of putting manure onto alfalfa land, though it seems to be an undeniable fact that fields from which the hay has been continually sold off are deteriorating, and are considerably less productive than a few years ago. In my humble judgment, the fertility of these older ranches has been kept up by the practice of pasturing. In addition to several thousand dairy cows that are fed here in the valley, there are also thousands of range steers that are driven in here from the mountain ranges and pastured and fitted for market.

The general practice in feeding alfalfa is to turn the cattle on the field when the alfalfa is about ready to cut, and feed it off in some ten days to two weeks. This would mean, on the best land and in the season when the alfalfa is at its best turning a bunch of one hundred steers on a twenty-five acre field for say ten days; by the time they have eaten the most of it the ground is pretty well covered with droppings; the cattle are then turned on another field, and field No. 1 is immediately irrigated. This irrigation pretty well dissolves the manure, and of course most of the fertility is carried down into the soil with the irrigation water. No ill effects are seen from manure in this way so far as I have ever heard or observed. Not quite as much revenue is obtained from alfalfa in this way as to make hay, though it is useless to say that it involves considerably less labor, and is undoubtedly best for the land. The ideal way, however, which a very few are practicing in a limited way, is to cut the green hay and feed to cows at a rack or stable, putting the manure back on the land. This is done but little, so little that I have never seen a manure spreader in the valley, but all who have tried this, unhesitatingly say there is a great saving in feed over pasturing.

The principal reason this is not practiced more is because of the high price of labor and the uncertain character of it. Dairy and ranch hands get $35 to $40 with board, but owing to the long hours that most ranchers require them to put in, together with some disagreeable features connected with milking in open corrals, etc., very few men stay with one employer longer than a few months.

During the winter months, from November to February, grass and grain make a slower growth than during the rest of the year. It is the general practice to sow grain, usually barley, with the alfalfa in the fall; the alfalfa is thoroughly disked and the barley sowed and harrowed in, then the field irrigated; this makes very good winter pasture and more of it than there would be of alfalfa alone. In addition, most dairymen find it necessary to feed considerable hay during the winter. Practically no grain is fed under the existing system (or lack of it). It would be impossible to feed grain at all economically, even if it would pay; and there are but few feeds available, bran is $34 per ton, other concentrates, like cotton seed meal, gluten, etc., are too far from their source of production to make it pay to ship here where freight rates are "out of sight." An alfalfa mill has been put up at Phoenix and will soon be in operation; it is possible that it might pay to feed some alfalfa meal in connection with hay and grass.

FIGHTING THE ALFALFA WEEVIL IN UTAH.

Director E. D. Ball of the Utah Experiment Station urges his constituents, through the Deseret Farmer, to fight the alfalfa weevil, about which we have previously had several accounts, in this way:

The time is at hand when the season's work against the alfalfa weevil should commence. The Experiment Station is planning to put two men into the field within a short time now, and word comes

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KING EDWARD'S GET Won 32 Prizes at State Fair Sacramento 1910

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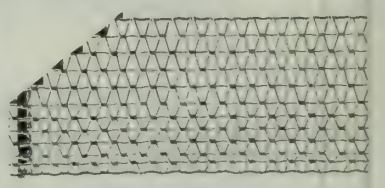
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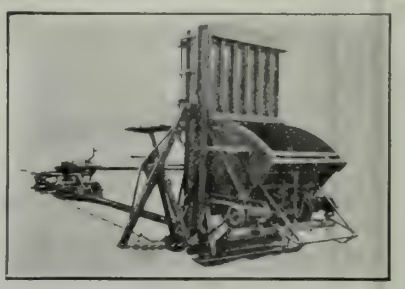
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from the Government that at least five men will be here to take up the investigation from that end.

The important thing for the farmer in the alfalfa-weevil district to remember at the present time is that all old alfalfa fields where the crop has become thin and bunchy should be plowed up and put into some other crop, as it is practically impossible to successfully combat this pest under such conditions; that young alfalfa fields where the stand is fairly uniform should be thoroughly disced as soon as the ground is in good condition to work. By thorough discing is meant discing and cross-discing until a dust mulch of an inch and a half or more in thickness is present all over the piece and until the older crowns are pretty well broken up and the field is level and smooth and in good condition for future treatment. This treatment will be of benefit to the alfalfa in any case and will more than repay the cost of the labor if there should be no weevils present.

Following this discing of all the fields, plans should be made to kill off the young larvæ. Probably the best plan of doing this, where possible, is to pasture the field off closely with sheep just at the time that the largest number of eggs are being laid, then taking the sheep off and watering the ground and giving the crop a chance to develop. The sheep will destroy most of the eggs that would otherwise have produced weevils enough to ruin the crop. If sheep are not available, probably the next best thing is to plan to use some sort of gathering machine that will keep the young weevils collected off from the field.

These matters will be considered at greater length in later articles. The essential thing at the present is to see that every field in the infested district is either thoroughly disced and prepared for further work or else plowed up and planted to some crop that will be profitable.

MORE ABOUT MILKING SHORTHORNS.

To the Editor: Noticing your recent allusions to the records of Dairy Shorthorns, I am sending you a cutting from the Tenbury Wells Advertiser, an English paper, dated March 24, and received today. It occurred to me it might interest some of your dairy readers, as showing what is being produced by cows elsewhere. I am a subscriber to your paper, but not interested in dairying myself.

Sebastopol. JOHN BENNETT.

We are thankful for this favor. The clipping is as follows:

"The milk yield of every cow in the herd of Lincoln Red Short-horns, belonging to Mr. John Evens, Burton, near Lincoln, has been weighed twice daily since 1890, and the educative value of the system is shown in the high average yield obtained. The figures for the past year have just been published, and the average return from 51 cows is 838½ gallons, or 8385 lbs. per cow, or probably 250 gallons above the average for the whole country. The average in 1890 was 740 gallons from 31 cows, and the highest record was 889 gallons from 43 head in 1896. The figures fluctuate considerably from year to year, but not to a greater extent than might be accounted for by seasonal influences. The highest individual yield last year was 12,213 lbs., by a cow which had been 322 days in milk, and had the splendid daily average of 37.9 lbs. Another was credited with 11,863 lbs., or a daily average of 38.5 lbs. for 308 days, and other eight exceeded 10,000 lbs. gross yield. Twelve of the 51 cows were first calvers, and one of these gave 11,664 lbs. in 315 days, or a daily average of 37 lbs., and another 10,810 lbs. in 385 days, thus proving the value of selection in the breeding of stock for a definite purpose."

CALIFORNIANS AT THE PORTLAND STOCK SHOW.

We recently gave an interesting account of carload awards at the Portland Stock Show in which Siskiyou county Short-horns figured creditably. In the stock sales connected with the show, northern Californians were also on deck. The Oregon Agriculturist says that a liberal buyer was Mrs. O. Julian, of Yreka, Cal. James A. Walker, of Fort Jones, Cal., was also a conspicuous bidder. Mr. Walker is a dairyman of considerable note and was enabled to obtain from a herd of Short-horn cows of 145 the sum of $70.80 per head. This is from the milk alone. In addition to this he has sold their calves, to be delivered the first of April, for $25 each. Among his cows are some exceptionally heavy milkers, one of his cows milking for several weeks 78 pounds per day. He and his brother have lived on the same farm for 30 years and have been breeding Red and Roan Short-horns in connection with their father for that length of time. There are 1100 acres in the tract. It is situated in a valley 30 by 5 miles, and 7000 head of cattle were shipped from the valley last year.

TOO MANY GRADE STALLIONS.

Figures which have just been gathered by the Percheron Society of America show a lamentably large number of grade stallions still in use in many States. The figures represent conditions in Illinois, Kansas, Wisconsin, Pennsylvania, North Dakota, South Dakota, Minnesota, Montana, Iowa, and Utah.

In the ten States named above the grades run from 26.42 per cent in Utah to 66.1 in Pennsylvania. The average is 48.03 omitting Iowa, as in that State no grade sires are listed.

Not a single State of the ten named has one pure-bred sire per 300 horses. The proportion should not be less than 1 to 200 horses, and the general average is now but 1 per 579 horses. A considerable part of the pure-bred sires also are not of high enough quality to warrant continued use, and it is probable that if the grades could be eliminated, as would be advisable, the pure-bred stallions could be increased from 300 to 400 per cent without being too numerous.

The grades are less prepotent than pure-breds, and their get is less valuable for work or market than the get of pure-bred sires.

According to the figures furnished by this society the Percherons furnish 68.06 per cent of all pure-bred draft stallions in the above-named States.

A RECORD SOW.

To the Editor: I think I can lay claim to a record, as last night I had a Tamworth sow, 14 months old, farrow 12 pigs, all living. The sow is of my own breeding, and this is her first litter. I would like to hear of any other breeders who can beat this record.

H. B. WINTRINGHAM.

Middletown, Cal.

I CAN

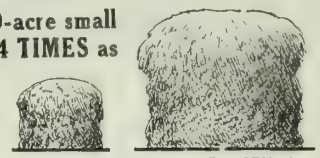
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One of the attractive features of dairying on this plan is that the revenue is coming in every month of the year. This estimate can be very materially increased by raising a flock of poultry.

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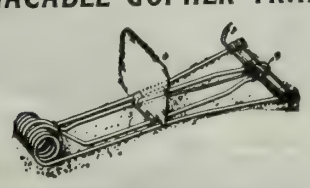
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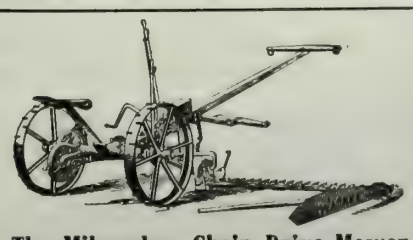


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POISONOUS PLANTS IN MOUNTAIN HAY.

To the Editor: I am sending you one sack of grass hay and weeds containing some poison or poisonous-acting stuff which raises havoc among the horses fed thereon.

The altitude in which it is grown is about 6200 feet in the Sierra Nevadas in a meadow. During the year 1909 on the stubble, I had horses taken violently ill, presumably with colic. After handling the horse the same as prescribed for colic I saved him in every instance. After feeding the hay in the barn I had the same trouble with the same results. After giving colic preparations, I noticed immediate change in the horses, but a change of feed would completely eradicate the symptoms of colic, which is not the case in colic, but the reverse when a horse is subject to colic.

In 1910 I had like results with the exception of one horse, which I failed to give medicine to, and it died a terrible death of presumably flatulent colic.

These horses seemed to be troubled with their urinary organs also.

There are several different kinds of weeds mixed in the forage, but none that I know to be poisonous. If you can determine whether or not there are any poisons in the sample sent you, it will be a great benefit, as one could possibly find and eradicate same by knowing what to look for.

There have been about twelve horses taken sick, some very violently, during the two summer seasons of 1910 and 1911, and some of them as many as four times.

There is in the sack also a root known as wild parsnip, which is considered poisonous to cattle. Would like to hear from you on that also. FARMER.

[We have the following report of Dr. H. M. Hall, Botanist of the University Experiment Station, regarding the grass and seeds which you sent:

"The hay contains several weeds which are not poisonous (Yarrow, Mallow, Ceanothus, Potentilla, etc.) and two which are, namely:

"1. Lupine. Grows in drier parts of the meadow and produces symptoms mentioned. Poisonous only when in seed. If fed before seed forms or after seeds falls, it makes a good feed.

"2. Fale Hellebore or 'Skunk Cabbage' (Veratrum californicum). A coarse plant with very broad leaves; grows in wet places. If eaten produces violent poisoning. Symptoms include frothing at the mouth and trembling.

"3. The dry roots sent are of Water Hemlock (Conium Maculatum), the most dreaded poisonous weed in California."

You have of course to judge how far any of these may have been involved in causing the troubles which you describe, but your conclusion that clean hay is the safest thing to use is undoubtedly true.—EDITOR.]

LIVE STOCK NOTES.

The Basque sheepherders from northern Spain who have had charge of flocks in Humboldt county, Nevada, may have to leave next year, owing to the opening of the Santa Rosa National Forest. It is claimed that the land has been denuded of grass and underbrush by overstocking.

After the first spring drive from the hill pastures of Tulare county, 700 head of steers and heifers were shipped from the Porterville yards recently. The cattle were valued at about $50,000. The grass in the hills is in fine shape, and the winter was unusually fine for stock, which are in first-class condition. The district has been troubled to some extent by cattle rustlers, who hav been operating in the upper country and are said to have got away with quite a number.

The feeding of burr hay is thought to have been the cause of the death of three driving horses of a Newville livery man. The horses were sick but a few hours.

James T. Ragsdale, of Merced, has received a shipment of stallions from Missouri. A jack has also been secured from the same place.

Several ranchers of Tulare county are reporting considerable success with Turkestan alfalfa which is being tried out.

F. A. Campbell recently imported six jacks from St. Joseph, Mo., and will breed mules on his ranch near Davis.

DAIRY NOTES.

W. H. Ginn of the Corcoran section of Tulare county, has increased his dairy stock by a shipment of 19 head of Holstein cows which were purchased at the Stanford University farm at Vina.

Two hundred dairy cattle were transferred early this week from Bryte's dairy, near Sacramento, to Nicolaus, Sutter county. The cattle were transported in barges.

The use of oleomargarine as butter will be practically prohibited by the signing of the Dairy Bureau bill by Governor Johnson. The new law prohibits the coloring of oleomargarine to resemble butter, and in this way will enlarge the market to some extent for genuine dairy products. The bill also requires better sanitary conditions for dairies than did the previous laws.

The Western Pacific was recently victimized by an insane man, who claimed that he was a dairyman about to retire from business and wished to ship 1000 head of cattle to San Francisco. After 40 cars waited for several days, the railroad officials found that the cattle existed only in the customer's imagination.

A large modern barn is being erected on a dairy ranch at Rio Bonito, near Oroville, and cattle are being purchased for use there.

In the first half of April fifteen convictions were secured by the State Dairy Bureau for insanitary conditions of dairies. The fines ranged from $10 to $75.

FOR SALE

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Los Altos Stock Farm, established for breeding with a choice selection of pure-bred, imported, registered stallions and mares with pedigrees running into the best blood lines. All of the big draft type, first class in every way. Some of the stallions and mares reach a ton in weight.

Now ready for sale, a few selected, coming three-year-old and one coming four-year-old stallions. All registered. These colts are fine in conformation, size, bone, and disposition, and give great promise. They can be seen at the barn near the station at Los Altos.

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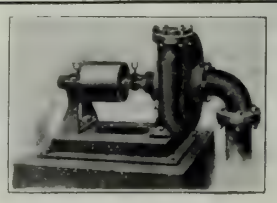


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Mention Rural Press.

A Menace to Our Poultry Industry.

By M. RUSSELL JAMES.

A short time ago, in the question department of this paper, we called attention to the increase of fowl tuberculosis, or consumption, in the poultry flocks of this Coast. This insidious disease is a menace to the growing poultry industry of this section, and if allowed to work unchecked will wipe out the industry as "blackhead" has the turkey industry in many sections of the East.

In "Tuberculosis in Fowls," a bulletin of the University of California, first printed in 1904, Dr. Ward, State Bacteriologist, says:

"Moore and the present writer studied tuberculosis of fowls in California during the summer of 1903. Observation during the past year has demonstrated that the disease is distributed broadly enough to demand the serious attention of poultrymen. The disease exists extensively among many poultry ranches, but seldom kills enough fowls at one time to excite the alarm of the owner. Its existence in a flock constitutes a steady drain, but it fails to attract much attention because the losses are so evenly distributed in point of time. In the first outbreak of the disease brought to notice, the owner reported a loss of 250 fowls out of a flock of 1400.

"Symptoms.—There seems to be no noticeable symptoms until the disease has progressed far enough to cause emaciation and weakness. In such cases the breast muscles are found to be wasted away. Lameness often occurs, and poultrymen usually refer to such fowls as affected with 'rheumatism.' This conclusion is not justified, for in a number of such cases the writer has been able to find tuberculosis of the joints, which would account for the lameness. In most cases the liver is affected. It is found enlarged and studded throughout with yellowish-white nodules (lumps) of a more or less cheesy consistence, varying greatly in size and number in different cases. Poultrymen are familiar with the condition and refer to it as 'liver complaint' or 'spotted liver.' Rounded masses of varying size may be found in the walls of any part of the intestines. The lungs are very rarely affected. Most hens badly affected with tuberculosis are very lean, but exceptions have been observed.

"Spread of Tuberculosis Among Fowls.—Tuberculosis is an infectious disease caused by organisms known as tubercle bacilli, which gain entrance to certain organs of the body and multiply there. The nodular growths (tubercles) so constantly found in tuberculosis are caused by the presence of these bacteria in the affected regions. The presence of tubercular growths in the walls of the intestines and in the liver suggests that the tubercle bacteria enter the body with the food. No evidence is at hand to indicate that tuberculosis is spread through the egg. It does not appear to occur in young chicks.

"Tests.—There is at present no means of detecting the existence of tuberculosis in a fowl until the affection has progressed sufficiently to produce lameness or emaciation. There is reason to believe that fowls may be diseased badly enough to make them a source of danger to other fowls without suggesting by their appearance that they are affected.

"Control of the Disease.—There is no known remedy for the cure of tuberculosis in the fowl. Affected birds should be killed as soon as the disease is recognized. It must be controlled by measures designed to keep the healthy fowls separated from the diseased ones. When the disease exists in a flock of fowls, there are usually many in the early stage that do not betray their condition by appearance or behavior. This insidious mode of development is an important characteristic of tuberculosis and one that blinds people to its seriousness."

A Case in Point.—After a careful reading of the symptoms of tuberculosis as given in the excerpt from the bulletin on the subject, even a layman can diagnose the disease described in the following inquiry from a subscriber in Modoc county:

"Our chickens for the last two years have been suffering with a peculiar disease that proves very fatal to them. The first symptom that we notice is that they become lame. They keep getting lamer and lamer until they can hardly walk. During all the time they are sick they have a fine appetite. During the last stage of the disease they seem to dry up, that is, they get very thin and their comb turns very pale. Sometimes they get sick and die in four or five days; again, they become lame and live several months. If you can tell me what is the matter with this poultry and give me a cure I shall be greatly obliged."

Had this poultry-keeper been informed as to the nature and seriousness of the disease when it developed in her flock two years ago, she might have stamped it out at once; as it is, she has in reality been propagating fowl tuberculosis for two years, and the poultry-runs and quarters are thoroughly infected with the tubercle bacteria. Plainly, the only safe course to pursue in this case is to destroy and burn all affected fowls and market the others. If the poultry buildings are of little worth, to burn them; otherwise to disinfect them thoroughly and move them, if possible, so that the entire ground where the fowls have been or ranged may be limed and plowed and planted. In any case, make a fresh start with sturdy young stock and keep them on fresh ground and in new buildings.

FACTORS MAKING FOR EGG PROFIT.

(Continued from New Jersey Agricultural Pamphlet.)

THE TIME TO HATCH.

The young chicks which are to make our winter layers should be hatched from the middle of March to the middle of May, depending upon the breed. If the heavier breeds, as the Plymouth Rocks, from the first of March to the middle of April is none too early; with Leghorns they may be hatched as late as the middle of May, but the first to the end of April is the best. The incubator is undoubtedly the best method of hatching, except where one has only a small number to raise. Chicks can be hatched artificially for a long period of years with no deterioration of vitality or size, and during that time the egg-laying qualities may be greatly increased. When taking the chicks from the incubator, the strong, vigorous ones should be separated from the weaker ones and given special attention, as they are the ones from which the pullets are to be selected. The others, together with surplus cockerels, which should be separated from the strong chicks as soon as sex can be distinguished, should be forced for rapid flesh growth and turned off for broilers as soon as they reach broiler size. The earlier this age can be reached the better.

GROWING THE PULLETS.

The pullets should be brought to maturity as soon as consistent with the normal development and body growth. Great care must be taken that this growth be uniform and that the pullets be given no backsets, as this will often cause the birds to develop too late for winter laying. The best development is gained on free range with an abundance of green food. Dry mash should be within their reach at all stages of their growth. Maturity should be reached in from six to eight months, the Leghorns being the quickest in this respect.

All birds that are to be depended upon for winter egg-production should be brought to the laying age by the middle of October at the latest, and they should be put into their winter or laying quarters by September 1, so that they may get accustomed to them, and that their development may be more closely watched just previous to laying. It is not advisable to mature birds too early in summer, as they will often molt the same season and be useless for winter egg-production.

POULTRY.

S. C. B. MINORCA EGGS for hatching at $6 per 100; can fill large orders; 12 yards large beautiful hens, excellent layers; a few young roosters left at $3 each. Black Beauty Poultry Yards, Dixon, Cal.

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WHITE WYANDOTTES, 221 egg strain; owner 1st prize cockerel Oakland and Petaluma, 1909; eggs $2 per 15. H. B. Wintringham, Middleown, Lake Co., Cal.

INDIAN RUNNER DUCKS—Eggs for hatching, $1 per setting; $2 for 30; for 50 or more, 5c each. F. L. HUNT, Lincoln Ave., Napa, Cal.

DAY-OLD CHICKS—Barred Rocks; also eggs for hatching; good laying strain. Fairmount Hatchery, Box 29B, R. F. D., Santa Cruz, Cal.

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WAYSIDE YARDS—A few settings from special S. C. White Leghorn matings, at $5 for 30. Carl Gregory, Petaluma, Cal.

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FREE BOOK—"Poultry Feeding for Profit," on application to Coulson Co Petaluma, Cal., Box P.

WHITE LEGHORNS—Chicks, eggs, cockerels. Fine stock. Reasonable. O. B Morris, Lodi, Cal.

BRONZE Turkeys and Eggs. Ed Hart Clements, Cal. Large size, good plumage. early maturity.

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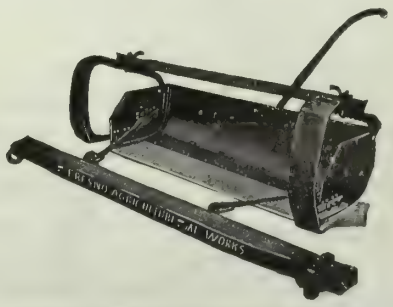
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The Home Circle.

The Boy for Me.

His cap is old, but his hair is gold,
And his face is as clear as the sky;
And whoever he meets, on lanes or streets,
He looks them straight in the eye
With a fearless pride that has naught to hide,
Though he bows like a little knight,
Quite debonaire, to a lady fair,
With a smile that is swift as light.

Does his mother call? Not a kite or ball,
Or the prettiest game can stay
His eager feet as he hastens to greet
Whatever she means to say.
And the teachers depend on the little friend
At school in his place at nine,
With his lessons learned and his good marks earned,
All ready to toe the line.

I wonder if you have seen him, too,
This boy, who is not too big
For a morning kiss from mother and sis,
Who isn't a bit of a prig,
But gentle and strong, and the whole day long,
As happy as happy can be,
A gentleman, dears, in the coming years,
And at present the boy for me.

—Household Journal.

His Master.

They say the name of the station is changed, and the dog is dead, but I remember, and I think I shall remember always.

In a sharp V of a valley between two tall, unheeding mountains, stood a little brown station, all alone. It looked like a knot in the end of the brown rag of road that hung over the low ridge beyond it. "Hope" was the name in the middle of the weathered signboard, with "Winnipeg — miles" at the nearer end, and "Vancouver — miles" at the farther.

There was small token of life about the building so far as even we in the observation car could see, so when the conductor came back from the office with his orders we wondered why the train did not go on. But pretty soon a tall old man with a red flag under his arm came up from the track ahead to the station platform. Some of us had alighted, and to us he volunteered, while he rolled his flag closer:

"Rock on the track."

"Is it very large?" asked some one.

"Nope; they'll get it off pretty soon; like 'nough in 'bout ten minutes."

That accent was unmistakably from the "States," and I came nearer where I could hear all he said. He sat down on a pile of boxes and in reply to some remark said meditatively:

"Nope, trains don't hev much 'casion to stop here long nowadays. Used to be a purty decent mine up yonner," jerking his head toward the little road; "then they war some doin's here."

"Mine abandoned?"

"Eaup," he was going on, when another idea struck him; he looked around uneasily.

"They hain't none o' you seen Rolly, hev you?"

"Who's Rolly?"

"W'y, Rolly, he's the dorg;" his eyes grew anxious; "he's a great institution 'round these parts, Rolly is."

He rose and went quickly to the door of the station, opened it, and put his head inside. We heard the click of the telegraph instrument.

"Say, Bennie, where's Roll?" he called. His voice was different from that in which he spoke to the men outside. The answer was inaudible.

"Humph! Curious, ain't it? When did he go?" Again the inaudible reply.

"Well, he must 'a' heard the whistle."

He came back to the travelers, but with his eyes on the brown road over the ridge.

"Didn't it pan out?" asked one.

"Huh? Oh, the mine! I dunno; I guess 'twould ef—" but the old idea was too strong—his eyes sought the slope again. "Now where in time is that dorg? He hain't use' to missin' trains."

"What was the matter at the mine?"

"Oh, there was ghosts came there, 'n' that scart everybody, 'n' now they won't no one go nigh but Rolly, and he'd come anyhow."

"Well, what is it about Rolly, my friend; is he your dog?" asked a big, quiet man standing near with his wife.

"Nope. That is, he is and he ain't—one way he's mine and two he ain't—one way he's mine 'cause I feed 'im and hanker after 'im ef he ain't 'round. One way he ain't mine, he's Bennie's, 'cause everything I've got that Bennie hankers after is hisn, an' he thinks a heap o' Rolly. Bennie's the telegraph here.

"'Nother way he ain't mine nor Bennie's neither. He hisself thinks he belongs to a man 't hain't been 'round here quite a spell—the last contractor at the 'Hope.' He left in a leetle hurry one night, bein' found with some mine pay-money mixed into his own inside pocket by mistake, 'n' he forgot the dorg."

One traveler, acquainted with Western euphemisms, asked:

"Did they hang or shoot him?"

The old fellow grinned.

"Shot 'im; sent the remnants East in a box. We hain't lookin' for 'im back, but Rolly is. Yes, sir, he's on hand every train, an' between times he goes up to the mine to see ef his man has slipped by unbeknownst an' gone up there."

Just then the conductor, passing, said:

"Nearly ready; all aboard."

We started reluctantly for the car, all of us with our eyes on the brown road now. The old man walked with us.

"Can't think what on 'arth keeps 'im. He'll cry all day ef he misses this train."

We were all on board now. The conductor stood, watch in hand, his eyes too on the road.

"There he is!" some one shouted.

"He knowed he was late an' took the short cut," exclaimed the old man.

Our eyes left the road, and at the other end of the platform met a small, smooth-coated, black-and-white mongrel, all dusty and panting, crouched with quivering flanks by the steps of the last car, a Pullman.

The dog's eyes were on the porter. The porter looked to the conductor for a sign; the conductor looked at his watch and his orders and nodded. Then the porter lifted the eager little brute into the car vestibule.

We in the observation car all waited with eyes on the door of the nearest Pullman; all but the quiet man who had retired into the front corner of the car behind his newspaper.

"Blest if I want to see the beast disappointed," he said to his wife.

"Does he go through the whole train?" I asked the old man.

"Yes, miss, all but the col'nist car and the em'grant; he knows that hain't the kind."

Just then the Pullman door opened and the porter came through, followed by the dog, stepping high and nervously. There were a great many in the car and the dog was bewildered. The porter picked him up and put him on one of the seats, a double row of which ran back to back down the center of the car. The dog put his paws on the back of the seat and looked all around, ears up, nostrils moving, flanks quivering, tail straight out and slowly waving.

Suddenly he gave a sharp yelp and bounded over the center seats down the aisle like a tornado and stopped with both paws on the quiet man's knees, yelping, dancing, tearing the newspaper down upon himself.

The man took the paper away and the dog leaped toward his face with a squeal. But the squeal broke half way, and the dog fell back on all fours, still as a stone. The quiet man looked at him kindly and put out a hand to pat him. The dog came closer, his eyes always on the man's face, and softly put his paws on the knees again. The man said:

"Well, Rolly!"

The dog's head went on one side a moment, the name was all right, but the voice—the voice— ,

He got down and backed off, his tail between his legs, his ears wavering; he gave one low, questioning whine, then slowly answered the porter's call.

At the top of the car-steps he paused and came back. With head on one side and paw raised he looked again, and then with a sharp sort of bark turned back and went down.

A moment afterward the conductor's watch snapped; he waved his hand and the train drew out, up the broad canyon of the Chanting Bow. But our eyes were all turned back to the platform, where the dog stood, poised, head on a side, and foot lifted, looking after us.

The quiet man didn't draw back till we had rounded a curve; then he found a cinder in his eye.

"Nice scenery," he said.—New York Post.

The Kitchen.

Let the kitchen be as light as possible, and to that end choose the wall color carefully. Cream or a rich warm yellow is a good color. The woodwork must be plain and smooth. The finish should be oil, so that it can be wiped with a damp cloth. If the walls can be finished in oil, so much the better. A smooth, hard plastered surface is better than any sort of wall covering, and if the corners can be rounded and casings of doors and windows done away with, the conditions would be ideal. Whatever the floor material, it must be easily cleaned and safe. Bare floors are trying when one stands long and are also hard to keep clean. Washable rugs should be provided and must be heavy enough to keep their place without slipping.

Self-Confidence.

"Do you believe in all the views you advocate?"

"Yes," replied Senator Sorghum, after some hesitation. "I do. But I doubt whether a less skillful reasoner than myself would be able to convince me of the correctness of some of them."—Washington Star.

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OUR YOUNG FOLKS' DEPARTMENT.

Conducted by M. Russell James.

Poultry Course for Young Folks.

General Classification of Chickens.—The eleven classes of chickens are divided according to their characteristics into four general classes:

1. All-purpose breeds. This means fowls which are medium large, good layers, and market poultry, and also birds which will hatch and rear their young. The breeds of the American class and the Orpingtons of the English class come under this head. The Houdans of the French class are sometimes named as all-purpose fowls, but as they are layers of white-shelled eggs and no-setters they more properly belong with the egg breed.

2. The meat or table breeds. These comprise all the breeds of the Asiatic class, together with the Dorkings and Indian Games.

3. The egg breeds. The Mediterranean class, the Dutch class, the Houdans, and the Redcaps.

4. The ornamental breeds. These comprise the Polish class, two breeds of the French class, all the Games and Game Bantams (except the Indians), the Ornamental Bantam class, and the Miscellaneous class.

CLASS I.—AMERICAN.

The Plymouth Rock has long stood at the head of tne American class, and of all other classes (in this country) of general-purpose fowls. It is entirely an American breed, and dear to the hearts of Americans, especially to those who are dwellers on the rock-bound Atlantic coast from which the breed takes its name.

The first fowls to be honored by this name was a high-bred cross originated by a Dr. Bennett in Boston some sixty years ago. These were birds of many colors which finally became extinct without reaching the grade of an established breed. In the fall of 1868 a trio of fowls was exhibited in Worcester, Mass., by a Mr. Upham, "in color bluish-gray, barred in lines of darker blue." These were christened Plymouth Rocks, and the first of the name in which the breed characteristics became established in regard to shape, size, and color markings.

All of our young folks are familiar with the Barred Rock, with its grayish-white color, each feather crossed with blue-black lines. But all do not know that this barring must extend the entire length of the feather, and show even on the down or undercolor; in other words, the fowl must be "barred to the skin" in order to get a place in the show-room. This color marking requires much skill in the fancier, and two matings are used in breeding show birds. The Barred male shows a lighter color than the female in ordinary matings, while the Standard requires the color to be the same shade in both male and female. Hence, fanciers resort to the following matings:

Cockerel Matings.—To breed males of the standard color, a male of standard color is mated with a hen of a darker color than standard. This mating will produce cockerels of the correct or standard color, but the pullets will be too dark. These may be used for future cockerel matings.

Pullet Matings.—For these a male lighter than standard color is mated with a female of standard color. From this mating the pullets will be of the color and the cockerels lighter than standard color.

The standard weight for Rocks is 9½ pounds for the cock and 7½ pounds for the hen. The body is long and broad, with full rounded breast, broad head with stout beak and large reddish brown eyes and upright single comb. The ear lobes as well as the comb and wattles are a bright red, which make a red-faced bird. The shanks and feet and beak are a bright yellow.

The Rocks are hardy and good layers of large brown eggs. They are extra winter layers. They are also good setters and mothers. As a market fowl they rate A-1. Their full round breast, fine proportions, and medium size, together with their rich yellow skin of fine texture meet the requirements of our markets. They do not make as early broilers as Wyandottes or White or Buff Leghorns, but as frys or soft roasters they are unexcelled.

The standard requirements of this breed apply to the other varieties of Plymouth Rocks excepting in regard to color, which must be pure white throughout in the White Rocks, and an even shade of golden buff in the Buff Rocks.

Prizes for Our Young Folks.

The Pacific Rural Press offers two prizes to its young folks. One for those over 12 years old, and the other for those under that age. This will give the little folks an equal chance with their big brothers and sisters.

These prizes will be books treating of animals, birds, and flowers, and will be beautifully illustrated—something well worth getting busy for. These awards will not be made until the end of the year. We have made the time thus long to give our young folks a better chance to show what they can do in the way of writing helpful, interesting letters—"to give them a run for their money."

Now, we shall expect our young folks to write something helpful. If you will just take notice, your bright, watchful eyes can see things that may be helpful even to grown-ups. Tell us when certain things on the farm have brought extra good results, and why. It may help some other farmer to get better results. If you have found a better way of doing your lessons and chores, tell about it. It may help and encourage some other boy or girl. If you have been on an outing trip and heard and seen things new and interesting to you, tell all about them and others will enjoy the pleasure with you.

Vacation time and "the good old summertime" are almost here, and you will soon have more leisure to note what is going on in the pleasant countryside. Everybody, young and old, likes nature studies these days, and you can form nature-study clubs and watch the creatures of the wildwood in your walks and outings, and study their habits. Keep a lookout for new and interesting things around you, and write of them for your department in the Rural Press. Regardless of the prizes we want you to take pride in this department, because it is yours. The manager of the Rural Press has allowed you this space in the paper on condition that you show an interest in it. Get busy and make it the liveliest and best-ever young folks' department. Work for the success of your department as well as for the handsome prizes to be given at the end of the year.

Our Young Folks Like Stories and Poems.

Ferndale, Cal., April 18, 1911.

Dear Pacific Rural Press: As I am very fond of your stories in the Young Folks' Department, I thought I would tell you how I enjoyed "A Comanche Princess" and "Getting Acquainted with the Country."

I live in the country about two miles from Ferndale. We have a large white house with a pretty orchard near it. I go to school and am in the seventh grade. I expect to be in the eighth grade in June. The name of our school is Grant. There are about forty-eight pupils.

I am always watching for the paper for its poetry, because I am looking for nice pieces as I am often called upon to recite. I will write again if it is convenient. Yours truly,

Annabelle Blanche Clausen.

Take Notice, Boys.

Earl Hopping, of Rogers, Ark., after having the land plowed, cultivated it with a plow manufactured with his own hands and pulled by a goat trained by him to work, and actually made a 50-bushel crop on his one acre.

Intensive Farming.

They used to have a farming rule
Of forty acres and a mule.

Results were won by later men
With forty square feet and a hen.

And nowadays success we see
With forty inches and a bee.

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THE MARKETS.

San Francisco, May 3, 1911.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

There is little feature to the market at present, prices remaining about the same, except on White Australian, which is a little higher. Supplies here are smaller than last month, and there is still considerable buying for local interests in the north. The northern markets are firm.

California Club	$1.50	@1.52½
Sonora	1.60	@1.65
White Australian	1.60	@1.65
Northern Club	1.50	@1.55
Northern Bluestem	1.57½	@1.65
Russian Red	1.50	@1.55

BARLEY.

Choice feed is a little higher, while shipping grades are not moving to any extent, being about cleaned up. There is a little more feed here than last month, but country markets are pretty well cleaned out and trading here is very dull in all descriptions, though values are firmly maintained.

Brewing and Shipping	$1.52½	@1.55
Choice Feed, per ctl	1.47½	@1.52½
Common Feed	1.40	@1.45

OATS.

There is some demand, but the market remains rather quiet. Offerings are moderate. Prices are steadily held on red oats, and the best black oats are held for full figures, though this discription is weak and some stock is offered at a reduction.

Red Feed	$1.37½	@1.45
Gray		Nominal
White		Nominal
Black Feed	1.30	@1.45

CORN.

California stock is not moving to any extent here, though there is some demand at outside points. Eastern corn is very firm, prices having advanced still further. There is little here, but the demand also is limited. Brown Egyptian is cleaned up, but some white is offered at quotations.

Cal. Small Yellow		$1.75
Eastern Yellow	1.50	@1.55
Eastern White	1.50	@1.55
White Egyptian	1.65	@1.70

RYE.

The quotations formerly given would be misleading. There is some offered at the old figure, but it is not of desirable quality, and no good stock could be obtained except at a sharp advance. This grain, however, is neglected.

Rye, per ctl ..... Nominal

BEANS.

All prices stand precisely as before. Local dealers report a rather quiet market, though supplies are none too heavy, and are gradually decreasing. A close clean up is expected on the colored varieties, as well as on limas, though some stock may be held over in other lines. Considerable business is being done in Manchurian beans, of the cranberry, red and speckled kidney varieties, which are selling at about $2.50 to $4. There is little new in the lima bean situation. Planting will soon be completed and a heavy crop is expected, as weather conditions have been very favorable. High prices are pretty certain to rule, however, speculators having paid up to $4.90 on the field for early beans. Officers of the association, however, look for a decline after the first demands have been satisfied. While supplies are small, the association expects to have something to offer until the season is about over.

Bayos, per ctl	$4.65	@4.75
Blackeyes	6.50	@6.75
Cranberry Beans	4.00	@4.25
Garvanzos	2.85	@3.25
Horse Beans	2.50	@2.75
Small Whites	3.40	@3.55
Large Whites	3.40	@3.55
Limas	6.35	@6.45
Pea		4.25
Pink	5.35	@5.50
Red Kidneys	6.25	@6.50

SEEDS.

Alfalfa is now entirely nominal, as supplies are pretty well cleaned out, and there is no demand of any consequence. Broomcorn seed is held at top quotation. Millet, which is in demand for chicken feed, is scarce and has taken a sharp advance, but otherwise there is no feature to the market.

Alfalfa	Nominal	
Broomcorn Seed, per ton	25.00	
Brown Mustard, per lb	5½c	
Canary	3½@	4 c
Hemp	3½@	4 c
Millet	3½@	4 c
Timothy	8 @	9 c
Yellow Mustard	5¾c	
Dried Peas, per ctl	3.75@	4.00

FLOUR.

No further change is noted, either in prices or conditions. The local market is fairly strong, with a good demand in the regular trade and some movement for export.

Cal. Family Extras	$5.20	@5.60
Bakers' Extras	5.20	@5.60
Superfine	4.30	@4.50
Oregon and Washington	4.50	@4.70

Hay and Feedstuffs.

HAY.

The quantity arriving in San Francisco has again been materially reduced, being the smallest in any week for some time. Trading here is very dull, however, and the market shows little change for the better, though a slight advance is noted in good wheat and tame oat hay. Local dealers have been buying on a larger scale in the country than is their usual custom at this time of year, as there is some possibility of a shortage of the better descriptions before the new crop comes out. The crop outlook is now very unpromising in many sections, but a fair yield is still expected, especially if the present cool weather continues.

Choice Wheat	$12.50@14.00
Good Wheat Hay	10.00@12.00
Other Grade Wheat	7.00@10.00
Wheat and Oats	7.00@11.00
Tame Oats	7.00@11.50
Wild Oats	6.50@ 9.50
Alfalfa	8.00@11.50
Stock Hay	5.50@ 6.50
Straw, per bale	35@ 50c

FEEDSTUFFS.

The demand for bran has been quite strong this spring, and supplies here are closely cleaned up, while the present production is only moderate. Prices are accordingly higher, and a similar advance has occurred in shorts and middlings. Cracked corn has also advanced in sympathy with the raw grain.

Alfalfa Meal, per ton	$19.00@20.00
Bran, per ton	28.00@29.00
Cocoanut Cake or Meal	26.50@27.00
Cracked Corn	34.00@35.00
Middlings	34.00@37.00
Mixed Feeds	29.00@32.00
Rolled Barley	31.00@32.00
Rolled Oats	32.00@33.00
Shorts	27.50@31.00

Garden Truck.

VEGETABLES.

The onion market has been weakened by rather large arrivals from various points, quite a lot having come in from Oregon, but prices are still comparatively high. Green onions are a little higher. Arrivals of asparagus are keeping up at about the same rate as before, but there is a heavy consuming demand, as well as some shipping business, and with canners paying fair prices for the surplus the market cleans up well from day to day. Prices are a little higher than last week, though the top figure is seldom obtained. Rhubarb is moving freely at unchanged figures. Arrivals of green peas are fairly large, but a lively demand has caused a slight advance. String beans are still scarce and high. Summer squash and cucumbers from outside points are offered in large quantities, with a corresponding reduction in prices, though tomatoes are steady as before. In the line of local garden truck, cabbage has advanced sharply, while cauliflower is lower.

Onions: Yellow, per ctl	$ 3.50@	3.75
Australian	3.75@	4.00
Bermuda	3.75@	4.00
Green, box	60@	1.00
Garlic, per lb	4@	5c
Green Peas, per lb	4@	6c
Tomatoes, per crate	1.50@	1.75
Cucumbers, per doz	50@	90c
Cabbage		1.00
Carrots, per sack		1.00
Rhubarb, per box	65@	1.25
Cauliflower, per doz	75@	85c
Asparagus, per box	75@	1.50
String Beans, per lb	10@	20c
Summer Squash, per box	1.00@	1.25

POTATOES.

Potatoes have been coming forward in rather large quantities from many quarters, and some weakening of prices is expected, though there is no great surplus offered. So far values have been very firmly held, river stock and new potatoes being higher. Quite a lot of Eastern stock is offered at about $2.10.

Lompoc Burbanks, per ctl	$ 2.85@	3.00
River Whites, per ctl	2.25@	2.50
Oregon Burbanks	2.60@	2.75
New Potatoes, per lb	4½@	5½c

Dairy Produce.

POULTRY.

Arrivals of chickens from California points are steadily increasing, being already rather large, while there is still considerable stock coming from the East. The result is a decline in prices for hens and young roosters and broilers and fryers are easy. While the local demand is in good shape, dealers anticipate a further weakening of prices in the next few weeks.

Large Broilers	$ 4.50@	5.00
Small Broilers	2.25@	3.50
Fryers	6.50@	7.50
Hens, extra	9.00@	11.00
Hens, large	6.50@	8.00
Small Hens	5.50@	6.00
Old Roosters	5.00@	6.00
Young Roosters	8.00@	8.50
Young Roosters, full grown	9.50@	10.00
Squabs	2.00@	2.50
Geese, per pair	3.00@	3.50
Ducks	8.00@	10.00
Turkeys, live, per lb	Nominal	

BUTTER.

Prices on the better grades are without much change, standing at the same level as a week ago. A few slight fluctuations have been caused by a temporary scarcity of supplies for the consuming or shipping trade, but general conditions are unchanged. The largest arrivals are going into storage; operators are unwilling to sell except at an advance. Seconds are higher.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	.22	22½	22½	22½	23	22½
Prime Firsts	.21½	22	22	22	22	22
Prime Firsts	..21	21½	21½	21½	21½	21½
Seconds	.18½	18½	18½	20	20	20

EGGS.

Extras have been advancing for the last two days, and are firm as quoted. Pullets are also a little higher, but firsts and seconds have been unchanged. Arrivals are still very largely in excess of current needs, and the storage movement is the feature of the market.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	.20	20	20	20	20½	21
Firsts	..19½	19½	19½	19½	19½	19½
Seconds	.18½	18½	18½	18½	18½	18½
Selected Pullet	.18	18	18	18	18	18½

CHEESE.

Flats are a little stronger this week, with ½ cent advance, but Y. A.'s are unchanged, and there is little feature to the market.

Fancy California Flats, per lb	12½c
Firsts	11½c
New Young Americas, fancy	13 c

Deciduous Fruits.

FRESH FRUITS.

There is nothing new in apples, which are fairly well cleaned up, but find little demand. The feature of the market is the arrival of cherries, which have been coming in on a small scale all week. The offerings are of the Purple Guigne variety from up the valley. They find no great demand at the moment, and are selling at about $2.25 per box, though the earlier arrivals brought about $5. Quotations are not yet very well established. Arrivals of strawberries from nearby points are steadily increasing, but little is coming in from the south. The consuming demand is not very active and prices are lower.

Apples, per box	$ 1.25@	2.00
Strawberries, southern, crate	1.25@	1.50
Longworths, chest	10.00@	12.00
Large varieties, chest	8.00@	11.00

Dried Fruits.

Spot apricots are no longer quoted, as there is nothing left in growers' hands. Some contracts for new crop cots have been placed, but prices are too unsettled to give any definite quotations. It is certain that the crop will be short, and sales for export are reported at over 14 cents. Contracts with growers have been made around 11¾ cents. No other changes are noted in the local spot market, most varieties being very closely cleaned up and hardly worth quoting, though there are still some peaches and raisins held at prices which packers are not yet willing to meet. New prune contracts have been made at the figures quoted, but most growers are holding for about 5 cents. Raisins are very strong, and some growers are holding out for 4½ cents or more, though 4 cents is about the highest price now paid by packers. Some extra inducements are being offered, however, and a further advance is expected, as this article is finding a good continued demand through the East. The current demand for peaches is not so strong, but everything is expected to clean up at good prices. The New York Journal of Commerce says: "While the market for future California prunes is still unsettled, there is an undercurrent of firmness in the advices from the coast. Many of the larger packers are not anxious to make sales for first half October shipment out of the 1911 crop, and some of them are not naming any prices. It would appear that their examination of the orchards since the last freeze has satisfied them that the damage was considerably greater than originally estimated. It is reported that orchardists in the Santa Clara valley nave already fixed their ideas of price to the grower at 5 cents, while packers are endeavoring to buy at a cent less without much success.

"There continues a very strong market for future apricots and peaches, with few sellers in the field as yet with definite quotations. Prices that are named, that is, 15 to 15½ cents as to seller, for apricots in equal quantities of choice, extra choice and fancy, and 8, 8½ and 9 cents for the same three grades of peaches, seem to be out of line with Eastern buyers' views. In the spot market there continues a fair jobbing demand for peaches and apricots as well as prunes, but no speculative interest is manifested; on the other hand, there is no pressure to sell.

"In California seeded raisins the approach of Raisin Day has not resulted in any quickening of business in spot goods in this section of the country so far as orders from the jobbing trade is concerned, but the retailers have shown a little more interest within the past few days. In other parts of the country, particularly the Ohio and Mississippi valleys, it is understood that the buying by both jobbers and retailers has been on a fairly liberal scale of late. The market for spot raisins of all kinds has a strong tone, but there is no advance in quotations to be noted."

Evaporated Apples, per lb	10½@11	c
Apricots	Nominal	
Figs, black	4½@ 5	c
Figs, white	5 @ 7½	c
Peaches	7¼@ 8	c
Prunes, 4-size basis	9½	c
New crop contracts	3¾@ 4	c
Pears	8½@12	c
Raisins—		
Loose Muscatels, in sweatbox	3¾@ 4	c
Thompson Seedless	4½@ 4¾	c
Seedless Sultanas	4¼@ 4½	c

Citrus Fruits.

Prices are holding up well on Eastern auctions. At New York on Monday, May 1, there were sold 51 cars of oranges and lemons. The bulk of the fruit was good, being 5 and 10 cents higher. Lemons remained unchanged. Quotations: Navels, extra fancy large, $3.40 to $3.70; regular, $2.60 to $3.75; small, $3 to $3.80; fancy large, $2.20 to $3.25; regular, $2.50 to $3.35; small, $2.65 to $3.50. Choice, large, $1.30 to $2.75; regular, $1.95 to $2.95; small, $2.15 to $3.20. Standard, large, $1.90 to $2.25; regular, $2.40 to $2.90; small, $2.80 to $3. Thompsons, extra fancy large $2.75 to $3.05; regular, $2.90 to $3.35; small, $3.05 to $3.45. Seedlings, extra fancy, $2.65 to $3.15; choice, $1.90 to $2.15. Michaels, fancy, $2.60 to $3.15. Budded, fancy, $2.50 to $2.85; choice, $2 to $2.70. Lemons from $2.90 to $3.30.

At the New York auction on Tuesday 36 cars were sold. Demand was active, quality of fruit good and prices again a little higher. Quotations: Navels, extra fancy, large, $2.65 to $3.40; regular, $2.95 to $3.80; small, $2.85 to $3.80; fancy, regular, $2.65 to $3.35; choice, regular, $2.25 to $2.35; orchard run, regular and small, $2.40 to $3.05; standard, regular and small, $2.40 to $2.70; Thompson, extra fancy, regular, $2.95 to $3.30. Lemons from $2.75 to $3.40.

At all other auction points oranges and lemons are holding their own, and the market seems to be in condition to absorb the crop as fast as shipped. At Los Angeles the auction there show prices to range from $1.50 to $1.75 for navels f. o. b. California.

Total shipments to April 30 for the

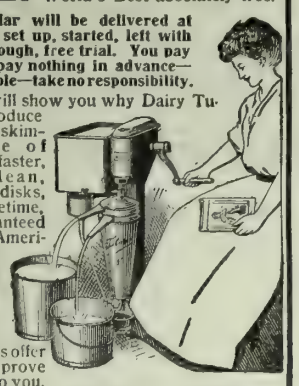
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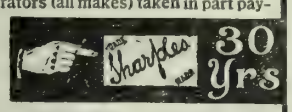
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season are 23,080 cars of oranges and 2912 cars of lemons.

Navel oranges find about the usual demand for this season in the San Francisco market, trade being somewhat more active than last week. The first lot of new valencias arrived this week and find a fair demand at the prices quoted. Mexican limes have again declined, while ordinary lemons are a little stronger.

Navel oranges—		
Extra choice	$ 2.50@	3.00
Choice	2.00@	2.50
Valencias, choice to fancy	2.75@	3.00
Tangerines	Nominal	
Choice Lemons	2.50@	3.00
Fancy Lemons	3.50@	4.00
Standard	1.25@	1.75
Limes	4.50@	5.00
Grapefruit	2.25@	3.00

Nuts, Honey, Hops, Etc.

NUTS.

Almonds are now practically cleaned up as far as growers are concerned, and since the last large transaction, stocks in packers' hands are closely and firmly held, prices on most varieties being advanced. The crop this year is expected to be light in most places, and it is reported that some contracts are being made at about 14 cents. Walnuts are little more than nominal, the present movement being in a jobbing way only.

Almonds—		
Nonpareils	16	@16½c
I X L	15	@15½c
Ne Plus Ultra	14	@15 c
Drakes	12	@14½c
Languedoc	11	@11½c
Hardshells	8	@ 8½c
Walnuts—Softshell, No. 1		15 c
Standard		14½c
Softshell, No. 2		11 c
Budded		17½c

HONEY.

Honey remains quiet and featureless, with little stock on hand and no prospects of any new stock for about a month. A good yield is expected in some places, but the latest report from San Bernardino indicates a shortage there.

Comb—White Sage	12	@ 15c
Sacramento River Comb	12	@12½c

BEESWAX.

There is a little more demand than for some time past and light stock is held at top quotation.

Light	28	@30 c
Dark	23	@26 c

HOPS.

There have been some large sales of old-crop hops in the last week, cleaning up a considerable quantity which has been on hand for several years. The greater part of the stock will go to England. It is reported that there are now only about 3000 bales left in the State, and a close clean-up is certain. Considerable contracting for the new crop has been done, some of the contracts covering the next three years, and it is understood that most of the 1911 crop has been disposed of. Spot prices are unchanged, but there is an upward tendency in futures.

Hops, 1910 crop	18	@22½c
1911 Crop	15	@19 c

Live Stock.

DRESSED MEAT.

Beef Steers, per lb	9½@10	c
Cows	8 @ 9	c
Heifers	8 @ 9	c
Veal, large	10 @11½	c
Veal, small	11½@12	c
Mutton: Wethers	9 @10	c
Ewes	8 @ 9	c
Lambs	11½@12½	c
Hogs, dressed	11 @12	c

LIVE STOCK.

Large shipments of beef cattle are now beginning to arrive from the San Joaquin valley district, and the increased supply has caused quite a drop in prices, both for live and dressed beef. Calves are also rather easy, and sheep are a little lower. Live hogs remain very weak, but prices are maintained. While supplies are not heavy, there is sufficient for current needs.

Gross weight:		
Steers: No. 1	5¾@	6¼c
No. 2	5½@	5¾c
Cows and Heifers: No. 1	5 @	5¼c
No. 2	4¾@	5 c
Bulls and Stags	2½@	4 c
Calves: Light	6½@	7 c
Medium	6 @	6½c
Heavy	5½@	6 c
Hogs: Grain-fed, heavy	6¼@	6¾c
150 to 250 lbs		7 c
100 to 150 lbs		7 c
Small prime wethers	5 @	5¼c
Large prime wethers	5 @	5¼c
Ewes	4 @	4¼c
Lambs	5¾@	6 c

WOOL.

Nothing new has occurred in the wool market, no values having been established, except for the better lots of southern wool. It is expected that a considerable part of the northern clips will be shipped on consignment. The Eastern market is dull and weak.

Spring Clip—		
Choice Southern, Year's staple	9	@12 c
7 months	8	@11 c

HIDES.

Hides remain fairly steady at former quotations, but there is little demand.

Heavy Steers, over 56 lbs.		10 c
Medium	9	@ 9½c
Light Steers, under 48 lbs.		9 c
Heavy Cows, over 50 lbs.		8¾c
Light Cows, 30 to 50 lbs.		8½c
Kip		10½c
Veal	15	@15½c
Calf	15	@15½c
Dry—		
Dry Hides	17	@18 c
Dry Bulls		16 c
Dry Kip, 10 to 15	17	@18 c
Dry Veal, 5 to 10	16½	@17 c
Dry Calf, 7 down		22 c
Sheep Skins—		
Long Wools	$ .85@	1.25
Medium Wool, 6 to 9 mos.	50@	80c
Short Wool, 3 to 6 mos.	35@	60c
Lambs	15@	50c

HORSES.

Desirable Drafters, 1700 lbs. up	$275@300
Light Drafters, 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	200@250
Wagon Horses, 1250 to 1350 lbs.	175@200
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	135@150
Young	200
Old Mares	100@150

MULES.

1200 lbs	$250@300
1100 lbs	200@225
1000 lbs	150@175
900 lbs	125@150

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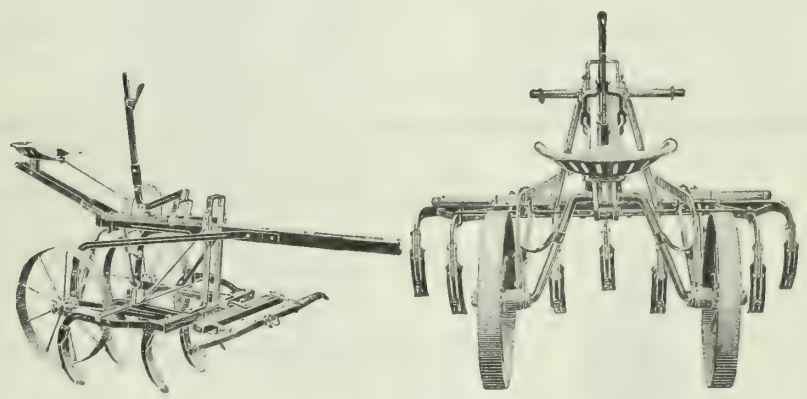
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	Per 1000
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Sevenor	7 teeth	4 feet	283 lbs.	365 lbs.	8
Nineor	9 teeth	5 feet	308 lbs.	390 lbs.	8
	Pole		32 lbs.	32 lbs.	1

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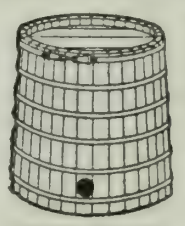
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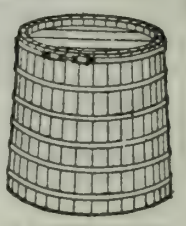
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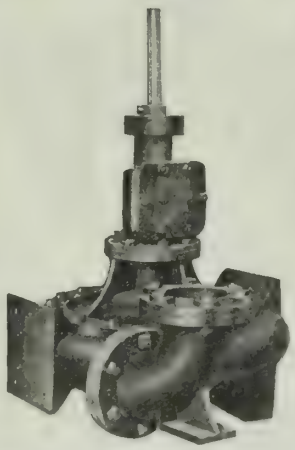
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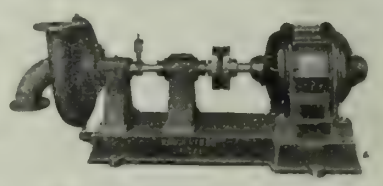
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Vol. LXXXI. No. 19. SAN FRANCISCO, SATURDAY, MAY 13, 1911. Forty-first Year.

A VISIT TO A CERTIFIED DAIRY.

Written for the PACIFIC RURAL PRESS by Mr. DUDLEY J. WHITNEY.

One of the most impressive features of the growth of the dairy industry in this State during the past few years has been the demand for a pure product, and it has been in response to this demand that certified dairies have come into existence. What the result of complying with this demand has been can be seen from a visit to the dairy of Mr. H. R. Timm of Dixon.

Two years ago, when Mr. Timm began to supply milk dealers with certified milk he had 15 cows. Now there are 350 cows on the ranch, 240 of which are being milked, and new cows have to be secured continually in order to have enough for the market.

A visit to the dairy is an object lesson in showing how milk should be handled, both as regards cleanliness and convenience.

The cows are milked in two shifts, owing to the size of the barn, which is large enough to hold 120 cows and is well lighted and well ventilated. Before a drop of milk is taken from them they are thoroughly cleaned around bag and flanks. First they are gone over with a currycomb and brush, then washed and wiped dry. Every cow in the stable is thus treated before any one is milked.



Filling the Silo on the Timm Ranch at Dixon.

In winter when mud will stick to the hide, water is applied with a hose, if necessary, to see that they are thoroughly cleaned before milking. All the hair near the udder is also clipped short to insure cleanliness. This cleaning is one of the first items of the extra expense of keeping a certified dairy, as milkers can only attend to about 20 or 25 cows a day, instead of the 30 or 35 they might handle without this care.



Milking Time at the Timm Dairy, Dixon.

Milking is done through a cloth and the milk is taken into a separate room to be emptied into cans for transporttion into the bottling room. The milkers are dressed in clean white cotton clothes when milking. These clothes are kept and put on in a special room where they will gather no dust. After milking, all manure is loaded at once into a manure spreader and taken to the alfalfa fields as fertilizer and is not permitted to remain to breed flies and dry into a dust. The cement floors of the barn are then hosed and scrubbed and that part of the barn remains vacant until the next milking. The wash water runs off through pipes into a cesspool, from which it is pumped into the irrigating ditches to fertilize the fields.

This system of having cement floors and removing the manure at once for use on the fields is said by Mr. Timm to be more convenient and cheaper than the plan of throwing the manure out of a hole in the side of the barn to rot and raise dust and flies, on account of the fertilizing value, aside from the benefit derived from obtaining clean milk.

Every bit of handling of the milk from the time it leaves the milkers' pails and is emptied into other cans is done in a way that will prevent the entrance of impurities into it and the growth of bacteria. The milk is carried to the bottling house in covered cans, and is run through an absorbent cotton strainer. From thence it runs through a cooler into the bottles, which are filled automatically, and, after the covers are put on, packed in ice for shipment. Before being filled the bottles are washed perfectly clean and sterilized in cases at a temperature of 220 degrees, after which they are removed to the bottling room, which is always kept closed and at a temperature but little above the freezing point. The ice used for cooling is made on the premises.

The cost of handling the milk is said by Mr. Timm to be just double what would be paid if the milkers did not clean the cows and emptied their cans at once into the vessels in which the milk was to be shipped, as is done in most dairies. The cost of equipment is still more, but the extra price received for pure milk is full recompense for the care given.

Outside the barn the cows are given the same careful attention that the milk receives inside. Every cow is tested for tuberculosis or other disease before being added to the herd, and is rejected if not in perfect condition. They are also given the tuberclin test every six months to see that the disease has not developed. When the cows are kept away from the disease and given good care they are pretty sure to remain healthy, and a cow once in the herd seldom has to leave it.

The milk of each cow is weighed regularly and no cow who does not more than pay her way is kept, as there is no room for "boarders" at this dairy.

The cows are freshened regularly, about the same number coming in at all times of the year in order to keep the supply of milk constant. Male calves are made into veal, heifers being kept to add to the herd.

The herd now is composed of mixed breeds, but all breeding is done to registered Holstein bulls, the scrub bull of nondescript breed not being used on the dairy. There are three bulls kept at the dairy.

The herd will thus contain more and more Holstein blood as time goes on, enough of other breeds being kept to have the milk contain a full supply of butter-fat.

During the alfalfa season alfalfa furnishes the bulk of the food for the cattle, a small amount of other roughage also being given. In winter, when there is no fresh alfalfa, alfalfa silage is fed. This is found to be

(*Continued on Page 382.*)

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., May. 9, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	2.12	30.73	43.32	68	40
Red Bluff	.90	24.38	23.79	74	40
Sacramento	.01	21.81	19.45	68	44
San Francisco	.15	25.33	21.61	62	48
San Jose	.12	22.59	12.51	72	38
Fresno	.22	12.29	9.22	86	42
Independence	.00	7.41	9.06	80	38
San Luis Obispo	.08	34.42	19.89	72	46
Los Angeles	.01	16.12	15.34	74	50
San Diego	.01	11.83	9.79	66	52

The Week.

The hay rains which we descanted upon last week amounted to very little, except in the upper coast region. The great interior regions are still waiting for a little water which the grain appeared to be sadly in need of over quite a stretch of the great valley as we saw it at the close of last week. All that can be done by rolling light cloddy land and by harrowing of heavier crusted soils should be undertaken, but this cannot bring the yield up to the figures which the heavy rains of the winter seemed to warrant. It looks right for another of many demonstrations that the late rains hold the making of the crop, and one can often give two inches of rain in February for one in March and April and gain much by the trade. At this moment the grain crops promsie to be late, and not to be large in total production. We probably would not have much use this year for the Panama Canal for grain ships, even if that great ditch were now ready for business.

Readers will find upon another page a carefully compiled statement about several early-ripening deciduous fruits with incidental references to the later fruits in the same districts. These later fruits will be more amply reported upon at future dates, for the system which we are now inaugurating contemplates reports at short intervals, so that readers can note the fate which befalls each fruit as it advances toward maturity. These reports are prepared for us by men who are trained to make careful generalizations from the abundant facts which come to their knowledge, and they are environed in such a way that the growers' point of view is natural to them. They are apart from the local boomers, who see everything large, no matter what its true dimensions may be, and they are removed also from the buying interest which has been saying "it is naught" ever since Abel tried to find out what his first crop of prunes was worth—because the world was full of prunes. We hope, then, by choosing reporters who are wholly away from narrow interests, to give our readers advance reports of fruit outlooks which can be depended upon as accurate and trustworthy for the dates they bear. We shall always be glad to receive from individual readers additional information which will render these reports more representative and valuable.

The Pacific Rural Press.

We have a little confidential remark for our readers which we can slip in here in this obscure way where it will not offend the modesty of Mr. Frank Honeywell, with whose work it has most to do—because publishers are forbidden by tradition to read the editorials in their own journals. It is three years this month since Mr. Honeywell bought the PACIFIC RURAL PRESS, and he has been very busy ever since explaining the investment to his commercial conscience. He has had to do a lot of hard work to justify his act, and, incidentally, he has accomplished great betterments of the property, as anyone with half an eye can readily see. We do not hesitate to point with pride to the improvement of the paper, because it makes it worth so much more to subscribers than it was before Mr. Honeywell's undertaking. We can say this without being charged with crying our own wares, because this writer never owned a nickel's worth of the property, nor does he ever expect to, preferring to lay up treasure where there are fewer moths and less rust than are found in commercial circles. We claim the right, therefore, to speak of the property disinterestedly. We have to admit that we have heard that the commercial branch of the establishment does speak very decently of this ancient writer when approaches are made to possible subscribers, but that is only what the traffic will bear and does not place us under any particular obligations. We have a right, then, to rejoice with subscribers that they are participating in the advantages of patronizing a living concern and getting more for their money than they ever secured before. It is a joy also to us to see our gleaming thoughts set forth in such elegant printing and upon such glistening paper as the present publisher provides, and to see them environed by the constantly increasing numbers of special articles on topics of direct and practical importance, so inspiring and helpful to subscribers in all lines of California farming. We feel that we are in good company and a part of a wide-awake and broad-minded enterprise which is constantly winning wider support and patronage because it merits them. We have overheard conversation between those connected with the more sordid departments of this journal that the aggregate business of the office has considerably more than doubled during the last few years and the number of subscribers has been multiplied so many times that we apprehend that there will soon be so few off the subscription list that it will not necessary much longer for us to scold such persons for their ignorance. All this and much else in the way of progress, which we shall probably never know of, must be added to what all readers can see for themselves, before the full results of Mr. Honeywell's vigorous and effective administration of the property can be appreciated. There is nothing in the agricultural publication line in California which is even within easy sight of the PACIFIC RURAL PRESS—and you can tell that to the man out in the street.

At the University Farm.

We went with the crowd last Saturday to the University Farm at Davis to attend the third annual basket picnic which the Farm gives to pupils, friends, and the general agricultural public. In this way the Farm and the Agricultural Department of the University, of which it is a part, reports back to its supporters the leading facts of its public service and calls upon them to see for themselves what it is doing. The picnic this year was much greater in the public regard than its predecessors. Although the morning was threatening, there came by every means of conveyance for scores of miles around a throng of enthusiastic people, which numbered by the counters at the gates about three thousand and by common estimate several hundreds more. They came bearing all kinds of lunch receptacles from the kid with a full dinner-pail to the lordly farmer who lashed a trunk full of grub upon the back of his automobile. They overflowed the farm until the whole 780 acres looked like a parterre of flowers with the brilliant hues of millinery, organdies and foulards, amid the clouds of fleecy lingerie—all afloat upon the wide seas of alfalfa and growing grain. So impressive was the sight that an enthusiastic Californian remarked to a European who was expressing his surprise over the gorgeous costumes of the California agricultural ladies: "Oh, yes, that is our way: you will see just as fine hats at a farm picnic as at an opera in this country." But we apprehend that we are not appealing very strongly to the masculine mind by setting up these standards of measurement. Let them be assured, then, that the picnic was great because the improvised farm kitchen poured out 320 gallons of hot coffee and sank in it 100 pounds of sugar and oodles of cream before the thrist of the multitude was appeased. While this was going on at large on the farm, about 500 people, which is all the stock pavilion would hold, were listening to the excellent playing and singing of the Lincoln High School band and the interesting speaking of President Wheeler of the University and President Ware of the Chico Normal School who were thoroughly in accord with their hearers as they spoke of the joys, aspirations, and problems of California rural life and the relations of our educational endeavors thereto. After the speaking and the lunch the multitude visited the dozen or more buildings which are now in various uses, or climbed to the top of the 60-foot water tower for a general view of the farm, which is level as a floor and not a waste acre in its area. The live stock paraded, the cream churned, the poultry strutted, crowed and cackled, the water ran, and the plants grew an extra inch in honor of the visiting thousands. It was a great day at a place which is fast becoming the joy and pride of California farming people.

The Work of the College of Agriculture.

The occasion of the great out-door day of the College of Agriculture is a good one to wider spread some striking facts of its work and its place in public esteem. Our readers will be interested to know that during the twelve years of President Wheeler's administration the number of distinctively agricultural pupils has increased from 31 to 309, an increase of 1000 per cent; the instructors in agricultural subjects from 11 to 36, and the number of courses given from 47 to 106. As instruction in agriculture is open to the whole University, many not enrolled in the College of Agriculture participate in it. By this arrangement the agricultural instructors had a total enrollment of 1246 pupils last year. The entrance of new students in the College of Agriculture during the current year was 122, and this is nearly four times as many as were taking the whole four years of the course combined in 1899. The attendance upon instruction on the University Farm, in the Farm School, Short Courses, etc., is not included in these figures and would add about 200 to them.

During the year ending April 1, 1911, 34,640 letters of inquiry about California agriculture in its many phases were answered from the Director's office—about two-thirds by direct dictation

and one-third by the use of forms prepared to meet recurring questions. From offices of subdivisions there were written during the same period 16,378 letters pertaining to particular subjects handled by these subdivisions. The total number of letters mailed from the Berkeley offices of the department was 51,018, during twelve months. The correspondence of outlying branches at the University Farm, the Southern California Plant Disease Laboratory and Citrus Experiment Station and other outposts is estimated at 5000. The grand total of correspondence would then be 56,018 letters. This count is supported by the expenditure for postage, which was $1145, which was almost exclusively for letters, as the publications of the department have free carriage through the mails.

A Slander on California Olives.

All the foregoing is very sweet to the pen, but the bitter must come. We alluded last week to the puncture of the falsehoods in the lemon importers of New York. It now appears that other features of the well-planned and richly-endowed warfare upon California products by the importers from the Mediterranean countries are coming to light. Evidently they are doing their best to advantage themselves and injure us by the change in the political character of the majority in Congress which encourages them to think they can break down the protective tariff by methodical mendacity. Here is a specimen which appears in the Wall Street Journal of New York City:

"Olive culture in this country is admittedly exotic. The California olive is both tough and acrid. Its oil may serve for wool washing, or soap making, but for these purposes it is handicapped by the partiality which the tariff extends to petted manufacturing industries; for it permits them to import their olive oil (the lower grades) free of duty."

This is an instance of very coarse lying. Of course, olive culture is exotic, which simply means not native, and so is nearly every agricultural crop we are growing except Indian corn and potatoes.

All our other grain and field crops, our live stock, commercial fruits and vegetables, etc., are exotic. The olive is established in this country just as they are, and it came sooner than many varieties or forms of them, for it appeared in 1769 in California and was commercially produced soon afterward. The evident intent of the writer shows that he does not know what the word exotic means, for the argument he proposes to base upon the word would annihilate American agriculture as it now exists. His comments upon California olives as tough and acrid fit the European olives just as well—when both are improperly handled. California olives are not surpassed, and we cannot produce enough to supply the present demand, which is based upon distinctive excellence and would be surely unable to keep in the industry at all if compelled to compete with south European conditions. The American people would then not be able to get what they are learning to appreciate, the ripe pickled olive as produced in California. As for the oil, California makes none which is available for such low uses as the New York journal describes. That is reserved for the cheap production which is possible under south European conditions. We are not making olive oil for soap fat and are not in competition with that grade. We are making the best table oil in the world and the purest, and that is the honorable and distinctive product which the existing tariff protects.

Queries and Replies.

Wash Land for Peppers.

To the Editor: We have a piece of land that was recently overflown by the San Gabriel river, the result of which deposited a sediment of from 18 inches to 3 feet depth which is a combination of sand and silt. This river from the mountain, as you know, passes through a rather rich country, a country that is highly cultivated through groves that are extensively fertilized which were overflowed to a greater or less extent and from where we assume this deposit came, together with a great many cuts and washes. Notwithstanding the fact that this wash came from a rich country, the soil in itself, apparently, has no life, and therefore we are at a loss to know what to plant to best advantage. We had contemplated planting this to the Mexican chilis, and have had a man over the field who has had experience for the past eight years in the cultivation of the same, and he feels that our soil is well adapted to it, but we have considerable doubt as to its fertility because of its having been washed to the extent that it has had water remaining over this deposit for fully a week. Could you tell, without sampling the soil, whether or not any elements would be lacking that are necessary to the proper growth of the Mexican chilis, and if any elements are lacking, what shall we add? In the event of your thinking that we could not raise chilis to advantage on soil of this character, what would you suggest as the most likelihood of a successful crop, with the understanding that we have abundance of water for the soil for irrigation purposes? Our neighbors inform us that it would be necessary for soil to rot for a couple of years before anything could be produced, but we doubt this also. —Planter, Los Angeles.

We should trust the judgment of your experienced chili grower when he says that your soil is adapted to the plant. You cannot call a wash of that sort raw soil unless it should be very coarse in character and has the appearance of washed sand and gravel, because it is soil carried from the surface of the hillsides largely and from cultivated lands by the eroding streams, and, if composed of reasonably fine materials, should have plenty of plant food for a time at least. We take it that it must possess this physical character or your experienced pepper grower would not accept it. Standing water, which you speak of, would not remove its fertility, but rather indicate that fine silt had been deposited which would increase fertility.

Alfalfa Mills.

To the Editor: Parties are trying to form a stock company among the farmers to build an alfalfa mill. They say they will build and equip the mill for $15,000. By this new process a hay loader takes the green alfalfa as soon as mowed, loads it on the wagon and then it is hauled to the mill. At the mill it is first chopped fine, then run through steam-heated cylinders to take out moisture, then it is ground and sacked. The whole milling process, taking only 30 minutes, is said to cost $2 per ton. Do you know if this method is a success in every respect, and to what extent does it improve the feeding value of the alfalfa hay? Do you think it advisable to invest $15,000 in a mill of this kind at the present time? Would we be likely to find a ready market for the meal at a satisfactory price? How much would grinding the hay increase the feeding value of the alfalfa for our own use?—Farmer, Biggs.

We have no definite information about the new process of drying and grinding of alfalfa. Grinding alfalfa hay is being quite widely undertaken, not only in California, but in Colorado and elsewhere, and alfalfa meal is in constantly increasing demand for feeding all kinds of stock, including poultry. Whether there will be an overproduction owing to the multiplication of mills is a matter of opinion. No one can demonstrate it one way or the other. The grinding adds nothing to the nutritive content of the alfalfa. It may, however, render the material more available by promoting ease of digestion when fed in connection with other coarser materials which the stomachs of all animals seem to require for healthy operation. The main thing to look out for in entering an enterprise of this kind is that expenditures are rational and that promoters are not allowed to succeed in placing machinery at a higher figure than it is really worth. Some years ago there were considerable losses from the promotion of creamery building in undesirable places and at too great cost. There is always danger that people may be persuaded to go into such enterprises without due regard to economical consideration. What the advantage of ruling the sun out of the job may be, we do not know. Whatever it is, it would seem to be greater at the East than in this State, where we have to watch out all the time to see that the open-air drying does not go too far.

Fasciation in a Rose.

To the Editor: I am sending you a freak rose-branch which was taken from the garden of a neighbor. You will see that it is about two inches in width and less than a quarter of an inch thick. It grew on a rose tree, seven years old, upon which has never appeared anything but the regulation buds and blossoms, growing upon normal stems. It may not be worth while to call your attention to this rose-branch, but it is such an oddity that it occurred to me that others might like to see it. Success attend your labors as you faithfully endeavor to assist the farmers of this State, both young and old.—A. W. Robinson, Santa Cruz.

The sample of abnormal growth of a rose is very interesting and of rare occurrence, but involved in phenomena which have been understood by botanists for a long time. It is called fasciation or a tendency of shoots to grow in bundles instead of separately. The botanical definition of fasciation is as follows: "A malformation in plants, in which they assume a flat or ribbon-like form. It may be produced by the flattening of a single steam or branch, or by the lateral union of several stems."

This fasciation occurs in nearly all plants, both herbaceous and woody. The common coxcomb of the gardens is quite subject to it, and we have seen even broader instances on cherries and other fruit trees. It is, however, very interesting, and we are very glad to have it brought to our attention. Many find fascination in a rose, but it is not given to all to see fasciation.

California Insect Powder.

To the Editor: Please tell me the name of the pyrethrum plant that the insect powder is made from, and what part of the plant is used, and how it is prepared? Is the plant a perennial? What soil suits it best?—Enquirer, Orland.

The plant is Pyrethrum cinerariaefolium. It has a white blossom resembling the common marguerite. The powder is made of the petals and the seed capsule, the stem being rejected. These seed capsules or heads are thoroughly dried in the sun and ground with a run of stone such as was formerly used for making flour. The powder must be finely ground, and only good powder can be made in a mill suitably equipped for that purpose. The plant is a perennial, beginning to bloom the second year from seed. It will grow in any good soil with ordinary cultivation. Twenty-five years ago it was thought that a great California industry might be established on that basis, but there is at the present time but one establishment, the Buhach Producing and Manufacturing Company, at Stockton, and they probably grow about all the material they can use on their own ranch in Merced county, where they have a fine, deep loam which the plant seems to enjoy.

THE ALFALFA BUTTERFLY.

Its Occurrence and Control in the Imperial Valley.

By Mr. V. L. WILDERMUTH.

We have an advance copy of Circular 133 of the Bureau of Entomology of the U. S. Department of Agriculture, giving preliminary results of a study of the alfalfa butterfly and its offspring, a multitude of caterpillars, by Mr. Wildermuth, from which we take the most widely interesting and useful parts. This insect is liable to be found in all sections of the State, having been detected in several regions, but it has, thus far, not proved as destructive elsewhere as in the Imperial valley.—EDITOR.]

The insect under consideration is a caterpillar of one of our most beautiful and common butterflies belonging to the group known as "the yellows," and is closely related to the well-known cabbage butterfly. The name "yellows" at once gives an idea of the appearance of the adult, but this may be misleading, as the coloration may vary from a bright yellow (very frequently noticed), through an orange-sulphur (the most commonly noticed), to a pale white (the least often noticed).

In 1907 a correspondent reported it as a "cutworm," damaging the alfalfa at Hanford, Cal. This caterpillar is known to have injured alfalfa in Utah. In Arizona, in the Salt River valley, and in the Yuma valley, farmers say that on an average about one year in every three or four the "worms" become sufficiently numerous to cause considerable damage. In the Sacramento valley, and in the irrigated alfalfa regions of south-central California, according to Mr. W. E. Packard, of the California Agricultural Experiment Station, the butterflies are quite numerous during certain years and cause more or less damage.

However, not until alfalfa began to be widely grown in the newly irrigated region in the Imperial valley of southern California did the butterfly assume such proportions, and appear with such regularity each season, as to become a dread to the farmers, particularly to those confining their efforts wholly to alfalfa growing. It was in 1909, after a season when the larvae had taken all of one crop of hay, causing a loss of hundreds of dollars on his 320-acre ranch, as well as a similar loss to dozens of other ranchers in the valley, that Mr. J. A. Walton, of the Imperial valley, wrote the U. S. Department of Agriculture asking for a remedy or a method of dealing with the pest. As no remedy was known, plans were at once begun for investigating the outbreak and if possible working out some plans of controlling the same. This circular is a partial report of the work done by the writer in the Imperial valley during 1910, and while the investigation is still under way, another year being necessary to complete the same, it is thought desirable to give to the farmers in the alfalfa-growing section of the country the information secured, it being of such a nature as to be of great immediate benefit, if put to practical use, in controlling the pest.

The full-grown larva caterpillar is usually one inch long, sometimes a little over, dark green in color, with a white stripe on each side, partially broken by black and red dots at each spiracle. There is often an intermediate, narrower, and less distinct white line just above each of the lateral lines. In some specimens a black or dark-green median dorsal line is also present.

Investigations in the Imperial Valley.—The investigations were begun by the author about the middle of March, 1910, and carried on through the summer until late in the fall of the same year. The writer was at first located on the J. A. Walton ranch, in the extreme southeastern part of the valley, and later at El Centro, where the work was carried on in co-operation with Mr. Walter E. Packard, an agent of the California Agricultural Experiment Station, to whom a great amount of credit is due for the assistance and timely suggestions offered.

The Imperial valley is a place unique in location and altitude. It is an irrigated region entirely surrounded by mountains and desert. The major part of the valley lies below sea-level; some of it, in fact, as much as 250 feet below. The weather is warm most of the year and hot the rest of the year. It hardly ever rains, and the humidity is usually very low. The growing season extends over practically the entire year, there being an entire lack of freezing weather during some winters. On the average, there is not during the year more than one month of weather that could be called winter weather.

The conditions just referred to serve to explain the immense numbers of these butterflies in the valley. The period over which the butterflies are able to continue breeding without being molested is very long, being from March to December. Then, too, owing to the very low humidity, there is usually insufficient moisture to permit the development of what appeared to be a contagious disease, resembling in effect flacherie of the silkworm. This disease was found to be largely responsible for keeping this butterfly in check in other parts of the State of California and in southern Arizona.

The alfalfa ranches in the Imperial valley, California, can all be divided into two classes: (1) Pasture ranches, or those devoted entirely to the fattening or pasturing of cattle and hogs, and (2) hay ranches, or those on which the crop is utilized for hay. For convenience we can look at these separately.

Pasture Ranches.—It was noticed early in the summer, and the writer's attention was called to the fact by a number of farmers, that ranches devoted to the raising of stock, either cattle or hogs, were rarely, if ever, seriously affected by the pest. On some dozen such ranches visited and inspected, very few worms could be found, and the butterflies flying over the fields were never numerous. At first this was considered entirely due to the fact that there was hardly ever any bloom present for the adults to feed upon and that the greater part of the fields was kept grazed quite closely, making the condition in pastured fields less favorable for the laying and development of the eggs. Under such conditions the number of eggs deposited is greatly reduced. Many of the eggs laid on the young growth under such conditions are destroyed by the grazing of the stock, and the percentage that develops is kept to a minimum. Later in the season it was noted that on the stock ranches visited the disease previously mentioned, which is common to lepidopterous larvae, was more prevalent than on hay ranches. All the factors determining this difference have not been ascertained, but the fact itself is quite significant.

On some of the ranches coming under the writer's observation the alfalfa was allowed to grow for some four weeks, or until it reached the height of about 20 to 24 inches. Cattle were then turned into the field, and within a few days the alfalfa became trampled. The ground and the alfalfa were very moist, there being more or less dew present every morning, and droppings from the cattle and hogs naturally brought about a foul condition in the field, assisting in the retention of moisture. Whether as a result of these conditions or as a coincidence, the contagious disease appeared to the writer to be much more prevalent in these fields than elsewhere.

Hay Ranches.—It is on the ranches and fields from which successive crops of hay are taken that the height of the damage is reached. In such fields the conditions for the development of the species are as nearly ideal as possible, and here the worms are ordinarily unmolested in their feeding and growth. The period elapsing from the time that one crop is cut until another is ready to harvest, so nearly coincides with the length of the period necessary for the development of any one generation of the butterfly that the cutting of the hay, as ordinarily carried on, does not reduce their numbers or disturb their work, since the worm will likely be in the advanced stage or, perhaps, have passed into the pupal stage before the crop is cut off.

Many fields observed by the writer were attacked in strips or patches. Sometimes one border would be almost totally devoured, while an adjoining plot would not be molested. Again, in other fields irregular patches would be attacked and the rest of the field not materialy injured. In cases where whole borders of alfalfa were injured, the time and amount of water applied in irrigating produced an uneven growth, and as the generation of butterflies, on issuing, chose for egg-laying the strip that was the greenest, and freshest, this strip would be the one damaged. It seems possible to account for the irregular patches in the same way—that is, considering that these patches were ones that were held back because of the condition of the soil. The soil conditions in one part of the field may be quite different from those in another part of the same field, and thus a varying growth of the crop results, which would be attacked in patches.

Besides alfalfa the larva is known to feed upon several other clovers and upon weeds.

Methods of Control.—In dealing with insect pests affecting cereal and forage crops it has proved possible in only a few instances to control them by the use of any of the various insecticides or poisons. The reason for this lack of success lies largely in the fact that such crops are distributed over a wide area and the expense of application of any insecticide as a control measure is necessarily high, while a lack of thoroughness is likely to arise when one tries to keep the expense of treatment down to an economical basis.

System of Crop Culture.—For the reasons just given the control problem, in dealing with this alfalfa pest, resolves itself to one of the method of handling the crop. The worst conditions noted were those in which the attack of the caterpillar was due to delayed cutting of the hay crop and due quite often to the fact that many of the ranchers were trying to cultivate more land than it is possible for one man to farm successfully. With such ranchers some of the following defects are observable in their treatment of the hay crop: First, there is often insufficient water used to provide for the prompt development of the alfalfa crop. An abundance of water is very necessary, as it enables the alfalfa to make faster growth, and thus the farmer can reap his crop sooner and before the caterpillars have effected much damage. Second, the crop is not cut early enough in the majority of cases—about 90 per cent; that is, the alfalfa is too far advanced in bloom when cut, and this delayed cutting enables the caterpillars to mature successfully. The alfalfa should be cut just when it is beginning to bloom. Other noticeable factors which tended to hamper control measures were that at haying time the crop was cut high, the turning corners were left ragged and the ditch banks and borders poorly mowed, if at all, and thus the caterpillars that were present and had not gone through to the adult stage had a large amount of material upon which to develop, and soon did so, so that the butterflies from these were ready for the next crop. These places would also afford bloom which would naturally attract the butterflies.

It takes about 28 days to produce a hay crop in the Imperial valley, a little longer than this in the spring and fall, and a few days less in warmer weather. It also takes just as many days as has been shown under "seasonal history" for the butterflies to develop from egg to adult. Now if the crop of hay be forced by frequent watering, or because of good soil conditions, the worms will not have gone into the resting stage at time of cutting, but, instead, will still be feeding on the green alfalfa, and when the hay is cut and removed, conditions are rendered unfavorable for their development and their food supply will be correspondingly reduced. Therefore, the hay should be cut just as it is coming into bloom, which is a few days sooner than it is generally thought advisable to cut it, as a generation of worms will take a whole field in a short time. Thus not only will the hay be saved, but the major portion of the larvae, finding a lack of the food necessary for their complete development, will

ultimately perish. To bring about this condition, however, it is necessary to mow the field carefully, leaving no high stubble. The turnrows, borders, and ditch banks should also be closely mown, as this will not only reduce the supply of food for the larvae, but also that of the butterflies, as such plants will afford considerable bloom. In two cases in the writer's experiments it became necessary to remow the fields at a cost of from 30 to 50 cents per acre, and then in all cases to irrigate promptly. As a result of this procedure a large percentage of the caterpillars failed to develop to the imago or butterfly stage. Deducting these, together with the larger number that failed to reach the pupal stage, it will be seen that there were many hundred less worms to attack the next crop, as each butterfly developing from them would have deposited at least 100 eggs. In some fields, instead of irrigating immediately after the hay was removed, the experiment was tried of letting the field go dry for several days, and thus starving the worms. While this gave good results, it was not as satisfactory as the method of immediate irrigation, for there was always enough moisture in the field to start the new crop going and thus provide a little food for the caterpillars.

The complete success of these methods is dependent on co-operation among the farmers, for the larger the percentage of those who inaugurate a good cultural system, the greater will be the benefit derived therefrom. The butterflies, however, do not fly very long distances, and as long as the conditions are favorable for their existence on one field or one ranch they will remain there. They may, however, fly considerable distances when forced to do so for want of food or for fresh green alfalfa on which to deposit eggs or when driven by the wind.

Results Obtained.—Of ten fields cultivated according to these methods only one was damaged by the caterpillars up to July 10, the date on which so large a number of them were killed by the disease previously mentioned. This one field was damaged because irrigation had been delayed for nearly two weeks after the cutting of the second crop, owing to a new ditch which was under construction. Being a thrifty field naturally, the alfalfa had made a start, assisted by the moisture still present in the ground, and butterflies coming in from an outside field deposited eggs on this new growth, thus enabling the worms to destroy the best of the crop after it was finally irrigated. As a result, almost an entire crop was lost. A field adjoining on the south, which had been irrigated immediately after cutting, was not in the least damaged. This was a lesson in itself, as it indicated the necessity for prompt work.

Protective Measures Advised.—Thus from a comparison of observations made in the two classes of fields it is possible to derive the following rules for handling the crop:

Do not abandon a field because the caterpillars are beginning to damage a hay crop. If the caterpillars threaten the destruction of a crop of alfalfa before the hay can possibly mature, mow it at once, cutting it low and clean, and in so doing starve a large majority of this generation of worms, thereby protecting the next crop as well as saving a part of the one already affected.

Get the ranch in the best possible cultural condition. Irrigate often and thoroughly and as soon after cutting as the crop of hay can be gotten off the ground.

Cut close to the ground, and clean, especially along the ditch banks, borders, and turnrows, as well as in the main part of the field.

Cut the crop early. When just coming in bloom is the proper time. Watch for caterpillars in the early spring crop, and if many are observed about grown, cut the hay a few days before it is in bloom, and thus save the next crop.

Pasture alfalfa whenever possible, as a minimum amount of damage occurs in such fields.

Use the method just mentioned on early spring crops, no matter whether any worms are noticeable or not, and thus avoid any risk of having overlooked them. The satisfactory results must come from an application to an early crop.

Renovate every winter, either by disking or by the use of an alfalfa renovator, thus disturbing any pupae that may be wintering over, and putting the land and alfalfa in condition for good growth the following spring.

These methods, while they will probably be of value in other sections, have been tried only in the Imperial valley of California, and they are not specifically recommended for sections where climatic and other conditions differ from those found in this valley.

A Long-Keeping Orange.

To the Editor: The Ad Interim Committee on Wilder Medals of the American Pomological Society has awarded a silver medal to a new variety of orange, known as the Lue Gim Gong. This variety has the following history:

Origin.—In 1888 Mr. Lue Gim Gong, De Land, Florida, pollinated Harts Late with pollen from what was believed to be a Mediterranean Sweet tree. From these seeds about twelve trees were raised, no two of which proved to be alike.

The variety, now called Lue Gim Gong, when it came into fruit, seemed to be such an improvement on Harts Late that Mr. Lue budded fifteen trees with this variety in one side and Hart's Late (Tardiff) on the other. About thirty other trees were budded with this variety on one side and other varieties on the other. Five trees are now solid.

Comparisons.—At this time Harts Late is the standard late orange of Florida, and it may therefore be well to make a comparison between this new variety and the standard sort. On July 6 Mr. Lue took fifteen boxes of Harts Late (from one side of above trees) to the packing-house, and after testing for Sp. Gr. by placing in water, packed five boxes out of the fifteen. These were considered to have enough weight for shipping. Those five boxes were shipped to North Adams, Mass. Upon arrival they had to be repacked at a cost of 35 cents per box, and then only three boxes remained. The three boxes repacked sold for $2.50 per box.

At the same time five boxes were picked of the Lue Gim Gong orange from the other side of the same trees. The fruit was not tested for Sp. Gr. and all the fruit was shipped. On arrival at North Adams, they did not require repacking, and the whole five boxes brought $4.50 per box.

The Lue Gim Gong orange is a hardy, thrifty growing variety. It can be marketed to advantage in August and September, when other varieties are out of season, and when the only fruit on the markets is Valencia Late from California.

The fruit hangs on the trees with very little dropping through the rainy season, which in Florida usually begins in June and lasts several weeks. The fruit has been known to hang on the trees two, three, and even four years in an edible state. There is no question but that this variety marks the beginning of a new era in late orange culture.

The report of the committee is as follows:

General Appearance—Good on fruit of this season. Two-year-olds a little coarser in peel, but still good. Three-year-old fruit thicker peel and darker color; less price.

Size—3¼ inches from calyx to blossom end, and 3⅛ inches in diameter.

Form—Good; somewhat cylindrical with well-rounded ends.

Color—A little light in midseason, darkening to a rich, deep, reddish-yellow later in spring and summer.

Market Value—Very promising.

Shipping Quality—Most excellent.

Keeping Quality—Of the best; its most marked quality.

Dessert Value—Good.

Texture—Firm with strong tissues.

Flavor—Sprightly; a rich blend of sweetness and sub-acid.

Quality—Good.

Special Merit Noticed—Holding its juices while on the tree for thirty months, and its remarkable resistance to cold.

Defects Noticed—Membranes strong, as in all late oranges.

Productiveness—Prolific even when loaded with previous season's crop.

Hardiness—Very hardy.

Resistance to Disease—Good.

Recommendation—Worthy of wide trial for planting on a large scale for a year-around orange.

A full description and history of this variety appears in the Report of the American Pomological Society covering the proceedings of the Florida meeting. This variety is unique in its keeping qualities. The writer, within a few weeks, has examined specimens of the fruitage of 1908, and found them in edible condition. These had clung to the tree since that time. They had become somewhat overgrown and slightly rough, and had lost a good deal of the juice, but were not vastly inferior to many of the store oranges we are accustomed to pay thirty or forty cents a dozen for.

JOHN CRAIG,
Secretary American Pomological Society.
Ithaca, N. Y.

CONFIDENCE IN CALIFORNIA GRAPEFRUIT.

Prof. C. F. Baker, of Pomona College, Claremont, Los Angeles county, has confidence in California pomeloes, after having had a chance to study the same fruit in the gulf region. He recently spoke on this subject as follows: "I find here, too, a most remarkable job-lot of grapefruit scattered through the groves. Moreover, I find many growers who do not know what variety they possess. Others, more confident, will name them, but I carry that fruit to some others, equally confident, and get other names for it.

Now, it is my humble opinion that California is just as capable of producing as fine grapefruit as Florida or Cuba. Eventually, I believe, this State will produce a finer product, since we have here a more all-alive community, and more vigorous, radical, and up-to-date methods. We are now awakening to the fact that we have never yet taken the first step toward broad, thorough, systematic efforts in applying modern methods of plant breeding to our citrus fruits. A little haphazard and unsystematic selection here and there tells the whole story to date. We are now at the opening of a new era, and I expect to live to see the day when we will have a navel orange or a Marsh grapefruit better in every respect than the average of today, and in addition possessing but four or five sections. What breakfast fruits they will make, and how rapidly they will replace the sorts we are getting along with today! There may be bud sorts existing even now in some California orchard that will yield such fruits. I have already seen individual fruits that were definite promises of such possibilities. We can beat the world along this line if we get at the work actively enough.

ORANGES OVER HIGH GROUND WATER.

To the Editor: I should be very grateful to you if you would let me know through the columns of the PACIFIC RURAL PRESS whether Californian experience shows that citrus trees can be grown upon land successfully where the water-level is six feet from the surface; that is, where water is to be found at that level at all seasons and does not appear to rise higher during the rainy season? If so, and presuming that other conditions are favorable, under good orchard management, to what age would the trees be likely to remain profitable? Kindly also let me know how trees would be likely to behave under similar conditions with the water-level at ten feet from the surface?

G. L. JOHNSTONE.

Transvaal, South Africa.

[We are not aware of a position where citrus trees are growing in California with groundwater permanently at six feet below the surface. We can only say theoretically that if the soil should be a free loam and the capillarity therefore somewhat reduced, we believe that orange trees would be permanently productive in such a situation. If the soil were very heavy, capillary rise might be too energetic and accomplish

a saturation of the soil for some distance above the water-level. In a free soil without this danger the roots could approach the water as they find it desirable and be permanently supplied. This is, as stated, a purely theoretical view, but we find by frequent digging of orange trees that they are largely dependent upon a shallow root system, the chief roots generally occupying the first four feet below the surface. From this fact we conclude that deep rooting is not necessary to the orange, although unquestionably deep rooting and deep penetration for water are desirable as allowing the tree to draw upon a much greater soil mass and therefore be less dependent upon frequent irrigations and fertilizations. As to whether the trees would be better circumstanced with the water-level at ten feet than six feet, again we can only give the theoretical opinion that six feet would be pretty close to a minimum distance and several feet more than that would be desirable.

The California Deciduous Fruit Crop.

This being the season of the year when growers and buyers are most interested in the growing crop of deciduous fruits, the PACIFIC RURAL PRESS last week sent letters to about forty fruit-growing counties, asking for information at first hand as to the outlook at this time. We have received replies from most of the principal fruit-growing counties and trust that the next letter we shall send out will be responded to by everyone addressed. As to the reliability of the estimates given below, we believe our readers can be assured that the figures are conservative and should prove of value to every grower.

In order that the estimates given may be most valuable, we give in the following table the acreage in bearing trees for the spring of 1910 in each of the principal fruit-growing counties, and next to it the percentage of a full crop for 1911.

As many of the responses to our letter give explanatory remarks, we herewith print them as received:

COUNTIES	Apricots	% of Full Crop	Cherries	% of Full Crop	Pears	% of Full Crop	Peaches	% of Full Crop	Prunes	% of Full Crop
Alameda	115,000	50	87,000	100	58,000	75	84,000		154,600	45
Butte	7,545	40	1,743	50	13,199		133,638	100	84,405	95
Colusa	17,000	50	1,000	90	7,000	75	13,000	75	92,500	50
Contra Costa	53,100	15	8,050	50	73,500	70	28,200	50	54,220	65
El Dorado	400		5,000		70,000		110,000		124,000	
Fresno	145,600	50					3,270,000	50	83,000	
Kern	25,000		1,000		1,500		50,000		4,100	
Kings	79,600	40					386,200	50	6,860	50
Lake	1,975		310		24,850		5,829		29,622	
Los Angeles	200,300		1,950		75,000		218,720		61,710	
Madera	10,000	15					70,000	30		60
Mendocino	500		750		10,000		10,000		20,000	
Merced	8,250	25	450		4,250		148,401	75	1,525	
Monterey	25,000	100	2,000	50	6,200		9,500	100	3,350	90
Napa	17,000		32,000		69,120		107,880		91,180	
Nevada	170	10	285	25	36,270	30	12,760	20	5,800	50
Orange	167,240	75					38,350	85	17,320	90
Placer	7,485		23,480	40	104,600	60	994,250	60	20,465	
Riverside	66,317				12,151		45,293		22,138	
Sacramento	17,000	60	8,500	75	55,000	60	18,000	85	46,000	80
San Benito	35,000	40			6,000		15,000	100	125,000	50
San Bernardino	26,200		15,600		18,500		8,250		2,800	
San Diego	9,140		1,300		2,318		8,760		3,240	
San Joaquin	70,540	33	37,301	100	25,425		235,130	75	47,815	100
Santa Barbara	21,450	95	750		1,215		6,325	95	1,250	96
Santa Clara	544,000	25	137,700	45	126,200		592,500	50	5,257,900	40
Santa Cruz	56,440	90	12,914	75	14,286		10,594		99,096	
Shasta	650		500		27,700		44,000		87,500	
Solano	237,800		65,200		203,000		490,600		465,000	
Sonoma	22,540	75	45,720	100	81,270	80	28,670	90	588,040	100
Stanislaus	9,050		1,350		3,620		50,410		7,190	
Sutter	4,804		1,186		11,309		130,854		39,922	
Tehama	64,410	10	5,070		63,050	50	679,400	27	115,700	60
Tulare	32,075		500		3,287		348,170		137,935	
Ventura	26,000	80					7,800		19,000	
Yolo	80,000	25	4,000	90	12,000		11,000	75	130,000	60
Yuba	18,750		11,125		14,450		69,555		5,055	

BUTTE COUNTY.—Estimate of fruit crop on May 6: Apricots 40%, Prunes 95%, Cherries 50%, Peaches 100%. The foothill Pear crop entirely ruined.

COLUSA COUNTY.—Estimate of fruit crop on May 4: Apricots 50%, Prunes 50%, Cherries 90%, Peaches 75%, Pears 75%. The Almond crop is almost an entire failure.

CONTRA COSTA COUNTY.—Apricots 15%, Prunes 65%, Cherries 50%, Peaches 50%, Wine Grapes 70%, Wickson plums 65%, Bartlett Pears 70%.

KINGS COUNTY.—Apricots 40%, Prunes 50%, Peaches 50%. Your correspondent just returned from tour of inspection.

LOS ANGELES COUNTY.—No report received, but we learn that the apricot crop will be short, owing to rain while trees were in blossom. Peaches will be a large crop.

MADERA COUNTY.—Apricots 15%, Prunes 60%, Peaches 30%. Impossible to estimate the grape yield yet. The summer-fallow grain is excellent. Winter sowing will soon be a thing of the past.

MERCED COUNTY.—Apricots 25%, Peaches 75%. Only a few cherries raised in this county, also very few prunes. These were slightly damaged. Grapes were hurt badly. Crops will range from 15% to 50% in differen localities.

MONTEREY COUNTY.—Apricots 100%, Prunes 90%, Cherries 50%, Peaches 100%. Prunes are not generally grown in this county. Apricot thinning about finished. Apples are blooming very fully. Frost killed walnuts. Apple buyers offering $22 per ton for fruit delivered at Watsonville and have bid 25% higher for orchards.

NEVADA COUNTY.—Apricots 10%, Prunes 50%, Cherries 25%, Peaches 20%, Pears 30%, Apples 100%. This is a a low estimate, the figures being very conservative.

ORANGE COUNTY.—Apricots 75%, Prunes 90%, Peaches 85%. Prunes not grown on a commercial scale. No cherries are grown and peaches not very extensively. This county is a large producer of apricots, being about the third in the State for quantity. Some apricot orchards have more than full crop.

PLACER COUNTY.—Plums 50%, Cherries 40%, Peaches 60%, Pears 60%, Grapes 70%. This is for the county as a whole. Some sections go far higher, some lower.

SACRAMENTO COUNTY.—Apricots 60%, Prunes 80%, Cherries 75%, Peaches 85%, Pears 60%. Thrips have damaged the pear

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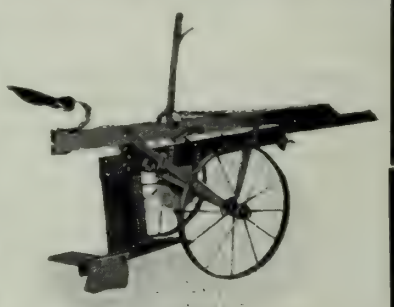
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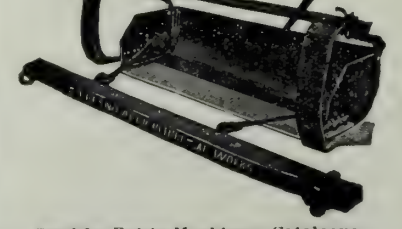
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crop in the Courtland district to the extent of 400 cars.

SAN BENITO COUNTY.—Apricots 40%, Prunes 50%, Peaches 100%. Apples and Pears, full crop; but pear scab may injure a large number of pears.

SANTA BARBARA COUNTY.—Apricots 95%, Prunes 96%, Peaches 95%. The frost only touched us in a few places, leaving us practically a full crop, as there is an exceptionally abundant setting.

SANTA CRUZ COUNTY.—Apricots 90%, Cherries 75%. Apples promise to average well, but blooms have been light in some orchards.

SAN JOAQUIN COUNTY.—Apricots 33%, Prunes 100%, Cherries 100%, Peaches 75%. Almonds, taking all varieties together, about half a crop. Plums good.

TEHAMA COUNTY.—Apricots 10%, Prunes 60%, Peaches 25 to 30%. Pears will be quite a bit short, the dry weather of last year being the cause of shortage this year. Frost did damage in spots only.

VENTURA COUNTY.—Apricots 80 per cent. Prunes, cherries, and peaches of no commercial importance in this county, there being only a few scattering trees and no real orchards.

YOLO COUNTY.—Apricots 25%, Prunes 60%, Cherries 90%, Peaches 75%. Muscat and Sultana Grapes will probably produce from 60 to 75% of full crop; wine grapes somewhat less.

FRUITS WILL BE HIGHER.

In another column we print estimates of the California fruit crop, and were the market conditions normal the prices would remain as they are. But with the markets practically bare of dried fruits, the demand strong, and prices stiffening, it would seem that apricots, peaches, and prunes will find ready sale at advanced prices.

A grower from Santa Clara county states that buyers are offering from 4 to 4⅝c. for prunes, fall delivery. He predicted a much higher price in a very short time. While the crop in that county was estimated at 50% a week ago, it is now though that 40% of a full yield is about right. This loss is owing to the fact that prunes are still dropping from the trees.

Cherries are now going forward in small lots, but will soon be shipped in carloads. The first boxes in the Eastern markets sold for as high as $9.25. Of course, but a few boxes brought these prices. On Tuesday, at New York, cherries sold for 5c. per pound. At present cherries are in the local market, but at a fancy price. Apricots are also bringing good prices. Dried apricots for the coming crop are quoted at 11c. to the grower. Last year the market started at 7c. The first apricots of the season were shipped from the Imperial valley this week.

Peaches have already gone up over a cent since the frost of a month ago. The Fresno Republican states that four carloads were sold by a local packer to a Minneapolis firm last week at 7 3-8 to 8¼c. It further says that a broker was out offering 8c. for new peaches.

Raisins in the sweatbox reached the 4½c price at Fresno last week, and at this price it is stated that a considerable quantity was bought, but that now growers are asking more.

Almonds have also gone up. The rain and frost in the State and bad reports from Europe all tend to stiffen the market.

Fresno county has determined to assist the Federal Government in the effort to destroy the ground squirrels, and five supervisors to conduct the work will soon be appointed. The campaign will begin June 1.

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Here is the Goodyear No-Rim-Cut tire as it fits any standard rim. When you adopt this tire you simply reverse the removable rim flanges so they curve outward. They curve inward with old-style tires. This change can be made in ten seconds.

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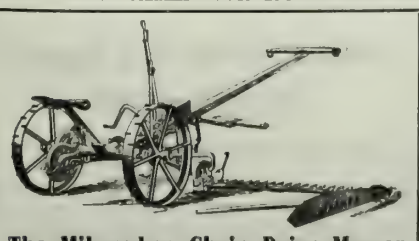
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Alfalfa Between Fruit Trees.

To the Editor: I wish to ask some questions about fruit planting in foothills on the east side of the San Gabriel moutainns and on the south border of the Mojave desert. The elevation above sea-level is 3700 feet. The intention is to grow fruit trees, 90 per cent apples and 10 per cent pears. The land is irrigated, and lies facing east and north in a valley completely hemmed in by high hills. There is now on it about 40 acres of apple trees, part of which are 5, part 4, and part 3 years old. The trees have been planted with rows 22 feet part one way and 30 feet apart the other way. They seem to be growing very well, indeed.

The practice followed is to disc the land between trees and cross with Acme harrow; keep the land bare and in soft condition, and irrigate the trees about once a month, not allowing any vegetation on the land other than the trees themselves.

I now come to the question which I wish to submit. My ideal is that until the trees are 7 to 10 years old, their roots laterally will not have grown outwardly from the bases of the tree any considerable distance, and until 10 years of age they will probably only have gone four feet from each side of the body of the tree. Am I correct as to this? If rows are 30 feet apart, one way, there is (up to the tenth year) a space of land from 20 to 22 feet wide which does not affect the tree or its growth, since the tree affects only the land that its roots have entered, and this vacant land is not involved in the growth of the tree until it has attained an age greater than 7 to 10 years. Eventually it will probably all be used in the larger and older growth of the tree.

If I am correct in my idea about this, land between trees to the extent of 20 to 22 feet not being vital to the growth of the tree in its earlier years, I wish to have you give me your opinion; for if this vacant land is not then of material value to the growing tree, I have a use for it to be put to during the first five to eight years after the planting of the trees. I figure that two-thirds of the total land involved in the growing of a young orchard during the early years might be used for other crops, and we need more land than we now have for the growing of alfalfa, and that if we can appropriate to this crop this vacant land we could produce a large amount of a crop that we have a decided need for and at the same time do no harm to the growing trees.

This alfalfa would be kept four feet away from these young trees, so as not to affect the strength of land the trees are growing in. This is a question I would like you to answer fully, whichever way you regard it, whether as practicable or not, detrimental or not, to the trees.

Our ranchman favors cow peas instead of alfalfa as a crop between the rows of trees. Alfalfa would suit us best, but if the peas would be a better crop for growing between trees I would like you to express an opinion upon the matter. One objection the ranchman has to alfalfa between rows of trees is, that alfalfa requires so much water to irrigate with, that the trees will be injured by it. I cannot agree with him in this. This soil is a very porous alluvial deposit, same as the Mojave desert, and water will not lie in it but sink deeper and deeper as the amount is increased; besides, the land itself is not flat; it has a fall always, and in some places too much fall. Nowhere in this orchard would water accumulate, beyond what is necessary for growing of alfalfa. Is it true that apple or pear trees, under the conditions I name, are injured by water, unless indeed they are in a swamp or with water continually about their roots?

I would do the irrigating of the alfalfa with a plowed furrow at either edge of this alfalfa strip, so as to cut off the direct flow of water from the alfalfa to the trees so that they could not be affected directly by the irrigation of the alfalfa any more than they are now when we irrigate for the trees themselves, and an irrigation of once in two or three weeks for a couple of days at a time would, in my opinion, do no more than help the growth of the tree, in insuring it a plentiful supply of water.

These questions I submit to you for a free reply, as they are matters which we are earnestly trying to fathom and not get in wrong on them. All other lands of ours are rather steep, or we would put alfalfa on them. They will answer well for trees and we are preparing to have a large orchard. OWNER.

Los Angeles.

[You will find on digging that your fruit trees extend their roots laterally much farther than you expect. However, the land between the trees can be used for cropping, providing you apply irrigation water enough for both the trees and the inter-crop. Alfalfa is possible under these conditions if water enough is used to supply both the alfalfa and the trees and not enough to waterlog the soil, which would be injurious to the latter. This, of course, is less likely to occur in such a deep open soil such as you describe. Pear trees are less liable to injury from excessive moisture than any other fruit we grow. Alfalfa is being successfully grown under these conditions both in the warmer parts of this State and in Arizona. The cow peas would be a good crop if you can get them to grow. Usually they are not successful in California in dry, hot situations even if irrigated, unless it be on low, moist land where there is not only moisture enough in the soil but the atmospheric dryness is also somewhat reduced. A little experiment would quickly tell you how you stand in relation to a successful growth of this plant.—EDITOR.]

IRRIGATION OF SAN JOAQUIN VALLEY.

The United States Department of Agriculture will shortly issue a report entitled "Irrigation in San Joaquin Valley, California," by V. M. Cone, which is available for free distribution as long as the supply lasts, on application to U. S. Irrigation Investigation, Berkeley, Cal.

This report gives an account of the physical and industrial conditions in San Joaquin valley and describes present irrigation on each of the streams of the valley. There are over 7,000,000 acres of land in the floor of San Joaquin valley, of which about two-thirds are irrigable and more than a million acres now irrigated.

In connection with previous irrigation bulletins issued by the United States Department of Agriculture, this report provides a fairly complete statement of the irrigation conditions and problems of this important part of California.

Genuine Florida Sour Orange Seed-Bed Trees

Extra fine one-year stock—the best to be had. Be sure you are getting the genuine article. If you will send your orders in now, we are prepared to fill them, be they large or small; but order early, as the supply is limited.

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The advantages of Likfresh do not end with economy of production.

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are not merely "dried." They are "Like fresh," as the name indicates

For example, Likfreshed peaches or apricots soaked in cold water, then eaten with sugar and cream, will taste as if just picked from the tree. Apple sauce made of Likfreshed apples, has the flavor, firmness, and appearance of sauce made from the fresh article. Likfreshed roasting ears, cabbage, string beans, cauliflower, pumpkin, squash, rhubarb, strawberries, loganberries, raspberries, etc., will have the appearance, flavor, and in every way resemble the fresh article when cooked.

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We want every fruit man to see the Likfreshing machine in operation. We invite you to visit our demonstrating plant at Berkeley, bring something with you and watch it put through, bring as much as you like.

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AGRICULTURAL REVIEW.

With the Fruit Men.

It is estimated that 1000 acres of oranges will be sprayed for orange thrips. A 20-acre orchard near Riverside is being experimented upon.

Prof. E. B. Babcock of the University of California, and Edwin Gower of Fowler are experimenting by crossing the walnut and pecan to develop better varieties of the nuts.

The Southern Pacific, Santa Fe, and Salt Lake railroads have joined in making application to the Commerce Court for an injunction to restrain the Interstate Commerce Commission from putting into effect the $7.50 rate for precooling citrus fruit.

Mr. and Mrs. J. Seulberger will leave next week for a year's trip through Europe. Mr. Seulberger is one of the pioneer horticulturists and seedsmen of Alameda county and was one of the earliest subscribers to the PACIFIC RURAL PRESS.

A large amount of planting in orchard and vineyard has been done in Sonoma county, according to reports of Commissioner R. R. Gallaway. Incomplete returns show that 117,917 apple trees, 14,432 pear trees, 13,951 cherry trees, 4903 peach trees, 3268 plum trees, 2014 walnut trees and 1219 apricot trees, besides many trees in smaller mixed lots, have been distributed for planting this season. Over 22,000 eucalyptus trees were supplied by one nursery. An encouraging amount of spraying and culture is also being done, although some growers are not doing as much as they should. Pear scab appears to be very scarce, owing to good use of the bordeaux mixture.

The Gravenstein apple crop near Sebastopol appears to be as promising as last year, in spite of frost and rains. Strawberries will be scarce owing to the late rains.

It has been decided to send grapes from Ocampo to Lodi for precooling before shipment. A precooling system will probably be put in at Acampo before the next season.

Work on thinning peaches has begun on the Kuhn ranch in Tulare. This will take about a month, after which the apricots will be ready for picking.

A large crop of Thompson's Seedless grapes is expected from many parts of Yolo county. Prices of $23 per ton for green grapes are reported by several growers.

Prices of $18 to $25 per ton for Tokays are being received in the Lodi section. For selected Tokays $27.50 has been received.

Peach and grape growers near Kerman are to be given an opportunity to ship fresh fruit this year for the first time though the Fresno Fruit Growers' Company, which will operate the Kerman packing-house this summer. A large increase of acreage of bearing fruit has developed this season.

Swarms of a white fly suddenly appeared in a vineyard near Fresno this week, and did considerable damage. The identification of the fly has not been made.

N. S. Stockton this year set out 200 acres to Calimyrna figs near Atwater, Stanislaus county.

Considerable eucalyptus and almond planting has been completed on the farm of Dr. Langdon near the same place.

Five-year contracts for apricots at $35 are being sought in Alameda county by buyers. Many growers are holding out for higher prices.

In a report which has just been compiled by the horticultural commissioner of Tulare county the total tree planting for the year ending May 1 was as follows: Grape vines, 536,070; eucalyptus, 5,044,556; citrus stock, 908,600; ornamental, 15,000; deciduous, 216,000; olives, 30,000.

General Agriculture.

An investigation of the eelworm in Nevada potatoes, resulting from the rejection of several carloads of potatoes by California, has been made by entomologists of the University of Nevada. The shriveled condition of rejected potatoes is described in a university bulletin, and strong recommendations against sending out infected tubers are made. The only method recommended for eradicating the disease is to cease planting in infested districts, and to destroy potatoes containing the insect.

The pea crop of the Emerson Packing Co. near Brawley, Imperial county, was a partial failure this spring owing to lack of irrigation. The peas were to be used for seed. Several Japanese growers in the same district received $2000 for peas from five acres of land, for market purposes.

Over 1000 cars of canteloupes will be shipped from Salt River valley, in Arizona, this season. Watermelon growers of the valley have received lower rates to Denver. There are 400 acres in the valley planted to this crop.

The hay and grain crop of the State is still in a critical condition, and a few weeks will determine what the outcome will be. A good rain at this time would make grain upon land that now will not produce sufficient growth for hay. A week of hot weather, on the other hand, at this time, would ruin considerable acreage that might come out well under favorable conditions.

Bermuda onions which are being shipped out of Coachella are bringing in about $1.50 to the growers. Earlier shipments netted $2 per crate.

The Turlock Board of Trade has appointed a committee to prepare plans for a melon carnival in the latter part of August. The carnival will last three days and end with a melon feast.

Celery acreage in Orange county will be reduced to about 2000 acres or less this season. A large amount of former celery land is being planted to beets, which is approximately one-third greater than last year.

The Nevada County Promotion Committee is endeavoring to secure a 400-acre orchard for use as a demonstration farm.

Hop dealers in Sonoma county are said to be offering 18 cents per pound for one-year contracts.

The cantaloupe crop in Imperial valley this season is estimated at from 2000 to 2500 cars, worth about $1,000,000. There is an estimated acreage of 5800 acres of this crop now maturing in the valley.

Many farmers in the foothills of Santa Clara county are getting very high prices for green peas and early potatoes, which are now being shipped in large quantities.

A large mortality in the yellow butterfly of the alfalfa is noted this season in Imperial, and the cause of the death of the pest is being investigated by J. C. Bridwell of the Imperial Valley Experiment Station.

The Indio Date and Cotton Co. is setting out 300 acres of cotton this spring. Planting is being done between rows of date trees on the ranch.

A. E. Marshall, of the Coachella valley, received 15c. per pound in the San Francisco market for his first shipments of summer squash. H. L. Sauers, of Calexico, received 40c. per pound for first shipments of green beans.

In Imperial county it is estimated that 20,000 acres of cotton will be planted this spring, against 9100 acres last year. An automatic cotton picker will probably be tried out in harvest time, which may help solve the labor problem in the valley.

A large amount of melon planting has had to be done the second time in the vicinity of Livingston, Stanislaus county, owing to recent frosts.

It is stated that over 300 acres will be planted to tomatoes in the section around Healdsburg this spring. Growers will receive $7 per ton.

That one-fifth of the acreage in Imperial, Yuma, Salt and Gila valleys could produce the amount of long-staple Egyptian cotton now imported into New England from other countries has been shown in investigations just completed by the U. S. Department of Agriculture. Investigations were carried on with Egyptian cotton in all cotton-growing regions of this country, but only in the above-named districts could the Egyptian cotton be grown successfully. Since the Egyptian growers are troubled with a mixture of Hindi cotton, which is proving a serious burden upon the industry, this opening is good for the California and Arizona growers. The Hindi cotton has a short, weak fiber, which injures the high-grade Egyptian cotton by introducing hybrids. The experiments of the department show that it will be easier to grow uniform cotton crops in the Arizona and California valleys than in Egypt itself.

The date for the irrigation jubilee at Orland, Glenn county, to celebrate the turning on of the water by the Government has been set for June 16 and 17. The jubilee is to be conducted upon a large scale.

A meeting of the ranchers of the upper Dry creek country was held at Cooperstown recently for the purpose of considering water rights owned by the Tuolumne River Power and Irrigation Co. Another meeting will be held in June, as no decision regarding the subject was reached.

Former Governor Pardee, president of the Conservation Commission, states that 2,500,000 miner's inches of water has been located on while the bill providing for the conservation board's control was pending.

According to the provisions of the bill providing for the new State Reformatory which was recently signed by Governor Johnson, farming will be taught in the place. Selection of a site will be made within a short time, and work on the place will be done largely by prisoners now in the penitentiary.

A decision has been reached by the Sonoma County Co-operative Poultry Association to put on dues for members. Branches of the association will also be abolished.

The Merced Poultry Association will hold a large poultry exhibit at Merced next week, from May 16 to 20, inclusive. A. L. Leitch of Fresno will act as judge.

The S. E. Gregg poultry ranch of Riverside has been sold to George and Alexander Sinclair of Edinburgh, Scotland. The property sold includes 1300 hens, 1000 chickens, three and a half acres of land, and a large amount of equipment.

The San Joaquin Poultry Association of Lodi has decided to co-operate in an official way with the Merced Poultry Association to make the coming Merced show a success.

Preliminary steps toward the organization of a poultry association were taken at Visalia last week. The association will be a branch of the American Poultry Association and will stand for the principles of the latter organization.

Imperial county growers are gathering an exhibit of their best agricultural products for the purpose of making a permanent display.

Tentative plans are being made in Imperial county for the experiment station provided for by the legislature, to permit work being started immediately after the money appropriated becomes available.

The Pomona Valley Protective Association, with capital stock of $75,000, has been organized for the purpose of developing and maintaining water supplies.

The Diamond range of 68,000 acres, located in Tehama and Shasta counties, has been sold to San Francisco and Los Angeles capitalists for $240,000.

The Petaluma Incubator Co. has sent the first shipment of incubators to New York that has gone by the Panama Canal route.

A large tract of 32,000 acres near Prescott, Arizona, has been purchased by Eastern capitalists for irrigation purposes.

Officers of the Penn Valley creamery of Nevada City have started work on the organization of a cannery and have opened subscription lists for that purpose. There is no cannery in the vicinity at present.

A protest against the poisoning of ground squirrels in the vicinity of Fresno is being made by a number of sportsmen of that place, who claim that quail, cottontail, and other game are destroyed in large numbers by the poison. They advocate shooting and smoking-out to kill the rodents.

Miscellaneous.

The residents of Visalia, under the leadership of Commissioner A. G. Chulz, are making a vigorous campaign against the mistletoe in the city. The mistletoe is badly infested with scale parasites which spread to the olives and do considerable injury to the first crop of berries.

The California Wine Association will make $100,000 worth of improvements on its plant at Winehaven this year, and will handle about 8000 tons more grapes than last season.

The Midway ranch of 247 acres near San Jacinto has been sold to H. T. Coffin. The entire ranch is irrigated, and the larger part is set out to alfalfa.

A cannery for Fillmore, Ventura county, is being projected by several business men of Oxnard and vicinity.

A company of 30 prospective purchasers of small farms has been inspecting Butte county land near Oroville. The men came from Utah.

The Moulton Irrigated Land Co.'s pumping plant on the Sacramento river near Princeton started operating Sunday. The water will be used to irrigate 6000 acres of land which was reclaimed from overflow recently.

A movement has been begun to reclaim a large acreage of flood and swamp lands of Clear Lake by filling in with a dredger. The cost will be about $18,000.

Lessons in silk culture are being given to school children by the distribution of many silk worms at Rialto. The worms are taken home and their work watched.

The Pacific Reclamation Co. is planning to reclaim 50,000 acres of land near Elko, Nevada, by building large storage reservoirs in the northern part of the county.

The Sebastopol Grange has been reorganized with 30 charter members, and officers elected. The grange will hold two meetings a month.

Health Officer Coleman, of Lodi, reports to the Woman's Improvement Club, which has been conducting a campaign against the mosquito, that the insect is now under control and that its breeding places near the town have been destroyed.

Artesian water has been struck at the depth of 587 feet in the well being sunk by the McNeil well-drilling outfit near Holtville.



A Welcome Change

Smoke curling up from the farmhouse chimney as the men are coming in from the fields, gives a pretty suggestion of a good supper and a comfortable home. But it also means a hot, tired woman, working hard over a blazing fire.

Your wife can escape this with a New Perfection Oil Cook-stove.

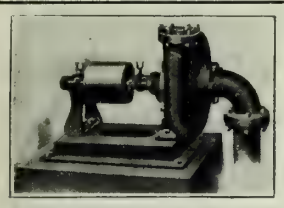
A New Perfection keeps a kitchen many degrees cooler than any other range, yet it does all a coal or wood range can do. It saves time, labor and fuel. No wood to cut; no coal to carry; no ashes; no soot. With the New Perfection oven it is the best cooking device you can find anywhere.

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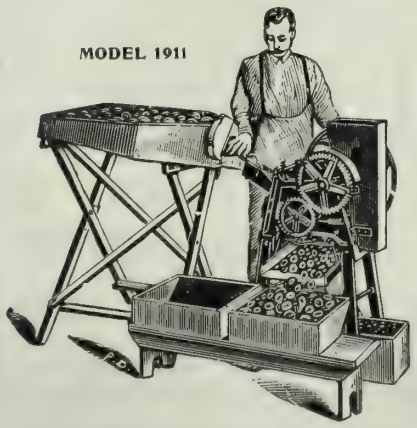
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Some Questions on Poultry Feeding.

Written for the PACIFIC RURAL PRESS by Mr. CARL C. CURTIS.

In your issue of April first your regular poultry contributor brings to the fore certain questions of feeding, and takes a position thereon that seems to the writer as not well taken. We refer particularly to the praise of corn and the condemnation of bran as a food for poultry, young and old. Before going further, permit it to be said that the writer hereof knows absolutely nothing of the experience of the author of that article; it is not an issue, and therefore is immaterial and irrelevant hereto; what follows is from the writer's personal experience, gained not only in the breeding of poultry and other livestock, but in other fields as well, and is offered for what it is worth.

We have not seen the report of the experiments in digestion at the Maine State Agricultural Station, but if they are correctly quoted by your contributor we believe they are somewhat in error in the conclusions drawn both as to Maine and California. In the first place, it is a very difficult matter to compare the economy of two feeds which differ as widely in chemical composition and properties as do bran and corn; the one is largely nitrogenous while the other is almost wholly carbo-hydrate in character, and are therefore fed, or should be fed, with different ends in view, one for bone and muscle and the other for fat. We think that there is no question of the higher digestibility of corn compared to bran, but bran will do what corn cannot, and vice versa; consequently, neither will replace the other in the other's field, and each has a definite purpose in the scheme of things that it will serve when correctly used. This comparative digestibility business in the hands of the uninformed is liable to be very misleading, for the very good reason that it does not constitute any empirical formulae for deducing food values. The expert knows that a very large allowance must be made in using digestibility tables, for variations that will widely affect the final results. The average individual, knowing nothing whatever about the modus operandi and the liberal discounts for error to be taken, swallows the pill whole and foots the bill.

Any ration fed to fowls or other live stock must be considered as in its entirety and not from the narrow standpoint of the properties of any one ingredient thereof. The several constituents of the ration in the process of digestion and assimilation by the body have more or less chemical action upon one another, and this chemical action is further complicated and varied by the influence of environment upon the bodily condition of the subject and which tends to alter in some degree the strength of the secretions of the digestive organs of the animal.

The different varieties of corn vary between themselves, and we believe that there will be a noticeable chemical difference in the corn grown in Maine and the same corn grown in California. The same is true of bran; hardly any two samples of bran are exactly alike in chemical constituents; we have found this out time and again by means of the egg basket, and therefore have rather well-fixed notions of what constitutes good bran.

Some years ago we fed a great deal of corn, both cracked and whole, to our poultry. The results varied widely, but were so negative that we finally abandoned it as a grain feed altogether. It is a great fattening food, but we were never able to make an egg-producer of it by any change in our rations in whole or in part, nor could we find any other grain to combine with it that would produce the results obtained from even the starchiest milling wheat. We found that whatever we could say of it in the East, in California it is not a safe grain to feed in quantity; it is too fattening and hence heating; the hens tire of it sooner, and is quite liable to leave more or less bowel trouble in its wake. The hens do not prefer it to the right kind of wheat.

What we have just said of corn will apply in a lesser degree to the variety of wheat known as "No 1 White Sonora," a very plump white wheat, very strong in starch and, as food for layers, reckless extravagance. It is, we believe, much easier of digestion than the harder "Turkey Red" that we always feed when procurable. We do not recall a single instance when the feeding of white Sonora was not followed by a sharp drop in egg production, and the same statement will apply to corn and rolled barley—another grain of questionable value for hens. If we cannot find in the market a "Turkey Red" wheat, the next best thing is an amber-colored wheat, known as "Club", and usually obtained with a very small shriveled grain. The harder and more shrunken the grain is the better, and if this is not in inverse ratio to the digestibility of it we are no judge. We would pay $5 per ton more for Turkey Red or Club any day than for the best milling grade of Sonora wheat obtainable. We have acquired this estimate of relative wheat values, not from the purchase of grain by the sack, but by the car.

Speaking of rolled barley. One spring we were unable to obtain any wheat whatever except at an outrageous price, and so we substituted rolled barley and used also some corn with it, feeding these two grains for an entire month, working in and out of them gradually. The egg yield dropped 75%, but returned to the normal within a few days after the resumption of wheat. That beautiful lesson cost us in the neighborhood of $400 and showed us conclusively that we would have been money ahead to have paid two prices for any old wheat we could get.

(*Continued on Page 383.*)

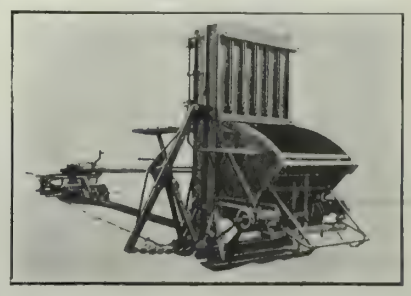
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Higher Honor and Profit in the Horse.

Hon. F. D. Coburn, who declined an election of the United States Senate because he believed he could do more good as executive officer of the Kansas State Board of Agriculture, has just written a stirring article for the Nebraska Farm Journal on the horse which describes a situation existing in California as well as in the central West. We urge the following paragraphs upon the attention of our readers:

THE HORSE TO STAY. The place of the horse in the affairs of the world and in the hearts of his admirers is as permanent as it is prominent, and his position is impregnable. There was a time not so long since when many professed to believe that his usefulness was about to be outlived. With his discharge from the street car and omnibus service, which employed him by thousands, with the introduction and rapidly increasing use of steam and other power in agriculture, and the coming of the automobile and its multiplying utilities, dire prophecies were advanced that the decline of the horse had set in and that as man's principal servant the passing years would mark him for neglect if not virtual extinction.

How wide of the mark these pessimistic views have been as yet is shown best by the history of the horse industry itself. Machinery, it is true, performs more economically and satisfactorily much of the work formerly done by the horse, but instead of retiring him it has in the main simply emancipated him from the underworld of equine existence and advanced him to higher stations.

NOT TO BE DISPLACED BY MACHINERY.—One may safely venture that no mechanical device can more than in part supersede the horse in his many uses, in business, sport and pleasure. Until human nature reverses itself the beauty, strength and utility embodied in a well-bred, well-trained horse, for whatever purpose, will be admired by mankind, and profit, with pleasure as well, found in his rearing, improvement and varied employment. It is impossible that this appreciation shall seriously abate. Neither is there evidence that machinery has lessened any important demand for horses of the heavier breeds, for these, while they are more numerous than ever, are sought on every hand. It is common knowledge, too, that our government is constantly in search of cavalry and artillery horses, of which the supply is always inadequate.

TO BE MORE FASHIONABLE THAN AUTOMOBILES.—Nor do sings point to any permanent lack of interest in the harness horse, for the elite of the fashionable centers are already exhibiting renewed interest in smart drivers, to differentiate themselves from the many using the motor car and thereby making it common, if for no other reason. There is, it must be confessed, an air of pomp, circumstance and style, suggestive of the aristocracy, if you please, about the possession and direction of a proud-stepping, free-acting, dashing team of high-bred roadsters, with proper appointments, not matched by any automobile yet constructed. While none will gainsay that latter-day developments of mechanical ingenuity properly supplement the horse, they do not supplant him, nor detract from his indisputable merit. In fact, the effect of the machinery age has, strangely enough, been wholesome, for it has tended to reduce the demand for and value of the low-grade sorts and consequently has raised the standard of excellence. As horses have been retired from the more menial service into that of higher grades the requirements have become more exacting, and the demand was never more brisk than now for animals of right conformation, action, size and carriage, according to class, with tractability and intelligence.

HOW TO GET PROPER HORSES. All these desirable attributes are obtainable by proper breeding, rearing and training, and the changed situation opens up new and larger opportunities for both the breeding establishments and the general farmer.

As it has ever been, is now, and always will be, the farmer, in the main, is the one who supplies the markets, and, it is to him that the world must continue to look for horses. It is through the farmer's wisdom and intelligence that the standards must be maintained and improvement made. While the breeding establishments will continue to keep abreast of the times and contribute to and share in the prosperity of the industry, the general farmer will remain the greatest producers of horses. Hence, it is incumbent upon the farmer to keep step with progress and produce the best possible. This applies equally to all other kinds of domesticated animals, but is emphasized in the case of the horse, for he has been sadly neglected, where in many instances the grading up of other stock was more or less carefully followed. With the farmer this branch of husbandry is not paramount, but the demand for horses of quality and the high prices they command suggest that it might very profitably be given more attention. In fact, every farmer should have at least a pair of creditable brood mares, of 1200 to 1600 pounds weight when in flesh. Judiciously mated, they would not only raise valuable foals each year, but with the work they could do would prove one of the farm's best adjuncts. While for the farmer of limited means the cost of pure-breds might be prohibitive, grade mares, roomy, of good size, robust, and good milkers can probably be obtained, but the sire should unmistakably always be an upstanding pure-bred of size, stamina and style. It is a happy circumstance that the "scrub" stallion is disappearing, and that several States are already legislating against him.

MORE HORSES AND MORE MONEY. There are indications that the farmers are awakening, and reports are to the effect that, as a usual thing, the right sort of mares are not being freely offered for sale, but are reserved for breeding purposes because of the handsome profits promised from so doing. This seems wise, too, for the business was never in a more flourishing condition than now, notwithstanding that never before were there so many horses, and likewise never before have they averaged so high in price. In fact, since 1902 there has been a steady increase each year in the horse population, and the number in 1910 is the largest ever recorded for the United States, or 21,040,000 head. Also in only one year preceding 1903 were they worth so much as a billion dollars. In 1903 their value was $1,030,706,000, and each year since there has been an increase, the aggregate in 1910 amounting to $2,276,363,000. This amount is four times greater than the value of horses in any one of the years of 1896, 1897, 1898 and 1899. The average value per head in 1910 was $108.19, the highest ever reported, as against $44.61 ten years before, and $31.51 in 1897, which year is notable for the lowest prices of record.

A RISING BUSINESS.—From this it is seen that the business of horse-raising has grown substantially in numbers and phenomenally in the values it represents. Considering all the circumstances of this marked development, the place of the horse becomes even more firmly established, and there should be no weight of discontent from the equine world, unless it might be directed at the quality. No matter what advancement has been made, or how good our horses are, they should be better. Better breeding will not only increase our respect for the horse and his owner but should result in maintaining and even increasing the industry's prosperity. In the benefits from improvement, let the farmer bid for his share by giving the horse attention commensurate with his importance and possibilities; by raising higher grades, if not pure-breds, and thus increasing the revenue from the farm at the expense of no other valuable commodity than brains.

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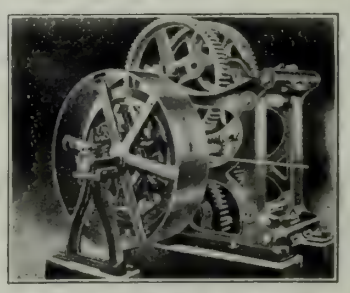
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What Humboldt County Cows are Doing.

If we mistake not, the first cow-testing association in this State was undertaken in Humboldt county, and it is nearing the completion of its second year's work. Leta M. Nevens writes from Ferndale to Hoard's Dairyman that those members who are about to complete the second season's testing have all found a marked improvement in the returns where the conditions for the past two seasons have been the same. Those who are completing the first season's testing are now in a position to make such changes in their herds as will make them remunerative returns in the years to come.

As an illustration of the benefits to be derived from the monthly testing of the cows, the gains made by those of average herds may be given to show what can be accomplished along these lines.

The first of these is a herd of 128 cows which in 1909 produced 24,640 lbs. of butter-fat, or an average of 206.7 lbs. per cow. This same herd had been increased in 1910 to 134 and, under identically the same conditions, has produced 28,777 lbs. of butter-fat, or an average of 214.7, which gives a gain of 8 lbs. per cow; or, by taking a conservative average price per year of 34 cents, gives a return of $2.72 per cow, on an outlay of 80 cents. This dairy discarded about 8% of the herd, the discards being chosen by referring to the figures of the association.

Another herd comprising 120 cows that had been tested produced, in 1909, 31,098 lbs. of butter-fat, or an average of 259 lbs. per cow. In 1910, this same dairy, after the herd had been improved by replacing the low producers with better cows, produced 32,167 lbs. of butter-fat, or an average of 268 lbs., showing a gain of 9 lbs. per cow; or, by taking 34 cents as an average price for butter-fat, showing an increased gain of $3.06 per cow.

The third dairy selected in 1909 had 50 cows which produced 329,476 lbs. of milk and 12,740 lbs. of butter-fat, or an average test for the year of 3.86. In 1910 this dairy had 40 cows which produced 391,372 lbs. of milk and 11,530 lbs. of butter-fat, giving an average test of over 3.96, or one-tenth of 1% gain, which gives a gain of 291 lbs. for the year.

In taking these figures it is well to consider that the additions to the herd, in most cases, were made by putting in young heifers, and the benefits derived are not as marked the first year as they will be in the years to follow, as their milk-flow will naturally increase.

The argument has been advanced that, after one or two years' testing, a dairyman can pick out his poor testers, after which his efforts toward the benefiting of the herd should be directed toward the increasing of the milk yield. While admitting that dairymen should never lose sight of the fact that the production of his cows depends primarily on the milk-flow, the association has a herd which illustrates what may be done in the way of improvement even after continuous testing and after the average has reached a very high standard. This herd in 1909 contained 36 cows and produced 6721 lbs. of milk and 317.9 lbs. butter-fat per cow, with an average test of 4.73. In 1910 the same herd was composed of 35 cows which produced 6500 lbs. of milk and 330.2 lbs. of butter-fat with an average test for the year of 5.08. This shows a gain of three and one-half tenths on the average for the year. At the same time the association keeps a record of the milk production of each individual cow. The different dairymen interested have discarded as many as 30% of their cows and have replaced them with better testers.

These figures are given simply to illustrate what is being accomplished in this section and average herds only have been selected, with the exception of one, whose high average test, combined with a heavy milk-production, must be admitted to be above the average.

The highest milk producer for a period of nine months ending January 31, 1910, gave 10,778 lbs. of milk. This cow also holds the association's record for butter-fat production, with an average to her credit of 515.9 lbs. for the period named. She has a close second with 10,492 lbs. milk, but this cow, being a lower tester, produced but 434 lbs. butter-fat.

Of about 1200 cows tested for the past ten months, one produced over 500 lbs. butter-fat; 17 over 400 lbs.; 193 over 300 lbs.; while not one went under 153 lbs.

The cows comprising the herds mentioned in the above reports are composed mostly of Jerseys, Durhams, and Holsteins, the preference being shown in the order named. While a number of the cows are full bloods, the greater number are graded stock.

Ferndale and the Eel River valley sections are known the world over as containing the finest dairy lands in the State, if not in the United States. Irrigation is not a necessity, the damp fogs and the frequent rains doing away with this altogether. The climate is not cold enough to warrant housing the stock even in the winter, and the dairy herds are seen roaming the fields the year round. Clover grows abundantly, and is the principal food for the dairy herds, with beets and carrots in the winter and sweet corn in the fall. On most of the ranches several crops of clover hay can be harvested a year.

SHORT MILK BOTTLES.

That the average milk bottle contains much less milk than it is presumed to contain is shown by investigations completed by the State Dairy Bureau.

The bureau examined 389 bottles, of which only 184 contained the required amount or over. If a limit of 10 cubic centimetres, or about a third of a fluid ounce, on either side of the exact value be allowed, 88 bottles would fall below the limit, and only 26 above it.

No bottles were found to contain as much as 30 cubic centimetres more than the required amount, while 28 were found to contain that much less, and 22 of these 40 cubic cetimetres less. This would amount to 19 per cent of the contents.

The 10 cubic centimetre variation from the exact amount should be considered permissible, while more than this could be easily avoided by the manufacturers.

One evil that has been remedied recently in the dairy business is the use of preservatives. Up to the time of the passage of the State pure food law in 1907, many samples of milk could be found in which preservatives were used.

Since that time their use has been largely discontinued, and in the last two years, out of 921 samples examined, only nine were found to contain compounds of boron and six formaldehyde.

It is stated by authorities that the shortage of pork which was so serious a year ago will not be repeated for some time at least. The high prices caused by the scarcity induced farmers all over the country to go into hog raising, with the result that production is being greatly increased.

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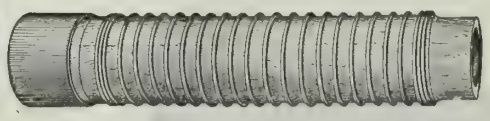
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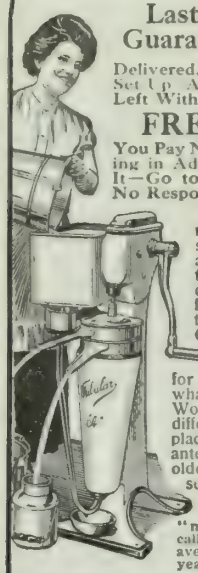
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A VISIT TO A CERTIFIED DAIRY.

(Continued From Page 369.)

a good substitute for the fresh food, but chopped alfalfa hay, bran, and grains, and other hay is also fed to increase the flow of milk, which otherwise would not be sufficient to supply the customers.

The cows are given enough alfalfa to keep them contented during milking. The rest of the food during the summer is put in the 15-acre run for the cows to gather up themselves. In winter they are kept in yards which are graveled to prevent the mud from forming, and are fed in an open shed, which they can enter at any time. This building can be closed on any side from which wind or rain comes, to give the herd shelter. The other sides are left open to permit plenty of light and air to come in.

The keynote of the whole system is cleanliness and keeping the cows healthy and in good condition. The cost is greater, and does it pay? The answer can be seen in the fact that certified dairies are being started more than ever before, and in the growth of this dairy from 15 to 350 cows.

LIVE STOCK NOTES.

American cattle owners who have ranches in Mexico have appealed to this government to allow them to bring cattle across the border in bond. One of the difficulties to be overcome before doing so is to rid the cattle of the Texas fever tick.

P. E. Funk, of Stockton, has purchased a large tract of land near Atwater, Stanislaus county, which he will plant to alfalfa. A dairy will be established on the place as soon as the place is ready.

A county fair and live stock show is to be held at Chico the latter part of September. Adjoining counties will be invited to participate, especially along stock and dairy lines.

From 12,000 to 15,000 head of cattle are being imported from Mexico monthly at Nogales, Arizona. This is much heavier than usual.

A sufficient amount of money has been secured and it is now announced that a $15,000 alfalfa meal mill will be erected at Biggs Junction.

The largest sales of stock in the history of the Tulare river reservation will probably be made this summer. The cattle of the Indians are in very good shape, and more calves than ever are in the herds.

DAIRY NOTES.

Several residents of Biggs, Butte county, are preparing to open a cheese factory and are signing up dairymen for that purpose.

Eighty-one head of dairy cows recently sold by J. Clark to Henry Lewis of the Dixon Creamery were tested for tuberculosis, and only one had any trace of the same.

T. S. Glide of Davis has had an unusually successful year with his French Merino and Shropshire sheep. He has now about 500 head of the best specimens of rams that he has ever raised.

State Dairy Inspector Canham has been looking over the dairies of Kings county recently and reports them to be in much better condition as a rule than when he was there a few months before. Two of the dairymen who had not cleaned their places were arrested and fined.

FOR RENT—120 acres A No. 1 pasture. Mrs. C. Tuft, Davis, Cal.

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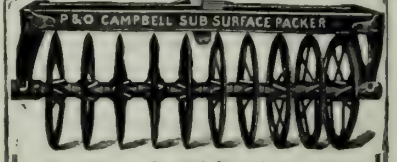
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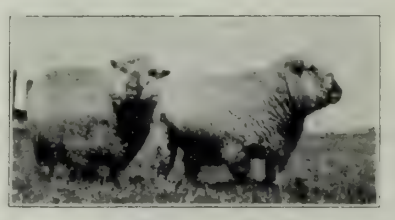
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SOME QUESTIONS ON POULTRY FEEDING.

(*Continued From Page 379.*)

In the matter of bran, we feed it constantly to young and old, even going to the extent of having it continually before our brooder chicks from their first feed on. We do not think it is a good feed for them—we know it. Chicks whose diet is largely bran—good bran, mind you—will be better boned and muscled and will mature faster than those fed on any other feed combination we know of. We believe in plenty of variety, and practice that belief, but whatever our chicks and hens get, bran is always a liberal ingredient of their diet. We have tried them with and without it, and consequently do not feed a car or so of bran a year simply out of charitable consideration for the feed man. If your correspondent's chicks have suffered from white diarrhea and other bowel troubles while feeding good bran, the correct diagnosis of the cause would point more positively to faulty incubation, bad brooding, or poor stock, than to the feed.

Except wheat, we exercise more care in the purchase of our bran than of any other food we buy. In our local markets there are two general grades, called "heavy" and "light". The former consists of fine hulls and much middlings or shorts, while the latter is very coarse and consists almost wholly of the hulls. The latter is the kind we look for, and is usually a dollar or two per ton cheaper than the heavy grade. The heavy bran is too starchy, and, if pure, too easily digested for business purposes on an egg ranch, and besides this, the possibilities for adulteration and the probabilities of ocular detection are correspondingly increased. We avoid this heavy bran even for dairy use, as it will not give the milk-flow that the lighter and coarser variety will, and its introduction into our morning mash is invariably followed by a drop in the egg yield.

If our conclusions as to the value of corn and bran and wheat as standard poultry feeds for California are warranted by the premises and the facts—and we have reason to think that they are—we do not believe that the Maine station report will be the means of working any extensive alterations in the bill-of-fare of the California hen, and are likewise quite positive that any of the faithful who are building fond hopes of Standard Oil dividends from the assiduous following of the Maine digestibility tables are doomed to disappointment if not financial distress.

Rancho Mirasol, Pasadena.

QUESTIONS IN FEEDING

By M. Russell James.

The foregoing communication will be found an interesting article in criticism of the value of corn as a general poultry food as proven in the Maine "Digestion Experiment with Poultry." The writer, Mr. Curtis, is owner of the large White Leghorn poultry plant, "Rancho Mirasol," at Pasadena, and well qualified, both by experience and education, to speak upon the subject. Comments from such a source should have weight with even those poultrymen who do not agree with his conclusions.

On the other hand, the work of our experiment stations should not be undervalued nor considered merely academic. Many of the stations, and particularly Maine and Cornell, have kept large flocks of fowl for years, and the most painstaking work has been done along practical lines as well as experimental and scientific ones.

As explained in the bulletin giving the results of the latest experiment at the Maine station, there have been few experiments attempted in this country with poultry to determine the digestibility of feedstuffs, owing to the great difficulty of the work with such small and active subjects. The "balanced ration" tables for fowls have been made up from the food values as obtained from such experiments with horses, hogs, etc. The structure of the alimentary canal of birds being quite different from that of ruminants, it follows that there must be a difference in their digestive capacity. To determine this point has been the work of the Maine Experiment Station with poultry for the past three seasons, the results of which are given in Bulletin No. 184, which may be obtained by addressing Director Chas. D. Woods, Orono, Maine.

CONCLUSIONS AS TO THE RELATIVE VALUE OF WHEAT AND CORN.—"The nutrients of wheat do not seem to be as well handled as most other concentrated grains, the ether extract showing a particularly low coefficient. Likewise bran, one of the wneat offals, shows low digestibility in organic matter, ether extract and nitrogen free extract. An exclusive diet of wheat had a deranging effect upon the digestive system of the birds.

"Our results, like those of Brown and others, show that corn is a most valuable grain for poultry. Its palatability and high digestibility have brought it into much favor with all poultrymen. It cannot, of course, be fed alone, as it is too concentrated feed and also deficient in protein, but when combined with feeds rich in protein and some bulky material, as cut clover, it makes up a most desirable ration."

By "low digestibility" in the above is not meant *slow* digestibility, but *in*digestibility. The experimenters had physical proof of their conclusions, as all excrements were analyzed and any undigested or wasted food detected.

An important point in this experiment is that poultry digest little crude fiber. This confirms the results from digestion experiments with poultry made in France and Germany a number of years since. Hence, the poultryman may know that however rich in protein a food may be, if it contains much coarse fiber, hulls, etc., it is practically wasted when fed to poultry. Seed birds do not eat the hulls of even the smallest seed.

AS TO BRAN.

Reasoning along this line, can bran, the hulls of wheat, which by actual proof has been found to pass undigested in greater part from mature fowls, be an economical or safe food for young chicks? In this connection, the following from an English agricultural publication is of interest, even if it has reference to a two-legged animal of a different class:

"BRAN AS FLOUR.—There are signs that the booming of 'Standard Bread', backed as it has been by a powerful Press Association, is on the wane. Warning voices have been raised from time to time against the ill-considered use of this much-puffed bread, of which so little was known beyond that it was dark in color and made of the whole of the flour, bran included, and therefore the proteins and salts necessary for the building up of the body. For the verdict of the scientists is that bran is digestible and assimilable by the human body in no higher degree than 50 per cent. According to Sir Compton Rickett, bran is a foreign substance which is refused by the human body. That is to say, made by systems now in vogue, whole-flour bread is an unwholesome compound, and to be avoided by all who have not the digestive facility of the horse."

As to the personal allusion, "If your correspondent's chicks have suffered from white diarrhea or other bowel troubles while feeding good bran," etc., I would say that my chicks have never suffered from diarrhea of any complexion. I have kept poultry long enough to know that a chick of stamina, under generally good conditions, cannot be thrown off its base by any one article of food—but there are others. I use bran to dry the mash for my breeding stock, and I find a large portion of it in the feed-boxes after the fowls have picked out all the other ingredients. They evidently consider it refuse matter and it is mostly wasted; in fact, may always be found blowing about the feed yards. Shorts, in the use of which no middlings is required, is the more economical dryer.

AS TO GRAIN.

Some variety in grains is an advantage in poultry feeding. I use about a third each of wheat, corn, and barley. It is unprofitable to feed the barley dry, as much of it is wasted, and what the fowls do eat is not relished. I use rolled barley cooked in the mash, and the whole barley sprouted. In this shape the barley is highly relished and proves a good egg food. Red wheat with a small proportion of cracked corn is fed at night, and, though the fowls have cracked corn in their noon mash and wheat but once a day, they pick out every particle of corn before eating the wheat. Barley is our cheapest grain, but I do not consider it economy to make it the entire grain feed. It is more profitable in results to use some wheat and corn, even at the high cost of both in California.

Fortunately for the poultryman—and also for the poultry—the hen is the most adaptable of creatures. The only thing that completely upsets her is change of habits. A sudden and decided change in either method or feed will bring down the egg yield, regardless of "protein" and the like. Nerves, probably, as with other femininity.

The poultryman may make the grain, which he can obtain at the lowest cost, the principal grain food, and with satisfactory results, providing that he furnishes his fowls some animal food and an abundance of fresh green food. The right kind of green food is a balanced ration in itself, and will round out any of the grains to the requirements of the hen. But when it comes to large eggs, perfect in flavor and rich in color, there is no grain that can take the place of good yellow corn supplemented by a abundance of fresh, crisp greens.

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So you might as well be happy
While you has a chance foh fun.

Trouble's mighty curious,
Don't wear out a bit,
De mo' of it you has, de mo'
You's liable to git.
An' yet it's mighty timid;
You'll learn it after while,
Like dem microbes in de sunshine,
You kin kill it wif a smile.

—Washington Star.

A Difficult Apology.

I was a little alarmed when I found myself in the room, but after my behavior on the previous evening it was absolutely necessary that I should see Miss Power. I began bluntly: "I have come," I said, "to offer an apology for what happened last night." She opened her eyes, and regarded me with an innocent stare, in which, however, some haughtiness mingled. "I do not understand," said she. "Did you trip on my dress? Well, at any rate, I hate apologies. Will you have some tea?" "Thank you," said I, seating myself and putting my hat on the floor. "You see, when we came out of the Hall, and there was that rush, I had no idea—" "Yes, it was an abominable crush," put in Miss Power, hastily. "I wonder, Mr. Radcliff, if you would mind ringing the bell?" "You remember," I explained, as I returned from the bell, "how, just as we reached the door——"

"Oh, dear me!" cried Miss Power, suddenly, "this teapot is such a silly thing! I hope nothing went over you."

"Not at all," I said, politely. She examined her dress carefully, and I waited in patience. "I think a tea-stain is worse than a wine-stain, don't you, Mr. Radcliff?" she went on; "and you can't put salt on it either." "No," I asserted cautiously. "But when we were being pressed so hard against the door, and trying to get out, you were on my right, and the rush suddenly sent me——" "You do take sugar, don't you?" interposed Miss Power, abruptly. "How hot the weather is!"

"One lump, please," said I. "And then some one pushed me, and I suppose some one pushed you, and the next thing I knew was that our cheeks were——" "Mr. Radcliff," interrupted Miss Power, quickly, her cheeks flaming, "I think we had better forget silly things, and go on with our tea." She spoke with some dignity, and even with the air of rebuke.

"That's what I want to do," I explained, eagerly. "But I have it on my conscience to explain to you. You see, I couldn't help our cheeks touching." "Mr. Radcliff," said Miss Power, rising, "if you will not leave stupid accidents alone——" "No, no" said I, quickly. "That is what I want to—I owe you an apology. You see, it wasn't that." "Wasn't what?" asked Miss Power, after a pause, and as if she did not want to ask it. "It wasn't an accident," I murmured, in a shame-faced way. I felt she was looking at me; and I felt, too, that her cheeks were crimson, and then she laughed an uneasy, discordant laugh. "You can make yourself extremely ridiculous," she said, suavely. "But please don't invite nonsense like that, and let us both forget a very unpleasant episode." "I suppose it was unpleasant," said I, dubiously. "Highly," she said, with asperity, and, turning away began to arrange some flowers in a vase.

"But you see," I began again, in a shuffling manner, "I can't rest—I mean I want you to say you forgive me." "I don't think," observed Miss Power, tranquilly, "that there is anything to forgive, seeing that it was entirely accidental." I will confess that her persistence baffled me; I almost began to think it must have been an accident. Still, I persevered; it was my duty. "But it wasn't an accident," I cried, dolefully. "Mr. Radcliff, you are intolerable," said she quickly. "You yourself have just explained that it was the crowd and——" "Yes," I put in eagerly, "that was when our cheeks—when we——" "Yes, yes," she exclaimed, impatiently. "But that was not all," I added. Miss Power elevated her eyebrows but did not face me. "Really," she said, indifferently, but I could have sworn that she was flurried. "You don't know what happened, then?" I asked meekly. "We came away, I suppose," said Miss Power, with the assumption of carelessness still upon her. "Yes," I said, meaningly, "after something else." "Upon my word, you are very tedious," she said. "I neither understand you, nor wish to understand you." I am sure she was agitated. "Were you not aware," I asked, "that I—that I——" Miss Power made no remark, but was much occupied with her flowers——" that I—well—I thought you must have known." Still I got no help, and her back was toward me now. "I took advantage of the juxtaposition to——" I heaved a sigh and got it over—"kiss you!"

Miss Power turned round abruptly, and her eyes were full of honest anger. She surveyed me with great dignity, and then, in very cold tones, said, "You seem determined to use the cap and bells today." "Indeed," I said, earnestly, "this tone and——" "How dared you?" said Miss Powers, fiercely. "Now, to say the truth, I did not think she would have made this fuss about it, because I imagined that she had known, and—well, she had been polite enough when I came in. But she was obviously very angry indeed, and this confounded me. I stammered more apologies. "I—you—the temptation!" I murmured. "Temptation!" she echoed, with scorn. "A man is a poor creature who cannot—who has no self-restraint, and must insult every girl he runs across, and——" "Oh, but it isn't every girl," I cried, hastily. "It was only you. I wouldn't have taken advantage of any one else and——" "That is a pretty compliment to me," she interrupted, with angry hauteur. That *I* should be the one chosen for your insult!" I moved my hands helplessly in protest. "Oh, but—you don't understand," I declared. "I understand you quite well enough," she said, looking at me with contempt. "The temptation!" I murmured again in confusion. She curled her nostrils. "I would not have done it in any other case, because there would not have been the same overpowering temptation," I said, bravely. "I dare say not," she exclaimed with a sneer. "You see," I went on, breathlessly, "no one could look at you without wanting to——" "I think we have discussed this enough," said Miss Power, curtly. "It was your eye that first gave me the irresistible impulse," I continued, humbly.

Miss Pofer snorted—very daintily, of course. "I have never seen eyes that color," I added, earnestly. "Eyes are common enough," returned Miss Power, severely, as she turned away again. "No," I said firmly, "not that strange, sweet combination of hazel and brown, and—" "I don't think this is very interesting, Mr. Radcliff," said she, coldly. "Then that peculiar shade of auburn I've never seen in any hair in the world," I cried, eagerly. Miss Power shrugged her shoulders. "That is ridiculous," she said. "It's true," I declared. "Those waving masses—I've often wondered and wondered how it looks when you take it down at night." "I don't think you have any right to do that," remarked Miss Power. "I can't help it," I exclaimed; "and the shape of your face." "There are plenty of people with faces as—much the same as mine," said she, re-fingering the flowers. "Where are they?" I demanded. "I've knocked about the world a good deal, but *I've* never come across one within miles of it."

"You're rather extravagant, Mr. Radcliffe," said Miss Power. "I often lie awake at night, thinking of you," I continued. "I can call up every single detail of your face and expression. And—I know you will think me very foolish and—and wrong, but sometimes I—well, I can't go to sleep without pretending to—to do what I did last night, you know!" "How foolish you are!" said Miss Power, with a faint laugh. "That was the reason," I explained, "why, when I found myself, not of my own doing, you know, but just found myself close to you—I couldn't have helped it for the world. I just—well, it seemed all so wonderful and beautiful, and my heart went thump, and I became quite unconscious of the crowd and every one; and then I caught your eyes, and—well, I did it before I knew."

There was a pause, and then, "Oh, but you shouldn't let such things influence you like that," observed Miss Power, in a softened voice. "I am very sorry," said I humbly. "Did you mind very much?" "Of course," replied she, promptly, and then hurriedly went on: "That is, I mean, when our cheeks—" and stopped in a rare confusion. "But you didn't mind my kissing you then?" I asked innocently. "Certainly I did," said Miss Power quickly. "That is—I mean—no, I didn't know, you see." "Of course you didn't," I answered, looking crestfallen. "I should have minded very much if I had known," said she, as though anxious that there should be no mistake. "I know you would," said I more lugubriously. "I am a brute." "Oh, I wouldn't make too much of it, Mr. Radcliff," said she kindly, looking out of the window. "You have apologized, you know. And of course, well, I can understand, from what you have said, that you had—some excuse, you know." "But you forgive me?" I asked, moodily. "Oh, yes," said Miss Power, cheerfully; "of course, and I wouldn't think anything more about it, if I were you." "But I can't help thinking about it!" I said desperately. "But, Mr. Radcliff—" she began, and was silent. "How can you ask me to forget all about it with the memory of that—with that memory?" I asked. I arose, and from where I stood I was conscious that Miss Power's cheek was tinged with color. "You—you shouldn't have done it, then," said she with a tremulous little laugh. I approached her hat in hand. "I could not help it," I said with a sigh. "Oh, but that's nonsense," said she, very gently, regarding the traffic in the street. "Whenever I am close to you, I have the same temptation," I said, drawing nearer. "But that's not nice of you," exclaimed Miss Power. "All the time we have been in this room, I have been struggling with a singular desire to do the same thing," I said, "and now it seems to be quite mastering me." "Oh, you mustn't give way," murmured Miss Power, but she did not move, and I was now very close to her. "I can't help it," I explained. Apparently Miss Power could not help it, either.—The New Budget.

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"Yes, it can. Try for a month and find out for yourself."

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"Johnnie, if I give you 2 cents and your father gave you 3 cents, how much would you have?"

"Seven," promptly replied Johnnie.

"You can't have understood me, Johnnie. Now, listen, and I will repeat the question. If I give you 2 cents and your father gave you 3, how much would you have?"

"Seven," said Johnnie again, and with some promptness.

"I am surprised at you, Johnnie," said the teacher. "How on earth would you have seven?"

"I got two in my pocket," said Johnnie. —Philadelphia Times.

OUR YOUNG FOLKS' DEPARTMENT.

Conducted by M. Russell James.

A Shattered Romance.

He met her in the meadow,
While the sun was sinking low,
And they walked along together,
In the evening's afterglow.

She waited while so patiently
He lowered all the bars;
Her soft eyes bent upon him,
As radiant as the stars.

But she neither smiled nor thanked him,
Because she knew not how,
For he was only a farmer's lad,
And she, a Jersey cow.

—Wilton R. Cole.

Poultry Courses for Young Folks.

DESCRIPTION OF BREEDS.

Wyandottes.—The Wyandotte is the second most popular breed in the American class of chickens. The Silver Wyandotte was the first to make its appearance, and the new variety was called American Seabrights or Seabright Cochins. Though the Wyandotte is entirely an American breed, and not a very old one, its origin is in dispute. Not until admitted into the Standard in 1883 were there any recognized Wyandottes. Since then seven varieties have been added to the original or Silver Laced Wyandotte, and all the beautiful markings and coloring may be seen in this breed.

The Wyandotte is an all-purpose fowl like the Plymouth Rock, and to one unfamiliar with the different types of fowl it may seem similar in appearance. But the Wyandotte is an entirely different shape from the Rock. Instead of the long back and the medium long shanks of the latter, it has a short back and short, stout shanks. The Wyandotte must be all curves. A round body, a round head with a round rose comb, a low breast—in short, a round, fluffy bird. The standard weight for this breed is 8½ pounds for cock and 6½ for hen. The Wyandotte is a red-faced bird like the Rock, having red earlobes as well as red comb and wattles. The beak, legs and toes yellow. They are excellent layers of brown eggs, which as a rule average rather smaller than those of the Rocks.

Their points of advantage when compared with the Rocks are earlier maturity, and while good mothers they are not usually so given to broodiness. As broilers they excel all breeds, but the Rocks excel as roasters and in the size of egg.

The White Wyandotte is the most popular variety of this breed at the present time. They originated from what was termed "sports" of the Silver Wyandotte. That is, black and white fowls will sometimes produce a pure white or a pure black chick and pure black fowls a pure white chick. In biology this is termed "to throw back," which means to go back to and produce the characteristic of some far-distant ancestor.

The White Wyandotte differs from the other varieties only in the color of its plumage, which must be a chalk-white throughout.

The latest variety of the Wyandottes is the Columbian Wyandotte. It originated from a cross of the Light Brahma and White Wyandotte. This variety has the plumage color and markings of the Light Brahma, and in all else it must conform to the Wyandotte type.

A Plucky Little Girl.

Our young folks have expressed their interest in the true story of a little Indian girl, and their wish for more such stories. Here is a story that reads like a romance, but it is the true story of a little girl of today, as reported in a recent dispatch from Wellsville, Kan., to the Chicago Inter-Ocean:

When Frances Wilson, the 12-year-old daughter of J. D. Wilson, planted an acre of corn last spring she expected to be able to enter the contest conducted by the Tri-City Farmers' Institute and possibly to win one of the prizes offered at the annual meeting in Edgerton. Later she learned that prizes had been offered only for boys, and was a very disappointed little girl when she found that her corn would not have a chance to win even favorable mention.

The farmers of Wellsville, Gardner and Edgerton have been holding this institute for more than twenty years and were among the first in the State to adopt the plan of offering prizes to the corn growers. But never before had they though of offering a prize for girls who raise corn. At the institute some one told of Miss Frances' pluck in planting and tending the corn, and the members voted unanimously to give her the same prize that was given the boys of her age and will arrange for special prizes for girls, to be awarded at next winter's meeting. Miss Frances already is planning to plant another crop and will go at the work in a scientific manner this year by first writing to the agricultural college for instructions.

Her experiences last year were rather discouraging. She secured her seed corn from a neighbor, planting a Yellow Dent variety that had been grown on bottom land. Her little tract was prairie land, and farmers say that she would have had better success had she secured seed grown on the same kind of soil. She believes that she will have better luck this year by planting seed raised on the place, and has saved enough seed corn for early planting.

Only a part of the corn planted came up and she had to replant, a tedious process when the work had to be done with a hoe, but her second planting resulted in a good stand. She went through the field three times with a hoe, carefully hilling up about the stalks each time. Until the hot weather of July she had excellent prospects. Then the hot, dry winds come on just as the corn began to tassel, and, in common with many other fields in eastern Kansas, her corn suffered. And a few days before she was ready to begin shucking a neighbor's cattle broke down the fence and ate a good share of her crop. Even with her bad luck the field "averaged" better than forty bushels to the acre, which she smilingly said was better than papa's crop this season.

Miss Frances has spent all her time on a farm, most of the time out of doors, and is a rosy cheeked healthy little girl. She is as much at home with her father's horses as any boy of her age could be. Last fall she helped plow forty-five acres of land for wheat, driving two horses and two mules to her plow. The wheat is looking fine now and she is watching it anxiously. For, though Miss Frances enjoys her work on the farm, she hopes for a course of domestic science at Manhattan as soon as she completes the common schools, and naturally is interested in the crop yields. She helps with the farm work every day. When her father was kept in the house this winter by a broken arm she attended to the work better than a hired man would have done. When she wants to go to town she catches the horses, harnesses them and drives the distance, three miles, by herself. Besides planting her own arce of corn this spring she expects to help her father with the rest of the corn planting.

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THE MARKETS.

San Francisco, May 10, 1911.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Trading remains rather quiet in the local market, though California buyers are getting considerable stock in the North. Spot prices here remain on about the same level as before, being fairly firm. The Northern market is quite firm, and there is no export business of any consequence.

California Club	$1.50	@1.52½
Sonora	1.60	@1.65
White Australian	1.60	@1.65
Northern Club	1.50	@1.55
Northern Bluestem	1.57½	@1.65
Russian Red	1.50	@1.55

BARLEY.

The speculative movement has caused a great deal of fluctuation in futures, causing a rather unsettled condition in the spot grain, and there is no spot trading on a large scale. The jobbing market, however, remains on about the same level as before, with a fair demand for feed grades.

Brewing and Shipping	$1.52½	@1.55
Choice Feed, per ctl	1.47½	@1.52½
Common Feed	1.40	@1.45

OATS.

The current demand is comparatively light, and while offerings are not excessive, there is some weakness as to prices, the top quotation for both red and black varieties being shaded.

Red Feed	$1.37½	@1.42½
Gray	Nominal	
White	Nominal	
Black Feed	1.30	@1.40

CORN.

California small yellow is in good demand in the country, but very little is appearing in this market. Egyptian is firm at a slight advance, supplies being light, and Eastern grades are held at full prices, though there is no great demand.

Cal. Small Yellow	$1.75
Eastern Yellow	1.55
Eastern White	1.55
White Egyptian	$1.70 @1.75

RYE.

This grain remains nominal, as there is nothing of good quality offered, and the only stock on the market receives no attention.

Rye, per ctl	Nominal

BEANS.

The upward movement of prices has stopped, for the time being at least, the only changes this week being a slight decline on bayos and pink beans. Imported bayos are plentiful and easy. While supplies in most lines are limited, and dealers expect to clean up on old stocks pretty well before the new crop comes in, no great advance is expected, as at present values the movement is very slow. This is believed to be partly due to the importation of foreign stock, brought about by the present high prices. Lima beans, however, remain very firm, and apparently are not suffering from foreign competition, though other varieties are being offered as a substitute in some Eastern markets. A number of buyers are endeavoring to secure a share of the new crop in advance, but it is believed that the great bulk of the crop will be controlled by the Association. The planting of lima beans in the southern California district is now well under way, and growers look for a bumper crop, the acreage being about 5 per cent greater than last year. There is no danger, however, that the production will exceed the demand, and there is every indication that the new season will open with much better prices than the last. There are only about 100,000 bags on hand at present, compared with 169,000 bags on April 1, and little new stock will appear before Sept. 15.

Bayos, per ctl	$4.55	@4.65
Blackeyes	6.50	@6.75
Cranberry Beans	4.00	@4.25
Garvanzos	2.85	@3.25
Horse Beans	2.50	@2.75
Small Whites	3.40	@3.55
Large Whites	3.40	@3.55
Limas	6.35	@6.45
Pea		4.25
Pink	5.25	@5.35
Red Kidneys	6.25	@6.50

SEEDS.

The market is largely nominal, most descriptions finding little demand. Millet and broomcorn seed, however, are finding considerable inquiry, and are held at firm prices.

Alfalfa	Nominal
Broomcorn Seed, per ton	25.00
Brown Mustard, per lb	5½c
Canary	3½@ 4 c
Hemp	3½@ 4 c
Millet	3½@ 4 c
Timothy	8 @ 9 c
Yellow Mustard	5¾c
Dried Peas, per ctl	3.75@ 4.00

FLOUR.

Flour shipments from San Francisco this spring have been much heavier than a year ago, though most of the output is required by the local trade. California grades are unchanged, but a 10c. advance has occurred in Northern stock.

Cal. Family Extras	$5.20	@5.60
Bakers' Extras	5.20	@5.60
Superfine	4.30	@4.50
Oregon and Washington	4.60	@4.80

Hay and Feedstuffs.

HAY.

Some of the local dealers refer to favorable crop conditions, but advices from the country show few favorable features. No definite estimates are available from some of the producing districts, but it is certain that the crop in Livermore valley will be only about half the average. The hay in many places is already heading out and no appreciable benefit could result, even if rain were to fall in the next few days. Accordingly, there is a prospect of considerably higher prices than were looked for a month or two ago. The San Francisco Hay Association will shortly publish its estimate of the carryover, which is looked for with considerable interest as having an important bearing on the prices of the new crop. It is believed that the amount remaining will be much smaller than last year. Arrivals here are a little larger than last week, but the demand is reviving somewhat, and prices on most lines are higher.

Choice Wheat	$13.00@14.00
Good Wheat Hay	11.00@12.50
Other Grade Wheat	8.00@1100
Wheat and Oats	8.00@11.50
Tame Oats	8.00@11.50
Wild Oats	6.50@10.00
Alfalfa	8.00@11.50
Stock Hay	5.50@ 6.50
Straw, per bale	35@ 50c

FEEDSTUFFS.

No further changes are noted in prices. Most descriptions continue in active demand, and rolled barley, bran, middlings and cracked corn are firm, though there is a little easier feeling in rolled oats.

Alfalfa Meal, per ton	$19.00@20.00
Bran, per ton	28.00@29.00
Cocoanut Cake or Meal	26.50@27.00
Cracked Corn	34.00@35.00
Middlings	34.00@37.00
Mixed Feeds	29.00@32.00
Rolled Barley	31.00@32.00
Rolled Oats	32.00@33.00
Shorts	27.50@31.00

Garden Truck.

VEGETABLES.

The first new red onions to appear here are said to have brought 7 cents per pound, though with increasing arrivals the price is now down to $3 per sack. Oregon stock is out of the market, but the arrival of new reds has caused some decline in other descriptions. Green onions are also lower. Good garlic is cleaning up and has advanced sharply, though some trashy stock is still to be had at former figures. Mexican tomatoes are higher, with very few coming in. Most other vegetables are arriving freely, and prices are tending downward, though carrots, cauliflower and cabbage have advanced, and the latter is hard to get. A good general demand is noted, and asparagus is cleaning up well at former figures, while rhubarb is somewhat higher. Supplies of green peas are larger than the market can absorb, and string beans are beginning to arrive from nearby points. Cucumbers and summer squash are also arriving more freely, with a corresponding reduction in prices.

Onions: Yellow, per ctl	$ 3.00	@ 3.25
Australian		3.50
New Red, sack		3.00
Bermuda, crate	1.75	@ 2.00
Green, box	40	@ 60c
Garlic, per lb	7	@ 10c
Green Peas, per lb	3	@ 3½c
Tomatoes, per crate	1.90	@ 2.00
Cucumbers, per doz	50	@ 60c
Cabbage	1.50	@ 1.75
Carrots, per sack	1.25	@ 1.50
Rhubarb, per box	85	@ 1.25
Cauliflower, per doz		1.00
Asparagus, per box	75	@ 1.50
String Beans, per lb	10	@ 12½
Summer Squash, per box	75	@ 1.00

POTATOES.

Lompoc stock is cleaned up and river stock is becoming very scarce, though Oregon potatoes are fairly plentiful, and the Oregon market is easy. Considerable Eastern stock is on the market. The local demand is limited, but there is a good shipping movement to outside points. New potatoes are offered more freely and prices are lower. New stock, however, is expected to bring rather high prices throughout the season, as the crop of the bay districts is about cleaned up and the crop around Stockton suffered heavily from the frost.

Lompoc Burbanks, per ctl	$ 2.85	@ 3.00
River Whites, per ctl	$ 2.25	@ 2.50
Oregon Burbanks	2.60	@ 2.75
New Potatoes, per lb		3½c
Eastern, per ctl		2.10

Dairy Produce.

POULTRY.

Eastern poultry is still coming in quite freely, and the steadily increasing arrivals of California chickens have caused an oversupply in some lines especially small hens. The market has dropped sharply on most lines, and while large fat chickens sell readily at quotations small stock is hard to dispose of. Fryers are about the strongest item on the list, and they will hardly bring last week's prices.

Large Broilers	$ 3.50	@ 4.00
Small Broilers	2.00	@ 3.00
Fryers	6.50	@ 7.00
Hens, extra	8.00	@10.00
Hens, large	5.50	@ 6.50
Small Hens	4.50	@ 5.50
Old Roosters	4.50	@ 5.00
Young Roosters	7.50	@ 8.00
Young Roosters, full grown	9.00	@10.00
Squabs	2.00	@ 2.50
Geese, per pair	3.00	@ 3.50
Ducks	8.00	@10.00
Turkeys, live, per lb	Nominal	

BUTTER.

Prices stand the same as a week ago, though for the week as a whole extras have been a little stronger. The market, however, shows little feature. The bulk of the arrivals goes into storage, and at present prices offerings for the retail trade are light.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	.23	23	22½	22½	23	22½
Prime Firsts	.22	22	22	22	22½	22
Firsts	.21½	21½	21½	21½	22	21½
Seconds	.20	20	20	20	20	20

EGGS.

The lower grades have shown no change whatever, and prices on all grades are remarkably steady, though extras are on a little higher level than last week. The principal movement is for storage, though the current demand is fairly active.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	.21½	21	21	21	21	21½
Firsts	.19½	19½	19½	19½	19½	19½
Seconds	.18½	18½	18½	18½	18½	18½
Selected Pullet	.18½	18½	18½	18½	18½	18½

CHEESE.

Flats remain firm at the recent advance, and Y. A.'s are a cent higher.

Fancy California Flats, per lb	12½c
Firsts	11½c
Fancy California Flats, per lb	12½c

Deciduous Fruits.

FRESH FRUITS.

Apples are becoming rather scarce, and nothing is offered below $1.50. Strawberries are still coming in from the south, though shipments from that quarter are decreasing as supplies at nearby points become more plentiful. Offerings of all descriptions are much larger than last week and prices are lower. Cherries are beginning to arrive in fairly large quantities, though all offerings still bring very good prices. A few scattered lots of blackberries and raspberries are coming in, selling around $1.25 to $1.50 per crate.

Firsts	11½c	
New Young Americas, fancy	14	c
Apples per box	$ 1.50	@ 2.00
Strawberries, southern crate	1.00	@ 1.25
Longworth, chest	8.00	@10.00
Large varieties, chest	6.00	@ 8.00
Cherries, per box	1.40	@ 1.50

Dried Fruits.

Aside from an advance in raisins, for which packers are now offering 4½ cents, sweatbox, no further change is noted in spot prices, most descriptions being practically nominal. Few growers are willing to sell their raisins at the price quoted, and 5 cents may yet be obtained, as there is a good consuming demand. In fact, the demand for all spot fruits is increasing, and any odd lots which remain in growers' hands can probably be moved at an advance. Attention is now centering on the new crop, and buyers are now actively in the market for several descriptions. As will be noted in the report on crop conditions on another page of this issue, practically all fruits will be scarce, some descriptions being less than 50 per cent. Apricots and prunes are apparently in worse shape than anything else, and prices in these lines are certain to be high. Packers are freely offering as high as 14 cents for good apricots, and have raised their offers on prunes to 4½ cents, though growers are holding out for 15 and 5 cents, respectively, and there is a fair prospect that they will get these prices before long. Peaches, also, are in strong demand, offers for new crop being considerably higher than for spot stock. As for raisins, the crop outlook is still rather uncertain, and most packers are not yet willing to pay over 4 cents, which few growers will accept. Unless conditions improve materially in the next few weeks, higher prices are assured.

The New York Journal of Commerce says: "The market for spot peaches and apricots is excited and advancing under light offerings and active demand. Brokers with orders in hand declare that it is next to impossible to secure goods in the quantities wanted in any quarter. Seeded raisins have developed considerable activity and quite a lot of stock is said to have been bought up here. Loose muscatels also show an advance. Spot prunes also have taken an upward turn. The stock here is reported to be very light.

"A stronger tone appears to have been developed in the market for future prunes. Reports from the coast attribute the bearish influence recently at work there to short sellers, of whom it is believed there is a considerable number. The relatively high prices quoted on spot prunes are not interfering with the spring consumption of that fruit, according to jobbers. In fact, some of them assert that the demand is even better than in some seasons when prices have been much lower.

"A notable feature of the spot peach market and one which in connection with the strong advices from the coast concerning the new crop situation is giving an upward impetus to price, is the export interest that has recently developed. A much larger market for dried peaches has been created in Europe by the missionary work done last year by dealers on the other side. Because of the short crop of prunes they bought more peaches than usual, finding themselves pretty well loaded up with the fruit. By making attractive prices on it they created a consuming demand that promises to be permanent, and furnish a larger outlet both in England and the Continent than has heretofore existed."

Evaporated Apples, per lb	10½	@11 c
Apricots, new crop		14 c
Figs, black	4½	@ 5 c
Figs, white	5	@ 7½c
Peaches, Spot	7¼	@ 8 c
New crop	8½	@ 9½c
Prunes, 4-size basis		9½c
New crop contracts		4½c
Pears	8½	@12 c
New crop	9	@10 c
Raisins—		
Loose Muscatels, in sweatbox	4	@ 4½c
Thompson Seedless	4½	@ 4¾c
Seedless Sultanas	4¼	@ 4½c

Citrus Fruits.

The Eastern markets are taking up oranges from California, as fast as shipped, at good prices. Valencias are being sent East from several points in the southern part of the State, the crop being much earlier than usual. It is claimed that about 2000 cars of navels yet remain in the State, that valencias will make 8000, and other varieties of oranges will fill 2000 more cars. Buyers are offering $1.25 per box for valencias, on the trees, in Orange county. Total shipments to May 7 from southern California were: Oranges, 24,983 cars; lemons, 3123 cars. On the New York market, as well as at other auction points, prices were a little higher on Monday, May 8, than they had been for the past week, and demand was good. Fifty-nine cars of citrus fruits were sold there on that date. On Tuesday, the 9th, at New York, sales of California fruit included 26 cars of navels, 2½ cars of Thompsons, 3 cars of seedlings, 4 cars of sweets, 1 car of Michael, 1 car of bloods, ½ car of budded, 1 car of grapefruit and

2 cars of lemons. There was an active demand and a large attendance. The quality of the fruit was mostly good, with a sprinkling of poor fruit. The market remained unchanged. Lemons were a shade higher. Quotations:

Navels, extra fancy large, $3.30 to $3.75; regular, $3.30 to $4; small, $3.35 to $4.15; fancy, regular, $2.80 to $3.80; choice, regular, $2.60 to $3.65; orchard run, regular, $3 to $3.60; standard, regular and small, $2.40 to $3.25; Thompson's, extra fancy, $3.55; Seedlings, fancy, $2.75 to $3.15; sweets, fancy, $2.60 to $3.40; Michaels, fancy, $3.20 to $3.85; bloods, fancy, $2.60 to $3.40; grapefruit, fancy, $1.60 to $2.45; lemons, fancy, $3.25 to $4; choice, $2.55 to $3.35.

Citrus fruits are receiving somewhat less attention, owing to increased arrivals of berries, cherries, etc., though there is still a very fair local demand. Fancy navels are scarce, most offerings being of rather unattractive quality and prices are easier. Valencias are arriving more freely, and all but the choicest lots are easier. Other lines stand as before.

Navel oranges—	
Extra choice	$ 2.50@ 3.00
Choice	1.75@ 2.25
Valencias, choice to fancy	2.25@ 3.00
Tangerines	Nominal
Choice Lemons	2.50@ 3.00
Fancy Lemons	3.50@ 4.00
Standard	1.25@ 1.75
Limes	4.50@ 5.00
Grapefruit	2.25@ 3.00

CALIFORNIA FRUITS

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Dean and Professor of Agriculture in the College of Agriculture of the University of California; Director and Horticulturist of the University Experiment Station; Author of "California Vegetables in Garden and Field"; Editor PACIFIC RURAL PRESS; member National Council Horticulture, etc.

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The Pacific Rural Press

PUBLISHERS

667 Howard St., San Francisco, Cal.

Nuts, Honey, Hops, Etc.

NUTS.

Supplies of almonds have been pretty well concentrated in the Eastern markets, as well as here, and everything is closely and firmly held. There is nothing of any consequence in growers' hands. The crop outlook is not encouraging and high prices are anticipated, as a good demand is assured.

Almonds—		
Nonpareils	16	@16½c
I X L	15	@15½c
Ne Plus Ultra	14	@15 c
Drakes	12	@14½c
Languedoc	11	@11½c
Hardshells	8	@ 8½c
Walnuts—Softshell, No. 1		15 c
Standard		14½c
Softshell, No. 2		11 c
Budded		17½c

HONEY.

New honey is not expected in this market for some time. The prospects for production are somewhat uncertain, being good in some places and poor in others. Old honey of all descriptions is pretty closely cleaned up and the little comb that is offered receives little attention.

Comb—White Sage	12	@ 15c
Sacramento River Comb	12	@12½c

BEESWAX.

The demand continues moderately active, prices remaining on about the same level as before.

Light	28	@30 c
Dark	23	@26 c

HOPS.

There has been considerable activity in the Sonoma county market of late, and a number of contracts have been made at 20 cents for this year's crop. Spot stock is scarce, and the market shows increasing firmness, with higher prices in prospect, as the growers who have not yet sold are holding for a further advance.

Hops, 1910 crop	18	@20½c
1911 crop	17	@20 c

Live Stock.

DRESSED MEAT.

Beef Steers, per lb	9½	@10 c
Cows	8½	@ 9 c
Heifers	8	@ 9 c
Veal, large		10½c
Veal, small		11½c
Mutton: Wethers	9	@10 c
Ewes	8	@ 9 c
Lambs	11½	@12 c
Hogs, dressed	11	@11½c

LIVE STOCK.

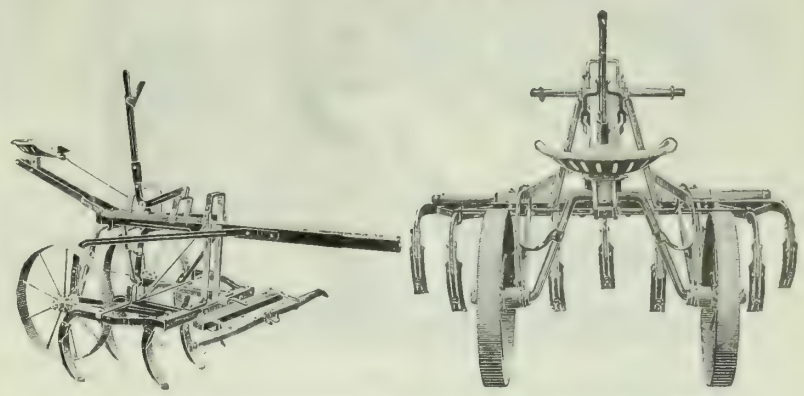
Nearly all descriptions are in larger supply than for some time past, and prices accordingly show a downward tendency, both in live stock and dressed meats. Prices on hogs have again been shaded, and the market is weak, with little demand. Sheep are also arriving freely, and wethers and lambs are bringing lower prices.

Gross weight:		
Steers: No. 1	5¾	@ 6 c
No. 2	5½	@ 5¾c
Cows and Heifers: No. 1		5 c
No. 2		4½c
Bulls and Stags	2½	@ 3½c
Calves: Light		6½c
Medium		6 c
Hogs: Grain-fed, heavy	6½	@ 6¾c
150 to 250 lbs	6¾	@ 7 c
100 to 150 lbs	6¾	@ 7 c
Small prime wethers	4¾	@ 5 c
Large prime wethers	4¾	@ 5 c
Ewes	4	@ 4¼c
Lambs	5¾	@ 6 c

WOOL.

A number of offerings have been sold recently from the northern and middle counties districts as well as the southern, but buyers are taking no interest in anything but the choicest offerings. There is apparently some movement, however, notwithstanding the talk of dullness induced by the tariff agitation.

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These Illustrations Show the Frame Raised Out of the Ground.

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The **BENICIA-ORR** is made in two sizes seven and nine teeth which cultivate a width of four and five feet respectively. By the loosening of six bolts it can be changed from one size to the other. Center tooth can be removed, if desired, for cultivating small vegetables, as beets, beans, etc.

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If you want to use the latest, **up-to-date cultivator,** place your order for a **BENICIA-ORR.**

Code.	Size.	Width.	Net.	Weight. Gross, Cased.	Measurement. Cu. Ft., Cased.
Sevenor	7 teeth	4 feet	283 lbs.	365 lbs.	8
Nineor	9 teeth	5 feet	308 lbs.	390 lbs.	8
	Pole		32 lbs.	32 lbs.	1

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Spring Clip—		
Choice Southern, Year's staple	9	@12 c
7 months	8	@11 c
Lambs		5½c
Northern, year's staple	12	@13 c

HIDES.

Prices have shown no quotable change for some time past. The market is without much feature, and local dealers describe the situation as dull.

Heavy Steers, over 56 lbs.		10 c
Medium	9	@ 9½c
Light Steers, under 48 lbs.		9 c
Heavy Cows, over 50 lbs.		8¾c
Light Cows, 30 to 50 lbs.		8½c
Kip		10½c
Veal	15	@15½c
Calf	15	@15½c
Dry—		
Dry Hides	17	@18 c
Dry Bulls		16 c
Dry Kip, 10 to 15	17	@18 c
Dry Veal, 5 to 10	16½	@17 c
Dry Calf, 7 down		22 c
Sheep Skins—		
Long Wools	$ .85	@ 1.25
Medium Wool, 6 to 9 mos.	50	@ 80c
Short Wool, 3 to 6 mos.	35	@ 60c
Lambs	15	@ 50c

HORSES.

While the horses coming out at the local auctions recently have hardly been as attractive as was expected, there has been a very good demand locally, and all offerings have been easily disposed of. Extra fine stock is commanding fancy prices, as shown by the sale of a lot of Colorado truck horses this week. A lot of good Oregon horses have also been sold this week at highly satisfactory prices.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	235@285
Chunks, 1350 to 1500 lbs	200@250
Wagon Horses, 1250 to 1350 lbs.	175@200
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	135@150
Young	200
Old Mares	100@125

MULES.

1200 lbs	$250@300
1100 lbs	215@240
1100 lbs	175@200
900 lbs	150@175

The Cuthbert Burre ranch of 1926 acres near Visalia has been sold to J. J. Vosburgh, a Los Angeles capitalist. The ranch is said to have sold for over $100,000. It was formerly used for stock raising.

The Schmeiser Mfg. Co. of Davis sent off last week a shipment of almond hulling machines to Jerusalem. These will be the first machines used on the almonds produced in Palestine.

MR. HAYGROWER

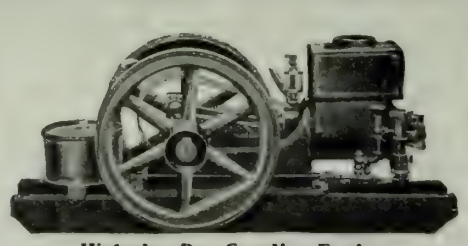


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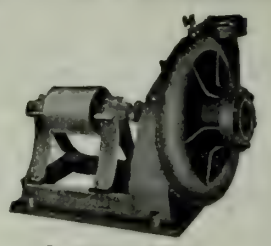
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Vol. LXXXI. No. 20. SAN FRANCISCO, SATURDAY, MAY 20, 1911. Forty-first Year.

Why Contra Costa is Planting English Walnuts.

Written Expressly for the PACIFIC RURAL PRESS.

The California black walnut grows luxuriantly in the rich valleys of Contra Costa county, and years ago many of these were planted along the roadsides for shade and foliage. At that time in southern California they had started the English walnut industry and were using the English walnut seedling, which has made fortunes for many, but the varieties resulting are open to various objections and have never attained commercial standing except in southern California situations, and are now being replaced by other varieties in that region. These English walnut seedlings are also generally subject to injury from walnut blight, and students of plant pathology have been striving to secure a tree that will resist this blight and have succeeded in avoiding it to a great extent by choosing late blooming French varieties and some of their seedlings produced in this State. They have also demonstrated that the black walnut, grafted to the French varieties of the English walnut, is notably successful, as it has proven in a measure a resistant tree, and, pushed by the root of the sturdy black walnut, becomes a very hardy and productive tree.

Profiting by the experience of others, the residents of Contra Costa county began grafting English walnuts upon the black walnut trees which they had planted along the roadsides, and today we find sturdy trees eighteen or twenty years old lining the county roads, producing thousands of dollars per year. That portion of Contra Costa county which has been designated as the "Mount Diablo country" is especially adapted to English walnut culture for many reasons. The English walnut must have an even climate largely free from frosts after the blooming in the spring



Fig. 2. Two-Year Graft on Black Walnut Root.



Fig. 1. Walnuts and Alfalfa on the Burgess Lands at Walnut Creek.



Fig. 3. Eighteen Year English Walnut of Mr. John Baldwin at Danville.

or early frosts in the fall before the nuts mature, if the best results are to be obtained from English walnut culture. Though English walnuts have been grown in a colder climate farther north, or at an elevation of 3000 or 4000 feet, such a climate does not develop the large, rich meated nut which can be produced under semi-tropical conditions.

Lying, as these valleys do, back of the Berkeley hills, they are protected from the cold wind and fog from the ocean during the summer, and yet the overhead currents of air from the ocean temper the climate during the winter, and frosts are rarely known heavy enough to destroy vegetation, except some early blooming fruits. Lying, as these valleys do, between immense water sheds having large rainfall, the soil is sub-irrigated, and orchards and vineyards do well without irrigation—most vegetables also—and on the lowlands three crops of alfalfa can be produced upon natural moisture. As water can in many places be had from fifteen to twenty-five feet, it is to be expected that the trees will be furnished with plenty of moisture if the land is adequately cultivated to prevent loss by evaporation.

Another important feature for the successful culture of English walnuts is the soil. Where the old black walnut is found in its natural state, you will find a deep, rich alluvial soil, and the success of walnut culture in Contra Costa county is largely due to the fact that throughout the valleys the soil is very deep and of a sediment nature, containing a large supply of plant food.

To be convinced of these facts, one has only to travel through the San Ramon, Ignacio and

(Continued on Page 394.)

Pacific Rural Press

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., May. 16, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.43	31.16	44.28	52	44
Red Bluff	00	21.38	24.12	82	44
Sacramento	00	21.81	19.65	80	46
San Francisco	.02	25.35	21.80	68	46
San Jose	00	22.59	12.65	74	38
Fresno	00	12.29	9.38	86	46
Independence	00	7.41	9.23	78	32
San Luis Obispo	00	34.42	19.99	76	42
Los Angeles	.01	16.13	15.42	80	48
San Diego	00	11.83	9.83	66	50

The Week.

The cool, slow spring continues. Even in the interior valley conditions are better for growing rather than maturing, and growers of early fruits are a little impatient and doubtful at times. There is action enough in fruit buying, however, to compensate for some slow things. Most remarkable prices are being paid for whatever has been held over from last summer's drying and something startling is being paid for futures on apricots, owing to a combination of shortage of the coming crop with a foreign demand for fruit which promises much for the future year's productions. European countries seem to be just awakening to the desirability of our dried apricots, and shipments even to Asia Minor, the home of the apricot are among the newer things. It is an interesting fact in world development that far away California should be teaching Mediterranean countries that fruits which they have grown for thousands of years as luxuries for the rich should come back to them from the other side of the world by tons in dried form such as they have never produced and at a price which brings them into quite general consumption among prosperous industrial classes. The sulphur bugbear seems no longer to rise in the trade, and American condemnation of American goods, such as arose through the unwarranted regulations on that subject from Washington, is more and more clearly indefensible and a great commercial sin. The long delay in the report of the Referee Board on the use of sulphur fumes in fruit drying creates a popuar impression that this regulation proves to be unnecessary, but, of course, in the absence of such report, it is not safe to figure upon that, except as a guarantee that this year's production will not be embarrassed—for it would be unfair to issue an adverse decision to affect the crop which is now coming under [illegible].

Upon another page will be found a re-issue of our tabulation of returns on this season's outlook for certain fruits. Additional reports which came in just too late for the press last week render the revised and extended publication desirable. Our readers are manifesting much interest in this undertaking and we are full of thanks to the well-informed friends who are co-operating with us in making this showing.

That Wretched Reciprocity Route.

The uprising of agricultural producers against the reciprocity plan of annulling the protective policy is only what any well-informed person could have forseen. As a matter of fact, there is no foresight required to know that much; it only requires a decently long memory. About 25 years ago a special commissioner of the French government tried to popularize the reciprocity route in this country soon after a duty was laid upon French wines in order that the American grape interest might have a fair chance to grow as the natural resources of the country invited it to do. This commissioner drew upon the historic friendship of France and the United States, displayed his national characteristics as a delightful mixer before the commercial organization of the country, and pointed his arguments with cork-popping at the expense of his government at Washington, and in fact wherever, in our large American cities, cork-popping would do most good. But despite his polite blandishments and genial hospitality, the sturdy American grape growers of that day defended their interest stalwartly and the protective conviction was then so strong that reciprocity was routed just as soon as it was seen to endanger the protective policy and would ultimately revoke it by a series of discrimination and unjust exposures. We are not sure that this was the first appearance of reciprocity escapes from tariff provisions, but it was an early and emphatic expression of the agricultural mind on the subject of subterfuges of free-traders, and whatever has been done by national diplomats along that line since that time has been against the frank and fair dealing which is dear to the farmers of this country. It is no wonder, then, that the protest against reciprocity with Canada has aroused the opposition of the leading farmers' organizations of the country. They are against it on principle because it is destructive of a principle, but the general opposition is built upon a multitude of particular menaces as might be expected. California has naturally always stood alert against trade with France which would undermine our wine interest. Just now, among other things in New England, it is a matter of milk. The New England railways have a postage-stamp rate on milk-carrying to Boston, so that the man who makes milk a hundred miles away gets the product into Boston for so many cents per can—the same rate that cans put on cars ten or twenty miles from the hub have to pay. Now comes Canadian reciprocity, and the New England cows will be hooked off their job by the cows on cheap lands just beyond the northern boundary. And so it goes on large products and small, all through the northern tier of States, the result usually being that large manufacturing concerns get more distant export markets while still under high protection against imports, while small producers of food products lose their home markets without any chance whatever of export compensations. Of course the free-traders are urging reciprocity; they do so because they are smart enough to see that it breaks down the protective policy. The wonder of it is that this very simple truth does not seem to have been revealed to those who claim to be protectionists and champions of American industries.

Cheap Chinese Hen Labor.

Another specter rises from the mists of the past, assuming new forms to meet the newer day. More than fifty years ago the cry against Chinese cheap labor arose sharply among those who were worsted by Ah Sin in "a game which he did not understand." Now the trouble seems to arise anew through the game of Ah Hen, which seems to involve energy and understanding also. Apparently our egg-farmers should store the facts in memory. The statement by General Amos P. Wilder, U. S. Consul at Shanghai, that "hen's eggs are produced in great quantities all over China and are sold very reasonably," is generally well known. It is also known that dried eggs and liquid eggs have figured in trade or trade talk, we are not sure which. It will, however, be news to many, probably, that Chinese hens are willing to accept cheap labor, as General Wilder's report indicates. He writes that a few years ago the price throughout the year at the open ports on the Yangtze average the equivalent in United States money of approximately 2 cents per dozen. Various causes have resulted in raising prices in general. Eggs have within the last year been sold in Shanghai at 5 to 6⅔ cents, and in Wuhu, Kiukiang and other ports along the Yangtse river at 4 to 5½ cents in American money. General Wilder advises that freight rates should be carefully inquired into by American firms considering the importation of Chinese eggs, as they will determine whether shipments of eggs from China to the Pacific coast will be profitable. Freight rates may determine it or they may not, for eggs could probably be brought cheaply enough even in cold storage as soon as the Pacific gets as many steamers as movement via Panama is likely to float on our ocean. It will be the tariff rather which will protect our producers against the output of cheap labor hens. And then the question will arise whether there shall not be reciprocity with China which will promote the sale of armor plate and warships or coal oil in China, while China bombards our great cities with ancient 5-cent eggs to the detriment of our own poultry industry. Reciprocity is bad—bad as a Chinese egg.

The Past and Future of the Earth.

But there are other old things to talk about besides eggs. As it is the graduation season, we should have a chance to produce an oration of commanding sweep, and therefore we choose the broad subject we have just written. There was recently a comparison of views among geologists and near-geologists about the age of the earth. As we remember the report, various conclusions, each with supporting data, were presented fixing the age of the planet at from 75 to 160 millions of years—which is perhaps near enough for all practical purposes, because the race cares notably less about where it came from than where it is going to. It is therefore consoling to think that the world is still young. In a recent lecture before a Swedish college in Illinois, Dr. Bvante Arrehenius of Stockholm declared that two causes are operating to bring about the extinction of life on the earth. Loss in heat generated by the sun is one of the dangers that threaten it, while diminution of carbonic acid in the atmosphere is the other menace. He explained that the sun will probably continue to give out the same amount of heat for at least a billion more years. The exhaustion of carbonic acid was held forth as the more imminent catastrophe. Dr. Arrehenius figured that at the present rate with which it is entering into other chemical combinations it will cease to exist in the atmosphere in sufficient quantities to sustain vegetable life in 10,000 years. This would mean, of course, that unless man can get busy in some way to save the earth it will get

into the same class with Mars in about that length of time, and the race will be gathered into sunburned graves, for there will be not only nothing to eat but no shade for the cemeteries. In chemists alone can be the hope of mankind, for only by their synthetic processes can the compounds necessary to prolong life be obtained from the soil and the rocks when the plant laboratories are closed. We, however, distrust this view, for a great chemist declared once that by 1910 there would not be wheat enough to make bread for the world—forgetting that most of the world's people do not eat wheat-bread and setting the date of wheat's disappearance in a year when the world's production was increasing instead of disappearing. His other prophecy, that by that time the chemists would be making bread from stones, is not verified either. We also remember that a generation ago it was popular to speak of a beneficent reciprocity between the animal and plant kingdom by which exhalation and inhalations of carbonic acid were to balance forever—but perhaps some of our modern systems of ventilation have knocked that out. Possibly this is another weakness in the doctrine of reciprocity, and it is likely to knock out the world—well, well!

Hunting for Fertilizer Deposits.

If plants are to disappear through the failure of reciprocity in about ten thousand years there arises a question of the necessity for the present feverish anxiety to discover new fertilizer deposits. Not only will the chance to grow plants disappear because of a shortage of carbonic acid, but by a strange contradiction there will be such a supply of plant food, barring the element, that never since the world began will there have been a moment when it was so abundant. The whole earth will be strewn with plant wreckage and animal remains undergoing decay, as San Francisco was strewn with junk after the great fire. There will be humus to fill all the lack of the present generation of humus-hungry people. How this can all go on without making carbonic acid enough to start the world all over again, we do not now see. The question is referred to Dr. Arrehenius. It seems to be a fact, however, that these considerations do not weigh for much with the fertilizer hunters. We read that Mr. Edward E. Free, physicist in the Bureau of Soils, United States Department of Agriculture, has been hunting for about six weeks among the California and Nevada deserts in search of potash deposits, which, if found, are expected to create a new industry for California. Phosphorus is found here in large quantities, but there is no potash. This all comes from Germany. The Department of Agriculture is working on the theory that there are potash deposits in California, which could be profitably worked into a fertilizer. This would not only bring a new industry to the State, but would greatly aid the growers of crops who are beginning to use fertilizer in large quantities. It would also be desirable for the Department of Agriculture to contrive a way, if it can, by which anyone who starts in to develop an industry of this kind will not be injured by the reciprocity which Germany will require if she continues to receive the meat products of the central West, for the first thing she will offer to trade for such concessions will probably be reciprocity favors for the potash which she wishes to sell in this country. But this is a mineral question and a little hard for us.

According to a new game law passed by the last session of the legislature and signed by Governor Johnson, no cottontail or brush rabbits may be shot from February 1 to July 1.

Queries and Replies.

Comice and Bartlett.

To the Editor: The Mesilla valley is getting to be quite a pear-growing section, and from the large number of trees that are now being planted, it will only be four or five years before we will be shipping carloads and perhaps trainloads of pears out of this valley. The variety that is taking the lead is the Bartlett. There are, however, a few individuals who are venturing out and thinking of planting other varieties. The one that seems to attract their attention is the Comice, but before taking up this variety on a large scale it is necessary to get as much information on this pear as possible. In view of this fact, I am asking you if the Comice is a better commercial pear than the Bartlett? Does it come into bearing earlier? Is it a more prolific and a more regular bearer? Is the tree as hardy to drought, as well as to disease, as the Bartlett? About what time do the pears ripen, as compared with the ripening period of the Bartlett? Is it as good a shipper and keeper as the latter?—Reader, New Mexico.

The Doyenne du Comice is an old French pear which you will find described in all the fruit books. Under the American Pomological Society's nomenclature, it becomes simply Comice. It is a long-keeping, winter pear which has been grown in California for the last fifty years, but during the last decade has advanced in favor as a shipping winter pear both from this State and from Oregon and very high carload prices have been secured. It does not compare or compete in any way with the Bartlett, which is entirely out of the way before Comice comes in. As a shipping fruit, therefore, Comice is in competition with Winter Nelis, Easter Beurre, P. Barry, Block's Acme, and other winter pears, and promises to be more profitable than any of them. So far as reported, it is prolific and regular in bearing, but as our winter pears are not at all likely to reach such demand as fall pears, this variety may be expected to remain permanently inferior to the Bartlett. As a matter of fact, we have at least a thousand acres of Bartlett to one of Comice—perhaps more.

Bean Growing.

To the Editor: I have about ten acres of land that I want to put into beans of different varieties. The land is rich, black loam with a little sand. When is the best time to plant? If planted early, what shall we do to keep the weevils out of them?—Farmer, Lordsburg.

It is desirable to plant beans as early as you can without encountering danger of frost killing. No particular date can be mentioned for planting because the dates will vary in different locations according to the beginning of the frost-free period. The best way to escape weevil is to sell most of the beans as soon as harvested, treating those which you retain for seed, or for your own use, with bisulphide of carbon vapor or by gently heating to a temperature not above 130 degrees, which, of course, must be done carefully with an accurate thermometer so as not to injure germinating power. Of course, we must add that unless you know that beans do well in your locality, it would be wise to plant a small area at first rather than to take chances on ten acres, because beans are somewhat particular in their choice of location in California, and one should have practical demonstration of their satisfactory bearing before risking much upon the crop.

Pears Under Hardship.

To the Editor: Please inform me whether pear twigs I send you show the effect of blight, or starvation and low vitality, coupled with frost injury. Trees are grown on high land without irrigation; soil is gravelly clay loam of fair depth. The trees had poor cultivation last year and carried rather too much wood. They are about ten years old. You will note one lot of twigs have not leafed out. Presume these are blighted, although I cannot find the reddish discolorations of the inner bark.—Grower, Colfax.

We do not find specific evidence of pear blight. There seems to be very clear evidence of neglect and resulting lack of vigor—probably from the causes you mention. The trees should be given good cultivation and irrigation if the soil dries out in the late summer. Look out for signs of blighted twigs, shown by blackening, also for blight bands proceeding downward along the larger branches, etc. Also see what condition the roots are in.

Sulphuring for Mildew.

To the Editor: For two years I have not sulphured my vineyard at all. I had no mildew. My vines seem as healthy and thrifty as any of the neighbors' that were duly sulphured. Have I lost anything by not sulphuring?—Vine Grower, Lodi.

Certainly not. In sections where mildew is practically sure to come, sulphur should be used regularly as a preventive without waiting for the appearance of the disease. There are, however, many locations, especially in the interior valley, where the occurrence of mildew is rare in sufficient volume to do appreciable harm, and then sulphuring should depend upon the weather, which favors mildew or otherwise. But growers should, of course, be always on the watch and have everything ready to sulphur immediately. They should also learn to recognize the conditions under which appearances of mildew become a menace.

Garden Snails.

To the Editor: As a subscriber to your paper I would like to know if there is any way to rid a garden of snails. I have a strawberry bed which would now be furnishing an abundance of berries, were it not for a small snail which eats into every berry. I have never been troubled with them before anywhere in my garden.—T. P. M., Oakville.

You can catch some by placing here and there pieces of boards on the under sides of which they will collect. You can get some by sprinkling lime on the spaces between the berry plants. The only way we know of to thoroughly discourage them is to have the plants in rows far enough apart for cultivation or hoeing, and keep the ground surface loose and dry. Irrigation must be in furrows covered as soon as ground dries enough to work. We know no way to escape snails on matted beds irrigated by sprinkling—the way many try to grow strawberries in gardens.

Nitrate of Soda.

To the Editor: Kindly give information as to the amount and how to apply nitrate of soda as fertilizer for roses and other flowers and lawns during the summer months.—Amateur, Palo Alto.

One has to be very careful in the use of nitrate of soda not to use too much and not to apply it unevenly, so that too much is brought in contact with the roots of particular plants. From one to two hundred pounds an acre evenly distributed is the usual prescription for nitrate of soda, although in the case of bearing orange trees consideably larger amounts have been successfully used. This would be at the rate of about one ounce to one square yard of surface. It would be a safe application to begin with and could be increased a little on the basis of observation of results. Of course, the application should be accompanied by copious irrigation in order to dissolve and distribute the substance.

Do Fruit Trees Get Root Knot From Legumes?

[Is there ever a time when a fruit grower should not stop and think? Here we are rushing legumes into orchard ground to get much needed humus and nitrogen and inclined to berate all who do not catch on to this practice as back-numbers, only to be checked up by the bacteriologists with the claim that the wrong bacteria may invade the roots of the legumes, displace the true nitrogen gatherers and fill the soil with their own pestiferous kind, which is the very kind which causes root-knots or galls upon the roots of fruit trees. What do you know about that? It is certainly a thing to think about and to watch. Mr. K. F. Kellerman has been studying the subject, and has just made an announcement about it in Circular No. 70 of the Bureau of Plant Industry of the United States Department of Agriculture. We give the following outline.—EDITOR.]

From time to time specimens of supposedly well-inoculated plants of alfalfa, crimson clover, and alsike clover have been forwarded to the Laboratory of Soil-Bacteriology Investigations with the explanation that although nodules were produced in abundance the leguminous crop was not satisfactory. In these cases the appearance of the nodules was abnormal, and the bacteria isolated from them, although resembling the nodule-forming organism, did not have the power of fixing nitrogen in culture solutions, and as a tentative explanation it was suggested that this was but an extreme case of pleomorphism of Pseudomonas radicicola, which could be of no symbiotic advantage to the leguminous host.

During 1909 the organism occurring in the abnormal nodules of alfalfa was studied more extensively, and it was decided that this organism represented a new, although not a destructive, disease of alfalfa. Through the courtesy of Drs. Smith and Townsend a comparative study was made of material furnished by the Laboratory of Soil-Bacteriology Investigations, which showed that the bacteria causing the abnormal nodules upon alfalfa were practically identical with those causing the crown-gall of orchard trees.

In a recent bulletin Smith, Brown, and Townsend have reported extensive studies upon the crown-gall of fruit trees, proving conclusively that this is not only an infectious disease caused by a specific micro-organism (Bacterium tumefaciens), but that it can infect many kinds of plants. For instance, the bacteria isolated from the crown galls of peach trees will produce excrescences upon the stems or upon the roots of tomatoes, sugar beets, salsify, rose bushes, apple trees, certain of the legumes, etc. The same is true of bacteria isolated from these abnormal galls, or tumors, upon sugar beets, and, in fact, it is probable that the crown-gall bacteria isolated from any one of the kinds of plants showing the disease will produce similar diseases in any of the other kind of plants which have been found infected.

Different Appearances to Be Looked For.—Fortunately, the difference between nodules produced by the beneficial nodule-forming organism of the legumes and those produced by the crown-gall organism is sufficiently typical to be easily recognized by an experienced observer. Though it may be possible to confuse these during a hasty examination, it is obvious upon close inspection that the nitrogen-fixing nodule is an outgrowth from the plant root, and that it has no more apparent effect upon the root than has an ordinary branch of the root. The interior of the nodule contains flesh-colored cells full of bacteria, which may be easily seen under the microscope. The crown-gall tumor, on the other hand, causes much distortion of the root, frequently forcing it to branch into many small roots, which project from the tumor itself. The interior of the tumor is white and it is difficult, if not impossible, to see any bacteria in any of the cells, even in the most carefully prepared sections of the tumor tissue.

Crown-Gall Infection Through Leguminous Crops.—The fact that must be emphasized especially in connection with farm practice is that the excrescences, or tumors, formed on certain legumes by the crown-gall organism have occasionally been confused with the desirable nitrogen-fixing nodules. It is obvious, therefore, that in all orchard or sugar-beet regions the possible danger of crown-gall infection through leguminous crops must be considered. The use of soil for inoculating alfalfa or clover, if selected at random, may be a serious menace. In the few years that this matter has been under observation many records of the shipping of alfalfa soil infected with crown-gall under the designation of inoculated alfalfa soil have been obtained.

Whether a leguminous crop infected with crown-gall constitutes an unusually serious menace to succeeding crops of sugar beets or to orchards has not yet been determined. The three leguminous crops, alfalfa, crimson clover, and alsike clover, seem to serve as very favorable hosts for Bacterium tumefaciens, and the organism isolated from these legumes appears to be at least as viable as when isolated from its other hosts. It is well known that most leguminous crops greatly magnify the severity of nematode infection for succeeding crops in regions where this pest occurs, and this analogy emphasizes the necessity, at least until the lack of necessity for such caution has been demonstrated, of using the utmost care in guarding against the dissemination and the favoring of crown-gall through the agency of these crops.

Conclusions.—(1) The crown-gall organism has been found in tumors somewhat resembling the normal nitrogen-fixing nodules upon the roots of alfalfa, crimson clover, and alsike clover.

(2) Great care should be taken in using soil or cultures for inoculating legumes in regions which may eventually be used for sugar beets or for orchards.

(3) It is usually possible to distinguish the tumor produced by the crown-gall bacteria from the nodule formed by the nitrogen-fixing bacteria by their external appearance.

(4) By the use of special media it is possible to distinguish between the bacterium which causes crown-gall and the nitrogen-fixing bacterium which forms the desired nodules upon the roots of leguminous plants.

(5) It is not known what other leguminous crops are susceptible to crown-gall infection. It is believed, however, that there is reason to suspect all of the clovers.

PACIFIC COAST WILD FRUITS.

Doubtless some of the many who are now making homes in the California mountains and in the upper coast valleys may encounter wild fruits strange to them and be assisted to appreciate them by a very interesting sketch prepared for the Rural New Yorker by Mr. Joes Shomaker of Seattle. Mr. Shomaker treats of them from the point of view of experience in western Washington, but many of the fruits extend southward into California and are thus liable to be encountered by many new Californians, among other wild fruits which are peculiar to this State:

The Oregon grape (a barberry) is a bright little shrub that stands all sorts of hot and cold weather, and seems to prefer semi-arid conditions. It seldom attains a height of more than two feet, and generally is not so tall. Many plants bear a rich, blue-black cluster of fruit, resembling grapes. The fruit is used for making syrup, canning and preserving. The foliage resembles holly leaves, and the Oregon grape frequently takes the place of imported holly for decorating homes and public halls.

Huckleberries are shrubby plants, growing in the open country. They are of three distinct types; one bears blue, another black, and another red fruits. The berries are always marketable, pickers often getting 10 cents per pound for choice huckleberries; in fact, I have seen the berries selling on the Seattle markets for 25 cents per pound. The plants are woody, and remain in the same spot for years, the black and blue being evergreen and the red a deciduous plant. The berries are used for home canning, for pies, and wine making.

Wild blackberries are the best native fruits growing in the Puget Sound region. They are sought by families, markets, and all wanting the combination of wild flavor and excellent fruit. It was customary, years ago, for the Indians to burn over tracts of forest, every summer, to open up the country for wild berries. That did two things—supplied fruits for home use and attracted the bear and fowls of the timbered districts. Then the pioneers followed the same plan, and the wild berries are well distributed over the logged-off territory.

Salal berries are grown on small, shrubby bushes. They are picked and mixed with Oregon grape for making jams and jellies, and for boiling to a syrup, which many prefer to that purchased in cans, coming from the refining mills of somewhere. The salal plant, like the others, thrives on sandy, gravelly upland, from which the timber has been removed. Its berries are ripe in September, and stand beside the huckleberries, until Christmas, giving fruits for the people and food for fowls and animals.

Salmon berries are among the wild fruits, growing in marshy and shaded spots, along the waterways. The plants stand about four feet, and branch out, in tree form, if there is enough room for spreading. The fruits are rich salmon color and come about the first thing in the Spring, being much sought by birds and wildfowl.

Wild raspberries are fine, ornamental umbrella-shaped plants, bearing black fruits, and companions of the salmon berries.

NOTES ON CHERRIES AND APRICOTS.

To the Editor: A request from a recent correspondent for information regarding trouble with cherry trees did not bring the responses I hoped to see. Possibly because the editorial comment was conclusive and convincing, which ascribed the probable cause of cherry trees often dying at about four years old to a poorly drained soil, or surplus of moisture at the roots in the winter followed by extreme dryness of the earth during the summer. There is no doubt of the correctness of this, in a generaly way, but it applies particularly to the cherry on mazzard root. On the mahaleb root, from long orchard experience, I know that the cherry will put up with these extremes of moisture and dryness with much less danger of bad results. The mahaleb root has many other advantages, such as earlier bearing, forming a lower, stockier tree, etc.

Apricots.—The apricot crop, after two years of fatness, seems to be hastening toward famine again. It would be exceedingly useful if accurate information could be had on the comparative crops borne on different varieties in the same locality. Prejudice enters largely into influencing a decision in the selection of varieties to plant. There was a time when Moorpark was the variety to plant in Santa Clara valley. Many years of "off" crops have dispelled the illusion existing in its favor. Then Blenheim and Hemskirke, because larger than Royal, became, and continue to be, the favorites. But even they seem to bear two successive years and rest the next three.

North of San Francisco, in Solano and Yolo particularly, Royal is the choice, and it certainly bears well its reputation for regular bearing. Except in this section, it is complained that Royal is too small. This, however, may easily be obviated by pruning and by thinning the fruit.

Some years ago a variety from Sacramento was distributed as "Royal," but proving to be inferior in every way, and sometimes designated "White" Royal. This is one cause of a poor reputation still clinging to the skirts of "Royal."

There are two varieties propagated as Hemskirke, one having the prefix "Alameda." "Blenheim" covers a multitude of sins, or otherwise.

In our experimental orchard in Santa Clara

valley we have trees bearing of these varieties, and many others, buds having been selected with peculiar care. It is worthy of note that Royal buds from a well-known Winter's orchard, bears every year, and so does "Barry," a variety originating in Alameda county. This latter is larger, and rather later than Royal, and both possess every qualification pleasing to canner and drier.

This season Blenheim, Hemskirke, Moorpark, Tilton, Montgamit, Smyrna, etc., have no fruit, but Royal and Barry both had to be thinned to avoid overcropping. They may be more strongly self-fertile, or more resistant to inclement weather conditions; the results are right.

Morganhill, Cal. LEONARD COATES.

PEACH TROUBLES.

We are having trouble this year, perhaps more widely than usual, with irregular behavior of peach trees, a part of which is due, as we have previously intimated, to lack of moisture and sufficiently late growth during the latter part of the last growing season. A similar condition seems to have prevailed on the Atlantic side. Professor M. A. Blake, of the New Jersey Experiment Station, says that a fair proportion of dead fruit buds will be found in New Jersey orchards. This is not due to cold weather, but to last season's conditions:

"The past winter has been favorable for properly matured peach buds in New Jersey with no temperature low enough to cause bud injury. An examination of the buds by the writer during the winter and before the recent cold weather showed a considerable proportion of fruit buds dead at the center, especially upon weak trees and in poorly managed orchards. The buds upon early varieties such as Carman are generally in good condition. Such varieties ripened their crop early last year and were able to mature a crop of well-formed buds to pass the winter. The late varieties show a much larger proportion of dead buds. Such varieties being obliged to ripen a crop late in the season and during the severe drought, were unable properly to develop a crop of fruit buds for the succeeding season, especially where the trees were not supplied with liberal amounts of plant food. Young trees which are to bear their first crop in 1911 generally have a full set of buds in excellent condition at this time, and this is also true in older orchards that were liberally fertilized and cultivated last season. Indications point to a considerably smaller crop of peaches the coming season, even with favorable weather at blooming time. Higher prices are likely to prevail and those who treated their orchards liberally last season will reap their harvest."

GROWING TOMATO PLANTS IN PAPER POTS.

To the Editor: I planted some tomato seeds about the first of February. When they were two inches high I transplanted most of them in shallow boxes. I picked out 25 of the largest and healthiest looking plants and planted them in pasteboard cartons such as the grocers use for pickles, olives, etc., one plant to each carton. The soil used was exactly the same and they all received the same attention. The plants in the boxes are now from 6 to 8 inches high, while the ones in the cartons have made practically no growth at all. If you can tell me what the trouble is it will be greatly appreciated.

Napa. GROWER.

We can only guess that the difference in the growth of your tomato plants is owing to the different amounts of moisture available, it being probable that the pasteboard container extracted the moisture from the soil and lost it by surface evaporation continually, while the boxes were more retentive and therefore retained ample moisture for the growth of the plants. Hard-rolled and non-absorbing pasteboard had been used to some extent in the place of earthen flower pots. You could, of course, check this tendency to remove moisture by smearing the inside of the container with paraffine if the advantage of using such material would compensate for the cost and trouble. It would probably be better to learn from your experience and use pots and boxes instead of the cartons which you describe.

If, however, you desire to continue experiments in this line of paper containers, you can take a hint about conserving moisture, etc., from the following record of experience in Pennsylvania as described in the Rural New Yorker by a commercial tomato grower:

"When I began growing tomatoes for market I tried the advertised paper plant pots to save one transplanting. I found two objections. They do not remain square at the top, which makes it difficult to fit them closely together in the cold frame, and the bottom, being several thicknesses of paper, cuts off the capillary action, which makes it difficult to gauge the moisture properly. I worked out a plan that I think is a decided improvement. I went to a local printer and got the paper, or cardboard as the printer calls it, cut 4 by 22 inches. It is about the weight they usually use for printing public sale bills, etc., and cost $1.50 per thousand, which is less than half what I paid for the others. By folding these tightly around a block of wood 3 by 3 inches high and 4 inches high, slipping off and putting in a pin, we have a square pot with no bottom. These are pressed flat and packed a thousand in a bunch for convenience, until wanted. When ready to use I open, give a quick pinch on the corners not folded, and the box will stand almost perfectly square. These fit nicely together and can be opened, shaped and set more rapidly than the others could be placed, and are much more convenient. I can carry a thousand of them in at once, while with the others I would have 15 bushels or more. I place several rows at a time, drop a little well-rotted manure in each one, press down, then fill in the soil with a shovel, set a plant in each box, then fill in more soil until the boxes cannot be seen. This prevents the air from getting in and drying too rapidly. When ready for the field I slip a trowel under and place them on a stone boat to haul out to the field. The manure serves every purpose of the paper bottom, while it does not interfere with the moisture either going down or coming up. It is not so necessary to remove these boxes, and if we do wish to take them off they are much more easily removed than those with bottoms."

A GENEROUS DEATH FOR GOPHERS.

The up-to-date way with gophers seems to be to provide them with a full breakfast just before death, just as they do condemned murderers on the verge of execution. On the face of it, this latter practice seems to be humane, but is it really so? Is it kind to the wretch to give him new reasons to stay in the world just before you chuck him out of it? However, how do we know that it acts that way with gophers? In the destruction of gophers the following formula has been tried with success and is recommended by the U. S. Department of Agriculture: Five ounces powdered strychnia sulphate, 4 ounces green coffee, 6 ounces alcohol, 4 eggs (white only), ½ gallon thick sugar syrup. Mix the coffee and whites of eggs and let the mixture stand over night. Add a quart of cold water to the coffee-egg mixture and stir thoroughly. Strain into the mixing vessel through a sieve fine enough to hold the coffee, which is rejected. Add the sugar syrup and stir thoroughly. Dissolve the strychnia in a little less than a quart of boiling water. Pour the alcohol into this solution and stir. Then add the mixture of strychnia, alcohol and water to the contents of the mixing vessel and their stir thoroughly. This quantity of poison is sufficient for two bushels of wheat and will be more than is needed for ordinary conditions.

Judged from the point of view of a full breakfast, it seems to lack nothing but the hot cakes. With murderers they are supposed to come afterward, anyway.

The Danger in Small Canning Enterprises.

California has not, fortunately, been largely chosen by promoters as a field to dispose of their wares in the form of outfits for local fruit and vegetable canneries. We have been favored in past years by creamery promoters who did succeed in locating a few creameries where there were no cows, nor any prospect of them, and inflicted losses upon credulous people thereby. We have a suspecion that alfalfa mills are being irrationally promoted at the present time, and all such projects should be carefully looked into. It is often necessary to measure visiting promoters inversely to the length and breadth of their watch chains and to the amount of stock which they propose to take in the projects themselves. It is always necessary for a wise buyer to ascertain what he is to get for his money and what the material is actually worth when the hot air blows out of it.

We find in the Rural New Yorker an interesting account of an Ohio reader's experience with a promoted cannery. It is as follows:

"An enterprising man from Chicago came to our village to induce the people of this vicinity to invest in a canning factory. As this community is situated in the Muskingum valley, surrounded on every side by fairly fertile soil, with excellent transportation facilities, he had little difficulty in selling 78 shares at a par value of $100 each; $6800 of this sum was to be paid the Industrial Company for erecting and equipping a large canning factory. The money was paid in installments, the final installment paid on completion of building. The stockholders allowed the company to put on a metal roof, not realizing the effect of the steam and fumes generated in canning on the under side of the roof, and accepted the building and equipment. Of the remaining $1000, $500 was paid for a site and $500 placed in the treasury.

"As canning time drew near the directors of the new canning company found out from the manager they had hired to run the factory that they would need more money than was in the treasury to buy cans, labels, etc., and pay labor. As the farmers had agreed in the contracts to wait for their money for tomatoes until canned goods were sold, they did not have to consider this item. As the shares of the company were non-assessable, a number of the stockholders got together and signed personal notes for $50 each, this money to be used to run the factory, and the factory to pay these notes and interest out of first money received for canned goods.

"The factory did well the first season, although it had but a small acreage. The producers were paid in full, and if it had not been for a bad debt (afterward collected) they would have paid the $50 notes in full. As it was, the directors of the factory becoming angry at the bank in which the notes were placed, took their own money, paid the notes in full, and put them in another bank for their full amount to raise money for the next year. A mortgage for $1500 was placed against the factory in the sping of 1909 to add needed improvements, a large acreage of both beans and tomatoes had been contracted, and everything seemed prosperous. The contracts this year, instead of making an indefinite time for paying, stated that one-half of the money was to be paid the producers on November 15 and the other half on December 15 of that year. All labor bills were paid promptly.

"The factory had a big run, canning about 600 cases (two dozen cans) of beans and about 5000 cases of tomatoes. The beans were sold early at a loss to get money for running expenses. November 15 came, but the factory postponed paying the farmers with the plea that tomatoes were advancing in price and they would lose money to sell them. When December 15 came and no money, the factory was threatened with suit; the directors claimed that a suit would wreck the factory and if they were just left alone they would pay everything in full.

"At the annual meeting in February, 1910, the fact was brought out that the factory was actually in debt $10,990, or twice what the most pes-

simistic person had imagined. It developed that the directors and the local bank (part of whose directors were directors in the canning factory) had loaned the factory $5000 and covered everything with chattel mortgages, including canned goods. It took only a little industrious figuring to convince part of the farmers that if these mortgages were paid, there 'wouldn't be any core' left, and so about half of the producers went to law; the other half, through fear of the law, indifference, or the selfish feeling that they would profit by the labor of others without expenses, or other motives, standing aloof. The canning company finally compromised our case by paying 27½ cents on the dollar and all our expenses. The half that did not join us and sue did not nor ever will receive a cent. The factory and equipment was sold the other day for about $1750. At the last financial statement given out, the company had nearly $19,000 in liabilities (including stock) and its final assets were less than $7000, and an assignee's fee and two lawyers' bills were taken out of that before it became net; also, an unknown amount of accrued interest. The stockholders, of course, lost everything."

WHY CONTRA COSTA IS PLANTING ENGLISH WALNUTS.

(Continued From Page 389.)

Clayton valleys and observe the sturdy growth of the English walnut, grafted with the black walnut. Mr. E. I. Hutchinson of Concord, one of the pioneers of walnut culture, has grown some twelve different varieties with great success. Among these are the Franquette, Concord, Mayette, Praeparturiens, Bijou or Mammoth, Gillett's Treyves and the Chabert. Among the new varieties which promise to be great producers are the Chase and Eureka, the latter being a particularly shapely nut which will, no doubt, vie with the Franquette in the markets of the world; in fact, it resembles the shape somewhat of the Franquette, being oblong but with more rounded ends, and those who have experimented with this nut for the past four or five years claim it to be a heavier bearer than the Franquette.

The first photograph in the group of pictures on this page shows some of the bottom land set to three-year-old black walnut roots, with a one-year-old graft, and the ground between the trees is planted to alfalfa. This is taken from the R. N. Burgess Company's property at Walnut creek.

The second illustration is a two-year-old graft on a four-year-old black walnut root. This is a top graft, which many prefer, but which requires a longer time to produce, and the method of planting orchards today, most highly recommended by those who have experimented in this line for years, is the transplanting of two-year-old black walnut roots, with a one-year-old graft, as the loss of trees, if cared for properly, is very small and the orchard will be more uniform and the trees more even throughout. This photograph is of a tree on Mr. John Baldwin's ranch, at Danville.

The third picture is of an enghteen-year-old tree on Mr. Baldwin's ranch, which produced 200 pounds a year for the last two years, being a little heavier last year than the previous year. Mr. Baldwin has no regular acreage that is producing, but trees from ten to eighteen years old, amounting to a little over two acres, produced 3½ tons last year, for which he received 17 cents per pound. This is not an exceptional yield, but seems to be about the average as near as can be found throughout the valleys of the "Mount Diablo country."

The future of the English walnut industry can hardly be appreciated, as nut food is coming into greater demand each year, and it seems likely that many years may elapse before this industry can possibly be overdone, as the locality best adapted to the production of English walnuts is limited for the various reasons cited above. While the production has been on the increase in California and in some other portions of the United States, yet the importation has more than doubled during the last eight years. The success of walnut culture in Contra Costa county has been so marked that a large amount of acreage is being planted at the present time. The R. N. Burgess Company has something over 500 acres in three-year-old trees this year, and perhaps as much more has been put in by other planters.

Contra Costa county is attracting many people seeking suburban homesites, as the "Mount Diablo country" is very accessible from the great cities of the Bay and is picturesque as well as productive.

A NEW WAY TO MARKET APRICOTS.

Through the tariff bill passed during the last Congress a market has been obtained for American apricots which may prove of considerable value to California producers. According to treaty provisions with Germany, apricot pulp, which previously was subject to a tariff of $17.85 per case of 220 pounds, may now be imported at a cost of only $1.17.

The pulp is made from fruit that is fairly ripe. After being halved and seeded, the apricots are half cooked with a little water in steam basins. They are then placed in tin cans which are sealed, placed in water, and subjected to a boiling lasting between five and ten minutes. The product is remanufactured in Germany by the addition of sugar and syrup, and eventually sold at retail in the form of preserves and marmalade.

The process of producing the pulp commercially was discovered by English manufacturers, who imported it from southern countries into England, and the business is now so old that shippers who formerly exported the pulp with the expectation that it would be preserved with sugar within two or three weeks now succeed in making consignments which undergo no deterioration in as much as three to five months.

In 1909 the pulp imported into Germany was valued at $1,333,276, while in 1910, in spite of much higher prices, the value of the imports rose to $2,554,454. The average price paid during 1910 was 20 marks, or $4.76, per case of 1100 pounds. Payments are made after the arrival of the goods.

Germany consumes immense quantities of preserved fruit, and the market may be expected to expand with the increased ability of shippers to provide first-class goods. Spanish pulp is packed in round cans which are not always tightly repacked in wooden cases, with the result that there is sometimes a considerable loss from bad tins. It has been suggested that American shippers might advantageously provide themselves with rectangular tins, thus economizing space and securing a better package. Through the provisions of the German tariff, apricots are the only fruits that can be exported to Germany in this condition.

In years when crops are small, the demand for dried fruits here will probably be so great that no profit could be found in producing and shipping the pulp, but when crops are large, or weather conditions hinder drying, much fruit which would otherwise go to waste might be put up and shipped in this manner and considerable money saved.

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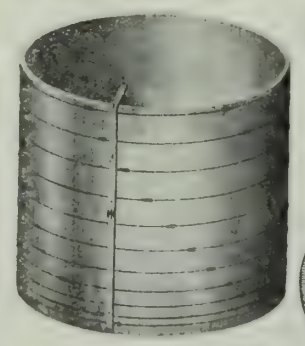
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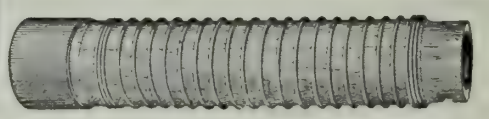
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R. F. WILSON, 447 W. MAIN STREET, STOCKTON, CAL.

The California Deciduous Fruit Crop.

Last week in these columns was printed the estimate of four varieties of the growing fruit crop, but as several correspondents had not sent in their estimates the table was incomplete. As we can give a nearly complete statement at this time, we reprint the table. We would also call attention to a mistake in the statement made last week—where it read number of acres in bearing, it should have read number of trees in bearing in the spring of 1910. This week another series of questions has been forwarded to our correspondents, and we trust we shall have a full response, to appear in the PACIFIC RURAL PRESS for the issue of June 3.

COUNTIES	Apricots	% of Full Crop	Cherries	% of Full Crop	Pears	% of Full Crop	Peaches	% of Full Crop	Prunes	% of Full Crop
Alameda	115,000	50	87,000	100	58,000	75	84,000		154,600	45
Butte	7,545	40	1,743	50	13,199		133,638	100	84,405	95
Colusa	17,000	50	1,000	90	7,000	75	13,000	75	92,500	50
Contra Costa	53,100	15	8,050	50	73,500	70	28,200	50	54,220	65
El Dorado	400		5,000		70,000	60	110,000	60	124,000	60
Fresno	145,600	50					3,270,000	50	83,000	
Kern	25,000		1,000		1,500		50,000		4,100	
Kings	79,600	40					386,200	50	6,860	50
Lake	1,975		310		24,850		5,829		29,622	
Los Angeles	200,300		1,950		75,000		218,720		61,710	
Madera	10,000	15					70,000	30		60
Mendocino	500		750		10,000		10,000		20,000	
Merced	8,250	25	450		4,250		148,401	75	1,525	
Monterey	25,000	100	2,000	50	6,200		9,500	100	3,350	90
Napa	17,000	40	32,000	90	69,120	90	107,880	50	91,180	75
Nevada	170	10	285	25	36,270	30	12,760	20	5,800	50
Orange	167,240	75					38,350	85	17,320	90
Placer	7,485		23,480	40	104,600	60	994,250	60	20,465	
Riverside	66,317				12,151		45,293		22,138	
Sacramento	17,000	60	8,500	75	55,000	60	18,000	85	46,000	80
San Benito	35,000	40			6,000		15,000	100	125,000	50
San Bernardino	26,200		15,600		18,500		8,250		2,800	
San Diego	9,140		1,300		2,318		8,760		3,240	
San Joaquin	70,540	33	37,301	100	25,425		235,130	75	47,815	100
Santa Barbara	21,450	95	750		1,215		6,325	95	1,250	96
Santa Clara	544,000	25	137,700	45	126,200		592,500	50	5,257,900	40
Santa Cruz	56,440	90	12,914	75	14,286		10,594		99,096	
Shasta	650		500		27,700		44,000		87,500	
Solano	237,800	40	65,200	50	203,000		490,600	75	465,000	35
Sonoma	22,540	75	45,720	100	81,270	80	28,670	90	588,040	100
Stanislaus	9,050		1,350		3,620		50,410		7,190	
Sutter	4,804		1,186		11,309		130,854		39,922	
Tehama	64,410	10	5,070		63,050	50	679,400	27	115,700	60
Tulare	32,075	25	500		3,287		348,170	50	137,935	40
Ventura	26,000	80					7,800		19,000	
Yolo	80,000	25	4,000	90	12,000		11,000	75	130,000	60
Yuba	18,750		11,125		14,450		69,555		5,055	

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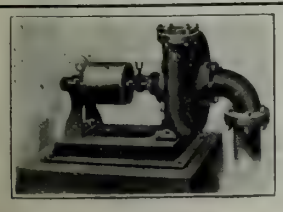
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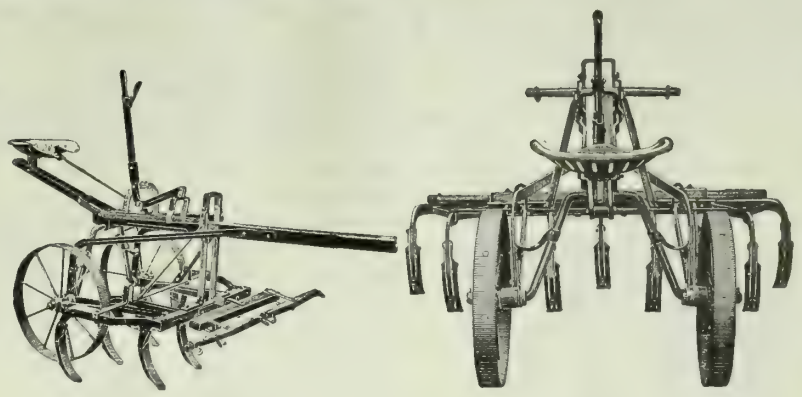
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	Pole		32 lbs.	32 lbs.	1

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A 1000-ton warehouse is being built by the Dixon Milling Co. for its alfalfa-meal mill.

Hints for the Home Garden.

With the passing of the season in which heavy frosts may be expected the last stage in the setting out of plants is reached, and in a short time it will be too late to hope for vegetables or flowers for which preparations have not been made.

The rains are now practically over for the year and many vegetables cannot be raised with success or will not flourish as they would if put out earlier in the season. Other groups of vegetables can be put out and will be at their best which would have done little if planted before this time, but will need good moisture conditions until well established.

Tomatoes should have been set out or well started in a cold frame and will now find conditions best for their growth. It is about as late as they should be started from seed, but will find the weather good for transplanting. The tomato does best in a heavy soil. In the coast counties or in the climate of the San Francisco bay region the early varieties are likely to give the best results.

A closely related plant to the tomato is the pepper, and the treatment that is best for the tomato will usually suit the pepper.

This is also the season for planting corn, and if the moisture conditions are suitable to establish a good root growth a good crop should be secured. Corn should not be set out much earlier than this date in most places owing to danger from frost.

Another group of plants which the frost keeps back is the squash and melon family. These could have been set out a little before this time in some places, but will do well now.

All of these succeed best if given a good start before the dry hot season comes on, and must be planted in a deep soil, and be well irrigated, if not provided with enough water naturally in order to be a success. It is not only a question of climate, but of good treatment.

Beans can be put out with good hopes of a crop, although considerable planting has already been done. Several other varieties of vegetables may do well, but will be handicapped by the weather. Success with them will be achieved by care, although the season naturally is too far along to expect the success that could be obtained with early planting.

For the flower garden many annuals can be set out and with care will do well, although the season, as stated above, is rather far along for most varieties. Trees should have been set out before this time, although several varieties of potted evergreen shrubs may be transplanted as late as now.

It is at this time, when the cold weather is about over and the warm sunshine awakes the insects that have been hibernating during the winter and hatching the eggs that have been lying dormant during the cold season, that the garden should be carefully examined for the young insects. The larvae of many pests, if likely to be troublesome later, can be found on the plants now, and a good spraying or dusting before they reach maturity may save trouble and disappointment later, when they are more in evidence, but harder to control.

TO KILL MARSH MOSQUITOES.

A subscriber from San Rafael has asked how to prevent mosquitoes from breeding in the salt marshes around San Francisco bay.

The most difficult task is to find the breeding places. Mosquitoes are seldom produced in marshes through which the tides circulate freely. The most prolific place for their production is behind levees where the water gathers and does not circulate. Another place is in the upper part of the marshes where water is left in small pools after the high tides of the full moon.

These breeding places can be entirely destroyed at slight expense by drainage that will prevent the water from standing for any length of time, and by covering pools that cannot be drained with oil. The oil should be applied as a spray and should not be heavier than 32°B.

Salt grass marshes are usually free from mosquitoes. Marshes covered with reeds furnish better ground for their production, as the reeds prevent water from circulating freely. In this case drains may have to be constructed over the whole marsh.

One of the best agencies in preventing the growth of mosquitoes is the fundulus, a fish about an inch long that can usually be found in the salt or brackish water of the marshes. They can swim in as shallow water as a mosquito can develop, and it is through them in large part that mosquitoes are not produced in the open marsh.

A trench that will open up an isolated pool to them may be the means of killing all mosquito larvae within a very short time, no oiling or further draining being necessary.

The cost of all work is generally found to be much below what is usually believed. At Mare Island, where the Government expected to go to considerable expense to clean out mosquitoes, only one breeding ground was found, and this was remedied by the digging of a few shallow ditches by workmen at the yards.

Some fresh water mosquitoes are also produced in the bay region in small swamps or in holes in creek beds after the water has ceased to flow. These places should be drained or oiled.



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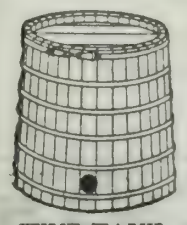
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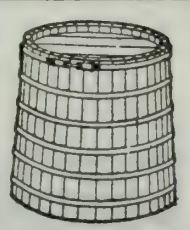
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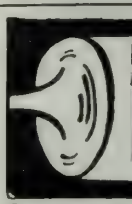
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Agricultural Engineering and the Demand for Agricultural Engineers.

By SAMUEL FORTIER, Chief of Irrigation Investigations, U. S. Department of Agriculture.

(*Continued From Issue of May 6.*)

THE DRAINAGE OF FARM LANDS.

In 1903 a committee on rural engineering, of which the writer was a member, was appointed by the Association of American Agricultural Colleges and Experiment Stations to prepare and submit a report on this subject. From this I quote the following:

"The marsh and overflowed lands along our sea-coast and the bottom lands bordering many of our rivers, are at present unsightly, unproductive, and in some instances a menace to the health of the surrounding districts. They need only to be diked and drained to be the most valuable lands in the country. The carrying out of these improvements will add immensely to the agricultural values of the country, and the work is certain to be undertaken in the near future. It involves, however, a larger knowledge of agricultural engineering than can now be obtained in our land-grant colleges. In fact, the profession of agricultural engineer, so prominent in Europe, is almost unknown in this country. Very little has been done in this country to develop a satisfactory drainage practise. The principles of drainage are understood by but few, and instruction in our colleges is meagre and far from being up to date."

Since the above was written, and in response to a resolution of the United States Senate of December 9, 1907, more definite information has been collected on this subject by Mr. C. G. Elliott, Chief of Drainage Investigations, of the Office of Experiment Stations. Mr. Elliott classified the unreclaimed swamp, overflowed, and wet farming lands of the United States, and estimates their content as follows:

	Acres.
Permanent swamp land.....	52,665,020
Wet grass lands	6,826,019
Periodically overflowed lands..	14,747,805
Periodically swamp lands.....	4,766,179
Occupied farm lands needing drainage 150,000,000	
Total 229,005,023	

In showing the effect of draining swamp lands on public health, the pamphlet recites many instances where the number of deaths from malaria has been greatly reduced as a result of drainage. The benefits of agriculture from the same cause are so placed so high in the millions as to be well-nigh incomprehensible. Perhaps the most surprising thing about this inquiry is that each State in the Union is in need of drainage. The figures giving the total extent, exclusive of occupied farm lands, varies all the way from 8000 acres in "Little Rhody" to nearly 20,000,000 acres in Florida.

IRRIGATION.—Of even greater importance is the subject of irrigation. Two-fifths of the United States is arid, and the remaining three-fifths, although humid, is subject to periodical drouths, during which crop failures can be averted only by artificial watering. In the past ten years nearly 16,000,000 people have been added to our population. The public lands suitable for cultivation in their natural state have been taken up, and the farms for the future millions must be wrested from the desert by irrigation or from the swamps by drainage. About 13,000,000 acres of desert land have been reclaimed. The water which is applied to this area each crop-growing season woud cover the whole of New England to a depth of 15 inches. The handling of this enormous volume, its distribution over widely scattered areas, and the preparation of the surface of fields so that water may be spread evenly over them, call for an amount of experience and skill not equaled in any other branch of agriculture. Western farmers deserve great credit for the lands they have reclaimed, but their task is not completed. So great is the waste of water at present that 50 to 100 per cent more land might be reclaimed if the waste waters were saved and utilized. It is, however, doubtful if the farmers will accomplish this reform by their unaided efforts. They have gone about as far as they can without the assistance and supervision of the trained specialist. All over the irrigated West, from every district and from nearly every farm, and also from the drouth-stricken States of the East and Middle East, comes the call for help: "How shall I line my ditch to prevent loss from seepage? How much water is needed for this and that crop? When should it be applied? How shall I prepare my fields so that the ditch water will moisten the soil uniformly? What is the most suitable device for measuring water?" In other instances, men want information on the construction of reservoirs and tanks, the installation of pumps, the erection of windmills, and the drainage of seeped lands. These calls for help come with every mail to both the Department of Agriculture and the agricultural colleges and experiment stations. Our branch is doing what it can in this direction, but the appropriation is much too small to cover even a small part of the entire field. As for the agricultural colleges and experiment stations, only a few of our far western institutions maintain strong departments in irrigation. The large majority is engaged in other lines of investigations.

I offer in conclusion the following brief summary:

1. The great middle class of this Nation—those who toil in the fields and shops—intended to provide a practical and scientific education suited to the needs of their sons and daughters by the establishment of the land-grant colleges.

2. At present over 54 per cent of the collegiate students in these colleges are being trained for the engineering profession.

3. The kind of training which these engineering students obtain tends to draw them away from the farm and shop to the city where they become the able lieutenants of corporations and municipalities.

4. For a quarter of a century or more, the land-grant colleges have been catering to the demand for engineers on the part of corporations and municipalities, and have expended little effort or money in training specialists for the engineering work of agricultural communities.

5. Unless the curricula of the engineering course of these institutions are modified there is certain to be overcrowding in the older branches of the engineering profession.

6. Meanwhile, progress in agriculture and the improvement of rural districts are being immeasurably retarded through the lack of competent agricultural engineers.

Artesian water has been found at a depth of 60 feet in Edgar canyon, Beaumont, Riverside county.

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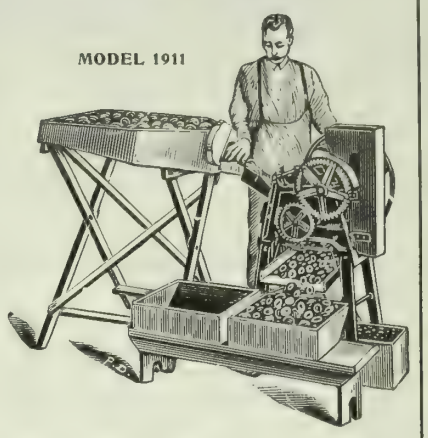
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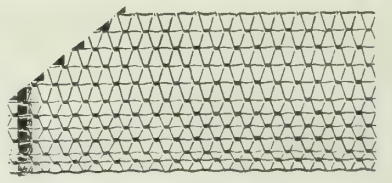


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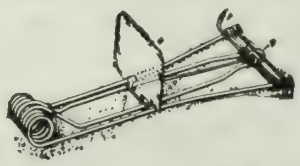


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AGRICULTURAL REVIEW.

Fruit Notes.

Eighty per cent of the apple acreage of the Gold Ridge district, near Sebastopol, has been signed by the Sebastopol Apple Growers' Union. The union will operate three warehouses and packing establishments.

A Concord Almond Fruit Growers' Association has been formed, and has affiliated with the California Almond Growers' Exchange. Offers of 15 cents are said by almond growers to be made for the best nuts.

The Leggett orange tree at Bidwell Bar, Butte county, is to be deeded to the supervisors of the county and preserved by them. The tree was panted in 1856, and was the first orange tree planted north of the Tehachapi, and is very large and well preserved.

A "white fly" which recently damaged a vineyard near Fresno has been found to be Fuller's rose bettle.

Several ranchers of Dry Creek, Stanislaus county, set out trial orchards with the intention of growing fruit on a large scale later on. Several good-sized plantings of almonds have been made.

Changes in standardization have been made by the Placer county fruit growers' association. Cherries are to be packed in cartons 5 by 6, and the boxes will be marked with the count. In peaches, 108 packs will be eliminated, and peach boxes are to be marked "84 to 96" and "72 to 84" instead of "84" and "96".

Thinning peaches has begun near Yuba, and while the fruit is ot as plentiful as usual, there is still enough to require the removal of some.

Seventy acres in lemons are to be planted by H. W. George near Imperial this fall.

A new pumping plant has been put in by the Driscoll brothers on their strawberry ranch near Niles. Shipments are being made now, and will continue if the weather is good, until October.

The French-American company has announced that it will operate a winery at Ukiah if sufficient grapes can be secured.

At a special meeting of the Strathmore (Tulare county) Citrus Association, it was arranged to make two pools of the 1911 crop.

R. W. Shoemaker, of Strathmore, reports the sale of his crop of pomegranates for $100 per acre on two-year-old trees.

A good orange crop for next season is expected at the Palermo groves, Butte county. Buds were killed by frosts, but other buds have come out in sufficient number to assure a good crop.

A quarter section of land 15 miles east of Fresno is being planted to oranges, being one of the largest plantings in the raisin district.

General Agriculture.

The E. Clemens Horst company is preparing hop-picking machines for this summer's work and will have most of their hops picked in this way.

The first shipment of string beans made this year from Yolo county was made by the Winters Orchard Co. They netted the grower 15½ cents per pound.

Five bales of Egyptian cotton grown by the Government experiment station at Bard, Imperial county, have been sold to the Clark Thread Co. for 28 cents per pound.

More than 1300 bales of the 1911 crop of hops have been sold in Sonoma county for 20 cents. It is said that 21 cents is now offered and 16 or 17 cents for the next two years' crops.

About 15,000 crates of tomatoes will be shipped from Brawley and vicinity within the next few weeks.

Green corn was shipped to Los Angeles from the Imperial valley a week earlier this year than last, and brought $1 per dozen ears.

H. L. Sauers, of Coachella valley, has begun shipping a good crop of eggplant, he being the only rancher who has succeeded in keeping all of his plants in good condition during the winter.

The grain crop of Imperial is being harvested. It is plentiful and in good condition.

A specimen of alfalfa six fet tall and of five weeks' growth is being exhibited at Marysville.

Farmers of Greeley, Colorado, are testing a new vegetable, the "Dasheen," which looks like a shriveled potato and when boiled is said to have a chestnut flavor.

The wheat and barley crops in the San Joaquin valley are now looking quite good, although not as large as usual. On account of cool weather, threshing will begin late. In many places the heads will be well filled, although the straw is extremely short. In the Sacramento valley the grain crop is also better than at first expected, although the amount available will be limited on account of the late rains preventing planting. A correspondent in San Joaquin county informs us that the acreage of barley in the county is about 80 per cent of last year, and that the yield will be considerably better per acre if the weather continues moderate. There is only about 70 per cent of the acreage in wheat, and the crop will be poorer than in 1910. Hay is poor.

Hay in Sonoma county is now being cut, but the crop is light.

An influx of cutworms in the alfalfa fields of San Bernardino county is worrying ranchers. The wet season is thought to be responsible.

Miscellaneous.

The first sale of land to a Hindu in California was recently made near Yuba City. The Hindu intends to raise vegetables and small fruits on the five acres bought.

A good flow of artesian water has been found at the State Hospital near Ukiah.

The Tulare Grange has requested the Board of Education of Tulare City to introduce a course in domestic science in the schools.

The California Orange Growing and Distributing Co., recently organized, has purchased the Allen ranch at Mentone Heights, near Redlands.

D. T. Curtis has sold 1820 acres of land in the Sad Creek Gap north of Orosi, in Tulare county, to southern Californian capitalists.

A melon day is to be celebrated at Brawley early in July.

A proposition to sell the settling basin near Marysville to the original owner is being opposed, and agitation is started to have the basin for an irrigation reservoir, or to sell it at auction.

The Coachella valley committee on the organization of an irrigation district has recommended the use of Alamo river water.

Residents of San Rafael are preparing to wage war against the mosquitoes that breed in the salt marshes and vicinity near their city.

H. H. Howard of Oakland is organizing a company to erect a ramie factory in Sacramento to work up ramie according to a process which he has discovered after long investigation. A large amount of ramie will have to be planted if the factory is started.

A proposition is being considered in Reclamation District No. 108, in Colusa county, to rebuild an old levee constructed for reclamation purposes a number of years ago, but later neglected. If the original proposition is carried through, it will reclaim about 20,000 acres.

H. D. Cosby, of the Sacramento Valley Farms Co., has purchased the Hugh McGuire ranch of 1270 acres near Lomo, Sutter county. The land will be subdivided and irrigated.

A number of poultry fanciers of Petaluma have organized the Petaluma Poultry Fanciers' Association. The object of the Association is to raise thoroughbreu fowls of various breeds.

The Independent Drainage District was formed at a recent meeting of the Sutter county supervisors for land south of Tudor.

A proposition is being discussed in Sutter county to enlarge Live Oak slough and otherwise provide drainage facilities for the low-lying land around it.

An irrigation district will probably be formed shortly in the Le Grande and Plainsburg territory in Merced county, and 35,000 acres are already said to be signed up for it. Mariposa creek is to supply the water, and a storage dam built if the proposition goes through.

A poultry association has been formed in the Todd district of Sonoma county.

The W. K. Stoddard ranch near Redlands has been sold to Louis H. Cooper. The ranch is planted to alfalfa and comprises 194 acres of land.

The Pacific Basket and Barrel Co. of San Francisco has opened branch factories at Lodi and Fresno, and is employing about 50 hands in both places.

A consignment of 14,000 baby chicks was made to the southern part of the State last week by the Bihn hatchery of Petaluma.

The bonds of the Tipton Irrigation District of Tulare county which were held in escrow in the First National Bank of Visalia, have been paid off, and it is expected that they will be publicly burned as an expression of joy over deliverance from debt of the district. The district was not a success financially, although irrigation can be done by pumping there.

Articles of incorporation for the Chico Alfalfa Milling Co. were filed in Oroville this week. The company will be capitalized at $25,000.

Great danger from foul brood in the apiaries of Fresno is reported by County Bee Inspector Job Chrisman, and immediate requeening is recommended by that official to check the spread of the disease. Chrisman recently inspected 2694 colonies of bees in the county, and of these found 308 that contained the disease.

FRUIT BRINGING GOOD PRICES.

Offers of 8½c. are being made for dried peaches in many places. Bids of from 4 to 4¾c. are made for prunes, but many growers are holding for 5 cents.

Reports from Sutter county state that clings have sold for $30 per ton, and dried peaches from 7 to 9c. Wine grapes are said to be bringing $15 per ton. Growers of Thompson's Seedless grapes are being offered $20 to $25. In Yuba county the pear crop is light and $35 has been offered.

Several large sales of 1910 raisins at 4½c. have been made at Fresno.

At the meeting of the San Jose Grange on May 13, the following prices were quoted: White cherries, 8c. offered; apricots, $90 per ton, dried; peaches, 8c. per pound, dried; prunes, 4¾c., refused.

The Northwestern Fruit Exchange at Portland, states that the apple crop will be large in all the northwestern districts except the Yakima valley, where frosts hurt the fruit. Prunes will be only a fair crop in Oregon. Pears will be heavy in southern Oregon.

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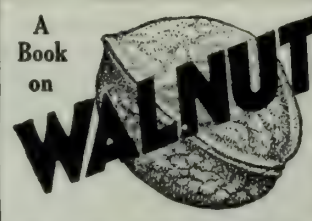
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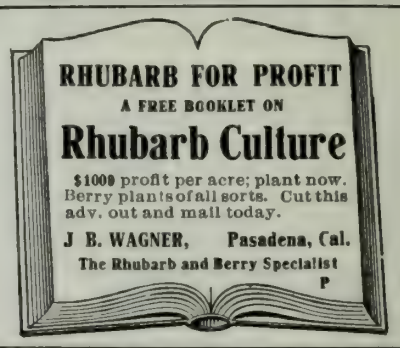
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THE PEAR SLUG AND ITS CONTROL.

By DUDLEY MOULTON,
Deputy State Commissioner of Horticulture.

The Pear Slug, *Eriocampoides limacina*, which is also known as the cherry slug because it injures cherry trees equally as much as it does pear trees, has again appeared in many of the fruit sections of California, and it is now time to adopt methods of control to check this pest.

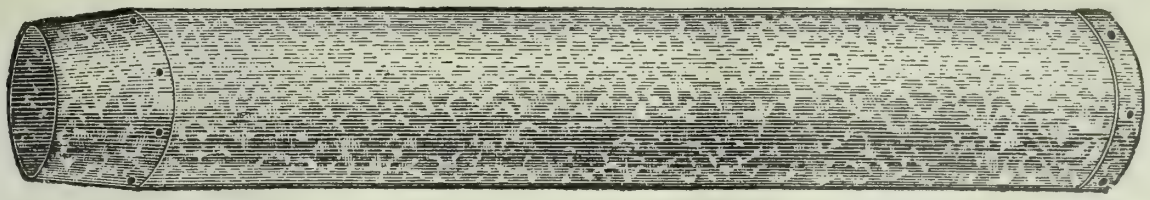
The adult insects of the species are four-winged, glossy-black, bee-like flies, about one-fifth of an inch long, and are called "saw-flies" because each female is equipped with a curved, saw-shaped ovipositor. These adults come out from their winter cells in the ground during April and May, and can then be seen flying around and placing their eggs in the leaves of pear and cherry trees. When ovipositing, a female alights on the under side of a leaf; she cuts an incision through the lower epidermal layer and opens a small cavity within the inner tissue, and then places an egg inside. The newly hatched larva comes out through the upper layer and feeds on the upper surface of the leaf. The most characteristic features of the larva are its resemblance to a tadpole because of the enlarged anterior end and its dirty-green, slimy covering which likens it to a slug. These larvae or slugs eat away large irregular patches of the upper leaf-surface and there remains only a net-work of veins, or a skeleton of a leaf, held together by the uninjured lower epidermis. The larvae shed their slimy skins four times during the progress of their growth and finally, after the fifth molt, they appear as clean, dry, orange-yellow worms. These mature larvae crawl down or drop from the trees, and after entering the ground to a depth of three or four inches, each forms a little earthen cell and within this undergoes the pupal transformations and eventually comes out as the adult fly.

There are usually two broods of the insect in California. The slug-like larvae of the first brood appear in May and June and are not usually serious. The larvae of the second brood appear during July and August, and are often very harmful and may completely defoliate the trees. The pear slug is known to feed also on plum and even oak trees, but they confine themselves principally to the pear and cherry.

Only two methods of treatment are considered here, because the insect is so easy to control. An old and often recommended remedy is to throw ashes or road or lime dust into the trees, purposing by this to take advantage of the slimy coating which covers the insects, on which particles of dust would stick. Experience has shown, however, that the larvae may merely shed the dust-covered skins and will continue living undisturbed unless they happen to be knocked off the trees. The treatment is therefore not always successful.

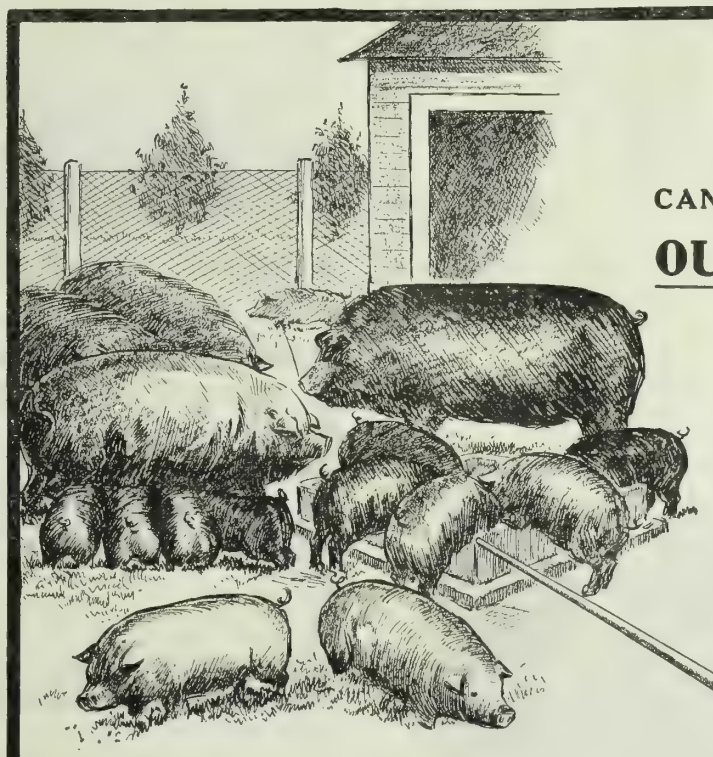
The most effective way to destroy the pest is to spray the trees with an arsenical poison. The larvae feed on the upper surfaces of the leaves, they take the particles of food directly into their stomachs, and they are very susceptible to poisoning. A mixture of two pounds of arsenate of lead to fifty gallons of water has been generally recommended. The spray should be applied when the slugs first appear and while they are small, and the grower should not wait until after the damage has been accomplished. One good application of the spray should be sufficient for the season, inasmuch as the poison will remain on the foliage for several weeks.

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A Visit to the Glide Ranch.

Written for the PACIFIC RURAL PRESS by Mr. DUDLEY J. WHITNEY.

Thousands of acres of land by the Sacramento river, many thousands more on the mountains and foothills of the Coast range to the west, a home place of over 650 acres for the nucleus of the herd on the banks of Putah creek, midway between the two, and a climate in which cattle live out of doors at all seasons of the year and reach a high stage of perfection, without other food than that which they obtain by grazing—this describes the conditions in California under which are produced some of the finest beef cattle that can be found in any climate or in any land. These are the conditions under which the Glide stock ranch in Yolo and Solano counties is conducted. The same praise could also be given to some other ranches of the vicinity.

The Glide herd of Short-horn cattle was established more than forty years ago by the late J. H. Glide, of Sacramento, and is now managed by his son, Thornton S. Glide, on the property grazed upon by the first animals imported.

Early stock ranching in the valley, when wheat and cattle were the only products of the land, and each rancher ruled over many square miles of broad acres, was often done on as large a scale as this, but the cattle usually were given no special care in breeding. They enjoyed thick nourishing grass while the winter and spring rains moistened the ground, and lived on the dry grass during the remainder of the year. Even with this lack of care, owing to the mild climate and the nature of the feed, the cattle reached a high state of perfection.

Since breeding in the valley has been undertaken on various stock farms, and good care given to see that the food obtained naturally was of high quality and plentiful, the combination of climate, food and good blood has developed animals that will stand second to none other in the world, while the freedom of the out-of-door life develops a vigor far surpassing that of stall-fed animals.

On the Glide ranch, instead of living on green grass only in spring and early summer and having to eat dry feed the remainder of the time, grazing is provided practically at all seasons by taking advantage of the overflow lands along the Sacramento river. In the winter and spring, when the water stands over this, the herd lives on the foothills, getting the benefit of the grass coming up from the rains. As this feed dries, the season approaches when the water recedes from the lowlands from the river, and a splendid growth of grass follows, upon which the cattle are pastured. Through the summer and fall this process continues, as the pastured area increases as the water recedes or disappears.

By this life, which could be lived in few other parts of the world, thoroughbred cattle for breeding purposes can have rich food at all seasons of the year while roughing it for themselves, and be at home on an ordinary range, while a barn-fed animal would be out of place and unable to find sufficient food to keep in good condition.

The home ranch of more than a section of land, located on Putah creek, near Davis, is irrigated and set out to alfalfa and other crops needed for the production of beef cattle. It is used to support the show animals and those that are used to breed up the average of the remainder of the herd, and for such cows as come off the range for a time during the breeding season to be bred to bulls of too high quality to risk on the range.

What has resulted from this combination of open-air life in the Sacramento valley climate, good care, food and breeding can be seen from the fact that the Sacramento Development Company last year requested the privilege of sending King Lancaster, one of the finest registered animals in the herd, to the International Live Stock Show in Chicago with the expectation of carrying off the highest honors over all competitors.



Some Fine Young Short-Horns on the Glide Ranch.

The development of a fine show animal, however, which could receive the blue ribbon in the prize ring, is not the object of breeding. This is secondary to the endeavor to develop good animals for use with ordinary range cows; to turn off sires that can look after themselves on the range and produce strong, vigorous offspring. For this purpose the majority of the animals, those that are sold for breeding beef, never see the inside of a barn. The range life they live, while not developing as large or quite as fine-looking an animal as could be obtained by keeping the young animals where they could be given continual care, does not prevent them from producing practically as fine offspring as would be the case if they were barn-fed to maturity.

The show cattle on the ranch are, of necessity, all pedigreed, while those on the range, through their greater numbers and the unrestrained freedom they enjoy, cannot be, although bred from the same stock. In developing the type of animal desired the points that are of most value in the typical Short-horns are always sought for, emphasis being laid upon early maturity.

Many years ago, and on too large a number of ranges now, steers were ordinarily marketed at not less than four years of age, while with well-bred Short-horns this age is reduced to two years. This enables the rancher to produce two animals in four years with grass on

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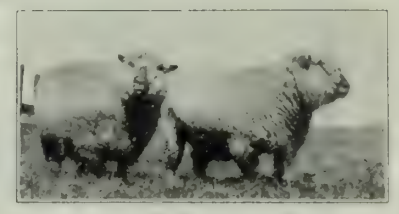
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THE STOCKMAN'S STAND-BY FOR SUCCESS IN VETERINARY USES

IT DOES THE WORK.

which he formerly could produce but one. At the same time the risk of loss is less and the beef is of better quality.

Mr. Glide claims that the Short-horn is the breed that makes good cows on the range in this way. The Shorthorns themselves and the calves bred from Short-horn sires are claimed to be stronger, earlier maturing, better feeders and less liable to run out than other breeds.

As a milk producer, even the beef type of Short-horn is also said by Mr. Glide to be of high quality. Milk for domestic use, both on range and on the farm is supplied from herd cows, which through accident or otherwise do not have to supply their calves with food.

While the young bulls that are sold to be used on the ordinary beef herd are put to service on the range earlier, those used on the Glide range are not used ordinarily until their third year, when they have reached full maturity, so that they then can produce strong calves. Inbreeding is provided against and registered stock is often purchased to be added to the show herd, and introduced into the range through breeding to range cows. This is to keep the blood fresh and vigorous.

As a result of using thoroughbred Short-horn sires on the ordinary range, Mr. Glide tells of one man who bought a bunch of young bulls for use with scrub cattle. He wanted only ordinary stock, but being unable to find them, paid the extra price for thoroughbreds much against his will. Two years later he came to buy some more stock, and claimed that the improvement in the quality of the calves in the very first year had alone returned the extra price paid for their sires.

In the continual endeavor for herd improvement on the Glide ranch, as on most other stock farms where breeding is made a business, calves and yearlings are gone over carefully to cull out those that do not score up to the point that is desired. Those that do not come up to the mark are made into beef, as are cows that have outlived their usefulness.

Besides Short-horns, two flocks of sheep are kept, one Shropshires as a mutton animal, the other French Merinos, bred for fleece. The Merinos have been bred from the beginning to develop a better mutton animal than the original stock, as well as to keep up the quality of the fleece. And it is now claimed that the present stock is considerably heavier than at first and is worth more for mutton when the usefulness is gone for wool or breeding.

Hardiness is developed in these as in the cattle and it is always desired to send out an animal that can look after its own food on the range. Extra feed is given the show sheep only when the pasture is at its worst or before being sent out for exhibition purposes.

Like other Merinos, quality and weight of wool is what is most wanted, and wool is produced on all parts of the animals except hoof, horn and muzzle. Recently a sheep rancher of Utah who had purchased some rams for his range wrote that the average clipping of wool from ewes gotten from the Merinos was 12 pounds, against 7 pounds from previous years.

CARE OF THE BROOD SOW.

To the Editor: Do not think that anything will do for the faithful old brood sow; and above all, do not think that any one thing, however good, will give the best results. Assuming that the sow is in good condition when bred, she should be fed a balanced ration for the next 114 days. This will not require any scientific feeding formula, but only the formula of good common hog sense. All grain or all grass will not give the best results: there shoud be a mixture of both. This winter and spring our brood sows had the run of California wild clover and green barley, and were fed about three quarts of ground barley, soaked until soft (not soured), at night, and we never saw sows do better and bring more thrifty pigs.

The sows must have good, comfortable quarters as well as good feed. We have frequently seen brood sows turned out on a poor range without any shelter except an old straw stack, all wet and cold, and then heard the owner of the sows complain about not raising more than two or three pigs to the sow.

If you have not the green feed mentioned above, you can substitute any of the many good grasses that abound during the winter and spring months; and during the dry months, if alfalfa is not available, substitute alfalfa meal. We mix the alfalfa meal, wheat middlings, and ground barley in about equal parts, to which we add about 8 per cent meat meal, and make the whole into a moderately thin slop, just thick enough to pour well, and add sufficient salt to give the slop relish.

A sow fed on this mixture during the dry season will farrow a good, strong litter, as a rule.

After the sow has farrowed there is a critical period for the following three or four days. Do not give the sow anything except some warm water (not hot), to which a little bran or middlings may be added, for the first 24 or 36 hours. This may look like drastic measures, but the little fellows had better squeal for something to eat the first or second day than to be doubled up on the fourth or fifth day with a bad case of scours.

Feed light at first and increase the feed gradually and carefully until the pigs are filled out and plump, when the sow may have all she can eat. All this will require judgment, and what is exactly correct in one case may not be just right in all.

The next trouble that may arise, if the pigs get too fat and do not have plenty of exercise, is a case of thumps, which is nothing more nor less than an accumulation of fat in the region of the heart, hence there is no remedy. Prevention, and not treatment, must be relied upon. The pig will struggle for breath until relieved by death or it becomes so reduced that nature furnishes the relief. Then you have stunted pigs that will inevitably make runts. If you steer clear of breakers up to this point, all will be well until weaning time.

Williams, Cal. CHAS. GOODMAN.

BREEDING A YOUNG MARE.

To the Editor: I have a beautiful colt 22 months old that will weigh 1200 or 1300 pounds; very compactly built, and has extra health, life and vigor. I want this colt for a brood-mare. Would you advise breeding at two or three years old?

Lodi. READER.

[Authorities agree at placing the age from two to three years, according to the development of the animal and other circumstances. Yours would sem to be near the two-year prescription.—EDITOR.]

REPELLANTS FOR HORSE FLIES

To the Editor: Could you inform me through your paper of any preparation that will keep flies off horses for any length of time? I have used sheep dip and "cowease", but, as we all know, they only last an hour or so, hardly paying for the trouble of using. If anything could be found that would do the work, it surely would be a great benefit to me and the rest of your subscribers as well.

San Joaquin county. SUBSCRIBER.

[It surely would be a great relief to man and beast. If any manufacturer or agent has such a preparation it should be advertised. If any reader has a home-made stuff, we shall be glad to print the recipe for public benefit.—EDITOR.]

HORSES AND CATTLE.

THE N. H. LOCKE CO., LOCKFORD, CAL., are offering for sale **pure bred Jersey service bulls** and **bull calves.** Among these, **Borello's Golden Pogis, No. 89243,** 1st prize yearling bull, 1910 Cal. State Fair. He is sired by the choicest lines of the great Island Bull, Golden Lad, P.S. 1242 H. C., and from a line of dams that produced over 20 lbs. butter in 7 days. These young bulls are from prize winners in the show ring and big producers at the pail. This herd was 1st prize winner 1910 Cal. State Fair, having won 4 champion medals and 17 ribbons, with 18 head exhibited. It is headed by the imported bull King's Valet, the unbeaten champion. Prices and particulars on application.

JOHN LYNCH, breeder of Registered Short-horns; milk strain. High class stock. First-class dairy breeding. Smooth cattle. Best pedigree. P. O. Box 321, Petaluma, Cal.

PURE-BRED SHORT-HORNS, Poland-China hogs, and Shropshire sheep. Roselawn Stock Farm, Woodland, Cal.

PAICINES RANCH CO., Paicines, San Benito county, Cal.—Young Percheron stallions for sale.

STEVENSON & WAGNER, Newman Cal.—Holstein-Fresian bulls, heifers for sale.

HENRY WHEATLEY, Napa, Cal.—Breeder and importer of Shires and Percherons.

KNOB HILL STOCK FARM—Reg. Poland-China swine. A. M. Henry, Farmington.

THOROUGHBRED SHROPSHIRE SHEEP, both sexes. S. H. Fountain, importer and breeder, Dixon, Cal.

SWINE

FOUR OAKS STOCK CO., breeders of Berkshire and Hampshire hogs and Importer Hampshire Down sheep. Woodland, Cal.

POLAND CHINA HOGS; Barred Rocks and Black Minorca poultry; young stock and eggs for sale. M. Bassett, Hanford, Cal.

THOROUGHBRED MULEFOOT AND BERKSHIRE HOGS. California Hog & Land Co., Calistoga.

GEO. V. BECKMAN, Lodi, San Joaquin Co., Cal. Registered Poland-China Hogs, both sexes.

J. A. MURPHY, Perkins, Cal. Breeder of Champion Herd of Berkshires; also Short-horns.

BERKSHIRE AND POLAND-CHINA HOGS. Both sexes. C. A. Stowe, Stockton, Cal.

STUDARUS & CUNNINGHAM, Mills, Cal. Registered O. I. C. swine.

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroughbred Berkshires.

CHAS. GOODMAN, breeder of High-Class Berkshire Swine. Williams, Cal.

H. B. WINTRINGHAM, Middletown, Lake Co., Cal. Breeder of Tamworths.

Cutter's Anthrax and Blackleg Vaccines

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HERCULES HARNESS SADDLES HORSE COLLARS

They Last Longer

The only sure way to get a HOME Industry Harness is to look for the Hercules stamp. Made by W. DAVIS & SONS, San Francisco, Cal. Your Dealer has our Catalogue

BERKSHIRES

Boars, different ages. Sows, both open and bred. State Fair Prize Winners. Over 100 Spring Pigs to select from. Sired by large Boars and out of prolific Sows. Write your wants.

A. B. HUMPHREY,
Grape Wild Farm. Mayhew, Cal.

For QUICK Sale.—Six registered Berkshire sows and one boar, too good for the butcher even though the papers are lost. Also their Spring litters and 15 sows of the Fall litter. These must move, as June 1st I enter into a milk contract instead of selling cream. M. H. Diepenbrock, Sacramento.

FOR RENT—120 acres A No. 1 pasture. Mrs. C. Tuft, Davis, Cal.

Warranted to Give Satisfaction.
Gombault's
Caustic Balsam



Has Imitators But No Competitors.
A Safe, Speedy and Positive Cure for
Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.
As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address
The Lawrence-Williams Co., Cleveland, O

DAIRY NOTES.

Chief Dairy Inspector Dockery and Dr. J. Welch are making a thorough inspection of the dairies of Sonoma county.

A large number of fines are being levied on dairymen in the lower San Joaquin, who have been found guilty of keeping unsanitary dairies, through State Dairy Inspector J. S. Canham.

A new creamery six miles west of Modesto is being started by Eugene and Ed Shipman. The brothers have leased 100 acres of land on the place and will run a dairy in connection with the creamery.

Joe Pace, of Porterville, has started a dairy on 80 acres of the Jones ranch near that place.

The R. Martinelli herd of dairy cattle of Sonoma county is to be auctioned at Modesto, Stanislaus county, May 23rd. There are 100 head of cattle in the herd.

The Peterson Live Stock Company has purchased 200 acres of land near Meridian, Sutter county, and will establish a dairy and stock ranch there.

George Hood, of Fountain, Sonoma county, recently purchased three pedigreed Spanish Merino bucks from the Middle West, paying nearly $500 for the trio.

E. S. Haase has started a new co-operative creamery at Harwick. The building is made of concrete throughout and has all modern equipment. The cream is collected by a large auto truck.

J. E. Blakely of Portland is to start a dairy and alfalfa ranch on a tract of land recently purchased near Willows.

A number of arrests have recently been made by the board of health of San Francisco restaurant keepers who were charged with selling thin milk. Fines were imposed both for watering and deficiency of butter-fat.

LIVE STOCK NOTES.

Otto S. Lewis of Santa Ana has purchased the Wolfskill ranch, nine miles south of Tulare, which he will use for raising stock. The tract comprises 560 acres.

The stock on the Rideout dairy ranch, in Yuba county, has been increased by a shipment of 250 cattle and horses from Sacramento.

Leases to sheep and stockmen have just been signed for the land of the Weyerhauser Timber Company in the northwestern counties of the State. Albert Turnquist has secured a lease of 60,000 acres in Modoc county for a term of five years.

The spring rodeos have begun on the hills of lower Alameda county. The percentage of calves is about normal, but the cattle as a rule will require more fattening than usual before marketing.

Callaghan & Morgan of Alameda county sold their entire spring clip of wool to T. W. Corder of Oakland for 12½ cents a pound. The wool this spring with most of the flocks is in very good condition and quite free from foxtail.

The clip at the Shippee ranch, Butte county, amounted to 26 large sacks. It is being shipped to Stockton mills.

The Crawford & Davis Live Stock Ranch Company held an auction sale on the morning of May 13 in El Centro, at which time both horses, mules and dairy stock were disposed of.

The abandoned mining camp of Old Tecopa, near the San Bernardino-Inyo county line, has been turned into an Arizona goat farm, Angora bucks and Mexican does being used as a foundation for the stock.

Several large importations of Mexican cattle into Imperial county have recently been made. The cattle are to be fattened for the market.

Considerable trouble is being experienced near Cresmore, San Bernardino county, with a mare, formerly owned by Forest Ranger Brown, who recently escaped and has lured many other animals away from their owners. The animal was corraled by a posse, but leaped over a seven-foot fence and escaped. Ranchers are now out after it with a gun.

A $100,000 beet-pulp drier is being erected by the Southern California Sugar Company in Santa Ana. The dried pulp will be used for stock feed.

POULTRY.

S. C. B. MINORCA EGGS for hatching at $6 per 100; can fill large orders; 12 yards large beautiful hens, excellent layers; a few young roosters left at $3 each. Black Beauty Poultry Yards, Dixon, Cal.

FOR GOOD, HEALTHY CHICKS in large or small lots, try Penn Grove Hatchery. All chicks guaranteed. Incubators brooders and supplies. E. W. Spring Prop., Penn Grove.

OAKLAND POULTRY YARDS, 149D, California St., San Francisco.—Est. 40 years. Standard bred poultry. White Orpingtons, R. I. Reds, Brd. Rocks, White Leghorns.

INDIAN RUNNER DUCKS — Eggs for hatching, $1 per setting; $2 for 30; for 50 or more, 5c each. F. L. HUNT, Lincoln Ave., Napa, Cal.

DAY-OLD CHICKS—Barred Rocks; also eggs for hatching; good laying strain. Fairmount Hatchery, Box 29B, R. F. D., Santa Cruz, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea fowl and eggs. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

WAYSIDE YARDS—A few settings from special S. C. White Leghorn matings, at $5 for 30. Carl Gregory, Petaluma, Cal.

PETALUMA INCUBATOR CO., Petaluma, Cal.—You will be pleased with our new Free CATALOGUE. Send for it.

FREE BOOK — "Poultry Feeding for Profit," on application to Coulson Co Petaluma, Cal., Box P.

WHITE LEGHORNS—Chicks, eggs, cockerels. Fine stock. Reasonable. O. B Morris, Lodi, Cal.

BRONZE Turkeys and Eggs. Ed Hart Clements, Cal. Large size, good plumage early maturity.

TWIN OAKS FARM—W. H. Bissell, Proprietor, Livermore, Cal.—Buff, White Orpington.

GUINEA EGGS — Pure White African Guinea eggs, $2 for 15. L. Leininger Ione, Cal.

HATCHING EGGS—White Leghorns. Circular 164. A. H. Gregory, Fruitvale, Cal

F. BALDWIN'S WHITE LEGHORNS



Winners from Seattle down; 33 out of a possible 35 prizes in 3 shows this season. **Bred as layers first.** Stock, any age, for sale at reasonable prices. Eggs $6 and $10 per 100. Settings $2 up. Send for **new free folder** and prices.

1st Pullet, A. Y. P. Ex. **49 Washington Ave., San Jose, Cal.**

FOR RENT—Chicken ranch, brand new, fully equipped, strictly modern and sanitary. Water system. Alfalfa. Near schoolhouse; telephone. MOUNT PLEASANT POULTRY YARDS, Lincoln, Cal.

POULTRY DEPARTMENT.

Conducted By M. RUSSELL JAMES.

BREEDS THAT LAY WHITE-SHELLED EGGS.—E. W. D., of Fountain City Farm, Merced, writes: "Will you kindly tell us through the columns of the RURAL PRESS which of the common breeds of hens lay pure white eggs? What are some of the characteristics of these breeds? Which are considered hardy? What is the standard size of the mature hens? Since white eggs bring from one to several cents per dozen more than colored eggs, these questions should be of general interest to many who are starting in the poultry business."

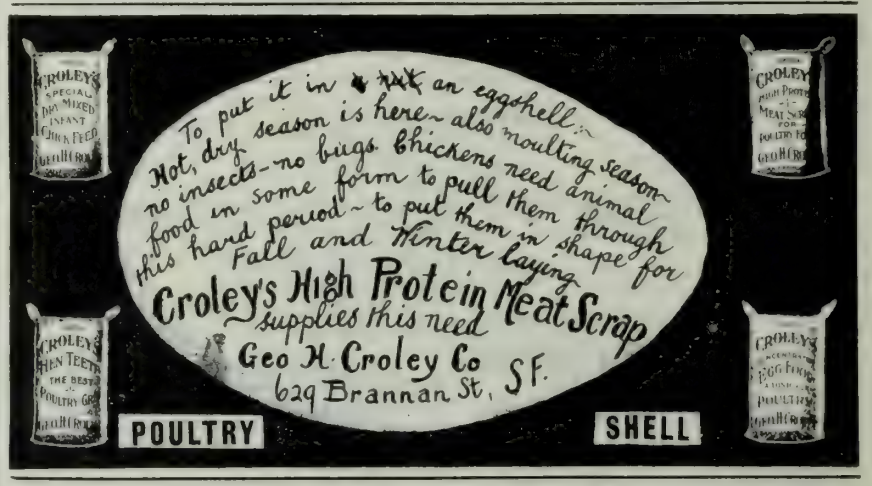
All breeds which come under the classification of "egg breeds" lay white eggs. The Mediterranean and Dutch classes of fowl and the Redcaps of the English class are considered egg breeds; also the French class of fowl, at the head of which is the Houdan breed, lay white-shelled eggs. Practically, they are all non-setters, though occasionally hens among each of the breeds become broody and sometimes hatch and rear a brood. This tendency to broodiness increases if the fowls are not well bred, or if any foreign blood be introduced. When they do set and hold on to the job, they make the best of hatchers and mothers, for all their small size and flighty ways. Their quick circulation gives them a higher temperature than that of the heavy, sugglish hens, and their lightness and intelligence prevent the smashing of the eggs and chicks.

They are all active and hardy fowls, and this is especially the case with the Leghorns and Blue Andalusians, breeds of the Mediterranean class. Though all lay white-shelled eggs, there is a difference in the degree of whiteness. It is pretty generally conceded that the White Leghorn in its purity can be most relied upon for the chalk-white eggs which grade highest in the commercial egg market.

Excepting the Hamburgs of the Dutch class, the Leghorns are the smallest in size of the egg breeds. There is no standard weight set for Leghorns, but they may be cut severely on size in the showroom, which counts for eight points in judging.

Minorcas belong to the same class as Leghorns, and are very similar. They are a much larger and heavier fowl, however, the standard weight for the Black Minorca being 9 pounds for cock and 7½ pounds for hen. The standard weight of the White variety is one pound less. They are fine layers of large white eggs. Their disadvantages as compared with Leghorns on the commercial egg farm are: slower maturity, heavier eaters, and the objectionable white skin and dark (pink in the Whites) shanks and toes. Other breeds have these same disadvantages in our market.

AS TO SHELL COLOR.—Considering that the richness and quality of the egg depends upon the condition and feed of the hen and not upon the color of the shell, breeders of fowls that lay dark-shelled eggs naturally feel it a hardship that the color-line is drawn on the output of their hens, and some of them, through the journals, advocate the "educating of the public taste." The public taste, even when founded upon mere fancy, is a difficult thing to manage, but in this matter there is a cause for the preference of the white-shelled egg for commercial handling. The brown egg when first laid is a thing of beauty, for it has a bloom like the plum, and like the plum, the bloom disappears at a touch, never to return. Instead, the egg when washed or handled after it is a few days old, assumes a stale appearance. White eggs also have this bloom when first laid, but its absence does not become conspicuous, owing to the white instead of dark background. Again, uniformity of shade as well as color pleases the eye, and brown-shelled eggs do not run even in shade, either





WARD'S ORIGINAL FIRELESS BROODERS
PRODUCES STRONGER, HEALTHIER CHICKS THAN ANY HEATED BROODER
FULLY GUARANTEED
NO LAMPS. NO OIL BILL. NO DANGER OF FIRE
WRITE FOR ILLUSTRATED BOOKLET AND DELIVERED PRICES
Coulson Co. GEN. SALES AGTS BOX B. PETALUMA CAL.



Save Money By Buying This Good Second-Hand Pipe

We can supply you with any size and quantity of **Standard Pipe or Casing**—all new threads and couplings—all stock guaranteed first class.

If thinking of buying any kind of pipe, your best interests will be served by writing us for prices and particulars.

Pacific Pipe Co., Main and Howard Sts., San Francisco

in strain or the daily output from the same hens, while there is a wide diversity of color in different breeds and varieties. And lastly, candling is a necessity of the commercial egg, and the thicker dark shell is a much more difficult medium to look through than the pure white shell.

TARTARY GEESE.—C. D. W., of Anaheim, Cal., asks: "Would you have the kindness to inform one of your readers about the large Tartary geese? The writer saw a pair many years ago in Alaska. They were twice as large as our common white tame geese, and were apparently thoroughly domesticated. They were sent from San Francisco. At that time I was not much interested, but would be very thankful for some knowledge on the subject now."

The largest standard breed of geese is the Toulouse, or French Grey goose. The American Standard gives 20 pounds for gander and 18 for goose, but they are bred much heavier and often average 40 pounds per pair. The English, who breed them extensively, say that a well-matured Toulouse gander should weigh from 28 to 30 pounds, and goose from 20 to 22 pounds. Perhaps some of our readers may know of the variety of geese inquired for.

POULTRY NOTES.

Protection of our insect-eating birds will be made a campaign issue throughout the nation, says the Rural World. Backed by the grangers, orchardists, ranchmen and planters in every section of the land, the National Associations of Audubon societies is preparing to obtain from representatives of every State in the Union definite declarations as to their stand on the conservation of the bird resources of the country.

AN EGG-LAYING CONTEST. — September next a great egg-laying contest is to be started at the State Poultry Experiment Station in Missouri. It will be the first real contest ever undertaken in this country. Australia, for several years, has been making us "sit up and take notice" of what the Australian hen can do, and it is eminently proper that Missouri should "show them" a few stunts of the American hen. These contests have become a fixture in Australia, and have been of great value to that country, not only by attracting world-wide attention, but by stimulating interest in the care of poultry and building up wonderful egg-laying strains of fowls in all the breeds.

The intention of this laying contest is to improve the egg-producing standard of poultry, and to awaken poultry raisers to efforts to estabish better laying strains of fowls. Competition will be open to all varieties of fowls. Any poultry breeder may contribute six females of any age for the experiment. Every pen of six females will be yarded, fed, and housed alike. Only fifty entries will be accepted. The owners of the birds will be known only by numbers.

Many prizes will be offered for the winners of each variety in the contest. The results will be announced monthly in the daily papers as well as the poultry journals.

INTERNATIONAL UTILITY POULTRY ASSOCIATION.—The aims of this association recently organized at Buffalo, New York, are the production of better utility poultry; better distribution of utility poultry products; creating a demand for poultry products raised by members of the association.

In production, to encourage the breeding of pure or cross-bred birds in regard to utility, by breeding only from selected birds; to establish laying contests under proper management; to conduct utility poultry shows; to obtain the best advice for members relating to selection, breeding, and raising utility poultry.

In distribution, to award prizes to members for the best and most economical methods of packing and marketing poultry products; arranging to place members having surplus poultry products in communication with retail dealers and large consumers; to adopt a standard package to be used by members only; to try to reduce shipping rates.

POOLED CHICKENS AND EGGS.—The poultry raisers of Ohio county, Kentucky, says the Courier-Journal, are selling their chickens on the pooling plan. Two and one-half carloads of chickens left Beaver Dam a few days ago, all purchased by a New York firm for 13½ cents per pound. Last year the Ohio county chicken pool sold at 16 cents per pound, but poultry prices are ruling lower this year, and there is general satisfaction expressed with the price paid. The pooling plan is said to have given great impetus to the chicken business in Ohio county. The chicken raisers who compose the pool sell their eggs in the same way and have found that they obtain better prices in consequence. Turkey pools have been common in central Kentucky in the past few years, but Ohio county seems to be in advance of the rest of the State with its chicken pooling. The pooling idea is taking a strong hold on the agricultural regions. That it will gradually extend to cover all products of farm, garden, and orchard seems entirely probable. The fruit growers of the West and South "learned the trick" long ago and have profited by it. The trust idea now pervades the country as well as the cities.

PRESERVING EGGS.—The method of keeping eggs with water glass—the only satisfactory method—has been frequently described, but we still have inquiries from housewives who desire to put down a few eggs against the time when hens are not on the lay. One asks in what form water glass comes and if any difference can be detected between the preserved variety and fresh eggs.

Water glass (silicate of soda) comes in the form of a powder and in a syrup-thick liquid. With the powder dissolve two pounds in three gallons of cold water, which will be sufficient to preserve about twenty dozen eggs. The liquid, however, is considered the more satisfactory form for use. Allow one part of the liquid to nine parts of pure water. Note that the water in both cases should be first boiled and then thoroughly cooled before using. Use only strictly fresh, clean eggs; pack in an earthen or wooden vessel with small end down; pour the solution gently over them and, when the vessel is packed, have it covering the eggs an inch or more. Place a tight lid on the vessel, pressed down to keep the eggs under the solution, and place the vessel in a cool, dark place where it will be undisturbed.

Clean but unwashed new-laid eggs give best results. It is a good plan to pack them each day as they are laid. Only eggs of perfect shell should be used. A cracked, or a thin-shelled, or a stale egg may ruin the whole lot. When using the packed eggs they should be first washed in cold water, as bits of the silicate of soda or glass adhere to the shell.

If the work is properly done eggs may be preserved in perfect condition for six months by this method. The Kansas Agricultural College reports that eggs put in the water glass last August were found in excellent condition when used this March, and that no one would guess they were back numbers. But there is a difference in tastes, and some of us hold that the truly fresh-laid egg has no substitute.

RED BALL BRAND

MANHATTAN

HORSE, CATTLE AND POULTRY FOODS AND REMEDIES

If your dealer or harness-maker does not have these in stock, lose no time in writing us direct. We have remedies for any disease your horse, cattle or poultry may contract, with explicit directions about symptoms and how to administer or apply the remedies.



These Are Not New Productions. They Have Been Used Profitably and Successfully for 25 Years



The **Original Manhattan Stock Food** (Red Ball Brand) keeps your horses or cattle toned up and gives them them that healthy, sleek appearance we all like to see.

Cow Aid—A milk producing powder. Highly recommended to prevent milk fever.

Worm Expeller—Removes worms and botts from horse, cow, sheep, swine, or dog.

Then we have **Conditioning** and **Blood Purifying** powders; **Cough** and **Heave** powders; **Colic Tincture; Mange Wash;** a **Blister** for **Splints, Spavin** and **Ringbone; Liniment; Gall Salve; Hoof Paste** and **Hoof Oil; Harness Soaps** and **Oils.** Get our price list and descriptive circular.

In thousands of instances the effectiveness of our poultry remedies has been demonstrated and they are put up in such shape as to make them the cheapest on the market. We have a full line of disinfectants; also lice and insect exterminators.

The Norwich Automatic Exerciser and Feeder



A Wonderful Poultry Feeding Device.



The U. S. Government Experiment Stations report 50% saving of labor, 25% saving of grain, and increased egg yield of 18%.

NOW READ THIS:

Use for 30 days. At the expiration of that time, if you do not see a **marked improvement** in your flock, if your **egg production is not increased,** and if you are not **absolutely satisfied** with the machine in every respect, **or find one objectionable feature,** return it at our expense and we will at once refund your money. Write for descriptive circular.

Before assuming control, we made a most careful investigation of the merits of these products, so that we have every confidence in recommending them, knowing that a trial will bring us further orders. We have preparations that *prevent*, but if disease should in some surreptitious manner appear on your farm, we have remedies of sterling merit. Prevention is *better* than cure! Keep our preventives at hand.

BAYLEY & LYON

(Oakland Poultry Yards)

SOLE DISTRIBUTORS

149-D California St., San Francisco, Cal.

Breeders for 40 Years—Standard Bred Poultry. Send for Circular.

The Home Circle.

The Post-Graduate.

When I came home from college
With wreaths of learning crowned,
I thought my fund of knowledge
Was something quite profound.
But father viewed it gently;
I marveled how he could;
I found out subsequently
How father understood.

As now I backward scan it,
The thing I meant to do
Was just to take this planet
And make it over new.
But father did not shout it
About the neighborhood,
He almost seemed to doubt it,
For father understood.

Now I have sons in college
Absorbing worlds of lore;
They find new fields of knowledge
I found in days of yore.
They boast of all their learning
More loudly than they should,
While I—well, I'm discerning
How father understood.

—Nixon Waterman.

The Emergency Cabinet.

The following advice is especially good for those living on farms or in isolated places. It is nothing short of criminal carelessness not to be prepared for accidents, where the physician and drug store are several miles away.

The emergency cabinet should include, ready for use, a two-ounce bottle of arnica, a two-ounce bottle of witch hazel, a two-ounce bottle of alcohol, a two-ounce bottle of powdered boracic acid, one bottle of iodoform gauze, one package of adhesive strip one inch wide, one roll of absorbent cotton, a small package of wooden splints, one paper of small sized pins, several rolls of bandages. The bandages may be purchased already prepared. Their cost is trifling. But if economy is necessary, bandages may be made from old soft sheeting, torn into strips of the proper width.

In addition to the above have several old soft towels, nicely laundered and rolled in tissue paper. A pair of scissors will be convenient, and if possible a pair should always be in the cabinet.

On the arnica bottle write: "For bruises and sprains." On the witch hazel: "For hemorrhage." On the alcohol: "For cleansing," and on the boracic acid: "General antiseptic."

No doubt you will add to this list as circumstances may suggest, but as it is, it is practical and will cost but a trifle. If you have these ready aids at hand, you can close the door of your little cabinet feeling that you are safe and secure and that no matter what unexpected accident happens, you will not have to waste time and energy searching for necessities at a moment that is full of anxiety.

Nothing Omitted.

"Waiter," called a diner at a local club, "come here at once. Here's a hook-and-eye in this salad."

"Yesseh, yesseh," said the waiter, grinning broadly. "Dat's a paht of de dressing, seh."—Cleveland Plaindealer.

"When did you commit your first fatal extravagance?"

"When my boss referred to my wages as my 'salary.'"

"And when did you perpetrate this latest folly?"

"The day my wife called my salary my 'income.'"

Household Hints.

When frying or sauteing, try inverting a colander over the iron spider. The small holes in the colander allow the steam to escape and still prevent the grease from escaping.

A double boiler is ideal for boiling eggs.

In making cream tomato sauce if you pour the tomato into the cream sauce when just ready to serve and salt at the last moment, no soda will be needed.

Cook cabbage without the cover and for thirty minutes only. It is more tender.

The hard white pimples should be pricked with a fine needle which has been dipped in boiling water, then touched with a drop of peroxide. This dries up the contents without enlarging the pores.

Save the water in which vegetables have been cooked, except potatoes and beans. It can be used in soup.

Socrates says: Beware of the food that tempts you to eat when you are not hungry and of drinks that tempt you to drink when you are not thirsty.

Every spot that is not clean is inviting to the flying moth, where its eggs may be safely deposited and hatched in due time. So the first necessity is to have such spots thoroughy cleaned—this even if the whole garment need not be washed.

Cream sauce is improved with ten minutes' boiling on the fire, but it must be stirred all the time. Salt just before using or it may curdle.

For cream potatoes use one cup of sauce to two of potatoes.

To cure hiccoughs mix some granulated sugar in a little good vinegar. A teaspoonful of the mixture will stop the hiscough at once. In a rebellious case a second spoonful can be given, but it is rarely necessary.

A Bad Witness.

A small Scottish boy was summoned to give evidence against his father, who was accused of making disturbances on the street. Said the magistrate to him:

"Come, my wee mon, speak the truth and let us know all ye ken about this affair."

"Weel, sir," said the lad, "d'ye ken Inverness street?"

"I do, laddie," replied his worship.

"Weel, ye gang along it, and turn into the square, and cross the square——"

"Yes, yes," said the judge, encouragingly.

"An' when ye gang across the square ye turn to the right, and up into High street, an' keep on up High street till ye come to a pump."

"Quite right, my lad; proceed," said his worship. "I know the old pump well."

"Weel," said the boy, with the most infantile simplicity, "ye may gang an' pump it, for ye'll no pump me."—Ideas.

Application of Heat.

Water boils at 212 degrees.

Fat does not boil, but smoking hot fat reaches 400 degrees.

Sugar without water melts at 400 degrees.

An oven varies from 180 to 425 degrees.

Starchy foods are cooked at a high temperature.

Nitrogenous foods are cooked at a low temperature.

Roasts after being seared in a hot skillet and sprinkled with flour to keep the juices in are cooked at about 190 degrees.

Eggs should be put into boiling water and not allowed to boil. A double boiler answers the purpose.

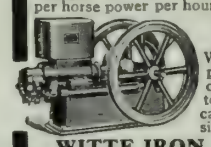
Bread is baked with a decreasing heat.

Cake is baked an increasing heat.

Water inside a double boiler never reaches higher than 202 degrees.

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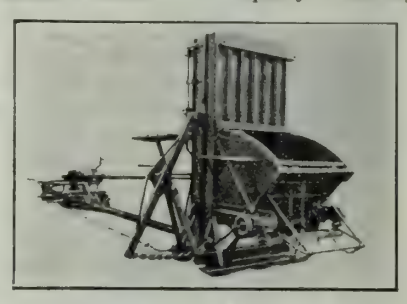
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Let me do my work from day to day,
In field or forest, at the desk or loom,
In roaring market place or tranquil room,
Let me but find it in my heart to say,
When vagrant wishes beckon me astray,
"This is my work—my blessing, not my doom.
Or all who live I am the only one by whom
This work can best be done in the right way."
Then shall I see it not too great nor small
To suit my spirit and to prove my powers;
Then shall I cherful greet the laboring hours,
And cheerfully turn, when the long shadows fall
At eventide, to play and love and rest
Because I know for me my work is best.

—Henry Van Dyke.

Poultry Courses for Young Folks.

DESCRIPTION OF BREEDS.

Rhode Island Reds.—The farmers of Rhode Island were the originators of this breed. Not with the intention of making a breed, but to produce strong utility fowls suited to their business, did these farmers work. A uniform and established breed grew out of the common opinion that a red cock is the most vigorous and prolific. Regardless of the color of their hens the utility poultry farmers selected red male birds to head their flocks. Red the cock must be, whatever his breed or wherever he hailed from. Sixty years ago the farmers of the coastwise district of Little Compton, Rhode Island, secured Red Malay and Red Cochin China cocks to cross with their flocks, and later Brown Leghorn cocks were also used. Thus by many years of out-breeding, always holding to the idea of the red male, a hardy breed of reddish fowls was produced.

Along in the '90s a few fanciers discovered the Reds in connection with the profitable industry that was quietly being carried on by the Rhode Island poultry farmers. At that time these Rhode Island fowls were not the handsome birds with rich uniform color and markings which we see today. They were still in the rough, though possessing the type and utility value. By careful breeding to a fixed standard, the points of beauty as well as the best type were established, and these farm fowls were exhibited and sought admission to the Standard of Perfection as a distinct breed. But they were met with ridicule and dubbed "mongrels" and "barnyard fowls" and unworthy the dignity of a breed or to appear among the "blue-bloods" of the Standard. Their sponsers put up a long and strenuous fight, and finally in 1904 the Single Comb Rhode Island Reds were admitted into the Standard, and the Rose Comb two years later. The popularity of the new breed was immediate and is constantly growing. Today the Rhode Island Reds are taking their place beside the Plymouth Rock as an all-purpose fowl.

The standard weight of the Reds is the same as for the Wyandottes, 8½ pounds for cock and 6½ pounds for hen. In appearance they resemble somewhat the Rocks, in that they are a long bodied bird, standing well up on shanks of the same length, but their general shape is more oblong and back straighter. On the Single Comb variety the comb is the same as that of the Rock, and like that of the Wyandotte on the Rose Comb. The comb, wattles and earlobes red; eyes full and red; shanks and toes yellow or reddish-horn. In color the Reds should be a deep glossy red, with main tail feathers and sickles in the males, black with a green sheen. The Reds are hardy birds, mature early, are excellent layers of brown eggs, and good sitters and mothers.

Buckeyes.—This is one of the new breeds, named from Ohio, the "Buckeye State," where it originated. It is like the Reds in color, but in shape more like the Indian Games, and has a small pea comb. It has the general characteristics of the other breeds of the American class.

Javas and Dominiques.—These are two of our oldest breeds, and are excellent fowls very similar to others in the American class, but newer breeds have come to the fore, and they are little known in the West or extensively bred in the East.

From these descriptions it will be seen that the six breeds and seventeen varieties in the American class are all of the same general characteristics. They are all-purpose fowls of medium weight, with the clean (unfeathered) yellow legs and the yellow skin which our markets demand, and excellent layers of brown eggs and good sitters and mothers.

Not the Only Birds of Interest.

In the following letter one of our young folks suggests that we publish articles about the "sweet-voiced songsters' as well as about our domestic birds. We are glad of the suggestion, and especially glad that it comes from a boy. We take it for granted that girls will love and protect the singing birds, but alack, boys often require to "be shown" their duty in this respect. A natural love for birds is the secret of success with poultry. It gives one the patience to attend to the many small details of the work, and the interest that relieves it of its drudgery.

The birds have well been named the "children of the air." They seem the embodied spirit of its motion and color and music. And they surely represent the spirit of thanksgiving. In the raw chill mornings of the early spring when nearly every human was on the grumble about the weather, children, have you not heard the clear song of the lark rising heavenward in thanks to the Giver of the fruitful earth? Is not that a beautiful lesson to us to rise above our discomforts and to be thankful always for the joy of living?

And is there a boy who would hurl a stone at the joyful mentor on the pasture fence? We fear there is, and also that there are farmers who would still its music with shot and poison. We have proof of the latter in the effort at each legislative session to have even the farce of protection removed from this sweet songster.

This being the case, it is the duty of all bird-lovers to join in the protection of the birds, and of all agricultural papers to teach the value of birds to agriculture. Our young friend at Chico is old enough to do a good work for the birds among the boys of his neighborhood. Often boys, and even girls, rob nests and destroy birds, toads, and other useful creatures through a wanton thoughtlessness rather than intended cruelty, and when they are taught the wickedness of such actions and the value of the creatures, they become protectors instead of destroyers.

From time to time as we have space in this department, we shall have articles descriptive of the wild birds of various kinds and their uses, and we invite our young folks to study the subject at first hand among the birds of their locality, and write of the things they learn in regard to the habits of these children of the air.

Chico, Cal., May 3, 1911.

Dear Editor: I am thinking again of the Young Folks' Department, and will send in my letter.

Last evening as I sat gazing through the window, discerning nothing but the lights shining out of the darkness, some artificial, others heavenly bodies, I noticed one particular light smiling bravely as it were. As the strong wind blew the branches of the staunch eucalyptus trees, this light was obscured, now and then, and seemed to be struggling with the darkness to throw a gleam to me. Once more it would shine forth; again it would be submerged, but it always came out ahead in the end and shone serene above.

Those who struggle as the light did shall surely win. Whistle as you hoe the garden, sing as you feed the chickens, and smile when the work is done. Present work is the foundation of future success.

Domestic fowls are not the only birds in which we may take an interest. The sweet-voiced songsters that inhabit the green-foliaged trees and the sunny air are worthy of our notice. I suggest that this department publish articles about the different kinds of birds.

Yours truly,

Fay Miller.

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THE MARKETS.

San Francisco, May 17, 1911.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

No particular change is noted here. California club seems to be a little stronger, but is not quotably higher. The volume of local trading has increased somewhat in the last week, but offerings of California grain are light, and most of the business is for shipment from the North.

California Club	$1.50	@1.52½
Sonora	1.60	@1.65
White Australian	1.60	@1.65
Northern Club	1.50	@1.55
Northern Bluestem	1.57½	@1.65
Russian Red	1.50	@1.55

BARLEY.

There is still some fluctuation in futures, but the spot grain is quiet. Choice feed is quoted a little lower, though it is difficult to obtain anything really first-class. Ordinary stock stands as before, and brewing barley is firm, with light offerings.

Brewing and Shipping	$1.52½	@1.55
Choice Feed, per ctl	1.45	@1.50
Common Feed	1.40	@1.45

OATS.

Prices show no further change. At the present level there is a brisk demand, and supplies have been considerably reduced. Values are accordingly firmly maintained.

Red Feed	$1.37½	@1.42½
Gray	Nominal	
White	Nominal	
Black Feed	1.30	@1.40

CORN.

There is no feature to the local market at present, the demand being very light, though there is some activity at outside points. Values stand as before on all descriptions, and the market is fairly firm.

Cal. Small Yellow	$1.75	
Eastern Yellow	1.55	
Eastern White	1.55	
White Egyptian	$1.70	@1.75

RYE.

No definite quotations are given, as no desirable stock can be had at the figures last quoted, and the only offerings on this market are not of desirable quality.

Rye, per ctl. Nominal

BEANS.

A few slight changes are noted, but in a general way the market is about as before. Cranberry beans have been marked down 25c., while horse beans are higher. Extreme firmness is noted in blackeyes, which, with decreasing supplies, are now held as high as $7.25 per ctl. All other descriptions stand precisely as before. There is no great activity in any line, trading in limas being limited at present by the small supplies and high prices. The supply is nevertheless decreasing rapidly enough to assure a close clean-up at about the present values. Buyers have been offering $4.75 or better for new limas, but growers are not inclined to sell at present.

Bayos, per ctl	$4.55	@4.65
Blackeyes	7.00	@7.25
Cranberry Beans	3.75	@4.00
Garvanzos	2.85	@3.25
Horse Beans	2.75	@3.00
Small Whites	3.40	@3.55
Large Whites	3.40	@3.55
Limas	6.35	@6.45
Pea		4.25
Pink	5.25	@5.35
Red Kidneys	6.25	@6.50

SEEDS.

Alfalfa remains nominal, with practically no demand at the moment. Most other descriptions are quiet, and values are quoted as for some time past.

Alfalfa	Nominal	
Broomcorn Seed, per ton	25.00	
Brown Mustard, per lb	5½c	
Canary	3½@ 4	c
Hemp	3½@ 4	c
Millet	3½@ 4	c
Timothy	8 @ 9	c
Yellow Mustard	5¾c	
Dried Peas, per ctl	3.75@	4.00

FLOUR.

No further change is noted in prices. There is little feature to the local trade, but export business from San Francisco is comparatively active.

Cal. Family Extras	$5.20	@5.60
Bakers' Extras	5.20	@5.60
Superfine	4.30	@4.50
Oregon and Washington	4.60	@4.80

Hay and Feedstuffs.

HAY.

No further advance is noted in the local market, but prices are pretty well maintained at last week's advance. Arrivals have been rather large the last two weeks, and dealers report some difficulty in disposing of the quantity coming in. Good wheat and oat hay is in good demand, but there is not much to be had, either here or in the country. The report of the San Francisco Hay Association shows the supply in warehouses on May 1, in the territory tributary to San Francisco, to be 103,950 tons, which, in view of the large demand through the country during the winter, is a somewhat larger estimate than was generally expected. Dealers are using this as an argument for lower prices on the new crop. It is evident that much of the hay now in stock will be carried over and sold in competition with the new crop, but as much of the holdover is of poor quality, it is not likely to interfere with the sale of the better grades. In view of the evident shortage of the new crop in this district, growers are disposed to hold their hay in anticipation of an improving market as the season advances.

Choice Wheat	$13.00	@14.00
Good Wheat Hay	11.00	@12.50
Other Grade Wheat	8.00	@1100
Wheat and Oats	8.00	@11.50
Tame Oats	8.00	@11.50
Wild Oats	6.50	@10.00
Alfalfa	8.00	@11.50
Stock Hay	5.50	@ 6.50
Straw, per bale	35	@ 50c

FEEDSTUFFS.

There is a continued active demand for practically everything on the list, and while no change has been made in quotation, most lines are firm. Bran is especially strong at present, with moderate supplies, and there as an upward tendency in prices.

Alfalfa Meal, per ton	$19.00	@20.00
Bran, per ton	28.00	@29.00
Cocoanut Cake or Meal	26.50	@27.00
Cracked Corn	34.00	@35.00
Middlings	34.00	@37.00
Mixed Feeds	29.00	@32.00
Rolled Barley	31.00	@32.00
Rolled Oats	32.00	@33.00
Shorts	27.50	@31.00

Garden Truck.

VEGETABLES.

New red onions are coming in quite freely, and are now offered somewhat lower than last week. Other descriptions, however, are quite firm. Old yellow stock is practically out of the market, and bermudas are held pretty close to top quotation. Old garlic of good quality is closely cleaned up, and the little stock available is closely held at an advance. Otherwise comparatively few changes are noted. The market for miscellaneous vegetables is in good condition. While arrivals of some descriptions have increased materially, the local demand is active, and the surplus is taken up by an inquiry for shipment to outside points. Asparagus is steady at former values, with large quantities still going to the canners, while rhubarb is a little stronger at the moment. Green peas are moving freely, both locally and for shipment, and string beans have not been plentiful enough to cause any decline. Cabbage is still scarce, and supplies of tomatoes are light. A few lots of okra and green peppers have appeared, selling at high figures.

Onions: Australian, per ctl	$3.50	
Australian	3.50	
New Red, sack	2.50	@ 2.75
Bermuda, crate	2.00	
Green, box	40	@ 60c
Garlic, per lb	10	@ 12c
Green Peas, per lb	3	@ 3½c
Tomatoes, per crate	1.90	@ 2.00
Cucumbers, per doz	50	@ 60c
Cabbage	1.50	
Carrots, per sack	1.35	
Rhubarb, per box	90	@ 1.35
Cauliflower, per doz	75	@ 1.00
Asparagus, per box	75	@ 1.50
String Beans, per lb	10	@ 12½
Summer Squash, per box	75	@ 1.00

POTATOES.

Dealers looked for lower prices on new potatoes this week, but with some demand for shipment, values have been well maintained. Offerings are a little larger, but are not up to expectations. Old river stock is about cleaned up, and Oregon stock is a little lower, other descriptions standing as before.

Lompoc Burbanks, per ctl	$ 2.85	@ 3.00
Oregon Burbanks	2.50	@ 2.70
New Potatoes, per lb	3	@ 4c
Eastern, per ctl		2.10

Dairy Produce.

POULTRY.

Prices are quoted as before, but the market is in very poor condition, and it is difficult to obtain full quotations for anything. Eastern poultry is coming in at about the same rate as for some time past, and with liberal arrivals from nearby points offerings are largely in excess of current needs. Fryers find a better demand than anything else, prices on this description being pretty well maintained.

Large Broilers	$ 3.50	@ 4.00
Small Broilers	2.00	@ 3.00
Fryers	6.50	@ 7.00
Hens, extra	8.00	@10.00
Hens, large	5.50	@ 6.50
Small Hens	4.50	@ 5.50
Old Roosters	4.50	@ 5.00
Young Roosters	7.50	@ 8.00
Young Roosters, full grown	9.00	@10.00
Squabs	2.00	@ 2.50
Geese, per pair	3.00	@ 3.50
Ducks	8.00	@10.00
Turkeys, live, per lb	Nominal	

BUTTER.

While much more butter is coming in than the consuming trade can take care of, the demands of the storage interests are keeping the market firm, with very little fluctuation, only ½c. variation being noted in the last two weeks.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	.22½	23	23	23	23	23
Prime Firsts	.22	22	22½	22½	22½	22½
Firsts	..21½	21½	22	22	22	22
Seconds	.20	20	20	20	21	21

EGGS.

Prime firsts, though listed on the Exchange for some time, have just appeared in the quotations. The list has also been increased by the addition of Eastern stock, which sells slightly below any of the local grades. The demand for storage, however, is as strong as ever, taking up the bulk of the arrivals, and keeping prices on practically the same level as last week.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	.21	21	21	21½	21	21
Prime Firsts	...	....	20½	20½	20½	20
Firsts	..19½	19½	19½	19½	19½	19½
Seconds	.18½	18½	18½	18½	18½	18½
Selected Pullets	.18½	18½	18½	19	19	19
Eastern	.16½	17½	17½	17½	17½	17½

CHEESE.

Young Americas are still firm, a further advance being noted. Local flats are steady, firsts being a little higher than last week.

Fancy California Flats, per lb	12½c
Firsts	12 c
New Young Americas, fancy	14½c

Deciduous Fruits.

FRESH FRUITS.

The following summary of fruit and market conditions was sent out by the California Fruit Distributors, May 13, and is a good statement of conditions:

The fruit season of California opened in a commercial way on the 10th of this month with the shipment of the first carload of cherries. It was followed by another car leaving the State today, and after this week car-lot shipments will leave regularly about every second day, until the end of the week, when regular daily shipments will undoubtedly be in order.

Cherries—The cherry crop this year is spotted and will not be as large as was expected ten days or two weeks since. Best advices obtainable would indicate that the shipping cherries from the Santa Clara valley will not be over 60% of last year's output. In the earlier sections the crop will be better accordingly, but will still be short. Shipments last year amounted to 250 cars, and it is not expected at this writing that the output for 1911 will be more than 175 to 200 cars. The quality of the fruit promises to be excellent. [At New York, on Monday, 142 boxes of cherries sold for $3.50 to $6.62½, all varieties included.—EDITOR.]

Apricots—This fruit will be a short crop in California this season. There will be sufficient fruit in the earlier sections to meet the shipping demands, but owing to the shortage in other localities and the exceedingly high price that is being offered growers for the dried product, the price for shipping fruit will probably be a little higher than in previous seasons. As is the case with cherries, the quality of the fruit should be fine, and is, up to the present time, entirely free from fungus and other defects.

Plums—Our plum crop is not expected to be quite as large as last year. The difference will not be very great, however, and we expect to be able to supply all demands. Some varieties will make a full crop, and there is considerable shortage in others. This shortage does not result from the effects of frost, but was caused by failure to properly set the fruit, owing to adverse climatic conditions.

Peaches—The peach crop will not be as heavy as last year. There will, however, be plenty of fruit available for shipment and we will be in position to supply all demands. As is the case with apricots, dried peaches are going to sell for a much better price than usual, and this is bound to have an effect on the price of shipping fruit.

Bartlett Pears—Owing to the ravages of the thrip in some districts, the loss from frost in others, the output of this popular fruit will be somewhat curtailed. It is difficult to tell at this time just what the difference will amount to, but as nearly as we can judge, there will be approximately 2000 carloads of this fruit available for Eastern shipment, this, of course, including all varieties. Fruit is free from scab or other defects and will probably be first class in quality.

Grapes—Outside of a few localities in the State where damage was done by frost, particularly in the lower San Joaquin districts, there will be a good crop of grapes. Quality should be first class, as rainfall was ample and the season has been favorable for development. Vines have not blossomed as yet, and it is too early to say very much about the size of the prospective crop, but it is expected to be ample.

Climatic conditions have been favorable to the growth of fruit so far this season, but not to early ripening. Many days have been cloudy and cool and this naturally has retarded early development. Now that the season has fairly opened, however, we probably will have the same rapid succession of fruits as in the past, and it is possible that with continuous warmer weather that a part of the difference in earliness will be overcome before the close of the season.

All conditions in California indicate the production of a first-class crop of nearly all varieties of fruit. There may be a trifling shortage in some of them, but it is not expected that the general output will be affected by more than 10 to 15% of the total, based on last year's shipments.

Apples are pretty closely cleaned up, and the little remaining stock is held at firmer prices. Cherries are arriving in larger quantities all the time, but so far the demand has been sufficient to keep prices at a rather high level, the best lots being at the moment higher than last week, though some decline is expected. A few apricots have arrived from the southern district, but have received little interest, and no definite prices have been established. Southern strawberries are no longer much of a feature. Arrivals of other descriptions are smaller than usual at this season, and prices are maintained at the former level.

Apples, per box	$ 1.75	@ 2.00
Strawberries, southern crate	1.00	
Longworth, chest	8.00	@10.00
Large varieties, chest	6.00	@ 8.00
Cherries, per box	1.40	@ 1.75

Dried Fruits.

Local packers are offering the same prices as last week, both for spot and future goods. In the spot market, however, there is no business of any consequence, as everything but peaches is about cleaned up, and under present conditions few growers are inclined to let their peaches go at the figures quoted. Futures are also quiet, as packers and growers have not yet come to any agreement in regard to prices. According to the most reliable estimates of the various crops, the growers appear to be in a strong position and are in no hurry to sell. Some packers are apparently trying to minimize the reports of damage to the crops, and have been spreading reports in the East that the production will be larger

than was at first expected, though it is noted that they have so far named future prices on very few varieties. Eastern buyers are beginning to feel a justifiable anxiety regarding supplies for the coming season, and as soon as they get into the market it is believed that growers will find little difficulty in getting the prices asked, though at such figures a rapid movement is hardly to be expected. Most growers are holding their apricots at about 15 to 16 cents, and packers have not been able to get any large quantities of peaches at the prices offered. While 4½ cents is the highest offer for new prunes quoted here, offers of 4¾ cents are reported in the Santa Clara district, while practically all the growers are holding out for 5 cents. The raisin situation is still unsettled, and nothing definite has been done in regard to future prices, though it is rumored that offers of 5 cents have been turned down. From all indications values should be better than for several years past. The Eastern market on spot fruits and raisins was feverishly active for a few days, but has quieted down, supplies at present being closely held at some advance over former quotations. The New York Journal of Commerce says: "Not in many years have opening prices on California dried fruits been so high as they are this season. Apricots in particular are held at figures which might well be considered prohibitive, yet according to advices coming from authoritative coast sources, Europe is not hesitating to pay what the packers demand. Few of the latter, however, seem yet to have had the courage to put out opening quotations. One of the larger packing firms has made the following opening quotations on new crop apricots, which appears to reflect the general packing view on the question of selling prices: 16 cents for standard, 16½ cents for extra standard, 17 cents on extra standard, and 17½ cents on fancy f. o. b. coast in 50-pound boxes. There has been a further concentration of spot stocks of California prunes and another advance in prices is to be recorded. The buying was of necessity circumscribed by the paucity of supplies. It is reported that about everything in the way of 50s has been cleaned up by one buyer, who paid the full price, the market subsequently advancing to 13 cents.

"No further developments of special moment in the market for spot or future peacnes are to be noted. Local buyers are disposed to let the latter alone, but they are not being urged to buy by packers, who consider that even higher f. o. b. prices than those so far named—that is 9-cent basis for choice Muirs—are warranted by the conditions. Some jobbing business is being done in spot goods, the market for which has an upward tendency. For choice 8¼ cents is an inside quotation.

"It is estimated that the stock of California seedless raisins of all kinds held here is not more than sufficient to supply consuming requirements for a couple of months."

Evaporated Apples, per lb	10½	@11	c
Apricots, new crop		14	c
Figs, black	4½	@ 5	c
Figs, white	5	@ 7½	c
Peaches, Spot	7¼	@ 8	c
New crop	8½	@ 9½	c
Prunes, 4-size basis		9½	c
New crop contracts		4½	c
Pears	8½	@12	c
New crop	9	@10	c
Raisins—			
Loose Muscatels, in sweatbox	4	@ 4½	c
Thompson Seedless	4½	@ 4¾	c
Seedless Sultanas	4¼	@ 4½	c

Citrus Fruits.

Oranges are being sent East from California in large quantities, and outside of spoiled fruit, prices are good on the Eastern auctions.

At New York on the 15th, 41½ cars of navels sold for $4.05 down to $3.20 for fancy; choice, $2.90 to $1.50; standards, $2.55 to $1.55. Lemons sold for $2.90 to $3.60.

At Philadelphia the same day 17 cars of navels were sold at prices ranging from $2.45 to $1.50. Floridas brought $1.55 to $4.30; average, $2.60.

At New York on Tuesday, the 16th, 27 cars of navels and several mixed cars of oranges and lemons sold on a strong market at good prices for good fruit. Navels, extra fancy, large, $3.50 to $4.10; regular, $2.90 to $3.95; small, $2.80 to $4.05; fancy, large, $2.25 to $3.45; regular, $2.35 to $3.90; small, $2.35 to $3.80; choice, large, $1.85 to $2.85; regular, $2.10 to $3.20; small, $1.75 to 3.30; orchard run, large, $1.45 to $2.40; regular, $1.70 to $2.60; small, $1.55 to $2.75; standard, large, $1.65 to $2.45; regular, $1.65 to $2.60; small, $1.40 to $2.65. Seedlings, fancy, $2.20 to $3.35. Michaels, fancy, $2.25 to $3.65. Sweets, fancy, $2.35 to $2.95. Bloods, fancy, $2.10 to $2.80. Lemons, choice, $2.20 to $2.90.

Total citrus shipments from California for the season to May 15, were: Oranges, 26,313 cars; lemons, 3317 cars.

Oranges are rather quiet in the San Francisco market. Supplies of navels are about exhausted, only half a dozen cars remaining to be delivered, and the price is well maintained, with a slight advance on ordinary stock. Valencias are easier. Lemons and limes are unchanged. Some extra fancy grapefruit is held at an advance.

Navel oranges—			
Extra choice	$ 2.50	@ 3.00	
Choice	2.00	@ 2.50	
Valencias, choice to fancy	2.25	@ 2.75	
Tangerines	Nominal		
Choice Lemons	2.50	@ 3.00	
Fancy Lemons	3.50	@ 4.00	
Standard	1.25	@ 1.75	
Limes	4.50	@ 5.00	
Grapefruit	2.25	@ 3.15	

Nuts, Honey, Hops, Etc.

NUTS.

Almonds are in small supply and closely held all over the country. Prices on the new crop are certain to be higher than last year, offers of 15 cents for Nonpareils being reported, though so far no price has been definitely established. The California crop is said on good authority to be only half of last year's output, while a similar shortage is reported in the principal European districts. It is too early to say anything about future walnuts, and spot stock is moving in a jobbing way.

Almonds—			
Nonpareils	16	@16½	c
I X L	15	@15½	c
Ne Plus Ultra	14	@15	c
Drakes	12	@14½	c
Languedoc	11	@11½	c
Hardshells	8	@ 8½	c
Walnuts—Softshell, No. 1		15	c
Standard		14½	c
Softshell, No. 2		11	c
Budded		17½	c

HONEY.

Some new extracted is coming into the market, selling at San Francisco quotations, which are slightly above the prices offered to growers. Old comb is cleaned up, and nothing new has arrived so far. It is now pretty well established that the output will be very small, the season having been short in San Diego, Monterey and Sacramento river districts.

New Extracted, White, per lb	8	@ 9	c
Comb	Nominal		

BEESWAX.

Light	28	@30	c
Dark	23	@26	c

The current demand is very moderate, business being entirely of a jobbing nature. Prices are unchanged.

HOPS.

Another advance of 1 cent is noted, both in spot and future hops. The market is rather quiet this week, and growers who have not sold are confident of a further advance.

Hops, 1910 crop	19	@21½	c
1911 crop	18	@21	c

Live Stock.

DRESSED MEAT.

Beef Steers, per lb		9½	c
Cows		8½	c
Heifers	8	@ 8½	c
Veal, large		10½	c
Veal, small		11½	c
Mutton: Wethers	9	@10	c
Ewes	8	@ 9	c
Lambs	11	@11½	c
Hogs, dressed		11	c

LIVE STOCK.

Cattle and hogs are now coming in more freely than for some time past, and the tendency of prices is downward, though live cattle and sheep are still moving at former prices. Hogs have declined sharply, and spring lambs are also lower. Prices on dressed beef have been shaded.

Gross weight.			
Steers: No. 1	5¾	@ 6	c
No. 2	5½	@ 5¾	c
Cows and Heifers: No. 1		5	c
No. 2		4½	c
Bulls and Stags	2½	@ 3½	c
Calves: Light		6½	c
Medium		6	c
Hogs: Grain-fed, heavy	6	@ 6½	c
150 to 250 lbs		6¾	c
100 to 150 lbs		6¾	c
Small prime wethers	4¾	@ 5	c
Large prime wethers	4¾	@ 5	c
Ewes	4	@ 4¼	c
Lambs		5½	c

WOOL.

No further change in prices. The market is very quiet, for the reasons formerly mentioned, and while a few of the more desirable clips have been taken up by local buyers, most offerings receive little attention.

Spring Clip—			
Choice Southern, Year's staple	9	@12	c
7 months	8	@11	c
Lambs		5½	c
Northern, year's staple	12	@13	c

HIDES.

A few slight changes have been made in prices, some lines of hides being a little stronger, while sheep skins are lower. Locally light hides find more demand than usual, considering the dullness in the heavy stock which is usually in demand.

Heavy Steers, over 56 lbs		10	c
Medium	9	@ 9½	c
Light Steers, under 48 lbs		9	c
Heavy Cows, over 50 lbs		9	c
Light Cows, 30 to 50 lbs		8½	c
Kip		10½	c
Veal	14½	@15½	c
Calf	15	@15½	c
Dry—			
Dry Hides	17	@18	c
Dry Bulls		16	c
Dry Kip, 10 to 15	17	@18	c
Dry Veal, 5 to 10	16½	@17	c
Dry Calf, 7 down		23	c
Sheep Skins—			
Long Wools	$ .75	@$1.00	
Medium Wool, 6 to 9 mos.	50	@ 75c	
Short Wool, 3 to 6 mos	25	@ 40c	
Lambs	15	@ 50c	

HORSES.

The market is a little easier than for some time past, as the country trade has done most of its buying for the season, and offerings are still fairly large. Good drafters find a fair demand and bring about the same figures as for some time past, but miscellaneous offerings move slowly and prices are somewhat lower.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	235@285
Chunks, 1350 to 1500 lbs.	0
Wagon Horses, 1250 to 1350 lbs.	165@190
Delivery Horses, 1050 to 1250	115@140
Desirable Farm Mares	120@140
Young	190
Old Mares	90@115

MULES.

1200 lbs	$250@300
1100 lbs	215@240
1100 lbs	175@200
900 lbs	150@175

ELECTRIC SHEEP SHEARING.

S. M. Blatchley recently came to Ellensburg, Washington, and, after looking over the field, decided to install an electric shearing plant. He leased for five years a tract of land in the park, about two and one-half miles east of Kittitas, and there he will build his pens, houses, etc., to be ready for the shearing season, which opened on April 28. His plant will have a capacity of 2500 sheep per day, and he has already booked 35,000 animals to be sheared this season. The sheep owners are much pleased with the undertaking, as the work done by the electric shearing machines is much superior to the hand method, as it shears more uniformly and never injuries an animal, and its wonderful speed is one of its strongest recommendations.

Contracts for four large dairy barns, four silos, three milk houses and a five-room cottage on the Tagus ranch near Tulare have just been let. It is the intention of the management to make the dairy a model of its kind when all is completed.

The Lemoore Cream & Butter Company is planning a skimming station at Traver to sterilize cream.

PUBLISHER'S DEPARTMENT.

Poultry and stock readers will be interested to learn that the old firm known as the Oakland Poultry Yards has been succeeded by the new firm of Bayley & Lyon, and that the latter gentlemen have become sole distributers for the well known Manhattan Stock Food Co. Mr. Bayley is well known to many of our readers who have had business dealings with him as manager of the Oakland Poultry Yards. The new firm of Bayley & Lyon wish to extend the business of the old established Manhattan Stock Food Co., and to that end wish to secure agents in every town and district on the Coast. They want every stock and poultry man to write them for catalogue and quotations, and will fill orders as promptly for small as large quantities. Look up their ad. and you will notice that the Manhattan Stock Foods and Remedies cover every want of the stock raiser, and as the preparations have been tested by time, you will make no mistake in ordering from them.

We were much pleased to have a call this week from L. F. Scribner, the plant specialist of Pasadena. Mr. Scribner tells us that he has shipped a half million berry plants to all parts of the country this season and has had to refuse many thousand more orders owing to lack of stock to fill with. He has shipped a great number of Himalaya berry plants from Sonoma county.

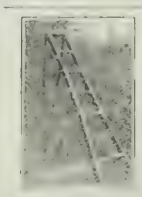
A letter from U. G. Strader, of Ceres, says: "I do wish to say your paper comes up to my ideals precisely, as regards farming and dairying. It treats on the subjects that I am mostly interested in."

The fruit growers will soon need ladders. See the Henderson Mfg. Co.'s ad. in another column.

Send to C. W. Martin, of 70 Fremont street, San Francisco, for one of his booklets on pumping and irrigation. Read his ad. in another column and then get the book.

The supervisors of Tulare county have decided to appoint a county dairy inspector to supervise the herds, dairies and dairy products of the county. This action has been taken on account of the results of the inspection of State Dairy Inspector J. S. Canham in the lower San Joaquin. A remarkable change is said to have resulted within the past few weeks through the activity of Inspector Canham, and the supervisors wish to have the dairies kept up to the standard after he has to leave for another section of the State.

An organization of dairymen for the purpose of jointly marketing their products has been formed near Newman by many of the dairymen in the district. About 25 signed the organization papers and more are expected to join soon. Bids have been invited for a yearly contract to purchase the cream, the association to employ its own weigher and tester.



THE HENDERSON

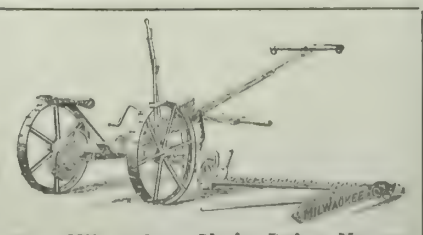
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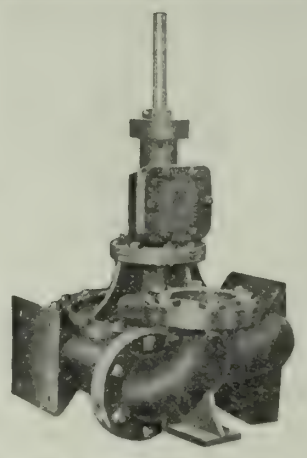


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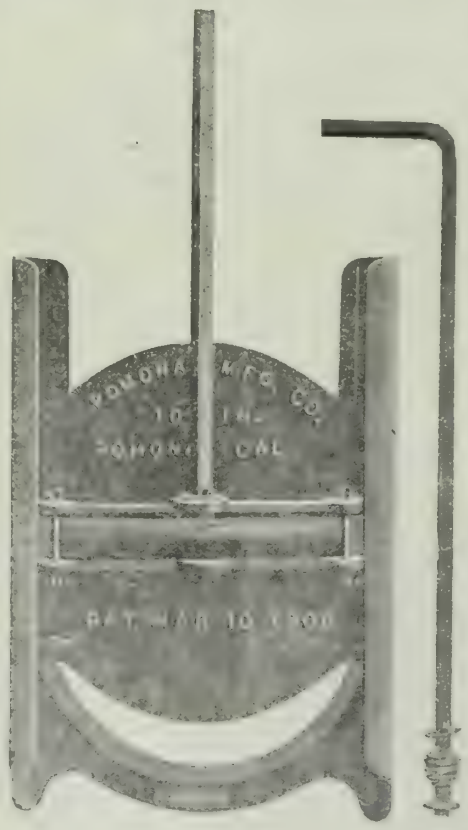
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THE PACIFIC RURAL PRESS

Vol. LXXXI. No. 21. SAN FRANCISCO, SATURDAY, MAY 27, 1911. Forty-first Year.

THE TRANSFORMATION OF THE SAN JOAQUIN VALLEY.

Written for the PACIFIC RURAL PRESS by Mr. FRANK HONEYWELL.

The Products Exhibit and Poultry Show held at Merced last week was the excuse for breaking away from usual duties and making a trip through part of the San Joaquin valley, now the scene of great real estate activity. While the exhibit at Merced was a credit to that section, and the effect of it will be for the good of the community, yet the one strong feature of the trip, which became more paramount the longer one was in the valley, was the transformation of that section which had taken place during the past few years, and which made the exhibition held last week possible.



Planting and Irrigating Sweet Potatoes, Near Atwater, Merced County.

We well remember our impressions of this great valley when we passed through it for the first time in the spring of 1894. Then from Fresno county north, through Madera, Merced, Stanislaus and San Joaquin counties, there were great grain fields and occasional large stock ranches. Then at the infrequent stations were great grain warehouses; now at the more frequent stopping places are found in their places, fruit packing houses creameries and canneries. Then the ranch houses were few and far between, with an occasional clump of trees near; the houses and ranch buildings were small whitewashed shacks, showing painfully bare in the glaring sun. Now, from Merced to Manteca, the big ranches have almost entirely been cut into smaller tracts.



The Rogers White Adriatic Fig Orchard, Near Merced.

Irrigation water in plenty has allowed the setting out of thousands of acres to alfalfa, great orchards of figs, peaches and almonds, and miles of vineyards are seen from the railway car. Besides the alfalfa and fruit, this section has become famous for its dairy products and for its sweet potatoes, cantaloupes and melons, as it is also for its poultry products. Where there was a broad unbroken expanse of country, two hundred miles long by sixty wide, now the homes of settlers are so thick one thinks he is passing through the outskirts of a city.

We do not take into consideration in this article the wonderful developments during the same time in the rich counties south of Madera, including Fresno, Tulare and Kings, as the changes took place there earlier and more of our readers are familiar with them.

Necessarily in looking around and inquiring one runs across people who have not made successes, or at best but partial success, in this great development, but still many have made fortunes in the changes, and many more are on the road to a comfortable competence in the possession of land which is intended for and is being cultivated intensively.

In talking with old as well as new settlers many interesting facts are learned, which we would like to publish, but this would entail the use of too much space, as the subject deals with large areas. But possibly a few side lights may be given that will allow some of the notable changes to be brought out. For instance, it may not be generally known that in Merced county more than half the products, in value, is credited to the dairy, which during 1910 amounted to $2,331,622.

L. I. Dorman, the manager of the creamery at that place, stated that his concern was now making 1000 pounds of butter daily, and he expected to increase the output to double that amount inside of two years. Asked as to the average milk production per cow in that district, Mr. Dorman stated that grade cows would bring $8 per month for the year.

At Turlock we talked over the dairy situation with A. P. Ferguson, the manager of the co-operative creamery there. He stated that grade cows would average $100 per year, and deplored the fact that more pure bloods were not used by the ranchers. Both Mr. Dorman and Mr. Ferguson stated that more cows were wanted and that pure-bred sires were being used more extensively. The Turlock creamery is making 2700 pounds of butter daily, has paid from 35 cents down to 26 cents for butter-fat the past three months. The creameries at Modesto are making more than 6000 pounds of butter per day.

Besides the creameries mentioned there are many more in the counties, notably on the west side, also several skimming and receiving stations for the Bay creamery companies. In the Turlock irrigation district alone there now 50,000 acres set to alfalfa, this being a gain of 7000 acres over a year ago.

In Merced county east of the San Joaquin river, the land is irrigated by the Crocker-Huffman Company, which furnishes a water-right at $10 per acre, and charges $2 per acre per year for about 33 acre-inches, to be delivered between April 1 and November. In the Turlock and Modesto systems all the land carries water-rights and the cost is about $1 per acre per year. The new high line canal will be ready in a few weeks to irrigate 20,000 acres of land in the Turlock district just south of that place, and the cost will be about $1 per acre per year. Besides these three systems, which cover nearly a half million acres, hundreds of wells have been and are being sunk by farmers that they may have water just when they want it in garden work.

Turning from alfalfa and irrigation to fruits, we will quote N. H. Wilson, the Horticultural Commissioner of Merced county, a man who has been in close touch with conditions there for the past thirty years. He stated that grapes would be a fair crop, from 2½ to 3 tons per acre, and that prices would be in excess of $25 per ton. The peach crop would also be an average. On the Buhach ranch, where there are nearly 400 acres set to peaches, the crop promised to be large. The planting of Smyrna

(*Continued on Page 414.*)

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., May. 16, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.58	31.69	44.35	64	44
Red Bluff	00	21.49	24.33	90	50
Sacramento	.02	21.86	19.79	90	48
San Francisco	.11	25.46	21.94	85	48
San Jose	.08	22.57	12.79	88	42
Fresno	00	11.82	9.45	96	46
Independence	00	6.22	9.32	88	42
San Luis Obispo	00	34.42	20.14	94	48
Los Angeles	00	16.15	15.49	94	52
San Diego	00	11.98	9.90	74	52

The Week.

Our columns are reflecting from week to week the significant activity of farm-home making and farm-product making in different parts of the State. The peopling of a small valley in the coast district, as indicated by the comments last week upon progress in the Mt. Diablo country, and the peopling of a great valley as suggested by the showing on our first page which is made this week for Merced county in the San Joaquin, are but instances of what is being done in all parts of the State. Coast, valley, and mountain districts are all awake and are all receiving acquisitions from the great aggregate increment which is coming to the State from all points of the compass. We cannot reflect this wide advancement so that it can be seen at a glance, and yet we are anxious that readers should know it all. The best we can do is to keep the film moving so that it may progressively appear in moving pictures which shall continuously convey to our parishioners the advancement of the State and the spirit of the people as embodied therein. It may be expected, then, that there will be much doing in this line all along.

Farmers' Liability as Employers.

We hope that our farmers will take due heed to understand just where they are likely to stand if a constitutional amendment (No. 32) should get votes enough for passage at the special election next October. This amendment is designed to enable the legislature of California, at some future session, "to create and enforce a liability on the part of all employers to compensate their employes for any injury incurred by said employes in the course of their employment, irrespective of the fault of either party." This contemplated legislation is first thought of as a way by which the rich owners of factories or the corporations owning transportation lines shall be made to pay for the distressing accidents to their employes. It seems easy enough for such concerns to provide for that and add the cost to the price of their products or service, or whatever it may be. This would distribute the burden over the whole mass of the output and carry such small parts of it to so many consumers that no one need be inconvenienced thereby. That appears to be very merciful and fortunate. But the amendment says "all employers," etc. It seems to mean that farm laborers or household servants or any other employe for anyone whatever, can recover from any employer, no matter whose fault may underlie an injury, some such compensation, we suppose, as is attached to life or limb in the accident insurance calculations. Of course, this might take the farm or the house, or whatever else the small employer might have, or else force him to protect his savings by buying accident insurance for every person he hires. This would be the only way such costs could be distributed, except by co-operative organization of employers to meet them. Our readers ought to look into this proposition pretty carefully before voting upon it in October, and should vote then upon conviction born of understanding.

Causes of Insanity.

In view of possibilities of new worries on farmers through employers' liabilities, it is something of a relief to find the latest inquiries disclosing the fact that agriculture has escaped from the charge of a generation ago that it was filling the lunatic asylums of the country. Agriculture was blamed for two chief lines of producing such unfortunates: first, overwork for farmers' wives; second, overidleness for sheep herders. Both these sources seem now to have retired to inferior places. Mr. Albert Ferris, president of the New York commission of lunacy, says that the stress of living and alcohol are to be charged with sending 28 per cent of the women and 50 per cent of the males to the asylums, and he explains his meaning in this way: "The probability is that cases of insanity to be attributed to stress and strain will increase in number as the difficulty of transportation, overcrowding, and exhaustion, nervous anxiety as regards personal safety owing to the crowded conditions in streets and cities, the temptation to gamble, with consequent unrest, anxiety, and disappointment." These are not rural dangers, nor is alcohol a rural indulgence. The social uplift in the rural homes of the country as a result of increased financial returns from farming is certainly a blessed thing. As for the sheep herders, there are probably too few of them now to cut much of a figure in insanity percentages, and after the free traders get through with the wool schedule there may be fewer herders and more flock owners on the dark trail. But we hope not.

The Panama Canal.

We seem to know just how far along the Panama Canal is, and we wish as much could be said about the Panama-Pacific Exposition. Still, we do not feel like complaining much, for it is better to make a good start late than a bad start early. There is surely to be something to celebrate, and that is a good thing. The report from Washington is that on the line of the canal only one-fourth of the excavation remains to be done, 138,000,000 yards having been removed. The placing of the concrete in the locks is more than 52 per cent completed, the installing of the lock gates has begun, and 70 per cent of the filling for the Gatun dam, which will feed the canal with water, has been done. The great ditch promises to get through on schedule time.

San Diego, we are glad to see, is going ahead bravely with her lateral exhibition—which we commend to our readers as a more respectful appelation than "sideshow." A resolution has been introduced in Congress authorizing President Taft to invite the republic of Mexico and the republics of Central and South America to participate in the Panama-California Exposition at San Diego in 1915. It looked a while ago as if Mexico might arrive at San Diego a little ahead of time, but that trouble is about over now. Certainly, San Diego promises the world a very unique and enjoyable show, and one also which will be rich in manifestations of California patriotism. The architecture is to be of the Mission type. Balboa park, the site, is a reservation from the original pueblo of San Diego under the first Spanish grant in California. The date for the ground-breaking ceremonies of the exposition has been fixed for July 19. Elaborate preparations for this event are in progress which will occupy five days. The celebration will include historical features covering the period from the discovery of the Pacific Ocean by Vasco Nunez de Balboa in 1513 to the founding of the California missions in 1769 by Father Junipero Serra of the Order of St. Francis. And yet California is sometimes spoken of as a new country! Let us all go to the celebration in July.

Tomatoes from Mexico.

Speaking of Mexico and California, reminds us of the movement of tomatoes northward into our winter markets which is increasing rather notably. The total number of carloads northward via Nogales during the first three months of 1911 was 141 carloads, as against 87 for the whole year 1910. In all, 3,144,570 pounds of tomatoes and green vegetables were exported during the first three months of 1911, an excess of 982,093 pounds over the total shipments of 1910. The greater part of the tomatoes are raised near Los Mochis in the valley of the Fuerte river in northern Sinaloa, although some come from the Yaqui River valley in southern Sonora. Last year the heaviest exportation took place in April and May, and nearly the entire crop was shipped to Los Angeles and San Francisco. This year the greater part has been sent to Chicago, with large shipments to Kansas City and St. Louis, as well as the Pacific Coast. We are not at all sure that bringing so many tomatoes into California in April and May is at all necessary. It looks as though there might be a large local winter product in thermal sunny places in this State with very small recourse to protection and forcing. Fall-grown plants would grow without protection until nearly Christmas in many places and could then be warmed and sheltered for winter fruiting. Why not give some attention to it?

Immune Asparagus Plants.

Although it proved to be very easy to rule rust out of asparagus fields in California, as demonstrated by Prof. R. E. Smith of the University Experiment Station and adopted by our growers, from one point of view it might have led to more heroic performance if it had not been so easy. It looks, for instance, as though Massachusetts, through her harder problem, might do more for the world. The asparagus growers, under the able leadership of Mr. C. W. Prescott, established and support an asparagus station where Professor Norton is working to get immune varieties, so that asparagus can be safely grown even in the rustiest old places. The announcement is made that he has secured one male plant which is immune which might at first thought seem rather bad for multiplication, because a male plant bears no seed. But, examined a little more closely, it appears that in working for immune plants, one male plant may be worth scores of seed-bearing plants, because of the wide possibilities in the use of its pollen in impressing the fact of immunity

or resistance. Professor Norton has made a fortunate start and is doing a good work. Of course, we have no objection to immunity, and there may come about, through the foresightedness of Mr. Prescott and his associates, some new varieties which will be very valuable in this State. Meantime, we hope they will not let the cat eat up the one plant which may be the great-great-grandfather of it all.

What the Schools Are Doing for Cotton.

We hope we may be pardoned for such frequent references to what the schools are doing for farming. It may seem to mean more to us than to many others, because our experience goes back to the time when even farmers were inclined to claim that a school could do nothing for farming except to make fancy farmers who were of no account, anyway. But now see what they are saying in Texas, a State which never could be charged with thinking too much of schoolin'—as applied to farming or to anything else. This year the cotton farmers are predicting a five million bale crop in Texas. This prediction is based upon three conditions: Increased area devoted to cotton, better farming as a result of the work of the agricultural schools in the State, and of the constant suggestions made by those who have produced the greatest acre results, and the most seasonable conditions for a period of ten years. In all parts of the State large ranches have been broken into cultivated areas and devoted to cotton, and, according to reports, the conditions of the crop never were more promising at a corresponding season of the year. And these reports come straight from Texas. We have not written a thing into them—not even a suggestion that the boll weevil has been knocked out by the schoolmen.

Pre-Cooling May Generate Heat.

Not in the fruit, of course, but in the people. One of the reasons why American agricultural progress is so rapid and effective is found in the haste of manufacturers and promoters to translate the results of research into materials or machines, or into the eloquence of promotion. On the whole, this is very good. If no one tried to embody the results of research in things which can be bought, the work of our investigators would remain in large measure embalmed in books and the industry unaffected. The work of manufacturers and traders in agricultural supplies, implements and processes is therefore preponderatingly good, although very much of it does include exaggeration and anticipation which no conservative person could approve. Beyond this, of course, there is a free use of facts and the suggestiveness of ideas which crosses the borderland into the realm of faking, but this, it seems to us, is rather rare and usually carries a rainbow of financial reward so gorgeous that any careful person would be warned to beware. The feasibility and desirability of pre-cooling of fruit shipments naturally lend the process to all the good and all the bad lines of application and promotion. Along good lines it is leading to the provision of capacious establishments both by transportation companies and growers' organizations; along bad lines, it may lead to undue expectations from inadequate processes and appliances. Mr. A. V. Steubenrauch, who has charge of the fruit-shipping investigations of the United States Department of Agriculture, has just issued a statement which he intends should warn people against going too far in plans and investments on the basis of results so far published by him and his associates. He naturally object to promoters using his utterances as endorsements of the particular kind of pre-cooling outfits which they see fit to offer the public. He says: "We have not yet gotten to the point in our investigations where it is possible to recommend any particular pre-cooling system as being the one adapted to all conditions, and to recommend any particular patented process is wholly out of the question."

Mr. Stubenrauch naturally objects to trade circulars which claim altogether too much. For instance, it is not safe to say that green fruit can not be carried in uniform condition under ordinary methods of refrigeration. Under certain conditions, green-fruit shipments are being carried safely without pre-cooling, and pre-cooling, as such, as not a panacea for all of the difficulties encountered in the transportation of green fruits over long distances. The type of handling given the fruit and the promptness with which its temperature is reduced are the most important factors governing the behavior of the products in transit. We can but commend careful scrutiny of all claims and of all appliances which are offered for investments in these lines.

Queries and Replies.

Irrigating Young Trees.

To the Editor: The writer would like to secure information regarding the watering of young trees. We have just put out ten acres to walnuts, about one-third to the nuts and two-thirds to yearling trees. The party who put them out wants me to have some boxes or troughs made 15 inches long with a 3-inch opening, and put in on the slant so as to have the water hit the roots. Now it seems to me that it will give too much air to the roots, and I am asking your advice. Also do they need much water?—Beginner, Sacramento.

Many such arrangements of boxes, perforated cans, pieces of tile, etc., have been proposed during the last fifty years in California for accomplishing the purposes which are mentioned in your letter, and all such devices have been abandoned as undesirable. They may bring the water to bear upon a lower level as intended, but the free access of air which you mention and the fact that, with their use, proper stirring of the soil is neglected renders them undesirable. The best way to water young trees singly is to make a trench around the tree, but not allowing the water to touch the bark, applying the water and then thoroughly hoe when the surface soil comes into proper condition. Young trees treated in this way, with the surface always in good condition, do not require much water. The amount depends, of course, upon whether the soil is naturally porous or retentive. Water should be applied frequently enough to keep the lower soil amply moist. A color of moisture is not enough and a muddy condition results from too much water. One has to learn to judge when there is moisture enough, and a good test of this is to take up a handful of soil, squeeze it and open the hand. If the ball retains its shape, it is probably moist enough. If it has a tendency to crack upon opening the hand, it is too dry. This test, of course, is somewhat affected by the character of the soil, but one has to form the best judgment possible how far allowance has to be made for that.

A Bad Spot for Fruit Trees.

To the Editor: Given an acreage in the Santa Clara valley of heavy black soil foul with morning glory and natural grasses to be found in places of similar character, in the course of a depression or drainage channel, with water very close to the surface, and during wet seasons in the lowest part carrying a small stream, what would, in your opinion, be the best variety of fruit (if any) to plant, in the expectancy of reasonable returns from the investment. In addition to the above mentioned disadvantages, I will add, that this land is in a locality subject to late frosts. In a part of this tract are growing prune trees on Myrobolan root; they have made good growths and seem thrifty.—Planter, San Jose.

The fruit tree roots which seem best calculated to resist unfavorable conditions as you describe are the Myrobolan plum and the pear. It is, of course, a question whether such a place as you describe ought to be planted to fruit at all, until adequate provisions for its drainage are made. With proper tiling to a depth of 3½ or 4 feet, such a situation might prove very satisfactory for the growth of most fruits which take a heavy soil, care being taken to select those which start late in the spring and therefore are less liable to frost injury. If the value of the land and product do not justify adequate expenditure for underdrainage at present, the land should probably be used for the growth of forage plants until there is a greater demand to put it to higher uses.

How Many Fruits Mature with Empty Pits?

To the Editor: Owing to a frost here in the early part of April, the kernel of many of the peaches was turned to a brown color. Since that time many of these peaches have grown and have a healthy appearance outwardly; the pit also is white, but the kernel itself has not changed, even in size. There are many opinions expressed as to whether this fruit will mature, and we would consider it a favor if you could give us any information upon the subject. It is almost impossible to form an idea of what the crop will be without such knowledge.—Grower, Fresno.

We know that some peaches do mature with empty pits, as do olives and some other fruies, but to what extent they can be relied upon to do so we do not know. Therefore, we can not prophesy what would be the effect upon the available crop from young fruit which starts with a blighted kernel. Probably some more observant reader has reached conclusions which warrant him in giving an opinion, and we would like to have it. We hope very much that you will keep track of the matter and share with us such knowledge as you may obtain as to what proportion of such deficient fruit will really come through in marketable form.

Prolification in Strawberries.

To the Editor: I send you a strawberry fruit which has a small bloom stem starting out from the top of it. It seems to be a freaky thing for a strawberry to do. Have you ever seen it before?—R. H., Woodward.

The interesting and abnormal growth of strawberries of which you send specimen is rare, but has been observed from time to time. The botanists call it prolification, which is defined as "the unusual or excessive development of supernumerary parts, either the same or different from those on which they are developed, as when buds are developed on leaves." In this case it is a supernumerary part developed on the same part, because it is a supplementary fruit-stem sent out from the product of a primary fruit-stem. We see the same thing rather more frequently in roses when an undeveloped bud may start out from the center of a fully blown rose. Of course, it is remotely possible that the plant breeder, taking advantage of this disposition of the plant, might produce us a two-story flowering stem on the strawberry, but no one can tell how long it would take to do it, if indeed this tendency to variation ever could be made permanent. The plumed knight in strawberries is probably as evanescent as the plumed knight in politics.

Frosted Strawberries.

[It may not be surprising that we do not know what frosted strawberries will do, for California is scant of experience in that line—and yet, in the infinite variety of our climate, we have, it appears, localities in which even this may be occasionally encountered. The following correspondence opens a very interesting question, and we would be very glad indeed to have readers who are wise from experience in the matter assist us in adequately answering it.—EDITOR.]

To the Editor: Will you please inform me how to grow a second crop of strawberries? We are in a frosted place in the northern part of the State. My early strawberries were frozen. They are the Marshall. They had only a few ripe berries when the frost came, and our prospects were good. The patch was white with bloom. I have perhaps half an acre. I need this crop very much and strawberries generally do fine here. I know that in some parts of California they raise two or three crops of berries. I want to know if certain kinds must be chosen, or if all kinds may be treated so as to bear a second crop. Can Marshalls be made to bear again this year? Can we have another crop right away, or must we wait until later in the summer? Should the runners be kept off?

We use irrigation. Should we first let the plants get real dry and then water, or should we keep them real wet now? We thought that as they have had no berry crop this year on account of frost perhaps they can be made to bear later, and we will appreciate any information you can give. GROWER.

Shasta county.

Our First Aid to the Injured.

[As the case seemed to require immediate response, even if inadequate, we addressed to the sufferer the following letter:

There are what are called "ever-bearing" strawberries, but the varieties like the Marshall, which constitute our chief commercial varieties are not ever-bearing in this sense. They are made to produce a second crop by irrigation, and where the frost-free season is long enough may not only produce a second crop but a scattering production afterward through the fall and winter. The result is that in the thermal situations in California it is possible to gather ripe strawberries almost every month in the year. Strawberry plants are usually rendered more or less dormant by the bearing of a heavy first crop and then are irrigated, which induces a new growth; break of blossom stems, etc. We are sorry that we do not know what is actually the best thing to do with plants which are in the condition of yours, because our experience does not cover just such a situation. We are not sure whether it would be better to keep your plants growing for a later break of blossoms, or to allow them to become somewhat dormant and then revive them by irrigation. For this reason we are sending your letter to one of our most experienced strawberry growers, requesting his knowledge and judgment on the matter. We are quite sure, however, that we should not allow the plants to become too dry, because that would reduce their vigor for the second growth.—EDITOR.]

Comments by Tribble Brothers.

The following interesting letter shows that such conditions as our correspondent describes are not understood by our widely-informed California growers. Tribble Brothers have given close attention to strawberry production and to determining the local value of hundreds of varieties in different parts of this State. They write:

To the Editor: In answer to your favor of May 11, we must say that we have not met with conditions as described by your Shasta county correspondent. Our experience has been that where the first crop failed for any cause, we usually got a good second crop, and it is the opinion of the writer that your correspondent's plants will do the same. With us the Marshall bears a heavy first crop and then bears a light crop through an extended season, which is not to be considered a paying crop. Those varieties which bear a paying second crop in this district, or with us, are the Longworth Prolific, Tennessee Prolific, Dollar, Jessie, Magoon, Arizona, Early Hathaway, Haverland, Lady Thompson and Porson's Beauty.

We have tried many of the so-called ever-bearing varieties, but none have proved profitable, owing to their bearing a few berries all through the season, not giving enough to pay for picking at any one time.

We would not withdraw the irrigation, but would give the plants the very best attention, keeping off all runners, providing the grower does not want the new plants. It may be that the conditions of your subscriber are like those in Oregon and Washington; if so, only one crop of berries can be expected. Then to have a succession of crops, the grower would have to grow different varieties, ranging from the Excelsior for extra early to the Midnight for the latest.

Strawberry growing should cover certain districts for certain varieties. The varieties producing best at Burbank, Los Angeles and southern California do not yield enough to pay for irrigation with us.

We are sorry that we are unable to give you direct information that would be suited to the conditions as stated by your subscriber, but we have never experienced such conditions. We agree with you that the plants must not be allowed to dry out, but should be kept in best growing condition. TRIBBLE BROTHERS.

Elk Grove, Sacramento county.

[Now the subject is open to all readers for discussion. Let us have all light possible.—EDITOR.]

SMALL FRUITS.

An agreement has been entered into between the Sunlit Fruit Company, several of the commission merchants of San Francisco who make a specialty of handling berries, and berry growers of the Pajaro valley by which all the excess berries put on the San Francisco market will go to the fruit company at 4⅓ cents a pound to be used for canning. By this method the fruit is turned over to the company before it spoils, and prices are prevented from breaking badly when the market is overloaded. This price is somewhat higher than the average price last year for the surplus stock. One day last year a number of cases were bought for $1 each, on account of sending in too many berries, and this will be prevented by the new arrangement from happening again. It is hoped that the knowledge that growers will be always able to get at least this price will encourage further planting.

Considerable extra planting has been done this year in the Pajaro valley, and Driscoll Brothers, who are among the largest growers, are trying a large acreage near Niles in Alameda county, which will be greatly increased next year if the venture is a success. The berries in most districts this year are several weeks late, but will probably give a full crop.

TASMANIAN APPLES.

The progressive producers of the Southern Hemisphere propose to go a long way around to strike the bare midsummer markets of the Atlantic coast with their winter apples which ripen in their autumn which answers to our springtime. A New Yok firm of fruit sellers announces the completion of arrangements by which a quantity of Tasmanian apples in boxes will come to them in New York during next July. The fruit reaches London from Tasmania in the refrigerators of fast steamers, and will be transshipped in London to the refrigerators of the Atlantic Transport Company's boats, and in this way the apples will be in refrigerators all the way from Tasmania. While there are several of the varieties known to the American fruit trade, such as Jonathans, Rome Beauties, Scarlet Pearmains, New York Pippins, and other kinds, many of the prospective arrivals are new varieties, but, generally speaking, they are not high-colored red apples.

When the Panama Canal is finished our southern friends will not have to go such a long way round to reach New York. They are enterprising in trying to open a market in advance of that date.

A GOOD APPLE TO AVOID.

Mr. H. F. Wilcox, of Julian, San Diego county, writes to an Eastern journal called Farm Progress as follows: "I have twenty acres in apple trees that have been set fifteen years, among which are two long rows of Huntsman's Favorite. These have never borne a tenth of a crop yet, and I do not know when they will. The apple is beautiful to look at, but is almost sweet and therefore not a good cooker. We are in an apple belt here in the mountains where we have snow in winter and where our apples are noted for flavor and beauty.

"A person setting out apple trees should know the habits of each variety, or he is liable to make a sad mistake. Huntsman's Favorite is by no means as popular an apple as it once was, one reason for which is its tardiness in coming into bearing, and another, as given above, being its lack of flavor when cooked. Probably some root-pruning might be beneficial. This can be done by deep plowing or by driving a spade in among the roots at a little distance from the trunk and severing a portion. Partial girdling of the main branches is sometimes practiced to promote fruiting."

Possibly, but what is the use of wasting time to promote fruitfullness when the fruit is not desirable if you could get it? We should graft out that Huntsman's Favorite at the earliest possible convenience.

Yellowing of Citrus Trees.

Error in Lime Medicine for Alleged Magnesia Malady.

To the Editor: The recent discussion which has been going on in southern California, and especially in the Covina district, with reference to chlorosis, has been instrumental in circulating certain opinions from pofessional chemists and growers which careful experiments of the present and past will not support, and moreover, opinions which are likely to bring about a good deal of mischief through the schemes which they will be instrumental in inaugurating in the practical management of orange and melon groves. I deem it of great importance, therefore, to make public a statement with reference to the above-mentioned discussion, and especially to show that the above-mentioned opinions are not tenable and not supported by the facts. I should be pleased, therefore, to have you publish in the PACIFIC RURAL PRESS the following statement:

The abnormal condition of citrus trees which manifests itself in the yellowing of the leaves and the later dropping of the same and also of the fruit, to which the name "Chlorosis" has been given, would seem to be caused, from the evidence which we have at hand now, by various factors which may in one way or another enter into the malnutrition of the tree, or influence the water-supply, or, through the mechanical condition of the soil, the air-supply. Instead of recognizing this condition with reference to chlorosis, for which we have innumerable instances as proof, Dr. R. R. Snowden has tried to show that, in the case of the Covina orchards, where an unusual number of trees have recently shown chlorosis, this condition is due to an abnormal ratio between the lime and magnesia in the soil. He has based his contention on the work of Oscar Loew, to whom we are indebted for a great deal of our knowledge with reference to the functions of lime

and magnesia in plants and soils. Doctor Loew and others who have recently worked on this problem, seem to be of the opinion that lime and magnesia are not only both necessary for plant growth, but that some ratio between the two seems to be required for a good growth of every class of plants under otherwise proper soil conditions; but, further, that it cannot be made, by any manner of means, a hard and fast rule which anyone can follow for any plant, and, besides that, the ratio may vary within wide limits. However, it seems that Doctor Snowden has built his theory with reference to the chlorosis in the Covina orchards on the earlier work of Loew in which the latter tried to state in a general way that a ratio of about two or three of lime to one of magnesia was necessary for proper plant development. With this as a basis, Doctor Snowden has examined chemically many samples of soil (I believe that they were 66 in number) from the groves of the Covina district where chlorosis existed, and where it did not, and found by his method of chemical examination of the soil that the magnesia was present in too large a quantity as compared with the amount of lime in the same soil, and concluded, therefore, that it was the excess of magnesia which was acting as a toxic agent and manifesting itself in the condition known as chlorosis.

A Test of Methods.—On inquiring of Doctor Snowden what his method of analysis was, I was informed that he digests his soil for one-half minute in hot dilute hydrochloric acid of the strength of one to five, and then carries out the method of analysis very much in the same manner as other soil chemists. When we compare this method with that used by the Official Agricultural Chemists, or with the method used at this Experiment Station, we find that the length of digestion differs from Doctor Snowden's in the two cases just named very markedly; that is to say, in the official method, the length of digestion is ten hours on the steam bath, in our method the length of digestion is five days on the steam bath, and in both of these cases the acid used is concentrated hydrochloric acid, which is five times as strong as the acid used in Doctor Snowden's work. It struck me that this radical difference in the length of digestion and the strength of acid ought to have markedly different effects in the extraction of the mineral constituents of the soil, and I therefore inaugurated some experiments on the extraction of soils by the three methods above mentioned in order to obtain a fair comparison; and, to keep as close as possible to the conditions which Doctor Snowden had, I employed two Covina soils, which I had received from some growers there, and on which, they had complained, there were trees showing chlorosis more or less markedly. In the small table given below, there are shown the amounts of lime and magnesia found in the two soils above mentioned, by the official method, our method marked "Hilgard" method, and by the Snowden method:

	Official.	Hilgard.	Snowden.
Lime—			
Soil No. 1.....	1.19	1.82	0.51
Soil No. 2.....	...	1.82	0.64
Magnesia—			
Soil No. 1.....	0.93	1.23	0.42
Soil No. 2.....	...	1.68	1.02

Sharp Contrast in Results.—It is evident from the above table that the length of digestion employed for the extraction of a soil's constituents has a great deal to do with the amount of lime and magnesia extracted so far as the ratio between the two materials is concerned, or, in other words, there is as large an amount of magnesia or a larger amount, obtained by the Snowden method than there is of the lime, whereas the opposite is true in the case of either of the other two methods. This is undoubtedly due to the fact that the magnesia compounds go into solution in the acid first, and in a very short period of digestion, such as that used by Doctor Snowden, the amount of magnesia shows up larger, and therefore would seem to indicate, when Loew's work is taken as a standard, that there is an abnormal ratio between the lime and magnesia. When the results of the other methods are examined, however, we find that the lime is not only not smaller than the magnesia in amount, but is actually larger and exhibits a ratio to the magnesia which is very much like that first recommended by Loew as the approximate ratio necessary between the two, for plants in general.

Not a Matter of Magnesia.—It would, therefore, seem from the table and the remarks above made, that there is no justification for believing that the excess of magnesia in the soils of the Covina groves is responsible for any abnormal condition in the tree whether it be chlorosis or any other. On the other hand, it is very important to point out here that not the total amount of lime, but the form of the lime in the soil has an important bearing on the productive power of a soil. For example, if lime is present in a soil in considerable amount as a total and yet only in very small amounts as the carbonate, the decomposition processes due to the decay of organic material may be instrumental in bringing about an acid condition of the soil, especially where green-manuring is followed, or where large amounts of barnyard manure are applied. In both cases, to be sure, that is whether the lime-magnesia ratio is not normal, or whether the lime carbonate is too small in amount to allow of an alkaline condition in the soil, the remedy would be the application of lime; but I think that it is exceedingly important to point out for what reason the lime should be applied, and not to base such lime applications on an erroneous notion.

The Right Reason for Using Lime.—The latter idea with reference to the form of lime in the soil is also borne out by tests which I have made on several soils sent me from Covina by some of the growers who are troubled with chlorosis in their groves, for I have found on testing these soils that they are either slightly or strongly acid in reaction when tested by our qualitative test with the litmus paper. It should also be stated here that, in addition to the fact of the erroneous basis on which lime applications are recommended from the results obtained by the Snowden method of digestion, the form of lime recommended for application is one which cannot neutralize the acidity in a soil if it exists. We have had inquiries from several growers asking whether it is advisable to apply large amounts of gypsum to the soil in order to establish a proper ratio between the lime and magnesia in the soil. One grower, it has been reported, has gone to the extent of applying 50 tons of gypsum to the acre where he was told an abnormal ratio existed between the lime and the magnesia. Now, while it is obvious that, if the latter was the trouble, gypsum would probably remedy it, it can also be plainly seen that, if it is merely a matter of acidity caused by the lack of lime carbonate and not by an abnormal lime and magnesia ratio, then only an application of alkaline lime, such as slacked lime or lime carbonate, could improve the condition of the soil, since gypsum is a neutral salt, like common table salt, and cannot neutralize the acidity of the soil. Moreover, grave dangers lie in the application of gypsum, to such an enormous extent as that just mentioned, for the reserve potash supply in the soil will thus be made available all at once, and in a short time will be instrumental in impoverishing the potash content of the soil.

Causes of Chlorosis.—The few facts which have come to light since we begun to look into the chlorosis of citrus trees seem to point to the conclusion with which I started out in this letter, namely, that a large variety of conditions, or in fact anything that will make for an abnormal condition of the soil may produce chlorosis; for example, in the case of the heavy soils of the Porterville groves, the experiments of Doctors Hilgard and Loughridge would seem to indicate that poor drainage conditions are responsible for the yellowing of the leaves on the trees and the dropping of the fruit. In other cases it would seem that a lack of moisture is responsible for this abnormal condition, and that will undoubtedly hold in the very light soils of the Covina district and in other sections of California where groves are planted on deep, coarse-grained soils which do not adequately retain their moisture. I believe that this same fact was pointed out to the growers in some parts of southern California some years ago by Doctor Hilgard when he was making an investigation into the moisture conditions of those soils. These and other manifestations, such as acidity, which we have had in the various groves in which chlorosis occurs, seem therefore to strengthen the idea that chlorosis is not a definite disease caused by any one factor and by no other, but rather may be a manifestation of anything which interferes with proper plant nutrition.

I believe, therefore, first, that if chemical analysis is to be brought in to help the solution of this problem it should be done by either our method or the official method, or one that is sufficiently like them to give concordant results, and results that more nearly approximate the actual conditions which exist in the soil.

Secondly, that the very rapid decomposition processes which take place in the soils of the arid region, which are irrigated, and the consequent solution of the lime carbonate from the surface layers and its washing downward to the lower layers of the soil, may be instrumental in producing acid soils which may bring about chlorosis. Therefore, means should be adopted, immediately, by the fruit grower to ascertain whether or not his soil is acid. This can be done very simply by the litmus-paper test which we shall be glad to describe to any grower who wishes to make it, or the samples can be sent to our laboratory to be tested for acidity.

Thirdly, the physical condition of the soil should be looked after in order to determine whether or not the proper water conditions exist there. In other words, we shall have to make sure of good drainage in the case of the heavy soils in order that the roots and the bacteria may have good conditions for their development. In the light soils we shall have to resort more largely to green-manuring and other means that may be in our power to improve the water-holding power of the soil. Among these may be mentioned the breaking up of plowpan or irrigation hardpan, irrigation with smaller amounts of water at more frequent intervals, so that the trees may have a larger supply throughout the whole season at their command, and perhaps by first packing the soil before arranging for the surface mulch through the summer, which must be carefully looked after in order to prevent evaporation so far as may be possible.

Investigation to Continue.—I believe it absolutely necessary that these facts and suggestions be given as much publicity as possible in order that the growers of the State may be acquainted with the facts which exist. To be sure, there is still a great deal of room for the investigation of this problem. We have only begun to get a few glimpses into the real nature of the factors which cause this undesirable and very harmful condition in our trees. It is hoped that present and future research will bring to light many more facts which will allow us to go at the eradication of the evil more systematically. However, I believe strongly that we should make use, in the most systematic manner, of the facts which we have at hand, and not start out on an erroneous basis to fight an evil by erroneous methods built thereon.

CHAS. B. LIPMAN.
University of California, Berkeley.

THOSE ROTTEN IMPORTED LEMONS.

The matter of the allowance for rotten fruit in lemon importations to which allusion was made in our issue of May 6, bids fair to be settled on a basis fairer to the home-grown fruit. It is reported from Washington that Assistant Secretary of the Treasury Curtis, on his return from New York, stated that he has determined to draft new rules covering the ascertainment of the proportion of rot in imported lemons. Heretofore the allowance for rot has been ascertained by estimating the percentage. Sample boxes, running about 5 per cent of a consignment, would be opened, and then inspectors run their hands down into the box turning over the fruit and estimating the loss. This loss usually ran from 10 to 50 or 60 per cent. Where it was less than 5 per cent no claim is ordinarily made by the importer. Under the new rules it is now stated the allowance will be ascertained by actually weighing the fruit in the sample boxes, separating the good from the bad and estimating on that basis. The result will furnish the percentage on which to figure the allowance. The new regulations will be shortly drawn up, and then they will be submitted to the representatives of the California producers.

THE TRANSFORMATION OF THE SAN JOAQUIN VALLEY.

(*Continued From Page 409.*)

figs in Stanislaus and Merced counties has been very large this season, it being estimated that 300,000 trees were set out. Figs are at home in the big valley, and this district will doubtless become as famous for its figs as Santa Clara has for its prunes, Fresno for its raisins and Riverside for oranges. The 25 acre Rogers Adriatic fig orchard east of Merced has proven a fine venture. Mr. Wilton stated that it had paid fine interest on $1000 valuation per acre. He also predicts a heavy planting of oranges and lemons in the foothills southeast of Merced next season, as conditions are right and considerable land has been secured for that purpose by southern growers.

From Merced north, through Livingstone, Atwater, Turlock, Ceres and Modesto one sees a very heavy acreage set to peaches. Most of the trees are young, but those old enough will have a good yield and prices will be good.

Both Atwater and Turlock have large fields set to sweet potatoes. At the former place more than 1000 acres have been planted, and at the latter fully 2500 acres are growing. Mr. Wilson told us of several growers at Atwater that raised $200 worth of sweet potatoes per acre last year—and it wasn't a good year for potatoes either. Another crop in these two sections is melons. Cantaloupes and watermelons each do amazingly well there and pay well watered dividends. The acreage at both places will be very large, nearly double this year over last.

The Southern Pacific railway will operate a special Eastern fruit train daily to take products grown between Merced and Manteca this season, which speaks for the development of the section.

And now once more back to the Merced exposition. We have not spoken of the poultry part of the show, which was exceptionally fine, and considering the circumstances, a good sized one. There were more than 350 birds shown, of which the valley furnished most, though there were a few from the southern part of the State, and a nice line from Petaluma, entered by Jack Lee. Stockton had a fine lot there, and our friend, W. A. French, seemed to be most in evidence with numbers and ribbons. A. R. Gurr, one of the PACIFIC RURAL PRESS subscribers of long standing, carried off most of the trophies for Merced county birds. He has but comparatively recently gone into the poultry business, but has now at his ranch, 4½ miles west of Merced, over 600 laying hens and has hatched out about 12,000 chicks this season. Another successful poultry raiser of that section is Mr. Petty of Turlock, who has 1500 laying Leghorns and will incubate 12,000 eggs this season.

And now we are done. A great deal more could have been said for both the east and west sides of the valley as well as the center, instances could be cited innumerable of successes and failures, the same as in every community. We trust that it will not be long before Madera county will show the same marvelous growth. Already the first efforts are being made to secure plenty of irrigation water preparatory to the subdivision of the land. If we have been able to show what has taken place in the heart of the San Joaquin during the past few years—what has caused land to advance in value from $15 per acre to $200 and even $300 an acre—it will be what we have tried to do.

GROWING ALFALFA IN CULTIVATED ROWS.

To the Editor: I do not know to what extent alfalfa has been grown by simply following the rules laid down for "cultivating" corn, potatoes, or other crops where no irrigation is practicable. An experiment made by sowing alfalfa in drills 20 inches apart and cultivated in the ordinary way, shows the plan to be eminently successful. The growth in two months is equal or better than a year's growth sown broadcast, when the seed takes its chance with all other seeds that may be in the land. As is well known, alfalfa is an uncertain crop if sown broadcast, without means of irrigating. If sown too early, frost or excessive winter rains may destroy it. If sown in the spring, unless late rains occur, it is doubtful if the roots of many plants will have penetrated deep enough before surface is dry and baked. The growth, at best, is poor, and if a fair amount of the plants survive the summer's drouth, the owner is in luck. The next year, gophers commence a systematic attack and soon kill out the crop. All farmers are familiar with these facts, and now-a-days few will sow alfalfa unless abundant provision has been made for irrigating. The experiment made shows conclusively that alfalfa may be profitably and easily grown anywhere in California where corn may be grown without irrigation, or, in other words, on average farming land, where the rainfall is not less than about 15 inches; the cultivating also keeps the gophers away. LEONARD COATES.

Morganhill, Cal.

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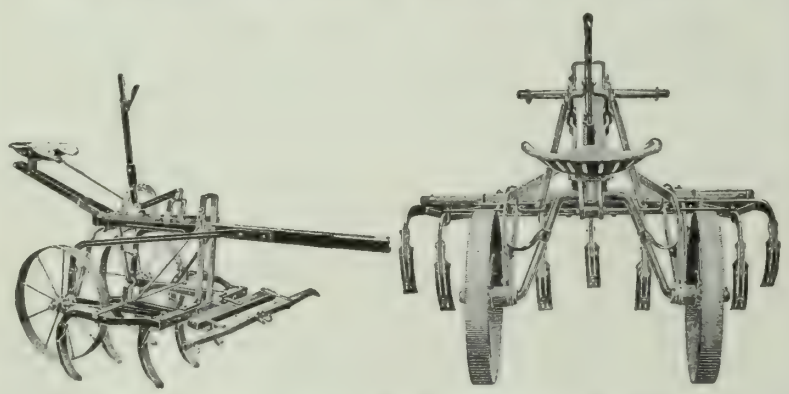
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COMFORT AT THE STATE FAIR.

To the Editor: In your last issue you speak of the reorganization of the State Board of Agriculture, with a new president leading the board in reforms. There is one reform I would respectfully commend to the notice of the board through your columns, if you will allow me; that is, to give some slight consideration to elementary principles in connection with the comfort of the people who pay for admission to the fair, more particularly needed in the case of women and children.

If the aforesaid women and children had been quadrupeds, or feathered bipeds, the intervention of the Humane Society would have been promptly invoked at the last fair, for prevention of cruelty to animals, by depriving them of any opportunity of getting a drink of water, or any place of rest. It was pitiful to see the distress, among the little folks especially. Cursing, deep and sometimes loud, was to be heard at the wanton neglect to provide the means of quenching thirst on stifling hot afternoons, except by going to a lemonade stand and paying for it; "graft" was generally considered to be the explanation of this inhuman treatment; whether correctly or not is another matter. I myself drew the attention of officials to the neglect; on the second or third day of the fair a solitary water container of about ten gallons was set up near the entrance of the central building; it was emptied in quick time; but it seemed to be no one's business to refill it, except once in a great while; perhaps it too seriously affected the lemonade sales.

As to seats for the accommodation of weary folk who had been on their feet for hours, there seemed to be absolutely none, except in one free grand stand; but no woman with children at her heels could venture to ascend in the face of a dense crowd. It was a choice between standing inside a roasting hot building, or wandering about, parched with thirst, with no seat or a single shade tree on an arid waste outside. It is to be hoped that the new management will pay more attention to the comfort of visitors.

Sebastopol. JOHN BENNETT.

FROM the latest consular reports it has been found that numerous olive orchards in the Aleppo district were so badly damaged by severe frosts during the last winter that hardly any crop can be expected this year. Throughout the whole of the Syrian orchards the damage was extensive and it will probably be at least five years before the trees reach their normal condition. Besides the large amount of oil used in the country there is normally a large amount exported, all of which will be cut off this year, and importations made instead.

Graduates of the Agricultural Department of the University of Missouri are in greater demand than those from any other department of the school. They have opportunities to start work in their profession at better salaries, and the opportunities are more plentiful; and this is true of other States as well as Missouri, going to show that trained brains are appreciated in the business of farming as well as in other occupations.

Several losses of horses have been sustained recently in the vicinity of Livermore through horse thieves who have driven off the animals to sell in other places. The sheriff is hunting for the guilty parties.

Elias Gallum of Kings county has just imported some fancy Poland-China stock which will be used in keeping his herd up to the latest date.

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The No-Rim-Cut tire has no hooks on the base. No tire bolts are needed to hold it on.

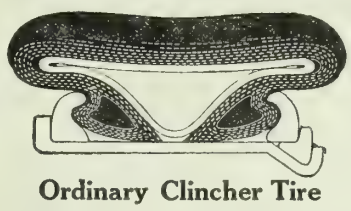
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This oversize takes care of your extras—top, glass front, etc. It avoids the overloading which causes blow-outs on nine cars in ten which have skimpy tires.

These two features together—No-Rim-Cut and oversize—will under average conditions, cut tire bills in two. Yet these tires cost you nothing more than other standard tires. Do you wonder that men who know these tires insist on getting them?

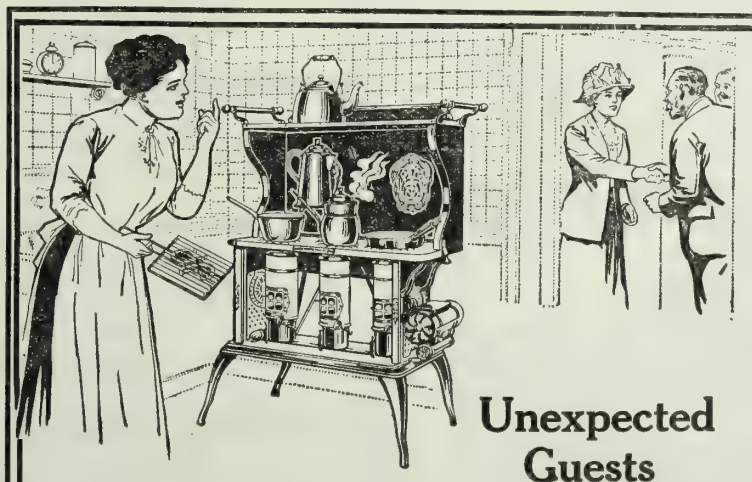
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She had it lit in a moment, and her guests hardly were seated on the porch before a hearty hot meal was ready for the table—sausages and eggs and long rashers of streaky bacon, and rolls just crisped in the oven and fresh coffee—and the hostess herself as cool and neat as if she had not been near the kitchen.

She never could have managed it with an old-fashioned range. The New Perfection is the quickest, most convenient and best cooker on the market.

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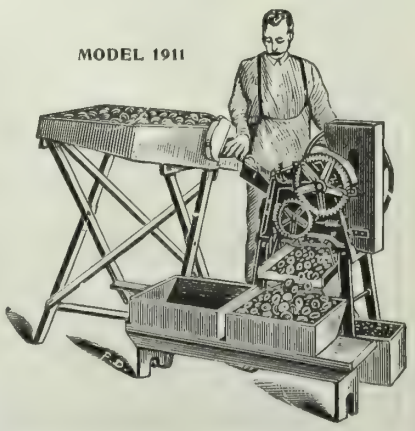
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Northern Methods With Alfalfa.

The way the younger alfalfa growers in the irrigated regions of eastern Washington are doing their work may be interesting to the pioneer alfalfa growers of California, for they are doing some rather new things:

SOWING IN THE DRY SEASON.—Mr. Burton O. Lunn, in the Irrigator, says that any time after the 15th of April and before the 25th of September will do for the planting of alfalfa in the Yakima valley. When planted in the early spring it is often sown with wheat, oats, or barley, but generally with bluestem wheat, planting about a bushel of wheat to an acre and 10 or 12 pounds of alfalfa.

"The seed is planted in many ways, but in the Yakima valley the best results are obtained by using a wheelbarrow planter; it does satisfactory work in the wind and distributes the seed very uniformly. Cyclone broadcast seeders are used to good advantage if the wind is not blowing strongly.

"When planting during the dry season, in some soils it is necessary to harrow to cover the seed before irrigation, but generally when the ditcher is used, making marks about two feet apart, the movements of the marker covers the seed sufficiently.

"The basic principle of successful irrigation is getting the soil wet quick and then turning it off. This fact makes it inadvisable to try to raise alfalfa where the water-supply is not abundant, or where a large head cannot be secured at one time. Therefore, alfalfa is a very poor crop to try to raise under a pumping system, unless the project has a reservoir to supply a large head when it is needed. This is especially found to be true in the irrigation of the second and third crops.

"The entire field must be irrigated immediately after the hay has been hauled off or the alfalfa will wilt or burn in the hot sun, diminishing the following cuttings.

"In the first irrigation after sowing the seed, much care should be exercised to keep the soil very moist so it will be soft and not bake, rendering it easy for the young tender sprouts to shoot through. It should be kept moist until three or four leaves appear, after which it should be watered frequently enough to keep the soil from baking, and nicely moist. It should not be allowed to get so damp that it will be scalded in the hot sun. The right condition of the ground can be told after the hay has covered it, by the color of the plants. This color should be a bright, healthy green. If the plants start to turn yellow while being watered or immediately afterward, too much water is being used, and the plants are scalding. Or, if the alfalfa begins to take on a very dark-green hue, especially noticeable in the leaves near the top, the crop needs water. The top leaves should always be of a lighter green than the balance of the foliage when the crop is in healthy condition and growing as it should.

"The banks of the head ditches where the horse-mower leaves the alfalfa uncut should be mown with a scythe and cleaned out after each cutting so that a good head of water can pass through. The small ditches or 'marks' may be cleaned out when necessary with a shovel ditcher on which the driver can ride.

"The time for the first cutting depends on whether the season is early or late, but should occur after the blossoms are well out and start to dry.

"In the Yakima valley, alfalfa is cut three times during the season, but in lower altitudes and sections with longer season it is cut four times. The first cutting yields two and one-half to three tons per acre; the second cutting about two and one-half tons. and the third cutting about two tons. Where there is a fourth cutting it generally yields a ton and a half. These figures are conservative. I have averaged eight tons per acre in three cuttings on 160 acres the year following planting.

"The first cutting is the best feed for horses, because it is riper and less watery; the later cuttings are better for cattle, because they are softer and more easily eaten."



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Let us tell you about our Suburban Walnut Homes in Contra Costa County, and our Easy Payment Plan.

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We can supply you with any size and quantity of Standard Pipe or Casing—all new threads and couplings—all stock guaranteed first class.

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A CARTRIDGE CHARGED WITH DEATH—Positively the most effective method known for exterminating burrowing pests. Better than poison, for it is absolutely safe and acts ONLY on pests that burrow. Tests made by the Department of Agriculture resulted inunqualified satisfaction. Awarded the Grand Prize A.-Y.-P. E., Seattle. Simple, safe, effective. Send for booklet. Sold by Dealers. If not, write to Hitt Fireworks Co., Seattle, Wash.

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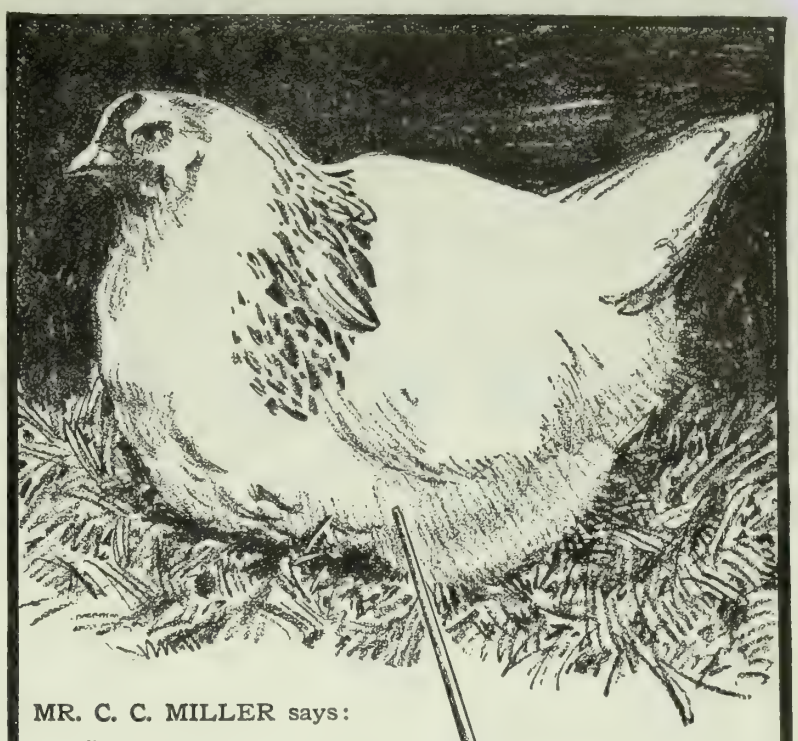
Railroading People Into Farming.

"When a railroad can't make expenses it goes into the hands of a receiver. When a man on a salary can't make expenses he wants to get into the chicken-raising business."—Daily paper.

To the Editor: It would be better for the man who cannot make good on a salary—be he clerk, mechanic, or of whatever trade or profession—to go through the formality followed by the impecunious railway company; as his failure as a man on a salary was probably due to a lack of just the qualifications requisite in the successful poultryman. These, for the beginner, are, primarily, great self-denial, willingness to work hard for small compensation, and long hours. If such a man goes into the poultry business expecting immediate profits, he will be sadly disappointed. If he expects to make a comfortable living "right from the jump," he will find the results far from coming up to his expectations. If it is long hours he seeks to avoid, he had far, far better stick to his desk or bench. Unfortunately, the poultry business, more than any other rural pursuit, lends itself to alluring figures, and too much advantage is taken of this fact by irresponsible writers for irresponsible journals. It is not too much to say that during the last few years several hundreds of people have been lured by these journals, assisted by the land boomers, into embarking their small savings in this business, of the essential points of which they knew practically nothing. Luckily, there are a few conservative writers and journals who have presented the facts in their true light, with the result that there are fewer incompetents throwing their money into a business they do not understand and who have not the qualifications to overcome the preliminary difficulties, do the hard work for long hours, and practise the economy necessary before even a measurable degree of success can be attained. We have all heard of the old woman who counted her chicks before they were hatched.

But by all this we do not wish to discourage anyone having an inclination that way from going into the poultry business, provided he has capital enough to tide him over the first stages and feels that he has the necessary qualifications as outlined above. What we would like to impress upon him, however, is, after he has failed in other lines, and decides to "try his luck" at poultry raising, to pause and make sure he is the man for that business. We are opposed to gambling in any form, but to the man who just wants to "try his luck" we are almost inclined to suggest the green cloth, the racetrack, or the bucket shop. Through these channels he will get much quicker action, while the result will be practically the same. Some grocerymen make money; others fail. Some lawyers make princely fortunes; some do not. Many poultrymen make good money, but they are the men who have carefully studied and thoroughly understand their business and did not go broke "trying their luck." The poultry industry has furnished more than its fair share of failures, and most of them can be traced to the people who wanted to "try their luck." This has resulted in keeping out of the business many who had the proper attributes for successful poultry farmers. A glance at the figures of imports of eggs and live poultry from Eastern and Middle States, and the fact that the "chicken dinner" has still to be regarded as a luxury to be indulged in only upon occasions by the average wage-earner, will go far to show that California is in no immediate danger of the approach of that bugbear—overproduction.

San Francisco. OBSERVER.



MR. C. C. MILLER says:

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A man who understands the poultry business will find our small farms in the Sacramento Valley the ideal place to raise chickens and produce eggs. He doesn't have to own a large acreage,—

"Twenty's Plenty—Forty's a Fortune"

Green feed, such as alfalfa, forms two-thirds of a chicken's diet, and here the hens can forage in the field practically every month in the year.

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The Sacramento Valley Irrigation Co.

will sell you a 20 to 80 acre farm for $125 an acre on very easy terms.

$15 DOWN THAT'S ALL **$11 A YEAR** THAT'S EASY

If you are willing to work you win. The climate, the soil and an abundance of water during the irrigation season are your helpers. If you want to be a king of your own little kingdom, be independent and make money, write today for full information.

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HIGH GRADE CITRUS TREES

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I deal direct with the consumer. My lumber is brought direct from the forest. Latest improved machinery. Up-to-date methods. A two cent stamp and some paper will show you that I can increase the purchasing power of your dollars. Redwood Tanks, Picking Boxes, Peach Boxes, Drying Trays, Egg Cases. A tank 5 ft. diameter, 2½ ft. deep, $7.50. A tank 6 ft. diameter, 2½ ft. deep, $10.50. A tank 8 ft diameter, 2½ ft. deep, $13.50. Spraying tanks.

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SAN FRANCISCO SULPHUR COMPANY Importers and Refiners of

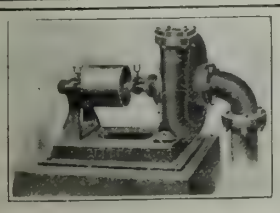
"Anchor" Brand, Velvet Flowers of Sulphur; "Volcano" Brand, Sublimed Flowers of Sulphur; "Tiger" Brand, Sublimed Sulphur; "Diamond S" Brand, Refined Flour Sulphur; "Fruit" Brand, Powdered Sulphur, Roll or Stick, Refined Lump.

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Improved machinery and methods enable us to sell you this pump for less than you can buy any other make.

Our retail prices are less than our competitors' wholesale prices.

We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.

PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

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Largest dealers in all kinds of

SECOND HAND STANDARD PIPE AND SCREW CASING

We make a specialty of IRRIGATING PLANTS

Write for information and Prices. Mention this paper.

AGRICULTURAL REVIEW.

With the Fruit Men.

Deciduous fruit growers of Ventura county are prefecting a dried fruit men's association.

C. A. Foster, a nurseryman of Dixon, has signed a contract for 2,500,000 fruit trees, to be furnished in five years.

The pear crop appears to be in good shape, a heavy crop being in prospect except where the thrips have been strong.

Land enough is being prepared for apple planting at Cohasset, Butte county, to double the acreage. A heavy crop is expected there this year.

About 110 cars of early grapes will be shipped from southern California this summer.

Oranges in the Porterville region are said to be setting nicely, with prospects, if the weather continues good, for a record crop.

Committees have been appointed and active work started for the 1911 Apple Annual at Watsonville.

Walnuts are reported to be setting well in southern California and the blight is said to be doing less injury than a year ago. Considerable grafting from trees showing blight resistance has been done, with apparently good results.

Placer county fruit varies greatly in different sections, as the frost has killed all the crop in some places, while in others a fall crop will be harvested. Hay in the valley part of the county is good.

A meeting was held Thursday afternoon of representatives from the orange-growing districts of southern California to consider improvements in the quality of the fruit pack.

Two fruit trains a day will be run out of Fresno this year, one to the bay cities, the other to Chicago. The Chicago train will make the trip in 6½ days.

The Sonoma county berry growers' association has fixed the prices for picking blackberries at $14 per ton and 3½ cents per drawer of five pounds.

Deciduous Fruit Conditions.

Sacramento, Cal., May 20, 1911.

The following gives number of cars of deciduous fruit shipped to all points by all members of the California Fruit Distributors for the week ending Friday night, May 19, 1911:

Cherries (five cars)—Cherries have ripened very slowly during the last week, but are expected to come forward more rapidly during the next ten days, as the weather, which has heretofore been cool, has changed and it is now very pleasant. Owing to the cool weather the quality of the fruit should be fine.

Apricots—Since our last letter there has been no change in the apricot situation, except that the crop in the Winters section perhaps looks a little more promising than it did. The fruit is absolutely clean and promises to be of fine size.

Plums—The plum crop continues to look fine and some varieties are so heavily laden that they are now being thinned. This will not be necessary on several of our best varieties, and it is expected that the crop will be as good as heretofore indicated.

Peaches—There is no particular change in the peach situation, except that there are some indications of a heavier drop than usual in June.

Bartlett Pears—There has been a little change in the situation on this variety, especially in the river section. While some orchards have lost practically their whole crop owing to the thrips, the orchards unaffected will produce a larger crop than usual, and it is now expected that the crop of this section will be fully equal to that of last year. The fruit is large and fine and free from scab and other defects.

Grapes continue to look very promising.

General Agriculture.

In the Santa Ana district 13,000 acres have been set to lima beans and 3000 to blackeyes.

On May 4 a carload of potatoes containing scab was received at San Luis Obispo, some of which were sold, but found by inspectors and condemned. A close watch is being kept by commissioners to prevent more of the shipment from being planted.

The first big shipment of red onions from Stockton this year brought the growers $2.30 per sack.

On account of the shortage in the hay crop there has been a considerable deman for alfalfa this spring. Because of the late cool weather the grain and hay both look better than some weeks ago. The hay crop has been increased on account of the frost spoiling the heading of wheat and barley. Except in a few places the grain hay will not amount to more than 60 or 75 per cent of a crop, and grain even less.

The California cotton crop, according to Washington reports, averaged 335 pounds per acre, all the cotton being of high quality. Missouri, second in pounds per acre, produced but 285 pounds.

Several contracts to raise pea seed have been made around San Leandro, Alameda county, this year. Although green peas have been raised in large quantity, seed peas are being tried for the first time in many years on a large scale. The tomato planting this year in lower Alameda county is a little larger than usual, and the rhubarb acreage is also increasing.

Henry Miller, of Miller & Lux, has offered a large tract of land to the city of Bakersfield for $60,000 provided it shall be called Miller Park. With another name the price is to be $80,000.

Miscellaneous.

Bids for construction work have been called for by the directors of the South San Joaquin irrigation district, at Manteca.

The old sugar mill at Watsonville is being dismantled and the machinery shipped to Fallon, Nevada.

Members of the Shasta County Farmers' Protective Association have again declared war against the Balaklala smelters, claiming that they have not observed the decrees of the court in previous suits.

The grass in the northern part of the State is in unusually good shape this year, owing to the heavy rains that came last winter, and the rain of May 16, which soaked the ground again.

A barbecue was held at Tipton, Tulare county, this week to burn the irrigation bonds recently paid off.

D. A. Keith of San Francisco has purchased a 20-acre ranch near Petaluma, on which he will raise pigeons.

A large honey crop will be taken in by Tulare county apairists this year, in spite of poor prospects early in the season. The San Bernardino honey crop will be exceptionally large.

A syndicate of Belgian capitalists have purchased the Pan-American ostrich farm near Phoenix, Arizona.

The Great Western Electric Power Company will build, at Big Meadows, a reservoir which will hold sufficient water to irrigate 300,000 acres of land.

The grape juice factory at Lodi has been sold under foreclosure proceedings for $17,500.

QUALITY
IN
FUMIGATION CYANIDE
IS THE IMPORTANT CONSIDERATION

The best authorities unanimously agree that for the effectual generation of Hydrocyanic acid gas a Cyanide should not contain in excess of 1 per cent of Chloride of Sodium (common salt). A higher percentage of this ingredient materially reduces the available amount of gas by the process of decomposition.

It is well worth your while to verify this statement, and when in doubt as to the Sodium Chloride content of a Cyanide, have a reputable chemist furnish you an analysis. It may prove a good investment.

The Roessler & Hasslacher Chemical Co.'s Special Fumigating Cyanide of Potassium 98-99 per cent and Cyanide of Sodium 128-130 per cent is manufactured expressly for fumigating. Contains no excess of chloride of sodium. It generates quickly. Reliable, Efficient, Economical.

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SELLING AGENTS
363-371 NEW HIGH ST., LOS ANGELES

JOIN THE
GOLDEN STATE EXCURSION
THE HIGH CLASS PERSONALLY CONDUCTED EXCURSION TO
OREGON, WASHINGTON and the CANADIAN ROCKIES

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ROUND TRIP - - $82.50

Including sleeping accomodations, meals and sight-seeing trips en route to Seattle

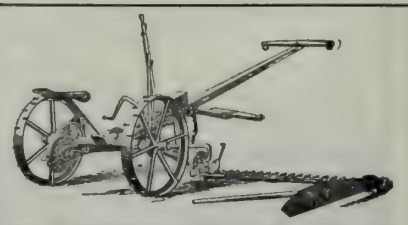
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BROADWAY AND 13th STREETS, OAKLAND

WANTED
Situation to keep ranch accounts by a competent book-keeper. Address
THOMAS W. WARD,
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To Exterminate
GROUND SQUIRRELS, GOPHERS, also BORERS, ROOT APHIS, etc. on Fruit Trees.
Carbon Bisulphide
Is the only effective remedy.
For sale by dealers and manufacturers.
WHEELER, REYNOLDS & STAUFFER
OFFICE 624 California St., San Francisco.



The Milwaukee Chain Drive Mower
Smooth Running, Strong and Durable. If you cannot find it at your dealers, write us
THE H. C. SHAW CO., Stockton, Cal.
Catalogues mailed on request

University Hog Cholera Serum.

In connection with a recent allusion to hog cholera, we stated that the legislature then in session was contemplating provision for the manufacture of hog cholera serum at the University and the free distribution thereof. This bill, by Mr. Stuckenbruck, was duly passed and has been approved by Governor Johnson. The money under the rules will not be available until June 28, but the regents of the University have arranged to advance it so that the serum manufacturing outfit can be immediately secured and the product ready for distribution this fall. The following is the new law regulating the procedure:

Section 1. The regents of the University of California are hereby directed to cause to be prosecuted with all possible diligence, through the agricultural experiment station, the preparation of seriums or vaccines that will produce immunity in hogs against the disease known as cholera.

Sec. 2. The regents of the University of California are hereby further authorized and directed to furnish such serums or vaccines in quantities not exceeding five hundred cubic centimeters as soon as possible after this act takes effect free of charge to any bona fide resident of the State of California who is engaged in the raising of hogs, upon application by such resident hog raiser.

Sec. 3. The regents of the University of California are also hereby further authorized and directed to furnish to any bona fide resident of this State, who is engaged in the raising of hogs, such serums or vaccines in quantities in excess of five hundred cubic centimeters, upon the applicant paying therefor the actual cost of the production of such serums or vaccines.

Sec. 4. It is herewith provided that no serums or vaccines shall be furnished free of charge to anyone unless the applicant shall have first furnished sufficient evidence that the disease known as cholera exists among his hogs or among the hogs in his immediate neighborhood, and in such latter case evidence shall be furnished by said applicant that there is danger of the disease being communicated to the applicant's hogs.

Sec. 5. Any person who shall sell, give away or misuse any of the serums so furnished shall, upon conviction thereof be deemed guilty of a disdemeanor, and be punished as in such cases provided by law.

Sec. 6. The director of the Agricultural Experiment Station shall obtain and establish such assistance, equipment, materials, appliances, apparatus and other necessary incidentals as may be necessary to the successful prosecution of this work within the appropriation herein specified.

Sec. 7. The sum of sixteen thousand dollars is hereby appropriated out of any money in the State treasury not otherwise appropriated, six thousand dollars of which shall be available for the balance of the sixty-second fiscal year and ten thousand dollars of which shall be available during the sixty-third and sixty-fourth fiscal years for the use of said experiment station to be expended by the regents of the University of California in carrying out the purposes of this act, and the State controller is hereby authorized and directed to draw his warrant for the same, and the State treasurer is hereby directed to pay such warrant.

Sec. 8. All money appropriated under this act, and all money received for the sale of said serums or vaccines as provided for in section three of this act, shall be paid to the regents of the University of California, and shall be expended under the direction of the director of the Agricultural Experiment Station of said university for the specific purposes herein named.

NEW ANTI-DISEASE LAWS.

In addition to the new hog cholera serum law, which we have already printed in full, other diseases preventive or reduction laws were passed, of which are outlined as follows:

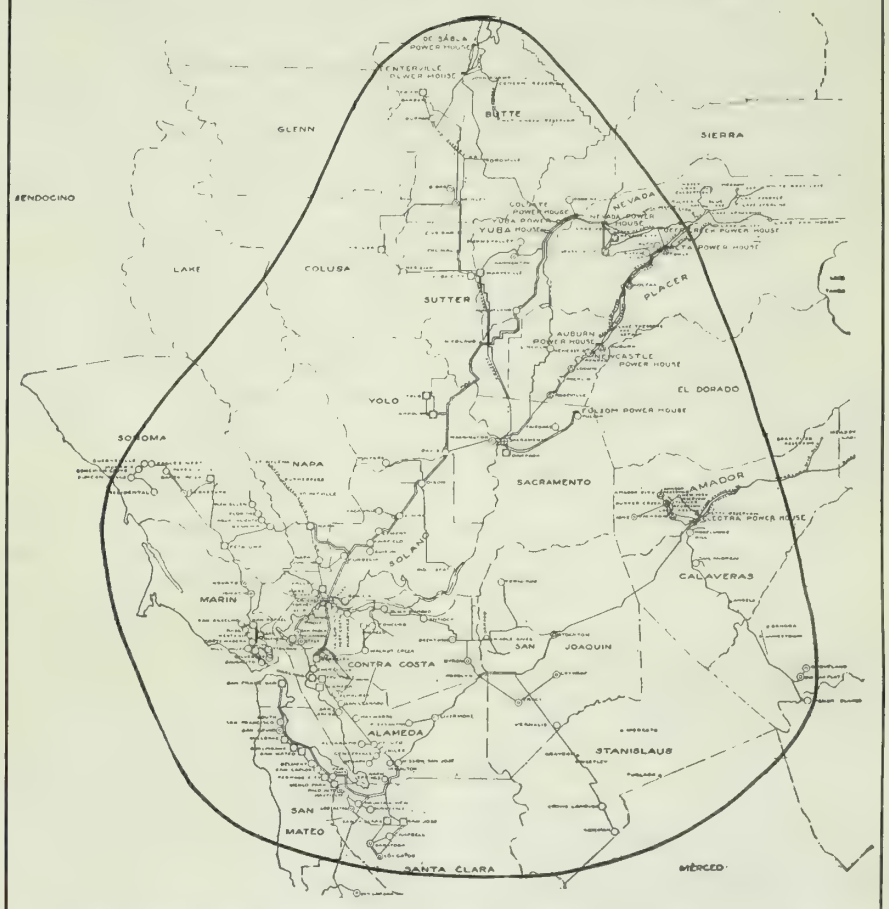
Senate bill No. 541 and 542 are intended to prevent the importation of diseased live stock, and should prove very valuable if properly enforced. Act No. 541 prohibits the importation of meat cattle for dairy or breeding purposes except accompanied by a veterinarian certificate that they have been examined and subjected to the tuberculin test and are free from disease. Act No. 542 prevents the importation of horses, mules and asses affected with glanders, and requires a certificate that such animals have been examined and subjected to the mallein test and are free from disease.

Senate bill No. 548, empowers the State Veterinarian to employ throughout the sixty-third and sixty-fourth fiscal years such inspectors as he may deem necessary to inspect and supervise the dipping of sheep infected and exposed to the disease known as scabies, and provides for their compensation and expenses. The Butchers' Journal says: "We all know how the flocks of the State have been already benefited by the action of the veterinarian's office in this direction, and we believe that before the expiration of the time allowed scabies will be thoroughly eradicated." In relation to the above, Senate Bills Nos. 544 and 545 repeal an act of March 24, 1903, "Creating the office of sheep inspector, etc." and an act of March 23, 1907, "Providing for the inspection of sheep, etc."

A first annual poultry show was held at Hanford, from May 23 to 27, this week, in connection with the Kings county carnival.

CHEAPER By Electricity Than Your Present

COST FOR ATTENDANCE



If you pump by steam anywhere inside the heavy line. Ask our nearest district manager or write us.

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Soy Bean MEAL

PROTEIN EXCEEDING 44%

For Cattle, Poultry and all Farm Animals

Will double your milk, cream and egg supply.

Takes the place of BEEF SCRAPS for laying hens at about half the cost.

ANALYSIS:

Protein	46%
Fat	9.91%
Crude Fibre	3.82%
Ash (Mineral matter)	6.36%
Carbohydrates	24.93%
Water	9.98%

Analysis furnished by Curtis & Tompkins, Chemists, 108 Front St., San Francisco.

To the INTELLIGENT farmer the above will tell its story.

Soy Bean Meal is indorsed by the United States Department of Agriculture and many university experiment stations as one of the best concentrated foods obtainable.

Write for booklet "SYSTEMATIC FEEDING AND THE VALUE OF SOY BEAN MEAL."
(Off the press June 1st)

For Sale by all Feed Dealers. If your dealer cannot supply you, please send us his name and address.
Samples supplied by us on application.

North American Mercantile Co.

318-320 Front Street **San Francisco, California**

Glanders in California.

By Dr. CHARLES KEANE, State Veternarian, Sacramento.

This disease continues to be a menace to the horse and mule industry of this State. Since the enactment of the act of March 19, 1909, requiring the reporting by veterinarians of glanders to this office, more or less systematic efforts have been made to eradicate this infection. However, some conception of the prevalence of this disease among equines in California might be gleaned from the number of reports that we have received after the passage of this act.

THE OLD WAY.—Prior to the enactment of this law a horse or mule affected with glanders might be brought to a veterinarian, who, after diagnosing the disease, would advise the owner to destroy the animal and tests the contacts. While in some instances the veterinarian's advice would be followed, in other instances, however, it would not. In the latter case it was more than likely that the affected animal would be sold or traded, and in this manner scatter the disease to other animals. It was a very common practice to hear of a horse affected with chronic glanders change ownership a number of times. Just as soon as the owner suspected or was informed of the condition of the animal, he traded it off or sold it. Of course, in a number of instances this was done without the owner having a true knowledge of the dangerous nature of the disease.

THE NEW WAY.—With the enactment of the law requiring the immediate reporting of such cases to the State Veterinarian, we have been enabled to early investigate each outbreak of this disease, cause the clinically affected animals to be destroyed, and test the contact animals for the purpose of ascertaining if any of them are affected internally without exhibiting external symptoms of this disease.

It can readily be seen how necessary it is for this department to obtain an early report of an outbreak of glanders, in order that adequate measures may be taken to exterminate the disease and prevent its further dissemination among healthy animals.

DETECTION OF GLANDERS.—Quite as important is the detection of occult cases of this disease; that is, those cases in which the lesions are confined to the internal organs. It is here that the difficult part of our work is presented. After testing a number of animals with which one clinical case of glanders has been in contact, we invariably find one or more animals which react to the test, showing that they are affected with the disease internally. In many instances these animals appear to be, from all external appearances, just as healthy as animals which have passed the test, and it is a difficult matter at times to convince the owners that these animals are also affected with glanders.

Glanders is similar to tuberculosis in many respects, one of which is that an animal may be affected and still show very little loss of condition. Then, again, infection in these animals may be of recent origin and the lesions so slight as not to affect as yet the general economy of the animal. Still, if these animals are allowed to live and constantly come into contact with healthy animals, they are capable of spreading the infection. The history of glanders has repeatedly shown that where only the clinical cases were destroyed in a stable or on a ranch, and the remaining contact animals left untouched, the disease would reappear in the form of clinical cases from time to time.

TESTS FOR GLANDERS.—There are several tests that are used for glanders, but the most universally recognized one is the mallein test. Mallein is a biological product prepared in a laboratory from the growth and development of an artificial culture of the germ that causes this disease (Bacillus mallei). After a suitable growth of the organism in an incubator, all life in the culture is destroyed by heat, and the dead germs are later filtered out. The filtrate is the substance used in the mallein test. When injected subcutaneously into animals affected with either the external or internal forms of glanders it causes an appreciable rise of body temperature and quite often considerable edema at seat of injection, malaise, etc. In the hands of a veterinarian who is careful, and with the use of approved mallein, the percentage of errors in diagnosis is exceedingly small.

DESTROYING DISEASED ANIMALS.—While an owner in possession of one or more horses or mules affected with glanders should, in protecting his other animals from this disease, be glad to destroy them, it appears to the writer that the destruction of one or more animals affected with this disease is a protection to the entire horse and mule industry of the State. It seems, then, that some equitable measure should be adopted by this State to reimburse owners for a part of the value of an animal destroyed for glanders. This seems particularly just in cases in which the animals are able to work. This system is in vogue in several of the Eastern States of this country, as well as in the Dominion of Canada. There are two means by which this can be accomplished—namely, either by a direct appropriation for this purpose, or by enacting legislation taxing the horse and mule industry of California for this specific purpose. I am rather inclined to favor the latter. I realize that it would be difficult to obtain a sufficient appropriation from the legislature for this purpose. In the past twelve months the value of horses and mules killed for glanders in California, computing their value at about $100 per head, was approximately $70,000. If owners were reimbursed a part of the value of destroyed animals, this amount would be raised considerably on account of the fact that many more cases of glanders would be reported to this office directly by the owners, instead, as happens in many instances now, of being kept hidden.

Such a system of reimbursement would in a likewise manner assist greatly in the work of extermination of this disease. While the fund for this purpose would necessarily require to be quite large for the first two to four years, it would only be a comparatively short time when by legislative action the rate of taxation could be lowered on account of the fact that the bulk of the work of glanders extermination would be accomplished during the first years after this system was adopted.

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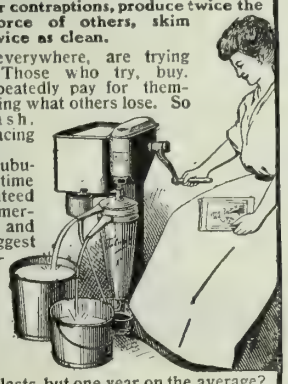
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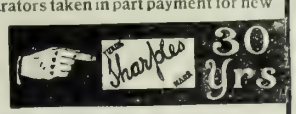


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Grazing in the National Forests.

To the Editor: The decisions handed down by the Supreme Court, on May 1, concerning the right of the government to control grazing on the National Forests are of great interest to Western people, and especially to the Western stockmen. The right of the government to control its own lands within the various States and Territories is so clearly defined that it is regarded by Secretary Wilson as establishing absolutely the position these lands occupy under the law. "I am very sure," said Secretary Wilson today, "that the stockmen of the West, as well as the Western people generally, will accept this decision of the Supreme Court at its full worth and that the controversy which has heretofore existed regarding the right to use the grazing lands within the various National Forests without permit from the Department of Agriculture will be brought to an end.

"The two cases decided were the so-called Light case, which originated in Colorado, and the case of the United States against Grimaud, Carajous and Inda, three California stockmen. In the Light case one of the principal issues joined was on the question whether the fence laws of the State must be complied with in order that the United States might sustain action for trespass on the National Forests. The California case concerned the question whether the violation of the National Forest regulations is punishable as a crime.

"Light is a Colorado stockman who, in 1906, turned his cattle loose on public land adjacent to the Holy Cross National Forest in such a way that they would naturally drift upon National Forest lands. Mr. Light refused to take any steps to prevent this and also refused to take out a grazing permit. It was maintained by Light's lawyers that, inasmuch as the laws of Colorado do not allow a private person any remedy against owners of stock which stray upon his land unless the land is fenced, the government is without redress. An injunction was secured from the District Court requiring Mr. Light so to handle his stock as to prevent them from trespassing upon the National Forest. Mr. Light, however, refused to do this and, with the backing of other stockmen of his State and, eventually, of the State of Colorado itself, which made a special appropriation for the purpose, carried the case up to the Supreme Court for final decision.

"In the effort to establish the contention that the government was wrong, not only the validity of the grazing regulations, but the constitutionality of the entire National Forest policy was challenged on every ground which the counsel representing the stock interests and the State were able to raise. The fact that their contentions were, one after the other, set aside by clear-cut statements of the law is a matter of extreme satisfaction to me.

"In the second case, known as the Grimaud case, the contention of the stockmen was that the act of Congress under which the Secretary of Agriculture is authorized to make regulations for the National Forests, was unconstitutional in so far as it delegated to the Secretary of Agriculture the power to make rules and regulations and made a violation thereof a penal offense. The unanimous decision of the case is exceptionally clear-cut and final. The power of Congress to authorize the Secretary to establish such regulations for the administration of these forests is absolute, the court holding that Congress had the full power to authorize the Secretary to make these regulations and enforce them. The punishment was fixed by Congress and the Secretary's regulation merely provided the methods of enforcing the law, and, in the event of violation, of applying the penalty fixed by the law. As the court in its decision says, the Secretary is authorized 'to regulate the occupancy and use and to preserve the forests from destruction.' A violation of reasonable rules regulating the use and occupancy of the property is made a crime, not by the Secretary, but by Congress. The statute, not the Secretary, fixes the penalty."

"I feel very certain," the secretary stated, "now that these questions are so definitely settled, that we shall have no further trouble in regulating the use of National Forest ranges by live stock. Indeed, we have had very little for some time, because the stockmen themselves, although originally inclined to resent the interference of the government with their long and uncontrolled us of the lands now within these Forests, have, recently accepted the situation and are rapidly realizing that their occupancy of these grazing lands is vastly more satisfactory under present conditions than it was in the old days when these areas were open to all comers and it was a constant struggle to obtain feed for their herds."

Washington, D. C., May 15. S.

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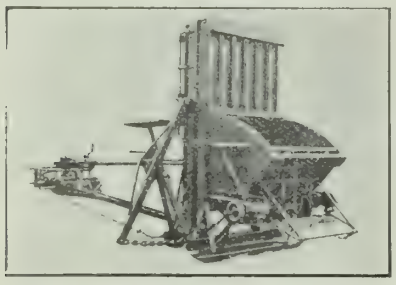
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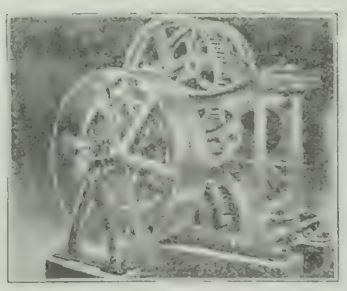
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LIVE STOCK NOTES.

J. W. Alderson, who recently purchased a ranch near Elmira, has started raising thoroughbred Duroc-Jersey hogs. He will also raise Rhode Island Reds and White Leghorn poultry.

M. P. Garesinno of San Francisco and Frank McGovern of Petaluma have been purchasing horses for city use in Sonoma county recently.

Among the recent sales of Dutch Belted cattle made by U. G. Strader of Ceres, Stanislaus county, are the following: One bull to Mrs. J. P. Lattin, Ceres; one bull and two cows to Will Clausen, Turlock; one bull to John Viera, Pleasanton, Alameda county, and one bull to William Mohe, Mount Eden, Alameda county.

In a recent Short-horn sale held in Lexington, Nebraska, the following prices were received: 36 females at an average price of $251, and 11 bulls at an average price of $133.

A new line of promotion business has been started by a company which is selling stock at $1 down and $1 a week until $100 has been paid, for the purpose of raising hogs. The game seems to be for the investor to find the hogs at the end of his payments.

Cattle rustlers have been working in the vicinity of Salinas, killing steers and selling the meat and hides and several arrests have been made of suspects.

DAIRY NOTES.

A milk exhibit has been opened in Philadelphia. The exhibit is designed to show what can be accomplished by clean milk, and prove that one-third of the 250,000 babies who die in this country every year are victims of poor milk and ignorant feeding.

D. Albertoni, who conducts one of the largest dairies in Marin county, has recently made large purchases of equipment and stock for his ranch.

The city of Stockton has adoptad a dairy ordinance which provides for more sanitary milk. The ordinance provides for the tuberclin test when, in the opinion of the sanitary inspector, a herd appears to be unhealthy, although no charge will be made for the same.

MANGE OF THE HORSE.

To the Editor: Enclosed you will find a sample of scabs that are forming on a young horse of mine. Before forming a scab, though, a bump appears under the skin, and these bumps appear to be very itchy, as the horse scratches and bites them. As you can see on the scabs enclosed, the hair comes out with it, and gray hair comes in in its place.

Will you please tell me what the disease is and what remedies to use to cure it? C. A. D.

Kerman.

Dr. C. A. Pyle, of the San Francisco Veterinary College, states that the horse is without doubt suffering from the mange, which is caused by a small mite burrowing into the skin. The disease is contagious and may spread to other horses that come in contact with the diseased animal. The horse should therefore be kept from other horses on the ranch.

If the hair of the horse is at all long it should be clipped and washed thoroughly with a three per cent solution of creolin of Kreso, the washing to be repeated every ten days until cured. The stall, blankets, harness and part of the barn in which the horse is kept should be thoroughly cleaned. Exercise will not hurt the animal, though it should be kept as strong and well as possible, as a weak or worn-out animal takes the disease quicker than a strong one.

POULTRY DEPARTMENT.

Conducted By M. RUSSELL JAMES.

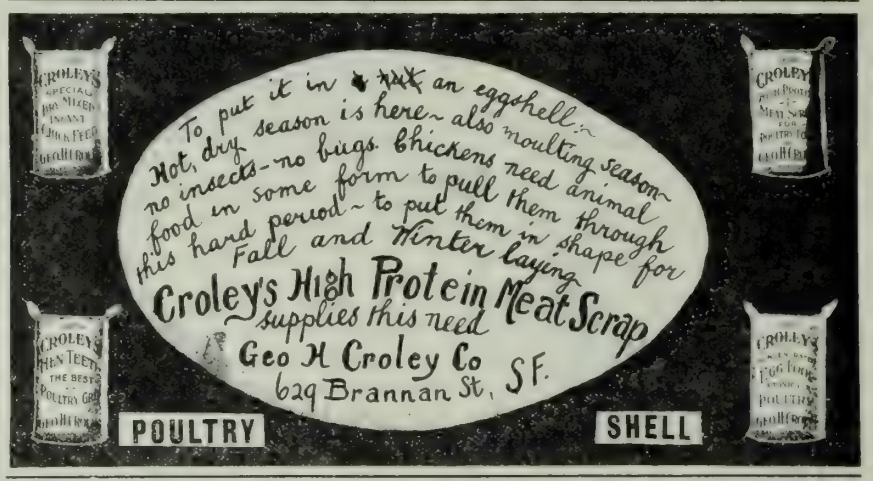
QUESTIONS AND ANSWERS.

DIARRHEA IN FOWLS AND CHICKS.

Will you kindly tell me the cause and cure for bowel trouble among hens? The action leaves the hens a smutty black, but the chickens are not sick in the least. They have been affected two weeks. Why do little chicks have bowel trouble so easily, and will you give me a quick cure for that stubborn disease? Two of my flock of 72 baby chicks have it, and I am anxious to eradicate it from my flock. I am very grateful to you for your information relative to fowl tuberculosis. We have adopted the precautions you prescribe.—Mrs. D., Alturas, Cal.

Diarrhea is caused by anything which irritates the digestive system, whether it be chill from dampness and cold, or the poison from soured and decaying food, or the effect of too much crude fiber such as rough hulls, long tough grass, or other indigestible stuff, and it is also caused by lack of sharp grit. In this case, the fowls must be getting something in their food, probably on range, which has that effect and also produces discoloration. As the fowls do not appear at all sick, it is evidently not serious, though if allowed to continue it might become so.

The first treatment in diarrhea (which must not be confused with simple looseness of the bowels) should be a mild physic to clean out the digestive tract. Epsom salts is probably best for this pur-





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pose where a number of fowls are to be treated. This is usually given in the drinking water, but Dr. Morse, who has charge of the investigation of poultry diseases in the Bureau of Animal Industry, says there is too much waste by this method and gives the following directions for administering the salts: "Clean out by giving Epsom salts in an evening mash, estimating one-third to one-half teapoonful to each adult bird, or a teaspoonful to each six half-grown chicks, carefully proportioning the amount of mash to the appetite of the birds, so that the whole will be eaten up quickly."

For a few days afterward, feed only lightly with dry grain and tender greens such as fresh-cut mustard and lettuce leaves. Keep plenty of pure, cool water, with just a thin skim of coal-oil—one drop to each pint—for drinking; also plenty of sharp grit and fresh charcoal broken to the size of grains of wheat. If our inquirer's fowls are on free range, it would be well to yard them during treatment and until their droppings are normal.

As to chick diarrhea, chick babies are just the same as human babies in this respect. Anything which chills or overheats them or that disagrees with their "tummys" causes bowel troubles. Some chicks are hatched with this tendency or the disease itself, owing to poor parent stock or faulty incubation. All such should be killed at once. If our inquirer's bunch of 72 chicks has but two so affected there is no cause for worry. The best plan would be to kill these two; but if she wishes to doctor such, always remove them from the healthy ones, keep them warm, and feed only dry corn-bread crumbs, and for medicine give two or three drops of paregoric in half teaspoonful of sweet oil.

The "quick cure" for chick diarrhea has not yet been found. Prevention is the only sure remedy. Healthy parent stock, proper hatching and brooding, proper feeding and care, and there will be no diarrhea. In this connection, let me repeat the hard and fast rule for brooder chicks; feed only dry food the first month. The prime food for chicks during the first week is chick bread or any kind of corn-bread, together with good chick feed. Large commercial poultry raisers consider the making of the chick bread too much work and confine themselves to chick feed and steel-cut oats. But the oats have a tendency to looseness, and we think that even in their case results would pay for the extra work of making the chick bread for the first week's feed to alternate with the chick feed. When properly made with about one-third shorts or middlings to two-thirds cornmeal and mixed with skim-milk, with one or more eggs beaten up in it and salted as for the table, then well baked and given in dry crumbs to the chicks, it is a safe and appetizing growing ration of which the chicks never tire.

DAIRY NOTES.

KEEP THE CHICKS GROWING.—This is the season when the yards are crowded with two, four and eight-week-old chicks, not to mention those of younger growth. What is their condition? Are they chirk youngsters, full of appetite and vigor, and getting perceptibly larger every day. If not, why not? This question is up to every poultry raiser. The yapping chicks, poorly fledged or with long droopy wings, or the chick that comes to a standstill in growth will never make profitable fowls even if they pull through the ills of their chickhood.

The growth of the chick should be constant and without check, and the aim of the chick-raiser should be to produce this growth. Keep the chicks growing, should be his watchword. In order to do this he must keep the chicks happy, and to keep them happy he must make them comfortable. How quickly the little creatures respond to either good or ill conditions and haw plainly they express either the joy of living or its burden.

Keep their runs clean and mellow, see that they have shade as well as sunshine, have a windbreak, if nothing more than a double thickness of burlap, to protect them from the chill trade winds. Feed well but do not allow food to lie around and spoil or get mixed with their droppings. Feed so that the chicks at each feeding time come with a keen appetite but never let them cry for feed or get so hungry that they gorge themselves and get cropbound. If they have no grass range keep cabbage heads or bunches of tender green leaves tied securely up out of the dirt for them to peck at, and be sure that they have pure cool water always at hand and also fine charcoal and grit.

Keep them free from vermin by having a moist mellow spot for them to roll in, and by going over their coops and roosting places every day or two with a can of distillate and a large paint brush. The mites and lice, like rats and such varments, are very fond of spring chicken, and it requires vigilence of the most vigilent type to protect the chicks.

Chicks should be taught to perch by the time they are eight weeks old. This prevents them from piling up in corners with resultant colds and roup. As soon as chicks have learned to perch their plumage becomes smooth and handsome and they improve in vigor and growth.

Again we say, keep the chicks comfortable, keep them growing.

It it said that Noah had two of every kind of living creature on board his ark, but that it is not especially extraordinary. The real wonder comes in with the thought that with so many animals on board there were only two fleas. That seems incredible—Harpers.

HERE'S TO THE HEN.

"Music hath charms;" and especially when
It comes from the throat of some long idle hen.
For it builds in the breast of the man who eats eggs,
A thought that high hen-fruit will drop a few pegs.
Nor do we much care if she's not tuned to A.
Our concern is to whether her cackle means lay!
Her breed cuts no ice, be she dunghill, or game,
Her fruit's what we're after regardless of name,
For the high cost of living hath stolen life's charm.
And we greet the glad cackle that flows from the farm;
For as soon as the hen fruit comes rolling to town
The merchant to farmers will say, "Eggs are down."
So here's to the hen. "May her son never set,"
And the more that she cackles the cheaper eggs get.
Cheer up, married brother! Let us look to the hen
To mellow the burdens that fall upon men.—Ex.

A Plea for Our Live Stock.

On one of the most westerly points of the coast of South America is a sandy area of a few square miles where rain falls in but one month during the year. Being within 100 miles of the equator, a grass almost immediately begins to shoot up after the first downpour. Then may be seen one of the most strange and interesting sights, a spectacle probably impossible to witness in any other spot on the globe. Hundreds of horses, mules, cattle, goats, pigs, chickens, turkeys, and, of course, the irrepressible but useful little South American *burro,* begin to arrive; every one of them emaciated and in the wrost condition it is possible to imagine animals or fowls to look. Some of them come from 150 to 200 miles in the interior. They break halters, fences, and overcome all kinds of obstacles to join this annual pilgrimage. The *burros* will charge in a body and break down the stoutest barbed-wire fence ever erected in order to join the procession. Do these animals have some unknown method of communicating their thoughts? Is it some sense of smell, or instinct, that tells those of the interior that they want to go to a spot some 200 miles away, across a country having no roads, and with all kinds of difficulties and obstacles to surmount before they get there? They have the *richest* food Mother Earth supplies. South America is the home of corn or maize. They have green bananas and cocoa beans (from which our cocoa and chocolate are extracted) and abundant grass or hay. With such a herd, as indicated above, grazing on this small area, the grass is soon exhausted, when the animals, some of their own accord, others driven, return whence they came; and with the hot winds and fierce tropical sun, what is left of the grass is quickly dried up and the region again becomes barren until revivified once more by these God-sent rains. But what a change has taken place in the condition and appearance of these animals and fowls during the six or eight weeks they have grazed on that favored spot! They are now full of life and vigor and in condition to perform their tasks or duties for another period; their craving for that indefinable *something* has been appeased. Undoubtedly the horses, cattle, and fowls of other lands have a similar craving for that *something,* but their surroundings do not include a spot where the craving can be satisfied. Happily, many owners and stock raisers understand this and supply the deficiency through other means; one of the best ways yet discovered being the use of a good, trustworthy stock food, but not the kind charged with calomel, antimony, arsenic, strychnia, nux vomica, belladona, asafœtida, saltpeter, sulphur, bicarbonate of soda, sulphate of iron, lobelia, opium, and other drugs. We do not mean that some of the above-mentioned drugs are injurious if given occasionally, or by the advice of a veterinary; but when fed regularly as a conditioner, they do great harm and cause a general breaking down of any animal thus treated. THE RED BALL BRAND OF MANHATTAN HORSE AND CATTLE FOOD is composed of ground, soft, mellow root, and appeases the CRAVING for that *something* for which, as we have attempted to show, animals and fowls will venture and suffer so much. Many an otherwise well-fed and well-cared-for horse will show "off" signs without any apparent organic cause, and which puzzles the owner and even skilled and experienced veterinaries, but which, in most cases, is just caused by fretting and nervousness brought on by the constant craving for that *something* which is not being supplied in its otherwise good and generous provender. If you wish your stock to be spared from falling into this nervous, fretful condition; if you wish your horse to pull more weight and go farther in a day and feel FIT when he pulls up; if you want your cows to yield more milk; if you want your stock to take on more weight—more beef; if you want your poultry to produce more eggs, give them that *something* for which they crave—give them a little Red Ball Brand MANHATTAN Horse, Cattle and Poultry Food. BAYLEY & LYON, 149-D California St., San Francisco.



The Home Circle.

The World.

The world is well lost when the world is wrong,
No matter how men deride you;
For if you are patient and firm and strong
You will find in time (though the time be long)
That the world wheels 'round beside you.

If you dare to sail first o'er a new thought track,
For awhile it will scourge and score you;
Then, coming abreast with a skillful tack,
It will clasp your hand and slap your back,
And vow it was there before you.

Aye, many an error the old world makes,
And many a sleepy blunder;
But ever and always at last it wakes,
With pitiless scorn for another's mistakes,
And the fools who have followed go under.

The world means well, though it wander and stray
From the straight, short cut to duty;
So go ahead in that path, I say,
For after awhile it will come your way,
Bringing its pleasure and beauty.

—Eller Wheeler Wilcox.

The Yaller Baby.

I have allus hed a good opinion uv the wimmin folks. I don't look at 'em as some people do; uv course, they're a necessity, just as men are. Uv course, if there warn't no wimmin folks there wouldn't be no men folks—leastwise that's what the medikil books say. But I never was much on discussin' humin economy. What I hev allus thought 'nd said wuz that wimmin folks wuz a kind of luxury, 'nd the best kind, too. Maybe it's because I hain't hed much to do with 'em that I'm sot on 'em. Never did get real well acquainted with more'n three or four uv 'em in all my life. Seemed like it wuz meant that I shouldn't hev 'em round me as most men hev. Mother died when I wuz little like, 'nd A'nt Mary raised me till I wuz big enuff to make my own livin'. Down here in the Southwest, you see, most uv the girls is boys. There ain't none uv them sivilizin' influences folks talk uv—nothin' but flowers 'nd birds 'nd such things as poetry tells about. So I kind uv growed up with the curis notion that wimmin folks wuz too good for our part uv the country, 'nd I hevn't quite got that notion out'n my head yet.

One time—waal, I reckon 'twuz about four years ago—I got a letter from ole Colonel Sibley to come up to Saint Louey 'nd consult with him 'bout some stock int'rests we hed together. Railroad travelin' was no new thing to me. I hed been pretty p'osperous—hed got past hevin' to ride in a caboose 'nd git out at every stop to punch up the steers; hed money in the Hoost'n bank 'nd use to go to Tchigargo oncet a year. Hed met Fill Armer 'nd shook hands with him, 'nd oncet the city papers hed a colume article about my bein' a millionaire. Uv course, twarn't so, but a feller kind uv likes that sort uv thing, you know.

The mornin' after I got that letter from Colonel Sibley I started for Saint Louey. I took a bunk in the Pullman car, like I hed been doin' for six years past, 'nd I reckon the other folks must hev thought I wuz a heap uv a man, for every haff hour I give the nigger haf a dollar to bresh me off. The car wuz full uv people—rich people, too, I reckon, for they wore good clo'es and criticized the scenery. Jest across from me there wuz a lady with a big, fat baby—the pruttiest woman I hed seen in a month uv Sundays; 'nd the baby! why, doggone my skin, when I wuzn't payin' money to the nigger, darned if I didn't set there watchin' the big, fat little cuss, like he wuz the only baby I ever seen. I ain't much uv a hand at babies, 'cause I hain't seen very many uv 'em, 'nd when it comes to handlin' 'em, why, that would break me all up, 'nd like's not 'twould break the baby all up, too. But it has allus been my notion that nex' to the wimmin' folks babies wuz jest about the nicest things on earth. So the more I looked at that big, fat little baby settin' in its mother's lap 'cross the way, the more I wanted to look. Seemed like I wuz hoodooed by the little tike, 'nd the first thing I knew there wuz water in my eyes. Don't know why it is, but it allus makes me kind uv slop over to set 'nd watch a baby cooin' in its mother's lap.

"Look a'hyar, Sam," says I to the nigger, "come hyar 'nd brush me off ag'in! Why ain't you 'tendin' to bizniss?"

But it didn't do no good 'tall. Pertendin' to be cross with the nigger might fool the other folks in the car, but it didn't fool me. I wuz dead stuck on that baby, gol darn his pictur! And there the little tike set on its mother's lap, doublin' up its fists 'nd tryin' to swaller 'em, 'nd talkin' like to its mother in a lingo I couldn't understan', but which I liked to hear; 'nd she kissed the baby 'nd stroked its hair 'nd petted it like wimmin do.

It made me mad to hear them other folks in the car criticizin' the scenery 'nd things. A man's in mighty poor bizniss, anyhow, to be lookin' at scenery when there's a woman in sight—a woman 'nd a baby!

Pretty soon—oh, maybe an hour or two—the baby began to fret and worrit. Seemed to me like the little critter was hungry. Knowin' there wasn't no eatin' house this side uv Bowieville, I jest called the train boy, 'nd says I to him, "Hev you got any victuals that will do for a baby?"

"How is oranges 'nd bananas?" sez he.

That ought to do," sez I. "Jest do up a dozen uv your best oranges 'nd a dozen uv your best bananas, 'nd take 'em over to that baby, with my compliments."

But before he could do it the lady hed laid the baby on one uv her arms, 'nd hed spread a shawl over its head 'nd over her shoulder, 'nd all uv a sudden the baby quit worrin', 'nd seemed like he hed gone to sleep.

When we got to York Crossin' I looked out'n the winder 'nd seen some men carryin' a long pine box up toward the baggage car. Seein' their hats off I knew there wuz a dead body in the box, 'nd I couldn't help feelin' sorry for the poor creetur that hed died in that lonely place ov York Crossin'; but I mought hev felt a heap sorrier for the creeturs that hed to live there, for I'll allow that York Crossin' is a leetle the durndest lonesomest place I ever seen.

Waal, jest afore the train started ag'in who should come into the car but Bill Woodson, 'nd he wuz lookin' powerful tough. Bill herded cattle for me three winters, but hed moved away when he married one uv the waiter girls at Spooner's hotel at Hoost'n.

"Hello, Bill!" says I. "What air you totin' so kin' uv keerful like in your arms there?"

"Why, I've got the baby," says he; 'nd as he said it the tears come up into his eyes.

"Your own baby, Bill?" says I.

"Yes," says he. "Nellie took sick uv the janders a fortnight ago, 'nd—'nd she died, 'nd I'm takin' her body up to Texarkany to bury. She lived there, you know, 'nd I'm goin' to leave the baby there with its gran'ma."

Poor Bill! It wuz his wife that the men were carryin' in that pine box to the baggage car.

"Likely lookin' baby, Bill," says I, cheerful like. "Perfect pictur uv its mother. Kind uv favors you 'round the lower part uv the face, though."

I said this to make Bill feel happier. If I'd told the truth I'd 've said the baby wuz a sickly, yaller-lookin' little thing, for so it wuz; looked half starved, too. Couldn't help comparin' it with that big, fat baby in its mother's arms over the way.

"Bill," says I, "here's a ten-dollar note for the baby, 'an God bless you!

"Thank ye, Mr. Goodhue," says he, 'nd he choked all up as he moved off with that yaller little baby in his arms. It warn't very fur up the road he wuz goin', 'nd he found a seat in one of the front cars.

But along about an hour after that back come Bill, moseyin' through the car like he wuz huntin' for somebody. Seemed like he wuz in trouble 'nd wuz huntin' for a friend.

"Anything I kin do for you, Bill?" says I, but he didn't make no answer. All uv a suddint he sot his eyes on the prutty lady that hed the fat baby sleepin' in her arms, 'nd he made a break for her like he wuz crazy. He took off his hat 'nd bent down over her, 'nd said somethin' none uv the rest uv us could hear. The lady kind uv started like she wuz frightened, 'nd then she looked up at Bill 'nd looked him right square in the countenance. She saw a tall, ganglin', awkward man, with long, yaller hair 'nd frowzy beard, 'nd she saw that he wuz tremblin' 'nd hed tears in his eyes. She looked down at the fat baby in her arms, 'nd then she looked out'n the winder at the great stretch uv



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prairie land, 'nd seemed like she wuz lookin' off further n the rest uv us could see. Then, at last, she turned 'round 'nd said "Yes" to Bill, 'nd Bill went off into the front car ag'in.

None uv the rest uv us knew what all this meant, but in a minnit Bill come back with his little yaller baby in his arms, 'nd you never heerd a baby squall 'nd carry on like that baby wuz squallin' 'nd carryin' on. Fact is, the little yaller baby wuz hungry—hungrier than a wolf—'nd there wuz its mother dead in the car up ahead 'nd its gran'ma a good piece up the road. What did the lady over the way do but lay her own sleepin' baby down on the seat beside her 'nd take up Bill's little yaller baby 'nd hold it on her arm 'nd cover up its head 'nd her shoulder with a shawl, jest like she hed done with the fat baby not long afore. Bill never looked at her; he took off his hat 'and held it in his hand, 'nd turned 'round 'nd stood guard over that mother, 'nd I reckon that ef any man hed darst to look that way jest then Bill would've cut his heart out.

The little yaller baby didn't cry very long. Seemed like it knowed there wuz a mother holdin' it—not its own mother, but a woman whose life hed been hallowed by God's blessin' with the love 'nd the purity 'nd the sanctity uv motherhood.

Why, I wouldn't hev swapped that sight uv Bill 'nd them two babies 'nd that sweet woman for all the cattle in Texas! It jest made me know that what I'd allus thought uv wimmin wuz gospel truth. God bless that lady, I say, wherever she is today, 'nd God blass all wimmin folks, for they're all alike in their unselfishness 'nd gentleness 'nd love!

Bill said, "God bless ye!" too, when she handed him back his poor little yaller baby. The leetle creeter wuz fas' asleep, 'nd Bill darsn't speak very loud for fear he'd wake it up. But his heart wuz way up in his mouth when he says "God bless ye!" to that dear lady, 'nd then he added, like he wanted to let her know that he meant to pay her back when he could, "I'll do the same for you some time, if I kin."
—Eugene Field.

A little boy, when he was invited to lunch the other day, was instructed that when he was asked to have a second helping of cake he should refuse. "You must say, 'No, thank you, I've had enough,' said his mother. "And don't you forget it." He didn't. When asked if he'd have some more cake, he said: "No, I thank you. I've had enough, and don't you forget it!"—Toledo Blade.

OUR YOUNG FOLKS' DEPARTMENT.

Conducted By M. Russell James

Thorns and Flowers.

We must not hope to be mowers,
And to gather the golden ears,
Until we have first been sowers
And watered the furrows with tears.
It is not just as we take it—
This mystical world of ours—
Life's field will yield, as we make it,
A harvest of thorns or flowers.
—Alice Cary.

Poultry Course for Young Folks.

DESCRIPTION OF BREEDS.

Class II. Asiatic. The three distinct breeds with their varieties which make up this class were not found as such in China, where this class of fowls had their origin. One of our fanciers traveling in China some thirty years ago has given the following facts as he found them in relation thereto: "Although there are no distinct breed of fowls bred or known to China by the Chinese, there are yet a great many specimens to be seen in all parts of the empire, and so closely do they resemble each other in general appearance that it is quite difficult to understand why distinctions should be made. They differ in some minor detail, it is true, for no two can be found of exactly the same color. Some are a chestnut color, others darker, and some quite light, yet they can all be seen in the same yards together, bred at random and producing many different colors; but in size and shape they are about the same and are known simply as Chinese fowls."

Light Brahmas.—These were the Gray Shaighais, those big fowls from China that set the poultry world in England and the United States crazy during the first half of the last century. Unheard-of poultry prices were paid for them and ditties were sung about them, one beginning, "Shanghai rooster grows so tall, in a few days, in a few days," etc. In New England a span of horses was sometimes given for a span of them, and for awhile the "hen fever" ran high. Those early importations from China were undoubtedly larger birds than any of the established Asiatic breeds of today. A fancier of Hartford, Conn., began to breed the big gray Chinese fowls for exhibition in 1847, and in 1850 they were exhibited in Boston as Brahmas Poortas. Since then they have been bred to a standard size and color markings.

The standard weight for Light Brahmas is 12 pounds for cock and 9½ pounds for hen, and 10 pounds for cockerel and 8 for pullet. In shape the back is rather short for the size and very broad; the body deep and well rounded in all parts; wings small and carried high, and upright medium tail; thighs stout; well set-up on strong shanks, with a thick row of soft feathers on the outer sides, and toes well feathered. The head is rather small with small pea comb; face and earlobes red; beak, shanks and toes yellow. The plumage of the Light Brahma is pure white and black in body, breast and thighs, and tail black.

Altogether, the Light Brahma is a beautiful fowl, compact and massive, the largest of all our breeds, and popular alike as a utility fowl or for exhibition purposes. The Brahmas head the strictly meat breeds and are also fine winter layers of large brown eggs. They are very hardy, but slow in maturing. They are classed as fairly good setters and mothers.

The Dark Brahma is darker in color, the black predominating, and a pound less in standard weight; otherwise it is identical with the Light Brahma.



Letters From Our Little Poultry Women.

Kellogg, Cal., May 6, 1911.

Dear Editor: I thought I would write you a few lines to let you know how I am getting on with the prize hatching of eggs. All but five of them hatched, and I have seventeen little chicks. They are doing fine and getting bigger and bigger every day. They will soon be able to go on the roost. They are always following me around for something to eat.

I am thirteen years old and I would like to be a member of the Rural Press' Young Folks' Poultry Club.

Yours truly, Emma Tamagni.

Marysville, Cal., May 7, 1911.

Dear Editor of Our Department: Please enroll my name as a member of your poultry club. I am interested in poultry. I am much interested in your poultry department.

I would have written sooner, but I have been so busy with my school and the setting of hens that I haven't had time. I have four hens with 54 chicks, and two more hens yet to hatch. I have lost only a few chicks.

I have been promoted to the fifth grade in my school. I will try and write often.

Yours truly, Ruth Wisdom.

Caruthers, Cal., April 30, 1911.

Dear Editor: Now I have eleven little chicks hatched out since I wrote that other letter. They are eight days old and they follow me everywhere. We sold two dozen eggs from our Rhode Island Red hens and Dorothy and me had the money. We earn a penny apiece each day for watering the ducks and chickens. If we forget till papa tells us, why, we lose two pennies in one day. We haul the water on a little wagon. Papa bought me a reader with my last money; now I have four cents again, and I need another reader. Yours, Florence Jared.

P. S.—Six more chicks hatched since I began this letter last week. That makes seventeen chicks of our own.

Hints for Our Young Poultry Raisers.

These letters show that we have a busy lot of little girls, and that they are busy to some purpose. And even if they didn't get one round penny from their poultry, they are getting something better than pennies from their work, for they are learning to be patient and faithful in small things, and that counts for success in the large things of life. When little Florence and Dorothy Jared forget to water the poultry until they are told, they lose three days' pay—the penny they would have earned and two which they arate the pullets from the cockerels and had already earned—so they will be careful next day. And this care will train their minds and make them reliable, thoughtful girls that can be trusted with important things when they are older.

But we want our young poultry raisers to get lots of pennies as well as good lessons from their poultry keeping, and so will give them a few hints as to the care of the chicks they are raising.

Emma has a fine hatch of seventeen chicks from the White Leghorn eggs awarded her. She will have from seven to ten pullets in the bunch, and these will begin to lay when eggs are "way up in the pictures," if the pullets are handled properly, and she will get many a penny from the bunch. What she should do, and the same applies to the pullets of the other little girls, is to sep- from all other chickens unless it be a few of the same age and breed, and put them in a comfortable house and run, feed them regularly, and be sure that they always have plenty of tender green feed and sound grain, and keep their quarters nice and clean, and never, no, never, let a mite or flea or louse get a foothold thereabouts.

The reason so many big poultry raisers, as well as little ones, fail to get eggs from pullets old enough to lay when eggs are bringing a nickel apiece, is because they let the pullets run with other fowls of all ages and kinds. Keep only pullets of the same age and kind together and not too many of these in one bunch, if you expect to get many eggs in the fall and early winter when the price of eggs hits the highest point in the market.

Drink milk in sips.

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THE MARKETS.

San Francisco, May 24, 1911.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Though quiet locally, the market is still quite firm all along the Coast, and there is some activity in the northern markets, with purchases for both California and Mexico. Northern Club has been marked up a little, and good local Club is strongly held. Sonora wheat is scarce, no desirable stock being offered at former quotations.

California Club	$1.50	@1.52½
Sonora	Nominal	
White Australian	1.60	@1.65
Northern Club	1.52½	@1.55
Northern Bluestem	1.65	@1.70
Russian Red	1.50	@1.55

BARLEY.

The unsettled condition of the future market is having little effect on the spot grain, which is very quiet at present, and hardly as firm as last week, though prices are held on about the same level. Offerings are pretty closely cleaned up, but the demand is light at the moment.

Brewing and Shipping	$1.52½	@1.55
Choice Feed, per ctl	1.45	@1.50
Common Feed	1.40	@1.45

OATS.

The current demand is moderate, and everything is firmly held, though there is no apparent scarcity of supplies. Good black feed is higher.

Red Feed	$1.37½	@1.42½
Gray	Nominal	
White	Nominal	
Black Feed	1.30	@1.50

CORN.

Prices have shown no change for some time. The market is steady, but quiet locally, most of the trading being done at outside points.

Cal. Small Yellow	$1.75
Eastern Yellow	1.55
Eastern White	1.55
White Egyptian	$1.70 @1.75

RYE.

There is nothing of desirable quality to offer, and such stock as appears on the market is neglected. Prices are accordingly nominal.

Rye, per ctl	Nominal

BEANS.

Horse beans are quoted a little higher, and they, as well as blackeyes and lamas, are extremely firm. Other descriptions, however, are easier than for some time past. Large whites and pinks are quoted lower, and bayos are weak, with large offerings of imported stock. In fact, imported beans have played rather an important part in the market this season, and while nothing of the kind is coming in at present the former arrivals have tended to weaken the market on several domestic varieties. Some of the imported beans are being sold in competition with limas, and considerable business of this nature in Manchurian beans is reported in Texas at comparatively low prices. Substitutes for limas have also been imported from Europe. How largely imported beans will figure in the coming season's buying is very uncertain, but in view of the great demand and comparatively limited production of limas in California there is no apparent anxiety on this ground. Dealers are offering high prices in the southern districts, and it is reported that contracts have been made for limas at 5 cents and blackeyes at 4¼ cents per pound. There has apparently been some effort on the part of dealers to discredit the Lima Bean Association, but as far as can be learned at present the Association will control the great bulk of the crop.

Bayos, per ctl	$4.55	@4.65
Blackeyes	7.00	@7.25
Cranberry Beans	3.75	@4.00
Garvanzos	2.85	@3.25
Horse Beans	3.00	@3.25
Small Whites	3.40	@3.55
Large Whites	3.25	@3.40
Limas	6.35	@6.45
Pea		4.25
Pink	5.20	@5.35
Red Kidneys	6.25	@6.50

SEEDS.

There is no trading of any consequence at present, and prices are steadily held at the formel level. According to reports from Santa Barbara, the California mustard crop will be very short, and high prices are expected on the new crop.

Alfalfa	Nominal	
Broomcorn Seed, per ton	25.00	
Brown Mustard, per lb	5½c	
Canary	3½@	4 c
Hemp	3½@	4 c
Millet	3½@	4 c
Timothy	8 @	9 c
Yellow Mustard	5¾c	
Dried Peas, per ctl	3.75@	4.00

FLOUR.

Prices stand as before. Local trading is mostly of the usual routine character, though there is still considerable movement to south coast points.

Cal. Family Extras	$5.20	@5.60
Bakers' Extras	5.20	@5.60
Superfine	4.30	@4.50
Oregon and Washington	4.60	@4.80

Hay and Feedstuffs.

HAY.

Arrivals continue on about the same scale as for the last two weeks, including some volunteer wild oat hay from the west side of the San Joaquin valley. Trading is confined to narrow limits in both San Francisco and Oakland, as consumers apparently have no anxiety regarding the supply for the coming season, and are buying only in small lots. The local market is accordingly rather easy, except on choice wheat hay, which is hard to find. Prices, however, stand as before. Dealers are apparently endeavoring to depress the market before the new crop comes in, and report improved crop conditions. Other reports, however, indicate that the crop in most localities was too far advanced to be helped by the recent shower, and at some places where cutting has started the crop is unusually short. In fact, it is practically certain that the production will be below average in nearly every district tributary to the San Francisco market.

Choice Wheat	$13.00@14.00
Good Wheat Hay	11.00@12.50
Other Grade Wheat	8.00@1100
Wheat and Oats	8.00@11.50
Tame Oats	8.00@11.50
Wild Oats	6.50@10.00
Alfalfa	8.00@11.50
Stock Hay	5.50@ 6.50
Straw, per bale	35@ 50c

FEEDSTUFFS.

All descriptions are firmly held, with an active consuming demand, but the general situation is about the same as before.

Alfalfa Meal, per ton	$19.00@20.00
Bran, per ton	28.00@29.00
Cocoanut Cake or Meal	26.50@27.00
Cracked Corn	34.00@35.00
Middlings	34.00@37.00
Mixed Feeds	29.00@32.00
Rolled Barley	31.00@32.00
Rolled Oats	32.00@33.00
Shorts	27.50@31.00

Garden Truck.

VEGETABLES.

The offerings of Australian onions are about cleaned up. Arrivals of new reds have been quite large, and prices are lower, while Texas Bermudas continue to find a fair demand, the best stock selling up to $2.10. Green onions are higher. Choice lots of old garlic are still held at high prices. Some new stock has come in, and is sold around 6 cents, but is not yet much of a feature. Many lines of vegetables are now coming in freely, and prices are declining, though some descriptions are firmly held. Green corn and okra from southern California have been added to the list. Green peas are now selling by the sack at fairly easy figures, with plentiful supplies, while string beans are coming from severel places and are much lower. Mexican tomatoes are also plentiful and easy at the moment. Rhubarb is also easy, and some recent arrivals of asparagus have been hard to move, owing to poor condition. Cauliflower is a little easier, while cabbage is scarce and high.

Onions: New Red, sack	$ 2.15@	2.40
Bermuda, crate	2.00@	2.10
Green, box	60@	1.00
Garlic, per lb	10@	11c
Green Peas, per sack	1.25@	1.75
Tomatoes, per crate	1.50@	1.75
Cucumbers, per doz	40@	60c
Cabbage		1.50
Carrots, per sack		1.50
Rhubarb, per box	75@	1.35
Cauliflower, per doz		75c
Asparagus, per box	75@	1.50
String Beans, per lb	5@	9c
Summer Squash, per box	75@	1.00
Okra, per lb	20@	25c
Green Corn, per doz	35@	40c

POTATOES.

Arrivals of new potatoes have increased considerabdly of late, with some stock coming in from Texas, and ordinary offerings are lower. Choice new potatoes, however, are still held at the figure last quoted. Old stock is unchanged. Quite a lot of garnet Chile potatoes are coming in, and find a fair demand at high prices.

Lompoc Burbanks, per ctl	$ 2.85@	3.00
Oregon Burbanks	2.50@	2.70
New Potatoes, per lb	2½@	4c
Eastern, per ctl	1.80@	2.10
Garnet Chile, per ctl		3.50

Dairy Produce.

POULTRY.

Four cars of Eastern stock arrived the first of the week, and more has come in since, keeping the supply above current needs. California stock is hardly as plentiful as for some time past, but the market shows no improvement, quotations on several lines being lower than before. Large hens and young stock find a fair demand, but small hens, old roosters, etc., are very hard to move.

Large Broilers	$ 3.00@	4.00
Small Broilers	2.00@	3.00
Fryers	6.00@	7.00
Hens, extra	8.00@	10.00
Hens, large	5.50@	6.00
Small Hens	4.50@	5.00
Old Roosters		4.00
Young Roosters	7.50@	8.00
Young Roosters, full grown	8.00@	10.00
Squabs	2.00@	3.00
Geese, per pair	2.00@	2.50
Ducks	6.00@	9.00
Turkeys, live, per lb	Nominal	

BUTTER.

No prices were made on the Dairy Exchange Saturday, owing to an outing of the produce dealers. The week opened with a slight decline in extras and prime firsts, while firsts are a little higher, and since then no change has occurred. The market is considered rather high for storing, but most of the arrivals are still going into the ice houses.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	.23	23	..	22½	22½	22½
Prime Firsts	.22½	22½	..	22	22	22
Firsts	..22	22	..	21½	21½	21½
Seconds	.21	21	..	21	21	21

EGGS.

Extras are slightly higher than a week ago, but otherwise quotations are unchanged and the market shows very little feature. By far the greater part of the arrivals is taken for storage, keeping the market steady, as the current demand could not absorb the present output.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	.21	21	..	21½	21½	21½
Prime Firsts	.20½	20½	..	20½	20½	20½
Firsts	..19½	19½	..	19½	19½	19½
Seconds	.18½	18½	..	18½	18½	18½
Selected Pullets	.18½	18½	..	18½	18½	18½
Eastern	.17½	17½	..	17½	17½	17½

CHEESE.

Young Americas have dropped the cent added to the quotation last week, but local flats show no further change.

Fancy California Flats, per lb	12½c
Firsts	12 c
New Young Americas, fancy	13½c

Deciduous Fruits.

FRESH FRUITS.

The warm weather a few days ago brought in largely increased offerings of strawberries, but did not continue long enough to cause much increase in demand. The market is accordingly in rather poor condition, showing a sharp decline from the former quotations. Southern stock no longer figures to any extent in local business. Gooseberries are beginning to come in freely, and sell readily as quoted. There are also a few southern blackberries and raspberries, which bring $1.25 and $1.50 per crate, respectively. Apples are not much of a feature, being scarce and high. Cherries are much lower, and ordinary stock is plentiful and weak, though good prices are still obtained for the best offerings of Purple Guignes.

Gooseberries, drawer	50@	75c
Apples, per box	$ 2.00@	2.25
Strawberries, Banners, chest.	6.00@	8.00
Longworth, chest	6.00@	8.00
Large varieties, chest	4.50@	6.00
Cherries, Purple Guigne, box	1.25@	1.65
White	75@	1.00

Dried Fruits.

There is very little actual business at present, either in spot or future fruits, as packers and growers have not been able to get together on prices. Apparently the market will be in a waiting condition for some time, as very few growers are in any hurry to sell, and from the statistical position of nearly all varieties, believe the prices asked are justified. The prices, however, seem to have scared off the Eastern trade for the time being, especially as some packers have been spreading reports that the shortage is much less than was at first estimated; and under the circumstances the packers seem inclined to hold off as long as possible. Most of them, however, are ready to buy at the prices quoted below on new crop goods. Some business in future prunes is reported at a shade below last week's quotation, but it is not likely that anything but a few odd lots can be picked up at these figures. As for spot goods, there is comparatively little of anything to be had, and while the consuming demand for peaches and raisins is limited by the prices asked, it is anticipated that everything will clean up at about the present range. The demand for both spot and future peaches for Europe is extremely strong. Quite a lot of peaches are being shipped in that direction at present, and packers have taken large European orders for new stock.

Evaporated Apples, per lb	10½@	11 c
Apricots, new crop	14	c
Figs, black	4½@	5 c
Figs, white	5 @	7½c
Peaches, Spot	7¼@	8 c
New crop	8½@	9½c
Prunes, 4-size basis	9½c	
New crop contracts	4¼@	4½c
Pears	8½@	12 c
New crop	9 @	10 c
Raisins—		
Loose Muscatels, in sweatbox	4 @	4½c
Thompson Seedless	4½@	4¾c
Seedless Sultanas	4¼@	4½c

Citrus Fruits.

Reports from the various Eastern auction markets show oranges and lemons to be in good demand and selling at good prices. Shipments from southern California are going East at the rate of more than 150 cars daily. Up to May 22 there had been shipped for the season 27,652 car of oranges and 3533 cars of lemons.

At New York on Monday, the 22nd, 63 cars of oranges were sold at auction. Navels brought from $1.70 to $3.65 per box. Bloods sold for $2.10 to $2.45. Sweets and seedlings brought from $1.40 to $2.40. Lemons from $3.65 to $4.25. On the same day the sales were large at Cincinnati, Cleveland, Philadelphia, St. Louis and Boston. Prices averaged with New York sales.

On Tuesday, the 23rd, at New York, 39 cars of oranges and 2 of lemons were sold. The quotations were: Navels, extra fancy, $3.50 to $3.95; fancy, $2 to $3.90; choice, $1.50 to $3; standard, $1.70 to $3.05. Thompson's, fancy, $2.85 to $3.45. Seedlings, fancy, $1.75 to $3.25; choice, $1.35 to $2.70; standard, $1.50 to $1.60. Valencias, fancy, $3.65 to $4.15; choice, $1.50 to $2.35. Lemons, fancy, $4.05 to $4.80; choice, $3.50 to $4.

There is not much feature to the citrus market in San Francisco, the amount of trading being limited. Navels are about out of the market. Fancy stock is held firmly, but choice oranges are easier. Valencias are coming forward in fairly large quantities, but are firmly held, the best offerings being higher. Otherwise prices remain as before.

Navel oranges—		
Extra choice	$ 2.50@	3.00
Choice	1.75@	2.25
Valencias, choice to fancy	2.25@	3.00
Tangerines	Nominal	
Choice Lemons	2.50@	3.00
Fancy Lemons	3.50@	4.00
Standard	1.25@	1.75
Limes	4.50@	5.00
Grapefruit	2.25@	3.15

Nuts, Honey, Hops, Etc.

NUTS.

The few interests which now control the limited supply of spot almonds have

again advanced their prices, as quoted below. The only movement of either almonds or walnuts is of a small jobbing nature, walnuts being about cleaned up. Some local buyers are said to be offering 15 cents for new Nonpareil almonds in the country, compared with 13 cents a year ago. The growers are getting more closely organized, and will be in a better position to command high prices than ever before.

Almonds—		
Nonpareils	16½@17	c
I X L	15½@16	c
Ne Plus Ultra	15 @15½	c
Drakes	12 @14½	c
Languedoc	12	c
Hardshells	8 @ 8½	c
Walnuts—Softshell, No. 1	15	c
Standard	14½	c
Softshell, No. 2	11	c
Budded	17½	c

HONEY.

Conditions remain the same as last week, though offerings of new stock are expected to increase considerably within a few days. There is no old stock on the market, and with a short crop in most producing districts prices are certain to be well maintained.

New Extracted, White, per lb	8 @ 9	c
Comb	Nominal	

BEESWAX.

There is a fair demand at present, and with old stock pretty well cleaned up the better offerings are held for an advance.

Light	28 @32	c
Dark	23 @26	c

HOPS.

Some further advance is noted in both old and new crop. There is very little of the old crop left, and the new crop is gradually being sold under contract, though a good many growers are still inclined to hold.

Hops, 1910 crop	19 @22	c
1911 crop	18 @22	c

Live Stock.

DRESSED MEAT.

Beef Steers, per lb	9 @ 9½	c
Cows	7½@ 8½	c
Heifers	7½@ 8½	c
Veal, large	10 @10½	c
Veal, small	11 @11½	c
Mutton: Wethers	8½@ 9½	c
Ewes	8 @ 9	c
Lambs	10 @11	c
Hogs, dressed	10½@11	c

LIVE STOCK.

Live stock of all descriptions is coming in more freely, arrivals of lambs being especially large. Stock is now being shipped from Santa Barbara islands. Prices here have been shaded on some descriptions, and hogs are weak, with no great demanad. Dressed meats are easy, most prices being a little lower.

Gross weight:		
Steers: No. 1	5¾@ 6	c
No. 2	5¼@ 5½	c
Cows and Heifers: No. 1	4¾@ 5	c
No. 2	4½	c
Bulls and Stags	2½@ 3½	c
Calves: Light	6½	c
Medium	6	c
Hogs: Grain-fed, heavy	6 @ 6¼	c
150 to 250	6½@ 6¾	c
100 to 150 lbs	6¾	c
Small prime wethers	4¾@ 5	c
Large prime wethers	4¾@ 5	c
Ewes	4 @ 4¼	c
Lambs	5½	c

WOOL.

Some additional trading has been done in northern California, where a few of the best clips have been taken at a little higher prices than were formerly quoted. The buyers are taking very little interest in general offerings, however, and growers have not been able to obtain the prices expected.

Spring Clip—		
Choice Southern, Year's staple	9 @12	c
7 months	8 @11	c
Lambs	5½	c
Northern, year's staple	13 @15	c

HIDES.

Prices show no further change. The market remains rather dull, and there is no strength to values, though most descriptions are steadily held.

Heavy Steers, over 56 lbs.	10	c
Medium	9 @ 9½	c
Light Steers, under 48 lbs.	9	c
Heavy Cows, over 50 lbs.	9	c
Light Cows, 30 to 50 ibs.	8½	c
Kip	10½	c
Veal	14½@15½	c
Calf	15 @15½	c
Dry—		
Dry Hides	17 @18	c
Dry Bulls	16	c
Dry Kip, 10 to 15	17 @18	c
Dry Veal, 5 to 10	16½@17	c
Dry Calf, 7 down	23	c
Sheep Skins—		
Long Wools	$ .75@$1.00	
Medium Wool, 6 to 9 mos.	50@ 75c	
Short Wool, 3 to 6 mos.	25@ 40c	
Lambs	15@ 50c	

HORSES.

There is a fairly well maintained demand locally for the better class of offerings, which are bringing full prices. Ordinary stock and farm horses, however, do not receive much attention, and values are weak, remaining about as quoted last week. A further decline is expected on ordinary horses.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	235@285
Chunks, 1350 to 1500 lbs	200@250
Wagon Horses, 1250 to 1350 lbs.	165@190
Delivery Horses, 1050 to 1250	115@140
Desirable Farm Mares	120@140
Young	190
Old Mares	90@115

MULES.

1200 lbs	$250@300
1100 lbs	215@240
1100 lbs	175@200
900 lbs	150@175

SPECIAL DECIDUOUS FRUIT MARKET.

Sacramento, May 22, 1911.

Despite the north wind of a week ago, which swept Sacramento valley and Placer County, causing plums and pears to drop in the vicinity of Newcastle, Penryn and Loomis, there has been very little change in the crop situation. As a matter of fact, crops are looking a little better and stronger.

Owing to the light supply of cherries the market remains very firm. Pittsburg last week averaged from $1.75 to $3. Philadelphia, in Pony refrigerators, averaged $4.50 for Tartarians; New York from $2.60 to $4.50 on Knight's Early Black; Chapmans from $4.37 to $5.50. Cincinnati, Purple Guignes, $1.60 to $1.90, ordinary express without refrigeration; Chapmans, $1.50 to $2.85; fruit was overripe and soft. Cleveland, from $1.55 to $2.05 a box, and Chicago, on Knight's Early, averaged $1.80; Rockports, $2.20 to $2.50; Chapmans, $1.80 to $2.10; Tartarians, $3.15. Boston, $1.50 to $4.25 for Tartarians.

Seven cars have been shipped from the State up to date and several thousand boxes in Pony refrigerators and by ordinary express. Tartarians will be out of the market within a week and Oregons and Royal Anns are expected to be ready for shipment in ten days or two weeks.

If the present warm weather prevails for the next few days we will be shipping peaches by the first of June and will be able to load mixed cars of apricots, peacnes, Clymans and cherries, and the season can then be said to practically open. Every indication points to good prices, and the canners are already bidding as high as $60 on pears, although we hardly think that many will be picked up at this price.

Despite the current reports that there is an extreme shortage of deciduous fruits in the East, the States of Iowa, Missouri, Illinois and Michigan report good crops. Florida and Georgia have already shipped a few crates of peaches to New York, but, on account of the heavy rains late in the spring, the fruit is of unsound quality and there will be very little of it.

PUBLISHER'S DEPARTMENT.

In last week's issue of the PACIFIC RURAL PRESS we expect to give a later estimate of the growing fruit crop. Letters are now coming in from our correspondents and we trust that the next report will be from practically every important fruit district in the State.

Eighty-four new subscribers were added to our list last week. We wanted more than a hundred, but we are happy over what we have and are trying for a hundred or more this week.

Read our advertising columns. There is money for you in doing so. Among the new announcements in this issue are the Pacific Basket and Barrel Co., of this city; the Byron Jackson Pump Co., of San Francisco, the Braun Corporation of Los Angeles; the North American Merchantile Co., of San Francisco; and others.

On another page will be found a map showing the territory served by the Pacific Gas and Electric Co. This company is one of the largest electric power companies in the world generating over one hundred thousand horse-power from melting snow in the mountains. This power is at the service of any farmer whose land is "inside the heavy line." It is said to be a very economical method of irrigation pumping, and is undoubtedly a great convenience for light about house and barns. Incidentally this is the first time, to the best of our knowledge that any public service corporation ever advertised in an agricultural journal with a definite campaign. Naturally we are proud to have the distinction of carrying such business. This company is noted for its frank open methods is conducting its business and anyone interested in irrigation should "talk it over with" them.

Work has commenced on the damming of the San Luis Rey, at the Warner ranch, San Diego county. The water will be used for irrigation and electric power.

A bee-keepers' association has been formed at Hement, Riverside county. A large honey crop is expected in the vicinity of Hemet this season.

The third annual picnic of the Santa Clara County Farmers' Union was held at Congress Springs last week, about 4000 persons attending.

A poultry show is being planned for Corning, Tehama county, next November.

G. E. Worthington has started a large poultry farm at Lemoore, Kings county.

A number of vineyards of Sutter county have been attacked with cut-worms.

Agriculture will be taught in the Lindsay high school next year.

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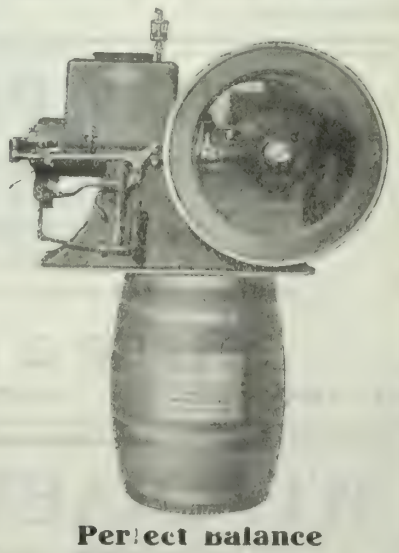
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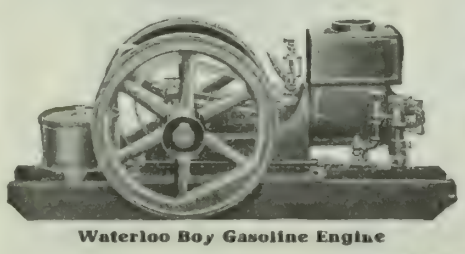


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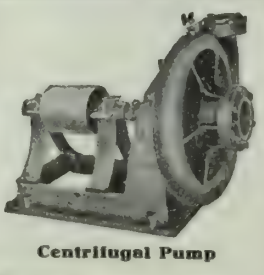
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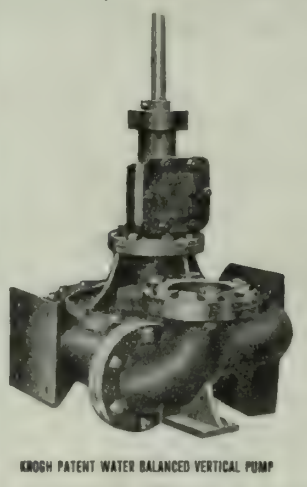
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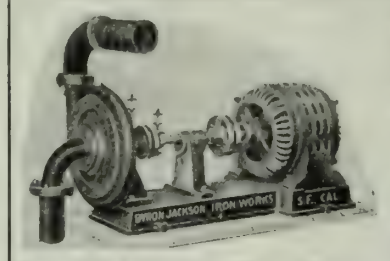
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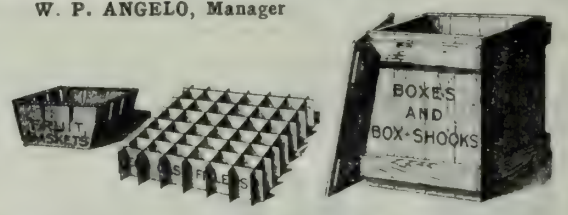
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THE PACIFIC RURAL PRESS

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Cost of Irrigating Citrus Fruits.

By Mr. C. E. TAIT, of "Irrigation Investigations."

[The division of the office of Experiment Stations known as the Irrigation Investigations of the United States Department of Agriculture has stood for thirteen years as the connecting link between irrigation engineering and the agricultural use of water. In a way it has built up in this country an applied science of irrigation and has rendered public service which must rank among the highest benefices of the governmental agricultural of this country. A good measure of its success lies in the fact that its work has been planned from the beginning by two men who added to engineering a rich agricultural experience and a clear agricultural point of view—Dr. Ellwood Mead, who established the work, and Dr. Samuel Fortier, the present chief of the division, who was Dr. Mead's associate from the beginning, and his successor when he accepted a call to Australia. This Irrigation Investigation division has been generously supplied with funds by Congress, supplemented by appropriations by various States—notably from the State of California—and in our own State most satisfactory return has been received, both in State development and individual industry. One of the most capable experts of the Investigations' staff is Mr. C. E. Tait, whose latest publication is "The use of Underground Water for Irrigation at Pomona, California," from which we take the interesting discussion of the cost of water in growing citrus fruits, which follows.—EDITOR.]



Private Reservoir in the Richard's Orchard, Near Lordsburg, Los Angeles County.

The cost of irrigating citrus fruits includes the cost of water and of its application to the orchard. The cost of the water is represented by the cost of pumping, where pumping is necessary, or the interest on the amount invested in water rights where canyon water is used, in addition to the cost of delivery.

The value of a miner's inch of canyon water varies from $1500 to as high as $2500 in some localities. The value of pumped water is not less than $1000 per miner's inch. A continuous flow of 1 miner's inch is used to irrigate, on an average, about 8 acres, thus making the minimum investment per acre $125, and the interest at 6 per cent thereon $7.50 per year.

The cost of pumping, as ascertained from the water charges and assessments of the several companies in this section, averages about 2½ cents per miner's inch per hour, or $15 per acre-foot. The cost of pumping for citrus fruits may be said to average $12 per acre, allowing a duty of eight-tenths of an acre-foot per acre.

The methods used by the various companies for securing funds for operation vary somewhat. The Del Monte Irrigation Company is representative of those which secure all funds by assessments on the stock. The assessments in the company aggregate 75 cents per share or $9.75 per acre, there being 13 shareholders per acre. This, together with the interest on the investment in water rights, makes the total cost of water at the point of delivery $17.25 per acre per annum. The company, however, has been paying $5000 of indebtedness annually. This indebtedness has now been cleared and the assessments may be reduced a fourth or a third.

Water is very cheap in the Palomares Irrigation Company. This company is now out of debt, and it has been fortunate in not having to bore more wells or spend much money on new installation.

The San Dimas Irrigation Company charges 2 cents per miner's inch per hour to members and 3 cents to non-members. Its water rights are valued at $100 per acre. The charges for water will meet all ordinary expenses. Out of fourteen small companies for which the charges were learned, eight charge about 2 cents per miner's inch per hour, three charge 1½ cents, and the others ¾ of a cent, 1¼, 3½ and 5 cents, respectively. Some of these companies also deliver to non-members at rates 25 to 50 per cent higher than the charge to members, while others do not deliver to non-members at all. In the small companies, as in the case of the San Dimas Irrigation Company, the charges for water meet all expenses, except when there is some unusually large expense, such as the installation of new machinery, for which purpose the stock is assessed, and most of the companies get along without assessments for five or six years. The charge made to members represents more nearly the ordinary running expenses, for it is intended that there be a profit in the sale of water to non-members. In the Citrus Water Company the charge produced a surplus and a dividend was declared. A fair average for the annual cost of delivering to irrigators from the pumping plant is $18 per acre, and when a cover crop is irrigated in the winter this may be raised to $22.

Water pumped at private plants often is sold, and the charges vary from 2½ to 5 cents per miner's inch per hour. Such plants are constructed primarily for the use of their owners, who are often not desirous of selling water. If they do sell, there must be a profit to them to aid in replacing the plant when the machinery is worn out. The depreciation, together with taxes and interest, for pumping plants is about 20 per cent per year, or $600 on an investment of $3000. The cost of pumping at private plants varies more than at company plants, because often there is no charge for attendance. The cost of attendance at small plants is about $3 per day of 12 hours and $3.50 per day of 24 hours. The tests of 1905 show that the cost of pumping for fruit at private

(*Continued on Page 481.*)

Pacific Rural Press

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., May. 30, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.08	31.77	44.92	54	44
Red Bluff	.02	24.42	24.54	88	46
Sacramento	00	21.86	19.93	80	44
San Francisco	00	25.46	22.08	62	46
San Jose	00	22.57	12.91	74	38
Fresno	00	11.82	9.56	86	46
Independence	.04	6.26	9.44	78	34
San Luis Obispo	00	34.42	20.39	70	42
Los Angeles	00	16.15	15.56	74	52
San Diego	00	11.98	9.97	68	50

The Week.

The slow spring is largely making good the lack of a wet spring, as was anticipated. It fortunately often happens that way when the rains seem to get weary of falling in March after such winter activity as they manifested this year. Under such scant evaporation as proceeds with low temperatures and moderate occurrence of dry winds, the capillary rise of winter water from the lower soil strata meets the needs of the plant and it grows apace, making stature of stem and breadth of leaf and weight of head which is surprising to those whose knowledge of plant-thrift is conditioned upon spring showers. This state of facts has much to do with establishing the character of California as an ideal State for dry farming. Dry farming results on the basis of (a) winter temperatures favorable for growth; (b) ample winter rainfall, if properly conserved by culture; (c) moderate losses by evaporation, because we have an insular rather than a continental climate with its exhausting extremes; (d) spring conditions in absence of spring showers in years when they are scant—all these make for the success of dry farming and increase the obligation of Californians to improve their methods by the introduction of all light upon soil enrichment and moisture conservation which recent experimentation has made available. One can hardly look upon the improvement of grain fields during the last two months without any rain to speak of, in those parts of the interior valley to which, through various openings in the Coast range coast conditions have measurably attained, without a deep conviction that nature has given again this year a demonstration of the importance of reducing loss of moisture by surface evaporation. And if nature does this without calling upon the farmer for spring tillage in some parts of the interior valley, how much farther the farmer can extend the saving of moisture by better farming? Those who are teaching agriculture in our schools can take a hint for a very interesting field lecture and demonstration by lifting their eyes from the book to the landscape.

Labor Problems.

Several interesting phases are appearing in our local labor problem which have some bearing upon agriculture. The Japanese in some of our towns are circulating politely worded notifications to their patrons that wages will advance 25 cents per day, and we presume the gentle strike will fall in the country wherever the traffic will bear it. Possibly as an offset in some kinds of rural work may come the greater supply of woman-labor, for many women are being displaced by men in some lines of manufacturing because, they say, when it comes down to an eight-hour day the employer can get more for his money from a man. In agriculture and product-preserving the women are not restricted to eight-hour days, and the more they lose by men in the city the more of them there will be available for the arts in which the eight-hour law does not hold. Therefore, we say, we may have more women and girls and fewer Japanese—and it is an awfully good swap, say we.

But whether the employment of more women should come from the yeast which the Japanese are putting into their wage-schedules or not, or from the eight-hour law or not, the fruit growers are very resolute to have more of them. The Santa Clara Farmers' Union, under the leadership of Mr. Homer A. Craig and his associates, as has been previously described in our columns, is proceeding valiantly to get more lads and lassies and their mammas into the fruit work this summer, and this will obviously give the papas more time for city politics, which promise to be very abundant during the next few months. Surely the old man will have the time of his life, with the family bread-winning in the country and he with all his wages in his pocket and all the joints wide open! It is hard to see how he will find time to work more than eight hours a day and keep the city running right. But we do not have to worry about that. We were thinking about the Santa Clara enterprise. They had a grand meeting last Saturday at which the speakers declared that 10,000 prune pickers, 2500 drivers for trucks and 2500 more workers in the dryers will be needed. Many of them will have to be students, if Japanese and Chinese are not to be employed in the orchards. Among the speakers was Fannie Stockton of the San Francisco School Department. She promised San Francisco's support and came for detailed information as to the number of workers needed. Miss Stockton said the San Francisco School Department had tabulated the names of hundreds of San Francisco parents and pupils who want to work in the Santa Clara county orchards during the summer months. Surely the producers will score a great advantage for themselves, and unless they should suffer too much from heart-enlargement over the great and good work which they are planning for, to put more comfort in the homes and more pin-money in the hands of city housewives, they should get much satisfaction from their lift to the phase of civic righteousness which appeals to them, while the men in charge of the city seem to be trying to make a hell of it—at least till after election.

The Horny Hand of Toil.

This scaly and knotted member has always been the joy of poets and orators—at least till after election, again. But we doubt if the horny hand has ever gained from poets and orators such an uplift as it now receives from bacteriologists, because humanity has never been so wild over literature as it now is over germicide and germ-resistance. By strictly up-to-date standards of eminence the horny hand now occupies the apex of desirability over all other forms of digital and manuary development. "As to washing," says Sir Almroth Wright, "there is little belief that by doing so, people wash off the microbes. We do take off a certain amount of microbes, but we also destroy the protective skin which is all around our bodies like the tiles of a house." Again: "When one has a horny hand, no microbes can ever get near the skin. If one has a skin like a tortoise shell, microbes will never get through. To have a Turkish bath is to take away one's horny protection. A great deal of washing increases the microbes of the skin, so I do not think cleanliness is to be recommended as a hygienic method." How much this explains! How easy to understand the long life of Methusaleth, the immortality of encrusted aborigines of our own day, and all that. And yet during recent years man has been scouring down his protective thatch even to the smarting point, and believing he did God service on the claim that cleanliness got next to Him. And to think, too, that the late, lamented Country Life Commission cornered its structure of rural uplift upon a bath tub in every farm house! Ding the glossy, slippery thing—the trap of the devil to catch man young, when he is good and worth catching.

The Hygiene of Whiskers.

And if the natural horny protection of a well-seasoned and thickened cuticle is the way to keep microbes from getting into the longed-for interior of a man, how do we know that the whiskers are not another natural protection which is being sacrificed to a false god of cleanliness? Think of a germ which flies pat against the abraded skin of a close-shaver. Oh the joy of such a germ as compared with the despair of its fellow which alights on the baffling tangle of hirsute waves dashing about above a decade's accumulation of impenetrability. Surely the horny hand and the hairy face are two stout legs of longevity. And yet the telegraph says that on Saturday last Mr. J. B. Haggin, ex-Californian and now multi-millionaire of Elmendorf Stock Farm in Kentucky, has caused notices to be posted requiring the several hundred employes on his 9000-acre estate, near Lexington, to be shaved every other day. Haggin believes that "whiskers" propagate dangerous microbes, and the order is meant to affect particularly employes in the dairy department. A barber shop is being installed and accompanying it is being erected a $100,000 bathroom, both of which are to be maintained free of cost to the employes. Oh Sir Almroth Wright, weep you over this new slaughter of the innocents!

Distinguished Foreigners for San Joaquin County.

There is a forlorn hope that this question of longer life for the race may be worked out more promisingly in California and Kentucky—a hope, we say, because the hardy Europeans who are expected to man two great enterprises near Stockton are not likely to sacrifice their immunity machinery as Mr. Haggin will require the Kentuckians to do. We read that Minnesota proposes to send 1000 Swedes to San Joaquin county. Some of them have small savings which they are willing to invest, while others wish to go to work on the ranches. It is common experience that no better labor can be secured than Swedes, who are a hardy, industrious lot. What the Swedes have accomplished in Minnesota and the Dakotas is proof of what they can do here. Most of them are very thrifty, and it will not be long before many of them will own small farms. The Swedes are among our best citizens. They are alert, energetic and dependable. The more we get of them the better—and their thickets of blonde whiskers will defy the microbe-bearing mosquito and multiply the sunshine.

Quite otherwise in form, but of like type, is

another acquisition likely to follow the organization of the Azores Dairy Company, which is to conduct one of the most extensive dairies of the country on the rich pasturage of the San Joaquin low lands. The property consists of almost 1000 acres, and is of the rich low land kind which can be used to advantage with or without irrigation, there being plenty of water in the river at all seasons of the year to either flood or irrigate any of the lands should the crops need moisture. They propose to add everything that is necessary to conduct a dairy under the most modern system. This enterprise, too, we consider predestined to succeed. It is well placed and rational, and judging from its name, it will be manned by the stout sons of Portugal, with chins and cheeks clad to the outer verges with whiskers so dense and black that the shades of Erebus will seem an electric illumination. Mr. Haggin's Kentucky dairy may scrape through, but these San Joaquin enterprises will endure.

A Fur Ranch at the North.

We could not give our distant querist much satisfaction a few weeks ago when he asked about California as a good place for a skunk farm. It may, however, interest him and others that fur enterprises are being projected in other parts of the coast. We read that 2000 acres in the lake district, north of Athabasca landing, in Alberta, have been leased by Dr. T. J. Burgen of Spokane and his associates in eastern Washington, who propose operating a mink and muskrat farm as a commercial enterprise. The work of preparing the farm and stocking it with animals will begin early in June. They will place 5000 rats in the lake, which is well stocked already. Dark rats will be used, as the pelts are of a higher commercial value than the lighter variety. The rats require no food other than what they can get themselves except in unusual cases, and for such emergencies carrots will be grown. It is a much more difficult problem to handle mink, as special pens are necessary and the net must be sunk deep into the ground so they will not escape. They expect to introduce minks in June, and to have several thousand for commercial purposes a year from next winter. The mink will be fed on fish, which are abundant. Fur farming is an interesting branch of the live stock industry, and it is very proper that the great northwest America should continue to delight the world with a substitute for the output of the pioneer hunters and trappers who laid the foundation for the development which is now being realized.

Queries and Replies.

Vegetables in a Cold, Dark Draft.

To the Editor: Kindly inform me what variety of vegetables will thrive in localities where the sun shines only part of the day? I have a space in my garden that gets the sun only between the hours of 11 and 5, thereabouts, and other places where the sun reaches only for a very short period. I would like to utilize those places for vegetables if any particular kind will grow under such conditions. The soil apparently is good, of a sandy nature, with some loam. The neighborhood is high and subject to much winds.—P. V. C., San Francisco.

You can only definitely determine by actual trial what vegetables will be satisfactory under the shade conditions which you describe. We anticipate that you may get good results from lettuces, radishes, beets, peas, top onions, and many other things which do well at rather a low temperature, while tomatoes, peppers, eggplant, etc., would probably be worthless. But really the only way to proceed upon the matter would be to sow whatever seems to you desirable and then let the plants themselves tell you whether they will accept the situation or not. Your soil is probably satisfactory and you can easily keep the moisture right by being careful not to use as much water as you would in open sunshine. The behavior of the plants will be directly dependent upon the temperature and the sunshine which they receive under the conditions described.

A Catch Crop with Reservations.

To the Editor: I want all the information you can give me about flax as a crop, as to best method of raising it and advisability of using it for the following purpose. I have been having some land graded for alfalfa and I have had to wait so long for the manufacture and installation of my pipe system that the seeding is going to be delayed until the latter part of May. I am now doubting the advisability of seeding it all under these conditions until fall, as hot weather will soon come. I want some good crop to plant in the checks and give two good irrigations. Also, what would you think about rye for straw for horse collars? Have you any other good crop to suggest that would not only be profitable but would do the land good? I do not wish to consider corn, as the stalks would be troublesome. Potatoes would necessitate disarranging the land too much and would require more attention than I am in shape to give just now. Everybody grows wheat, barley, and oats. I want something that I can get a special market for.—Farmer, Hemet.

In order to succeed with flax, the seed ought to be sown in the fall, or early winter, in California, and will make satisfactory growth under about the same conditions that suit barley or wheat. We doubt if spring sowing would give you anything worth while except on moist bottom land. Rye is also a winter-growing grain. To grow rye straw for horse collars would be unprofitable unless you could find some local saddler who could use a little, and it is probable you could not get a summer growth of rye which would give good straw, even if you had a market for it.

You could get a growth of stock beets, field squashes, or pumpkins for stock feeding. In fact, the latter would give you most satisfaction if you have stock to which they can be fed to advantage. Sorghum is our chief dry-season crop, but that makes stalks like corn and would therefore be open to the same objections.

Has it never occurred to you that people grow the common crops, not because they are stupid, but because those are the things for which there is a constant demand and the best chance for profitable sale? Efforts to supply special markets are worth thinking of, but seldom worth making unless you know just who is going to buy the product and at what price.

Chestnuts in the Coast Region.

To the Editor: The chinquapin or chestnut oak grows nearly everywhere in the Coast range; would the cultivated chestnut do equally well, and, if so, at what elevation and how far from the ocean should they be planted? Where they are planted for the nuts rather than for the timber, what varieties do you consider best?—C. Queen, Fish Rock.

We do not know. We are rather more confused on the desirability of chestnut planting for nuts than we are on the desirability of progressive politics—for they often seem to be matters of chestnuts, cats and fires. Most people tell us they get beautiful trees, but no nuts to speak of. We would really like to have reports from all readers who have trees, what they get from them aside from landscape effects. In the county reports, Amador county returns 2135 trees bearing 12,500 pounds of nuts. No other county reports any products, and the figures of the numbers of tr are evidently guesses. In Amador county the va riety is the Italian or Spanish. Now who has a word for us for or against the chestnut?

Wrapping Stems of Young Trees.

To the Editor: I have been much interested in your book, "California Fruits and How to Grow Them." It is because of a practice in this section of pruning trees fresh from the nursery to a high head that I ask your indulgence for this letter, seeking your aid in the matter. On page 313 you advise against this.

The practice here is to wrap all young trees to a point 24 inches above the bud, for the purpose of protection against rabbits, to protect the bark from the sun and to prevent growth of sprouts. These wrappings are kept on indefinitely, the rule being that no sprouting is to be permitted below the 24-inch mark. Is there any virtue in this, and why is it done? Those who do it have their reasons, of course, but if you have any special writings on this matter and the practice I refer to, will you kindly tell me where I can obtain them.—W. T., Upland.

There is no particular virtue in wrapping a tree to prevent sprouting below the point where you desire the main branches to emerge. That could be better done by rubbing off the shoots as they appear in wrong places. The wrapping is desirable both to protect them from rabbits and from sunburn, and either this or whitewash or some other form of protection should certainly be employed against the latter trouble. You will see by reading the chapters in "California Fruits" which discuss different kinds of fruits, that it is not desirable to have all the branches emerge at the same point, either 24 from the ground or at some lower level, as is preferable in interior situations, but branches should be distributed up and down and around the trunk so as to give a strong, well balanced, low headed tree. So far as wrapping interferes with the growth of shoots in this manner it is undesirable. We are not aware that any fuller statement of this matter has been published than can be found in "California Fruits."

Sour Sap in the Top.

To the Editor: I enclose a twig of a three-year-old Newtown Pippin apple, and would like to know what the trouble is. I have lost quite a number in this way for the past two seasons. They start out all right, but gradually die, though the root appears in good condition. My walnut trees are 15 years old. This season quite a number of them are dying back; in some cases there is one or two branches gone, and in others about two-thirds of the tree. Would it be better to cut the dead wood out now, or wait till next pruning season? The trees were badly hurt by the frost this spring. I did not notice any of them dying back till about two weeks afterward. Was that the cause?—W. G., San Juan.

Your apples and walnuts are injured by the same agency, namely, the occurrence of low temperatures after the sap has risen. Whenever frosts follow growing temperatures this is likely to be the case. It is called sour sap in the top, and is different from sour sap in the root, which results from soil conditions and not from atmospheric conditions. All wood injured in this way should be cut back below the point of injury as soon as discovered. You should do it now and not wait until the next pruning season. Dying back of branches it not, however, always due to sour sap in the top; it may result from bad soil conditions also.

Ladybirds.

To the Editor: Where can I obtain the proper ladybird for the destruction of melon aphis?—Subscriber, Alpaugh.

Distribution is made from the State Insectary, Sacramento. Mr. E. K. Carnes is in charge.

Cultivation: How Deep and How?

To the Editor: I have read Mr. R. L. Adams' article on "How Much Moisture Does a Tree Need," in the PACIFIC RURAL PRESS of April 29, and am rather puzzled at the last part of it under head of "To Save Moisture," where he says, "Further cultivation is liable to be detrimental. It will pulverize the soil into a fine dust, which in turn will carry off the moisture. A two to four inch mulch is best. The aim should be to have as small a mulch as will properly conserve the moisture. A greater depth may reduce evaporation, but the greater loss of water from the larger mulch and its attendant placing out of commission of the soluble plant foods in that layer will more than offset the possible saving in moisture. Once the mulch is made it should be left alone." Now this is new to me. I always thought that the best practice consisted in plowing the land at the proper time in regard to condition of soil, getting into a good loose mulch of six or more inches deep as soon as possible and keeping it loose by weekly or every ten day cultivation till the fruit was ripe. Can you explain this seeming contradiction?

Sunnyvale. C. R. FORGE.

Comments by Mr. R. L. Adams.

The amount of mulch which shall be maintained in any orchard must be regulated by the character of the soil. In the article referred to, emphasis is laid upon gaining knowledge of the soil in every individual case so that the land will be handled to the best possible advantage. The question of what constitutes a correct mulch cannot be stated in a definite rule applicable to all cases. The variations of soils are infinite in number and a depth of mulch suitable and proper for one class of soil will often prove too deep or too shallow for another.

Opinions are varied regarding what constitutes a proper degree of cultivation. Prof. King says: "Soils which maintain a strong capillary rise of water through them will, when converted into mulches, still permit the water to waste through their mulches faster than it will be lost through the mulches of soils which permit only slow capillary movement." That is, clay soils require deeper mulches.

Laboratory experiments with two-inch and four-inch mulches have shown that the amount of moisture saved by mulches to be: On sandy loam, 54% for a two-inch mulch and 57% for a four-inch mulch during 100 days' time; on clay loam the saving was 59% for the two-inch mulch and 63% for the four-inch layer during the same length of time. To my notion, the saving of moisture between the two-inch and four-inch mulch is not sufficient, in such cases, to pay for the extra work.

Prof. King says, further, "When a soil mulch is well loosened and thoroughly separated from the firm ground beneath, and especially after the mulch has become quite dry, little can be gained by stirring the soil."

Dr. Hilgard states, in his book on "Soils," "That excessive aeration results in serious losses of humus as well as of nitrogen, is very obvious in the arid region, where it is the habit to maintain on the surface of orchards and vineyards during dry, hot summers, a thick mulch of well-tilled soil, thus preventing loss of water by evaporation. In the course of years this surface soil becomes so badly depleted of humus that good tilth becomes impossible, the soil becoming light-colored and compacted, while the loss of nitrogen is indicated by the small size of the orchard fruits."

Prof. Wickson, Dean of the College of Agriculture of the University of California Experiment Station, believes that getting a mulch and letting it alone to be a rather dangerous practice. In one of his books, where he takes up soil practices, he writes: "Summer cultivation means cultivation all summer, or at least as long as growths are progressing. * * * The earth mulch will have its capillarity restored by its own absorption of moisture from below or from the air, and it will lose its efficiency as a protecting cover even though no rain falls. Therefore, frequent stirring to the adequate depth, but without soil-turning, must be maintained at intervals, both to restore the mulch and to destroy weeds which start late and pump moisture away from the plants in an incredible amount."

I, myself, maintain that a shallow mulch is preferable, for the reasons outlined in my article in the PACIFIC RURAL PRESS of April 29. Observation indicates that the formation of a plow-pan in many cases is the result of breaking down the compound soil-particles by working the land dry, so the fine particles work down to the depth of plowing, to be once more brought together under the influence of water, in this case, however, in a more compact, more impenetrable layer—the so-called plow-pan. Plow deep and cultivate shallow—the depth which will constitute "shallow" depending on the character of the soil. The size of the soil grains, the frequency and amount of rainfall and irrigation, the humid conditions of the air, and the physical condition of the soil as regards humus, all have a bearing on determining the depth.

The first handling of the soil is of far more consequence than subsequent cultivation, for if the work is poorly done at the beginning of the season, later cultivations can only modify and not entirely eliminate the results of improper preliminary preparation. Land plowed either too wet or too dry will never attain its greatest moisture-holding power—for the current season, at least. It either packs too hard, remains cloddy, or reduces down to a dry and floury powder.

The proper depth of cultivation is reached when a sufficient depth of dry soil is produced over the body of well moistened soil beneath, so that the two remain distinct, and the change in the lighter color of the mulch to the darker color of the moist soil is abrupt and well defined, especially when several days have elapsed after the work is done.

The more clay in the soil, the greater is the depth of mulch required. And should the distinct difference fail to hold, a deeper cultivation must be given, or a repetition done from time to time, even if it be necessary to cultivate six, eight or more inches deep, and to repeat as often as rains, irrigations, fogs, or absorption tends to reunite the mulch and soil body. But while the union is distinct, leave the mulch alone until such time as new conditions arising necessitate a change. On other words, have a reason for cultivating, and do not work on an arbitrary rule of thumb of "once a week" or "once in ten days."

Spreckels. R. L. ADAMS.

[As Mr. Adams has kindly included this writer in the "authorities," he quotes above, there is little for us to add to his statement. It is valuable to have such a clear exposition as he gives of the exact relations of mulch-making to moisture conservation. Our observation is, however, that it is a little dangerous for a man to get an idea that he is likely to lose moisture by over-cultivation, because it is so easy to let the land lie and so hard to keep working. The result is that to avoid the loss by too much cultivation he is apt to swing away over to the other side and lose volumes of moisture by inadequate cultivation. Instead of doing too much work he concludes to do a great deal too little work, and his crop suffers accordingly. To our mind, cultivation resembles irrigation—a little too much is just about right.—EDITOR.]

THE SUN AND FRUIT COLORS.

A writer in the Ranch, an upper Coast journal, has this: "The question was recently asked me, What is it in the soil that gives color to apples? It is not what is in the soil, but what is overhead, that affects the color. Let us go into an apple orchard, no matter where, and pick out a loaded tree, no matter what variety. Let us use a Winesap. Some of these apples will be red all over, some few will be red on one side, and some will be quite pale in color. Now, where do you find the solid red apples? On the outside of the tree. Where do you find the half red and the pale apples? On the inside of the tree top, where the apples are more or less shaded. It cannot be the soil that causes these various colors, for they are all on the same tree and derive their nourishment from the same soil. What do the apples on the outside of this top get, that the other apples do not get? Nothing but sunshine. Then what gives that solid red color to part of the apples on this tree? Nothing but sunshine. Then what is it that gives a better color to some apples? Nothing but sunshine. Where do we have the most sunshine? Where the skies for most part of the time are cloudless."

[This is probably true as between different apples from the same tree or the same section, but as applied to the apples from different sections it is not all the truth. There is such a thing as quality of sunshine in addition to the amount of it, and there are different qualities in color—if the term is allowable. Clearness and brightness of color seem to be due to maximum of sunshine operating through an atmosphere of maximum dryness. Depth or darkness of color (which is, of course, not always desirable) is apparently produced by sunshine in an atmosphere of greater humidity. In California, speaking generally, the fruits of clearest, brightest color are found in the interior valleys, foothills and mountains, while the deepest colors are found on fruits in the coast valleys—and these colors are sometimes too deep, dull and dark to be desirable. This applies to deciduous fruits. We are not sure how far it applies to oranges. Oranges in some of the upper coast valleys are pallid, though of good quality. The questions involved are interesting and commend themselves for comparative observations.—EDITOR.]

COMING CONVENTION OF PACIFIC COAST NURSERYMEN.

We are glad to know from the preliminary statements by Mr. C. A. Tonneson of Tacoma, Wash., secretary of the Association, that preparations are being made for the largest gathering of nurserymen ever assembled on the Pacific Coast at the 1911 meeting of the Association in San Jose, June 21 to 24. Mr. George C. Roeding, of Fresno, president of the Association, assisted by Messrs. Leonard Coates, W. B. Eberly, Almon Wheeler, and Mr. Elmer, have perfected arrangements for the entertainment of the visiting delegates who will be present from all of the Pacific Coast States and beyond. The meeting is to be held in Odd Fellows hall, which is centrally located and comfortable, and when decorated as Mr. Roeding proposes it will be a delightful place of assembly.

The convention will be called to order at 10:30 a. m., June 21.

Addresses of welcome will be made by Mr. C. N. Davidson, mayor of San Jose, and by Mr. Joseph J. Brook, secretary of the Chamber of Commerce.

Response by Mr. P. A. Dix, Utah.

Announcements and reports of officers.

Wednesday will be devoted largely to the business affairs of the association, including the president's address, George C. Roeding, reports of vice-presidents on nursery conditions in each of the States represented, together with their recommendations, as follows: Washington, G. W. R. Peaslee; Oregon, J. B. Pilkington; Idaho, C. P. Hartley; California, W. B. Eberly; Utah, E. N. Tyson; Montana, D. J. Tighe; British Columbia, Richard Layritz.

Report of Legislative and Transportation committees—M. MacDonald, P. A. Dix, Charles A. Chambers, C. P. Hartley, A. Eckert, J. Tighe, A. Brownell.

On Thursday morning, papers. "Nurserymen and Horticultural Authorities," M. McDonald, president Oregon Nursery Company.

"Inspection Policies in Relation to Nurseries," J. W. Jeffery, California Commissioner of horticulture.

"Why the Nurseryman Should Stand in the Position of an Educator to the Fruit Growers," Prof. E. J. Wickson, of the University of California.

Half hour conference with Luther Burbank, the originator.

In the afternoon the nurserymen will be the guests of the Chamber of Commerce on a trip on their electric lines, visiting Cangress Springs, Los Gatos, Saratoga and Campbell, all of which points are situated in the great prune districts of the

Santa Clara valley. The Protective Association will meet Thursday evening.

Papers for Friday and otherwise to be arranged on program.

"Pedigreed Stock: Does it Pay?" Mr. Leonard Coates. Ten minutes' discussion by Mr. H. M. Lichty and others.

"Grading of Nursery Stock," Mr. C. F. Breithaupt, followed in five minutes' discussion by Messrs. H. A. Lewis and O. R. Hayes.

Address upon a subject to be announced, Mr. S. A. Miller, of Milton Nursery Company.

"Virtues and Faults of Different Kinds of Pear Stock," Mr. N. S. Bennett.

"Rose Growing," Mr. C. W. Howard.

"Some Landscape Requirements," Mr. Johannes Riemers.

"Wild Flowers in California," Mr. Theo. Payne, Los Angeles.

"The Nurseryman a Pioneer," Mr. P. A. Dix, Roy, Utah.

"Early Nursery Reminiscences," Messrs. J. D. A. Ballou and George W. Tarleton.

On Friday afternoon, June 23, those in attendance will be invited by Mr. W. B. Eberly, of the California Nursery Company, to be their guests, taking a special train on a trip to their nurseries, 18 miles from San Jose. The California Nursery Company is perhaps the oldest on the Coast and contains plants and trees from all over the world in vast quantities and varieties. This feature of the program is worth coming a long way to enjoy, being highly instructive as well as enjoyable.

The Field.

ONION-SETS BY WHOLESALE.

Correspondence from Santa Ana, Orange county, gives details of very large production of onion-sets for export which are very interesting. The Murdock onion-packing house, five miles west of Santa Ana, is the largest establishment of the sort in the country perhaps. There are seventy acres in the ranch, thirty-five of which are given to growing onion-sets for the growers. During the early history of the ranch, onions were produced for the market, but the growing of seed and "sets" was found more profitable. Last year 140 tons were shipped over the entire country.

The early varieties, the seed for which comes from the island of Madagascar, are the Crystal Wax and the White Bermuda. This year the seed for these early producers began to be sown February 9 and is still being put in. Sometimes the crop goes in as early as December and January. Following these comes the New Queen variety, which is followed by the Brown Australian. The planting continues till June and the harvest comes in the fall. The early sets will be ready for shipment in June and July, and will go mainly to Texas and Georgia. The latter State has already ordered twenty tons for this year. G. A. Murdock is the owner and superintendent of the business. His father, S. J. Murdock, began to produce onions near Westminster twenty-two years ago.

In preparing the sets for shipment the crop is first pulled and spread on racks prepared for that purpose, to be dried in the sun for three to five weeks. From the field the trays are hauled to the packing-house, where they are dumped into the hopper of a large circular separator, run by machinery, in which the tops are beaten off. In another machine, to which the onions and chaff are conveyed by an endless belt, the chaff is blown out. Thence the elevator takes the onions to the grading machine, which separates them into four classes according to size, and from which another elevator carries them upstairs, where a final sorting takes place. Here is a long row of machines, before each of which an operator sits to inspect the sets as they pass along the carriage, while the defective sets are cast out. This double sorting insures a high-grade product. From here the onions drop back to the ground floor, where they are sacked and crated for shipment. All the machinery was invented by G. A. Murdock. The shipments are made from Westminster, about twenty tons being placed in a car. The average per acre is close to four and a half tons. The highest yield on record here is ten tons, while six and seven are frequent.

Citrus Fruits.

COST OF IRRIGATING CITRUS TREES.

(*Continued From Page 429.*)

plants of 10 to 100-horsepower, with lifts of 100 to 300 feet, varied from $10 to $90 per acre-foot.

The application of water to orchards requires, ordinarily, an expenditure of $193 for a head line for a 10-acre orchard, and the interest on this, which, at 6 per cent, amounts to $1.16 per acre per annum. An irrigator is paid about 25 cents per hour when hired, and his services for seven irrigations of twelve hours each for 10 acres costs $2.10 per acre. Where a cover crop is grown there are not less than nine irrigations, and the cost is $2.70 per acre. This makes the total cost of obtaining and applying the water about $24 per acre, or as much as the cost of a water right in some sections of the West.

These figures, however, have little meaning unless considered in relation to the total cost of production of citrus fruits and the net return to the grower. The number of boxes of fruit produced per acre varies through a wide range and depends, among other things, on the location, the age of the trees, the care of the orchard, the variety of the fruit, and the season. A crop of 300 boxes per acre is obtained sometimes, but even on a well-managed grove in full bearing, 200 boxes of oranges per acre is an exceptional average. The average number of boxes of oranges produced per acre in California for eleven years on an acreage which increased from 30,193 in 1898 to 104,073 in 1908 is 155. The average number of boxes of lemons produced on an acreage increasing from 6518 to 16,718 in the same period is 66, but it is only in the last five or six years that orchardists have known how to grow good crops of lemons. Now they not only produce more, the average production for the last five years being 101 boxes per acre, but the lemons are of much better quality. In general, trees bear more heavily near the coast than in the interior, although orchards in the coast sections are more troubled with scale and must be fumigated more frequently. Pomona, being centrally located, should be representative.

The selling price of citrus fruits varies to a great degree. The cost of marketing is deducted from the gross receipts by the fruit exchange before the grower is paid for his fruit. This includes packing and selling at 37 cents per box for oranges and 64 cents per box for lemons, and 84 cents per box for freight, either for oranges or lemons. There is a refrigeration charge, also, of 15 to 25 cents per box for fully one-half of the oranges. The average net price per box received for oranges has been as low as 75 cents some years and as high as $1.50 other years. The variation in the price of lemons has been about as great. The net prices for single shipments have a much wider range. The records show that the average net price for all fruit delivered at the packing-houses of the fruit exchange for several years is $1.14 per box for oranges and $1.41 per box for lemons. If an orange orchard produces 155 boxes of fruit to the acre, and the return is $1.14 per box, the grower receives $176.70 per acre. This, however, is not all profit, as the cost of producing the fruit is yet to be deducted.

The cost of irrigation, cultivation, and fertilization is the largest. The cost of fertilizer varies more than any other item. Some orchardists use little fertilizer, but as a rule their profits are small. The useful age of the orange tree under unnatural conditions has not yet been determined, and longer experience may teach, on the other hand, that the forcing of the trees by fertilizing to too great an extreme is unwise.

The practise on some well-kept orange orchards is to use ten tons of stable manure per acre, at a cost of $2 to $2.75 per ton, and 10 pounds of commercial fertilizer per tree, at 2 cents per pound, each year. In most localities trees must be fumigated at intervals of two to five years. This costs $15 to $25 per acre, depending upon the size and condition of the trees. Pruning costs $4 to $6 per acre for oranges and more for lemons. Picking and hauling costs 8 cents per box for oranges and 26 cents per box for lemons. The following represents the average cost per acre of production, together with picking and hauling, of oranges:

Cost per acre of raising oranges.	
Irrigation	$ 24.00
Cultivation	20.00
Fertilizer	40.00
Pruning	5.00
Fumigation	7.00
Taxes	8.00
Picking and hauling	12.40
Total	$116.40

Using $176.70 as the return and $116.40 as the cost of production, there is left $60.30 per acre as the grower's profit and interest on his investment. Where the production, the cost, and the prices vary so greatly it is difficult to make a fair statement of the profit. The averages include many young orchards and some that are neglected sadly. Perhaps the orchard on which $40 per acre per year was spent for fertilizer produces more than the average of 155 boxes per acre. Trees over 10 years of age should give a profit of $100 per acre.

Stories are current of fabulous profits from orange growing. A grove does occasionally return a large sum for a single year, but these are exceptions, and the publicity given such has left a wrong impression with many unfamiliar with the industry. The general condition of the districts as regards home and mode of living is not always a true index to the profits of the groves, for much wealth has been brought from other sections by attractions of the country other than the profits in fruit growing, but there is a fair profit even on the large investment, and the high cost of irrigation is fully warranted.

[The publication from which we take the foregoing is Bulletin 236 of the Office of Expertiment Stations of the U. S. Department of Agriculture. Copies can be had as long as the supply lasts by application to Mr. Frank Adams, Irrigation Investigations, Berkeley, Cal.—EDITOR.]

Viticulture.

CHANCE FOR CALIFORNIA WINE IN GERMANY.

(From U. S. Consul-General Robert P. Skinner, Hamburg.)

Owing to the general failure of the European wine crops last year, considerable interest is being manifested in the importation of table wines from California, and it is not improbable that a permanent demand for such wines can be created in this country if American producers are in a position to meet German requirements.

One of the obstacles to commercial success in this matter will be the necessity of submitting the wine itself to chemical analysis after its arrival in this country. It therefore follows that importers are willing to buy only on conditional terms, payments to be made after delivery of the merchandise and examination by chemists of the Government. Comparatively few lines of American goods are sold in this manner, the general rule being to submit samples or other proof of quality in advance of shipments, the value of such shipments being collected against the delivery of shipping documents by means of confirmed bankers' credits.

Certificates of Analyses.—Wines shipped to Germany from Italy, Austria, and Hungary are exempted from German analysis, and there are special provisions of law whereby the German Government is in a position to recognize certificates of wine analyses established in the country of origin, the form and mode of issuance of which are determined by international agreement.

Thus, if an agreement of this character existed between Germany and the United States, California wine shippers could ascertain in a conclusive manner, before their merchandise left their possession, whether or not it would pass German customs control. Not the least of objections to analysis in Germany is the cost thereof, amounting in Hamburg to $2.86 for each sample tested.

Upon the arrival of imported wines in casks,

samples are drawn from each 100 casks of wine of the same kind. When consignments consist of different kinds, one sample is taken from each kind. Wines received from different warehouses, or which differ in vintage or price, are regarded as different in kind. When wine is shipped in bottles, one sample is taken from every 2500 bottles the contents of which are the same. The examination of what are called "high-priced wines" may be waived upon the assumption that the price itself is a guaranty of the purity and excellence of the article.

An office of the U. S. Public Health and Marine Hospital Service has been opened in San Jose to assist in the campaign against ground squirrels.

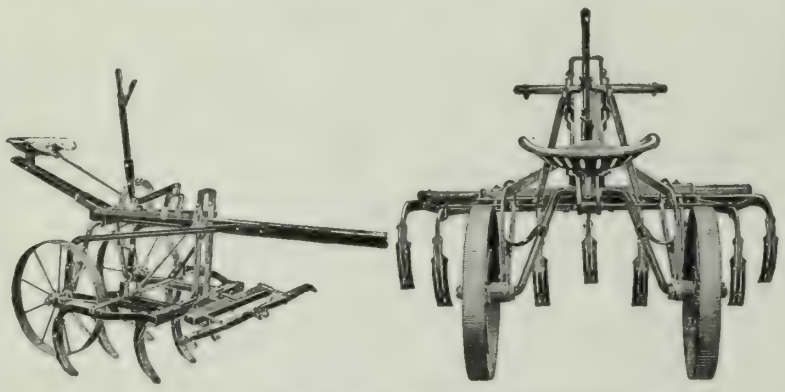
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The **PIPE RECOMMENDED BY ALL USERS.** It is the **ONLY SCIENTIFICALLY CONSTRUCTED SURFACE IRRIGATION PIPE** on the market. **THERE'S NO ROUND SEAMS TO LEAK,** retard the flow of water or weaken the pipe. This pipe is easily handled and cheaper than flumes. It will last a lifetime. For irrigating alfalfa it is the only pipe to use. We make **RIVETED PIPE AND TANKS.** Write for Illustrated Catalogue also **SPECIAL IRRIGATION FOLDER** which may mean much to you.

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Benicia-Orr Cultivator



These Illustrations Show the Frame Raised Out of the Ground.

Just note how the frame extends out beyond the wheels so that the driver can work up close to the trees, vines or vegetables.

Note that the frame is level in every position.

Note how well the various parts are bolted and braced so as to get the desired strength and rigidity and still be light in weight and draught.

The **BENICIA-ORR** is made in two sizes—seven and nine teeth—which cultivate a width of four and five feet respectively. By the loosening of six bolts it can be changed from one size to the other. Center tooth can be removed, if desired, for cultivating small vegetables, as beets, beans, etc.

Bear in mind that this implement was designed and is built by practical men who understand the need of agriculturists.

For **good, hard, thorough work in garden, orchard, vineyard or field, the BENICIA-ORR has the lead over any other cultivator on the market.**

If you want to use the latest, **up-to-date cultivator,** place your order for a **BENICIA-ORR.**

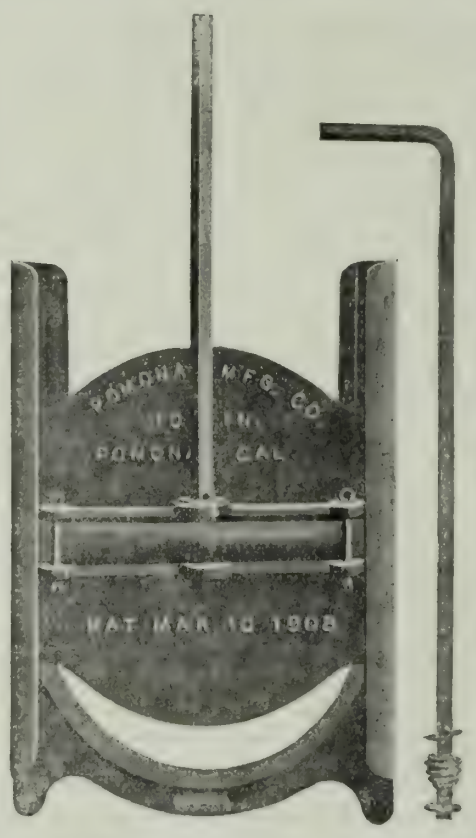
Code.	Size.	Width.	Net.	Weight. Gross, Cased.	Measurement. Cu. Ft., Cased.
Sevenor	7 teeth	4 feet	283 lbs.	365 lbs.	8
Nineor	9 teeth	5 feet	308 lbs.	390 lbs.	8
	Pole		32 lbs.	32 lbs.	1

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MR. DEALER: We are receiving many inquiries for Benicia-Orrs; have you secured the agency in your vicinity?



GIVE THE POMONA PATENT PRESSURE GATE A TRIAL.

No rubber or wooden facing to rot or wear out. Absolutely water tight when closed. Locking mechanism is protected against rust or clogging with sand or dirt. Simple in construction. Cheap in price and as durable as solid iron.

THE LOCKING DEVICE

Is the simplest made, merely a tapering screw with split tapering nut socket. It locks the cover in any desired position or locks the faces, making an ABSOLUTELY WATER TIGHT JOINT.

TWO FOOT HANDLE FURNISHED WITH EVERY PRESSURE GATE FREE.

ALSO A FULL LINE OF CIRCULAR VALVES FOR ORCHARD AND ALFALFA IRRIGATION CARRIED IN STOCK.

Write for descriptive circular and price list.

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THE IMPERIAL LAND GRADER

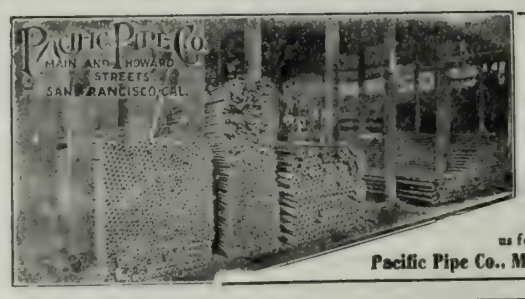


The only grader and scraper combined that moves earth and levels the ground perfectly and with ease.

GASOLINE ENGINES. CENTRIFUGAL PUMPS.
TRACTION ENGINES. ELECTRIC MOTORS.

ALL KINDS OF MACHINERY REPAIRS ON SHORT NOTICE.

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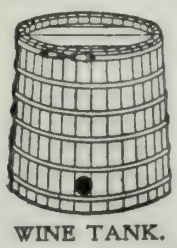


Save Money By Buying This Good Second-Hand Pipe

We can supply you with any size and quantity of **Standard Pipe or Casing**—all new threads and couplings—all stock guaranteed first class.

If thinking of buying any kind of pipe, your best interests will be served by writing us for prices and particulars.

Pacific Pipe Co., Main and Howard Sts., San Francisco



WINE TANK.

Tanks Tanks

WINDELER'S PLANING MILL AND COOPERAGE

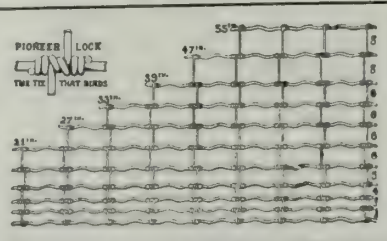
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Water Tanks, Wine Tanks, made from carefully selected stock by careful and experienced workmen. "Tanks that are well made last a long time." It will pay you to get my prices before buying.

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Has a reputation and guarantee behind it.

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CALIFORNIA ANCHOR FENCE CO., 822 Main Street, Stockton, Cal.

The California Deciduous Fruit Crop.

This week we publish the latest estimate of the growing fruit crop in this State. The figures show very little change from three weeks ago, though there are some modifications of the figures which we give in the notes presented by our correspondents.

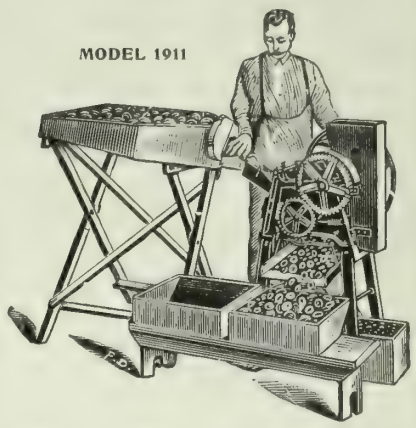
This table gives number of bearing trees in each county in 1910, followed by figures of per cent of full crop.

Our Contra Costa county correspondent states: "Some contracts made for prunes on 4-cent basis; offers now being made on 4½-cent basis. Many crops of Bartlett pears have dropped heavily during last few days." The Fresno report says that pear trees not blighted will have 75% of a crop. From Nevada county reports we learn that 25% of the apples have dropped from the trees. Riverside county will have a 90% crop of almonds. San Diego reports a 100% lemon crop; quality very fine. The grape crop in Stanislaus county is rated at 25% above the normal yield of the past two years; peaches will be only about a half crop. Shasta county has had an unusually cold spring, which has damaged apples in the mountain districts, so that the estimate of 25% of a crop will likely need revision later. Our San Joaquin county correspondent says that prunes are still dropping, 4¾ to 5 cents being offered for same; apricots and almonds are very spotted; peaches, dried, 8½c. up; cherries are bringing 12½c. Some apples in the higher elevations of San Bernardino county are reported to have been hurt by frost, balance good crop. From Solano county hard winds are reported to have injured cherries last week; pears dropping badly in some orchards. Sonoma county will have a good apple crop, but Gravensteins are reported at about half normal yield. Growers in Tehama county realize the crop shortage and will take extra care of what they have; no sales yet reported. From the Tulare county report we learn that grapes will be 50% and that every prospect now is for a very good orange crop. The grape prospect in Yolo county is given as follows: Muscats, 75%; Sultanas, 60%; Thompson's Seedless, about 80%. Madera county reports almonds as 25% of a crop. The plum crop is generally reported as being good over the State.

The estimates of the prune crop in Santa Clara county place it at 45%, and a total yield of 50,000,000 pounds. Prices are strong at 4½c., and it looks as though 5 cents would soon be paid. Apricots are very spotted, but peaches have gained greatly in the last two weeks. The crop is now stated to be 85%, and many orchards are being thinned.

COUNTIES	Apricots	% of Full Crop	Cherries	% of Full Crop	Pears	% of Full Crop	Peaches	% of Full Crop	Prunes	% of Full Crop	Apples	% of Full Crop.
Alameda	115,000	50	87,000	60	58,000	75	84,000	60	154,600	50	55,200	
Butte	7,545	40	1,743	50	13,199	70	133,638	100	84,405	95	12,137	85
Colusa	17,000		1,000		7,000		13,000		92,500		6,500	
Contra Costa	53,100	15	8,050	30	73,500	60	28,200	50	54,220	65	8,000	
El Dorado	400		5,000	50	70,000	70	110,000	65	124,000	50	32,000	80
Fresno	145,600	50			.....		3,270,000	50	83,000	75	20,000	80
Kern	25,000		1,000		1,500		50,000		4,100		12,000	
Kings	79,600				.....		386,200		6,860		500	
Lake	1,975	30	310		24,850	95	5,829	50	29,622	30	9,872	40
Los Angeles	200,300		1,950		75,000		218,720		61,710		135,150	
Madera	10,000	15				90	70,000	35	.....	60	11,000	
Mendocino	500		750		10,000		10,000		20,000		2,000	
Merced	8,250		450		4,250		148,401		1,525		4,500	
Monterey	25,000	100	2,000	25	6,200	75	9,500	100	3,350	90	70,000	70
Napa	17,000	35	32,000	90	69,120	90	107,880	40	91,180	75	45,000	90
Nevada	170	10	285	25	36,270	30	12,760	20	5,800	50	12,270	75
Orange	167,240	75			.....	30	38,350	80	17,320	90	12,795	60
Placer	7,485		23,480	40	104,600	60	994,250	60	20,465		19,480	
Riverside	66,317	85		50	12,151	80	45,293	75	22,138	50	5,087	75
Sacramento	17,000		8,500		55,000		18,000		46,000		5,000	
San Benito	35,000				6,000		15,000		125,000		17,000	
San Bernardino	26,200	50	15,600	60	18,500	50	8,250	70	2,800	10	22,680	50
San Diego	9,140	100	1,300	100	2,318	80	8,760	80	3,240		20,200	100
San Joaquin	70,540	25	37,301	50	25,425	100	235,130	75	47,815	50	20,500	10
Santa Barbara	21,450	85	750	100	1,215	90	6,325	95	1,250		9,450	85
Santa Clara	544,000	35	137,700	70	126,200		592,500	85	5,257,900	45	17,200	
Santa Cruz	56,440	95	12,914	70	14,286		10,594		99,096		590,878	80
Shasta	650	10	500		27,700	50	44,000	40	87,500	25	15,000	25
Solano	237,800	50	65,200	55	203,000	80	490,600	85	465,000	40	229,120	
Sonoma	22,540	75	45,720	60	81,270	100	28,670	90	588,040	100	3,450	90
Stanislaus	9,050	75	1,350	90	3,620	100	50,410	40	7,190	100	4,372	75
Sutter	4,804		1,186		11,309		130,854		39,922		4,700	
Tehama	64,410	10	5,070		63,050	80	679,400	25	115,700	60	18,650	25
Tulare	32,075	25	500		3,287		348,170	30	137,935	50	13,320	80
Ventura	26,000						7,800		19,000		8,100	
Yolo	80,000	20	4,000		12,000	75	11,000	80	130,000	65	800	
Yuba	18,750	50	11,125	50	14,450	45	69,555	70	5,055	60	7,250	30

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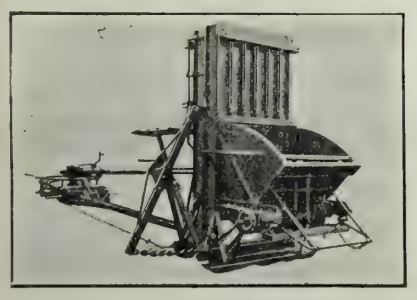
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NOTICE TO STOCKHOLDERS

Notice is hereby given that the Annual Meeting of the Stockholders of the Grangers' Business Association (a corporation) for the election of officers to serve for the ensuing year and for the transaction of such business as may come before it, will be held at its principal place of business at the Merchants Exchange Building, No. 431 California St., San Francisco, State of California, at 10 o'clock a. m. on Tuesday, June 3, 1911.

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R. H. CHILDS, Secretary.
Dated May 9, 1911.

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How to Choose Bee-Keeping Locations in California.

Mr. E. M. Gibson, of Jamul, San Diego county, believes in beekeepers getting together, to a certain extent at least, and increasing the output of localities, rather than to fear too much that overcrowding of available pasturage will result. In a recent letter to Gleanings he makes these points:

Have Honey Enough to Handle.—I did not produce enough honey for a full carload, and the railroad company asked more to ship what I had by local freight than they wanted for a car. I wrote to several producers to see if I could buy enough to fill a car. From some I received the reply, "Not a pound of surplus this year"; from others, that they had "a few cases," the amounts ranging from 6 to 35 cases (720 to 4200 pounds). What inference could one draw from such replies but that some of their bees were in better condition than others, knowing their ranges were practically the same? Some years a few miles makes a vast difference, but this year conditions were very similar throughout the county.

Better Beekeepers Would Get More Honey.—There are localities in which one cannot point to a single beekeeper who depends on his bees entirely for support, and I opine he never will until they drop other vocations, stop scattering their forces, and attend strictly to their bees. If work is pressing, and anything has to be neglected, it's always the bees. I could point to several who depend entirely on their bees for support, among them the writer. I do not even raise the feed for my horses. By working overtime I might get the seed planted, but the harvest would come just at the time my bees need attention the most. Modesty would suggest that I say nothing of my own success, but I know of others who are making a good living, and some of them with whom I have had dealings, I notice, carry a check-book. Those people who keep a few bees must surely make something or they would not bother with them; and if they can make something from a few without much attention, they would make correspondingly more with a large number and good care. One would not expect a farmer to make a living from ten acres of land; but if he had ten times ten he might do well. A recent writer sounded the keynote when, in answer to the question, what to keep in connection with bees, answered, "More bees."

Coast or Mountain?—The desire of some to locate too near the coast is a mistake. I know of no one who is not back from the coast more than fifteen miles who is making a success with bees. It is much more pleasant and convenient to live near the coast, but if one is going to succeed in beekeeping or any other business he must adjust himself to conditions. "If the mountains will not come to us, we must go to the mountains." There is no danger of my being crowded with barley or any other kind of grainfields, for the country is so rough there is but very little land that could be cultivated. We have no sages in this section but the white. Eriogonum is the sheet-anchor of the bee industry here; and, to my liking, there is no better flavored honey, although it is a decided amber. There is too much difference in the price of light and amber honey. Tarweed honey is quite light, but I would never taste honey if I could get nothing but tarweed.

Getting Points on Locations.—Some critics seem to think I am standing in my own light by encouraging beekeepers to come here. It is not to get more beekeepers, but to get better ones. However, if it brings more, I shall still feel it my duty to do all I can for them, for I was treated very shabbily when I came here, and I have not forgotten it. Coming here for the express purpose of keeping bees, I naturally called on some of the beekeepers, who were quite friendly until they learned I was looking for a location, when they shut up like clams. I had bought 40 colonies of bees, and I wanted a place to put them, for they had to be moved. I tried three different men who owned a lot of rocks and brush which they called ranches, but there was "nothing doing." There were no bees within nine or ten miles, and not three acres on the three quarter-sections that could be cultivated—not a thing the bees could injure, and absolutely worthless except for bees. I am not quite fatalist enough to believe that all things are for the best; but in this instance it proved to be; for after I got my bearings so that I knew east from west, and learned what plants produce nectar, I went to the county records and found three much better and more accessible locations than I tried to get at first. After reading the foregoing, if there were any who considered me a fit subject for the insane asylum, I think they will change their verdict.

Get the Hives off the Ground.—In looking at photographs of apiaries in which the hives stand on the ground, I often wonder why those who are old enough to realize that they have backs do not have their hives on benches. There is no harder position for me than to work half bent over for a long time. Benches that are 14 or 15 inches high bring the super at just the right height, so one can work standing straight. The only reason that I can see for having them on the ground is that they think it saves bees that miss the alighting-board—but does it? Are there not many more bees caught by toads, lizards, skunks, etc., than would get lost by missing the alighting-board? If not too busy, I always watch a bee if I see one miss; but I cannot call to mind an instance when she did not take wing and enter the hive after resting a short time; and if the alighting-board extends four or five inches beyond the hive, but very few will miss it. Then, too, when the grass gets four or five inches high it's a nuisance, and much time is required to mow and pull grass and weeds, which is quite an item when one has many bees; but when they are on benches the grass does not bother until it is 17 inches high, and one mowing will usually be sufficient, especially in this country, where the dry season commences in May. The bottom-boards will last as long as the rest of the hive when on benches. Ants can be kept from hives in counties where they are troublesome by daubing the bench legs with axle grease occasionally. I have seen alighting-boards ruined by skunks scratching on them to get the bees out so they could catch them. Benches, as I make them, are cheap, strong, and easily put up.



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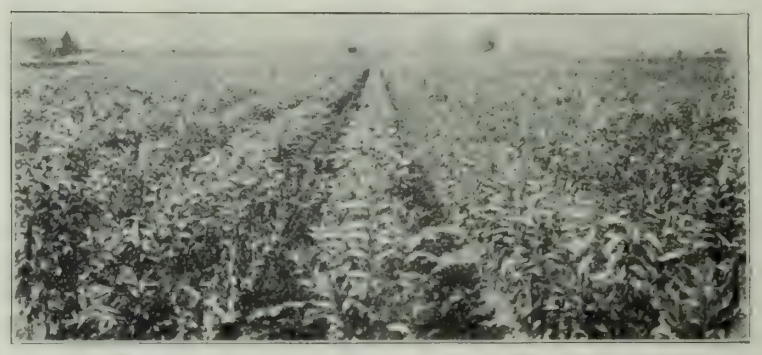
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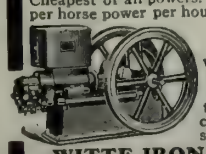
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Detection of Commercial Fertilizers by Simple Methods.

By Dr. H. KASERER.

(Translated from the German by Professor JOHN S. BURD, University of California.)

It frequently happens that the practical agriculturist is placed in a position where it is necessary to determine whether a given substance is in fact a definite commercial fertilizer. Even if the fertilizer sacks are tagged, as is usual, it frequently happens that exchanges take place and sometimes conscienceless dealers take advantage of the ignorance of the public; also, the case frequently arises in a warehouse that the label on the sack, or the temporary tag, is lost, and it is not known which fertilizer is being used. It should, therefore, be of interest to show that it is possible to determine with sufficient accuracy which fertilizer is present without costly apparatus and without a systematic and complete investigation. It must, however, be noted that other substances which sometimes occur on the farm are not considered by these methods, but only the most frequently occurring commercial fertilizers can be considered. As to utensils for this investigation, only an iron spoon, several test glasses, red and blue litmus paper, sugar, hydrochloric acid, alcohol, lime water, tartaric acid, and a small spirit lamp are needed. In place of hydrochloric acid, if necessary, strong vinegar may be used. By means of these supplies the substances in question may be investigated according to the following method.

First, the solubility or the insolubility of the substances in water is determined.

A. The substance is almost completely soluble.

1. On addition of lime water and heating, an odor of ammonia is given off and the piece of moist red litmus paper held in the fume becomes blue. The salt itself is volatile when heated: The substance is sulphate of ammonia.
2. When mixed with sugar and heated, the substance deflagrates:
   a. The substance is salty and colors the flame of the alcohol lamp yellow; it is Chile saltpeter (Sodium nitrate).
   b. The substance is earthy, colors the flame reddish yellow; it is Norway saltpeter (Calcium nitrate).
3. A solution of the salt mixed with a solution of tartaric acid and alcohol gives a crystalline precipitate: the substance is potassium sulphate, 40% potash salt, or Kainit.
4. The salt is almost completely soluble, does not deflagrate with sugar, is not volatile, gives no precipitates with tartaric acid and alcohol, tastes salty, color of the flame yellow: the substance is manure salt.

B. The substance is only partially soluble in water.

1. The solution has an acid reaction, the substance itself a peculiar (acid) odor: the substance is superphosphate.
2. The solution is alkaline but neutral.
   a. The substance is dusty, smells like acetylene, also like ammonia: the substance is lime nitrogen.
   b. The substance becomes moist in the air, but is otherwise similar to (a.): the substance is nitrogen lime.

C. The substance is insoluble in water.

1. Reaction toward moist litmus paper is neutral.
   a. The substance efferverseces with hydrochloric acid, is partially soluble therein, odorless, earthy: the substance is crude phosphate.
   b. The substance does not effervesce with hydrochloric acid, but is partially soluble: the substance is bone meal. (Note.—Steamed bone meal which has not had its lime removed by treatment with acid will carbonize on heating. Bone meal in which the lime has been removed will carbonize, but to a much less degree. There is also a distinction between the two based upon their odor.)
   c. The substance is completely soluble in hydrochloric acid without effervescence: the substance is precipitated lime phosphate.
2. Reaction toward moist litmus paper is alkaline.
   a. Substance is dusty and of very great weight: the substance is Thomas phosphate powder.
   b. The substance is earthy and effervesces vigorously with hydrochloric acid: lime carbonate.

Various mixtures of these materials will give several reactions. It should be understood that the methods described do not comprise a complete chemical investigation, and do not tell the amounts of the valuable constituents contained in the materials. It is to be understood that errors may enter if the investigation is not confined to the class of materials mentioned in the beginning.

The methods described were originated by the author in the Agricultural Laboratory of the Imperial Royal High School for Agriculture.

ORANGES IN SOUTH AFRICA.

To the Editor: Having noticed in your issue of the 22nd of April, the query, "Where to Grow Oranges", I would point out that at the present moment Southern Rhodesia, the Garden Colony of South Africa, offers advantages which cannot be equalled in any other country.

Land is very cheap as yet, and can be purchased for 2s. 6d. an acre. The climate, frost being unknown, has been shown to be suitable for the production of oranges of excellent quality. Grafted trees bear from 300 to 400 oranges in their fifth year without injury to themselves, and ripen their fruit at a season when the world's markets have practically no other source of supply.

C. W. L. MAUDE,
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ALFALFA ENTERPRISE.

The David Jacks corporation has started the work on the south end of Los Conchos rancho, near Soledad, Monterey county, of putting 2000 acres into alfalfa. At the present time 50 scrapers are kept busy checking the land. George Garside is drilling for them more than a dozen wells, and two big pumps are to be installed. The land was thought to be more or less sand waste, but upon plowing it black soil is turned up which will make fine alfalfa land. The whole acreage will probably be seeded tne coming fall and it is the intention to lease it in 160-acre tracts to dairymen. Houses and buildings necessary are now being erected. The engineering firm of Kerns & Sessions of San Francisco are directing the work.

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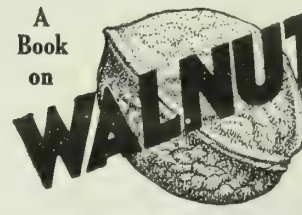
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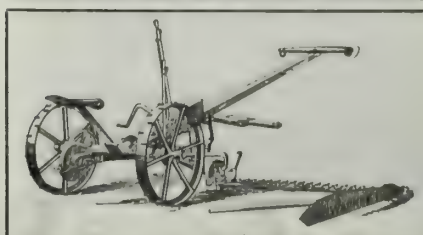
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AGRICULTURAL REVIEW.

With the Fruit Men.

The Court of Commerce has indicated that it will deny the injunction of the Interstate Commerce Commission regarding the pre-icing and pre-cooling of fruits and permit the railroads and not the shippers to handle this work. This will force the shippers to take the pre-icing and pre-cooling of the carriers without a guarantee, or of taking standard refrigeration at $52 per car.

The city council of Roseville, Placer county, has petitioned the authorities at Washington to locate a proposed viticultural station at that place.

A. Sorenson, president of the Fresno Farmers' Union, is making an investigation of the fruit situation, especially as regards peaches in Georgia, Texas, and other parts of the South.

In Solano county from 7 to 9 cents is being asked for peaches, 10 to 15 for apricots, and 4 to 5 for prunes.

C. L. Patteson, of Alexander valley, Sonoma county, has sold his prunes for $130 per ton, dried. At Healdsburg $135 has been paid.

In Fresno county 9 cents is being offered for peaches.

Some selling of raisins at 4½ cents has been done in Fresno.

Members of the San Jose Grange have decided to hold their prunes until they can secure a price of 5 cents per pound, dried.

Growers near Sebastopol have sold their dried apple crop up to August 15 at 8½ cents per pound, and 7½ cents after that date.

Five-year contracts for cherries have been signed in Sebastopol at 5½ cents the first two years, and 5 cents the succeeding three years.

Deciduous Fruit Conditions.

The following gives number of cars of deciduous fruit shipped through the California Fruit Distributors from all points in California for the week ending Friday morning, May 26, 1911:

Cherries—Nine cars. The pleasant weather reported in our last letter of the 20th did not last very long, soon changing to very cool weather, which still continues. As a consequence, cherries have not ripened as fast as expected, but nevertheless are being shipped daily from Vacaville and Suisun, with the promise of car-lot shipments from the Santa Clara valley next week. So far we have had four carloads sold and the fruit has gone at very satisfactory prices. Our first car in Chicago grossed $5554. The first in New York, containing 1166 boxes, sold for over $3600, an average of $3.10 per box. Our second car in Chicago sold yesterday for $5352, while our second car in New York sold at the same time for $6234, this being the banner sale for a carload of deciduous fruit.

The later varieties of cherries, such as Tartarian, are now going forward from the early sections in fairly liberal quantities. The first few scattering boxes of Royal Ann and Bing have made their appearance.

Apricots—The first few crates of apricots are now going forward, but there will be no considerable quantity of them for about one week.

There is no change in the situation of plums, peaches, Bartlett pears and grapes. All these varieties are growing nicely and promise well.

General Agriculture.

A carload of Triumph potatoes consigned to the Stockton markets from Texas was recently condemned by Horticultural Commissioner W. Garden, who found the potatoes badly infested with a potato beetle that does great damage in the East and South. Specimens of the beetle have been sent to Sacramento for identification, and the shipment was forwarded by the owners to Portland, Oregon. A common name of the beetle in the East is the "possum" beetle. It is a relative of the Colorado potato beetle, although much smaller, and works in the same way.

On the islands near Stockton a heavy grain crop is expected, although much late planting was done on account of winter overflow. Other planting is about the same as last year, there being a few less beans and a little more potatoes than a year ago. The acreage of celery will be increased slightly this summer.

A new factor in the agricultural conditions on the islands is the entrance of the Hindus as independent growers, as a considerable acreage has been leased to them on either shares or a flat rental.

Hay in Monterey county will amount to only 25 per cent of a full crop.

In San Diego county a 75 per cent crop of hay will be secured.

Twenty carloads of onions were shipped out of Brawley this season.

Harvesting of peas has begun on the river bottoms near Langworth, Stanislaus county. The upland crop is good, but that on the lowlands has been injured by weeds.

Miscellaneous.

An egg-laying contest, open to chickens from all parts of the world, may be started for the year beginning next November at Spokane, Washington, for the purpose of determining just how many eggs could be expected from different breeds of poultry.

A shipment of parasites from South Africa to attack the black scale has been received by the State Horticultural Commission.

The Visalia Poultry Co. is to install a 5100-egg incubator at its plant in time for fall hatching.

Work has begun on an alfalfa-meal mill at Orland, Glenn county.

Fifteen wells are being sunk on the Hartley colony in Merced county.

J. D. Jones of Seattle has filed upon 5000 miner's inches of water for irrigation purposes to be taken from Butte creek.

The honey crop from orange blossoms in Tulare county is completed and is said to be larger than in any previous season.

Redding, Shasta county, was recently invaded by a swarm of grasshoppers.

Elmer C. Purdy, of the Carl Purdy Flower Co. of Ukiah, is collecting wild harebell bulbs for shipment to the East in the hills of Tulare county. He will also collect bulbs of the red Mariposa tulip in the Mojave desert.

The Blossom Ranch, near Red Bluff, comprising 12,500 acres and equipment and stock, has been sold.

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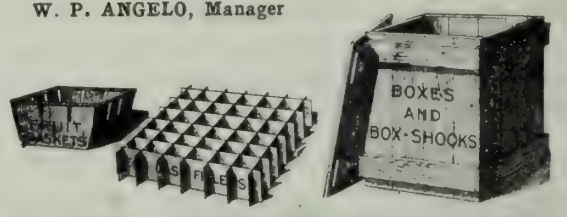
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LIVE STOCK NOTES.

Freeman Ford of San Fernando valley has purchased a number of Shetland ponies, and will import others from the East soon to start breeding the ponies on a large scale on his farm. Shetland ponies will also be raised by J. L. Mendenhall, on a ranch recently purchased near Williams, Colusa county.

A Jersey cow of C. C. Wright of Burbank recently dropped three calves at a birth. Two calves and the cow are alive and doing well.

Sheep men of the upper Sacramento valley are becoming worried over the difficulty of taking their flocks over the Sierras into Lassen county, where they are pastured during the summer, as the mountains are still covered with snow and the sheep may not be moved for some time yet.

One hundred and fifty head of cattle near Gridley, Butte county, recently stampeded and plunged into the Feather river. The herd, however, landed on an island several miles down, the only loss being four calves.

The hot weather in the East caused the loss of many hogs in cars being shipped to market.

Several large rodeos, which are now uncommon in the Livermore district, Alameda county, have been held recently.

The management of the Paicines Ranch Company, near Hollister, will soon dispose of all grade cattle and horses and in the future raise only thoroughbred animals.

DAIRY NOTES.

The officers of the Dairymen's Protective Association of Newman have signed a contract with the Kerman Creamery by which the creamery will obtain the product of the Association.

G. F. Lynch, of Poplar, Tulare county, sold a large amount of his dairy stock and equipment last Tuesday at auction.

H. R. Timm of Dixon, Sonalo county, is erecting a barn to hold 650 tons of alfalfa hay.

Several heavy fines have been laid recently in Sonoma county upon dairymen convicted of keeping unsanitary dairies, through the efforts of State Dairy Inspector James A. Butler.

On the B. G. Lambert dairy, four miles south of Corcoran, B. C. Roberts has commenced the construction of two cement silos, 20 by 40 feet. This is the second dairy near Corcoran to adopt the use of silos.

The Dodds Creamery of Crows Landing, work upon which was started only a little over a month ago, is now running. The cream is shipped to San Jose to be made into butter.

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RED BALL BRAND

Suppose, after doing a little preliminary work around the farm early in the morning, and your wife called out breakfast was ready, and you had sat down with a keen appetite to some nice fresh-laid, medium boiled eggs, it was discovered the salt had run out, and the nearest grocery was several miles away. Wouldn't it be annoying? The eggs would probably go untouched and you might be a little grouchy till lunch time, owing to being "off your feed."

Then you wonder why your live stock get "off their feed." It is just for a similar reason you declined the eggs. Their feed lacks the **seasoning.** They have a craving for that **something,** without which their otherwise good and generous provender seems tasteless and uninviting. Their systems demand this **something. THE RED BALL BRAND MANHATTAN HORSE AND CATTLE FOOD** will keep them toned up and contented. It is composed of ground, soft, mellow root, and contains no drugs. Try it—The cost is very small.

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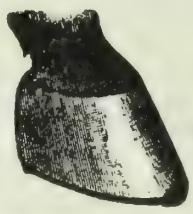
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Samples supplied by us on application. Mention Rural Press.

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318-320 Front Street San Francisco, California

Still Harping on the Horse.

We wonder how many readers of the PACIFIC RURAL PRESS have been influenced by the many exhortations we have printed during the last few years to pay more attention to growing the right kind of horses. The facts of the chances for profit to those who are rightly fixed for the increase of this product are still being set forth by earnest writers. Mr. James S. Kirtley, of Illinois, gives the facts new emphasis in a recent letter to the Breeder's Gazette:

WORLD-WIDE DEMAND.—The clamor for more horses comes from all over the world and from all over our own country, in spite of the fact that America has more horses than any other nation with the exception of Russia, and gives more attention to improving its stock than any other nation except France. We probably have 31,000,000 horses and mules, while Russia has scarcely any more for all her provinces in Europe and Asia, so that Russia and the United States combined have a majority of all the horses in the world. We value ours at three billion dollars, which makes the horse the most precious farm product—one billion more valuable than all our cattle, sheep and hogs; nearly a half billion more than all the cereal crops of corn, wheat, oats, barley, and rye.

WE DO NOT SUPPLY OURSELVES.—Even if we could supply our own needs, we could not satisfy the hungry markets of other lands. We import about 2500 horses each year from France, Belgium, England, and Scotland for breeding purposes; but each of those countries would buy back all the produce from them and call for more. Besides, with the awakening of Japan and China, there is a demand for the horse that has just begun to be aware of itself. While Russia and the United States have more than half the horses of the world, they have scarcely one-seventh of the people. The rest of the world will want horses as much as we do now, when they get around to it, while we will want a great many more. Every dog may have his day, but the horse's day seems just dawning. All over Europe they are asking us to sell them horses, and they will take anything, from a thoroughbred to a bucking bronco. The cry comes from Asia, too, and a Chinaman on a bronco would be considered by Western ranchmen one of the most edifying of human spectacles.

But the demand in our own country is far greater than the supply. In 1902 the exports were 106,000, while in 1910 they were only 20,000. In the opening months of 1911 the price of horses is as high as at the same time last year, and yet last year was a great year for the sale of the auto. The big dealers have their buyers scouring the country and offering farmers more than they ever dreamed of for good horses, because their customers in the city and in the poorly stocked portions of the country are calling for more every minute. Look at some figures and see how the price has been soaring: The Bureau of Statistics gave the average price 20 years ago as $48.24; in 1909, $95.64; in 1910, $108.19; January, 1911, $111.69.

THE FARMING DEMAND.—The horse has been relieved of part of the heavy hauling. If he now had it all to do, we would be in a hopeless predicament. The steam cars lessened his burden, for he used to take heavy freight hundreds of miles. Then the street-cars ware an unspeakable relief, as they set him free for more congenial tasks. Now the electric cars across the country are relieving him of long journeys. The street-cars, trolleys, autos, and steam plows did not come a minute too soon for his comfort and convenience. But of course the most insistent call comes from the country. They have some autos there, and on the colossal farms steam plows can be used, but on smaller farms they are too expensive and the farmer still needs his old friend. With the breaking up of the large farms into small ones and the reclamation of great areas of waste lands by irrigation and dry farming, the call for horses comes from everywhere with pathetic urgency.

THE ARMY DEMAND.—There is the demand of our army. The difficulty of securing horses in sufficient number and of the requide quality has always been great. We are not proud of our cavalry horses. They are common stock, bought at $150 to $175, when we should have, for the officers especially, horses that cost from $200 to $500. It is interesting to note that we are about to follow the example of European countries and go into the breeding of army horses, under the direction of the War Department and the personal supervision of cavalry experts.

MORE RACERS NEEDED.—There is another demand, which is not so much for service and ordinary pleasure as for sport. Trotters and pacers are in increasing demand for racing purposes. The number of horses participating in races has increased till there were 20,000 in the year 1910—trotters and pacers and a few thoroughbreds. This was in spite of the fact that State legislatures have been passing laws hedging the racing activities within narrower limits. We have 2500 racetracks in our country.

OTHER DEMANDS.—No separate notice has been taken of the mule and pony, though they are included in the statistics given. The mule is about one in six as compared with the horse, while in Spain, for instance, he is in the majority. The Shetland and Welsh ponies, especially the former, are raised in increasing numbers, but their use is mainly for pleasure, though they prove a means of training children in learning about dumb animals and caring for them.

With the vast amount of money invested in ornamental and sporting horses, there is still a growing tendency to direct the horse industry toward the practical, for the largest career he has ever run is now opening up for him.

OREGON MOHAIR.

Mohair, says the Rural Spirit, seems to be soaring skyward, each succeeding pool sold marking an advance over the previous one. The pool sold last week at Eddyville brought 39.5 cents per pound. On the previous day a pool was sold at Hillsboro, Ore., at about 2 cents less than the Eddyville pool brought. These prices are about 5 cents higher than those quoted in New York and Boston, so it seems that our local goat men are very fortunate in having a good home market. The mohair season came to a close on the 27th so far as auctions are concerned when the Sodaville pool was sold. The market showed some weakness, and 37.95 cents was the highest bid made. Theodore Bernheim & Co. of Portland getting the 10,000 pounds at that figure. During the period of the pool sales, about 250,000 pounds of mohair was bought on the open market and it is estimated that about 100,000 pounds remain yet unsold in small lots scattered over the western part of the State. If these estimates are all correct the total of the year's crop aggregates 446,000 pounds.

FOR SALE—All sizes Irrigating and Windmill Pumps. Repairing a specialty. Plumbing, Farm Machinery, etc. A. RUST, Elmira, Cal.

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After substituting a part of their regular feed with Proteina, says a leading dairyman. ¶ Unequalled for Cows, Calves and Poultry, and fed at a comparative low cost.



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Boars, different ages. Sows, both open and bred. State Fair Prize Winners. Over 100 Spring Pigs to select from. Sired by large Boars and out of prolific Sows. Write your wants.

A. B. HUMPHREY,
Grape Wild Farm. Mayhew, Cal.

How to Get Clean Milk.

One unfortunate result of the use of separators in dairies has been in many cases a more careless handling of milk and cream. In early days when the cream was obtained by rising to the top of the milk in pans and each dairyman made his own butter, great care had to be taken with the milk, or he would feel the result of his carelessness by the lower price which would be secured for his butter, provided it could be sold at all. As a result, persons who would not give their milk good care had to retire from the business of dairying.

Later, when separators began to be used, many of these persons found that they could handle their milk carelessly, give little attention to the cleanliness of the cans or separator, and separate the cream immediately and send it to the creamery before it soured or showed the result of such bad handling. The same bad effects of unclean milk existed that had previously made their business unsuccessful, but the problem of making and marketing the butter that came from the milk was passed up to the creamery and not to the dairy.

In all dairy districts these persons are thorns in the sides of the creamery operators, who have to produce good butter from impure cream, or receive less money for their butter. The condition of each dairy can usually be described quite accurately by the man who handles the cream, which alone is sufficient proof that cleanliness is necessary, but any remonstrance about the condition of the cream usually offends the seller, who may clean up, and then sells to another creamery.

The variation in the price of butter should be a sufficient reason for producing good cream, as the higher price that is paid for butter, the more could be paid for cream. The fact that many creameries, without extra charge, collect their own cream, for the sake of getting it fresh and cleaner than it could usually be obtained shows the value that they put upon a good produce. If this expense was saved them the money saved would untimately go into the pockets of the dairymen.

The violation of the dairy laws are found most frequently among that class of persons who will not give attention to good sanitary conditions, or in dairies that are just starting and have not reached their normal operating condition. In these cases the need for other work in getting the farm in running condition causes the dairyman to slight the dairy work and to do no more than is needed to keep his cows in condition and to get a full supply of milk. The barns are often not cleaned until the dirt gets so thick that for his own comfort the dairy man has to get out of the way. Pails right after milking are left standing while the milker goes about his other chores and are only rinsed out before the next milking. All these are found by the State inspectors in some old dairies, as well as the new ones, where the owners could not be expected to know what proper dairying was. Sanitary conditions often seem of little importance if cleaning up can be done in ten minutes instead of the hour or more that ought to be given to it.

Separators are also very often neglected and the milk of the evening removes the dried milk of the morning. Some dairymen consider that it is all right for the milk that is sticking to the sides of the pipes to be washed off with the milk from the next milking, as it is only 12 hours old and won't be sour. It is no uncommon thing for a dairyman to gravely inform a judge, after he has been taken up for having an unsanitary dairy, that he has the separator washed regularly once a week, and he cannot understand why that is not all right.

Usually a warning only is the result of an inspection by inspectors from the State Dairy Bureau, provided conditions are the result of ignorance, but where unclean milk results from carelessness or notice is disregarded an arrest is made. With one of the inspectors of the Bureau during the month of April, thirteen convictions under the State law were found, and fines amounting to from $10 to $75 were laid.

The State dairy law which was passed at the last session of the legislature is explicit regarding the care of dairy barn and yard, and is to be strictly enforced by the inspectors, several more of whom will be appointed to take office July 1. It is often found by the inspectors that unsanitary conditions are the result of ignorance rather than carelessness, and in many instances when conditions are bad remedies are pointed out and no arrests made until a second ivsit is paid to see whether the recommendations have been followed.

The regulations regarding dairies in the new dairy law are as follows:

Sec. 2. A dairy shall be deemed unsanitary within the meaning of this act, among other causes that render milk, or products made therefrom, unclean, impure, and unhealthy, in the following cases:

(a) If the drinking water is stagnant, polluted with manure, urine, drainage, decaying vegetable or animal matter.

(b) If the yards or enclosures are filthy or unsanitary or if any part of such yards or enclosures, other than pastures, are made the depositories of manure heaps or otherwise where it is allowed to ferment and decay.

(c) If a suitable milk house or room is not provided and maintained, properly screened to exclude flies and insects, for the purpose of cooling, mixing, canning, and keeping the milk. Said milk house or room shall not be located in or be a part of any residence, or dwelling house, or any barn or poultry house, and shall not be used for any other purpose whatever.

(d) If any milk or cream shall be cooled, stored, mixed, canned, or kept in any room or place which is occupied by any persons or persons as sleeping or living apartment, or occupied by horses, cows, hogs or other animals, or fowls of any kind, and if the milk shall not be cooled to as low a temperature as practicable within one hour after it is drawn from the cows.

(e) If any urinal, privy vault, open cesspool, horse stable, pig pen, stagnant water, accumulation of manure or other filth shall be permitted within 100 feet of any such milk house or room, or within 50 feet of any cow stalls or stanchions or other place where milking is done.

(f) If the walls become soiled with manure, urine or other filth.

(g) If to the interior of cattle stables, barns, milking sheds, milk house or room an application of lime whitewash is not made at least once in two years, or oftener if in the judgment of the agent of the State Dairy Bureau it is needed, or if in the mangers or other receptacles from which cows are fed, decaying food or other material is allowed to accumulate.

(h) If the pails, cans, bottles or other utensils coming in contact with the milk or its products are not sterilized by boiling water or superheated steam each and every time the same are used.

(i) If the person or wearing apparel of the dairyman, his employees, or other persons who come in contact with milk and its products, are soiled or washed from time to time with reasonable frequency.

The law has been changed so that half of the fines levied will go to the county in which the conviction was made, and half to the State school fund, instead of to the State Dairy Bureau, as was formerly done. This provision was changed owing to the fact that convictions were occasionally escaped in previous years on account of the claim that the State Dairy Bureau profited by the convictions made through it.

A large dairy barn is being erected on the Kirk ranch near Dixon for the use of the Shuey Creamery Company, who have leased the place.

HORSES AND CATTLE.

N. H. LOCKE CO., Lockeford, Cal., are offering registered Jersey bulls and bull calves of the choicest Island and American breeding, from prize winners and big producers; also a carload of unregistered Jersey cows, and a car of Jersey heifers, unregistered.

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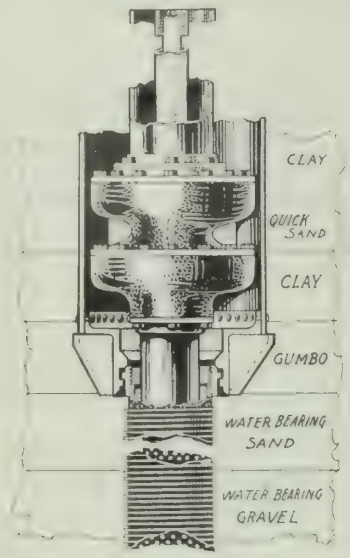
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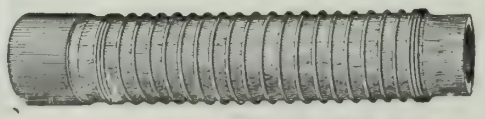
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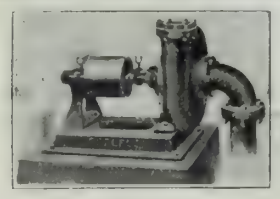
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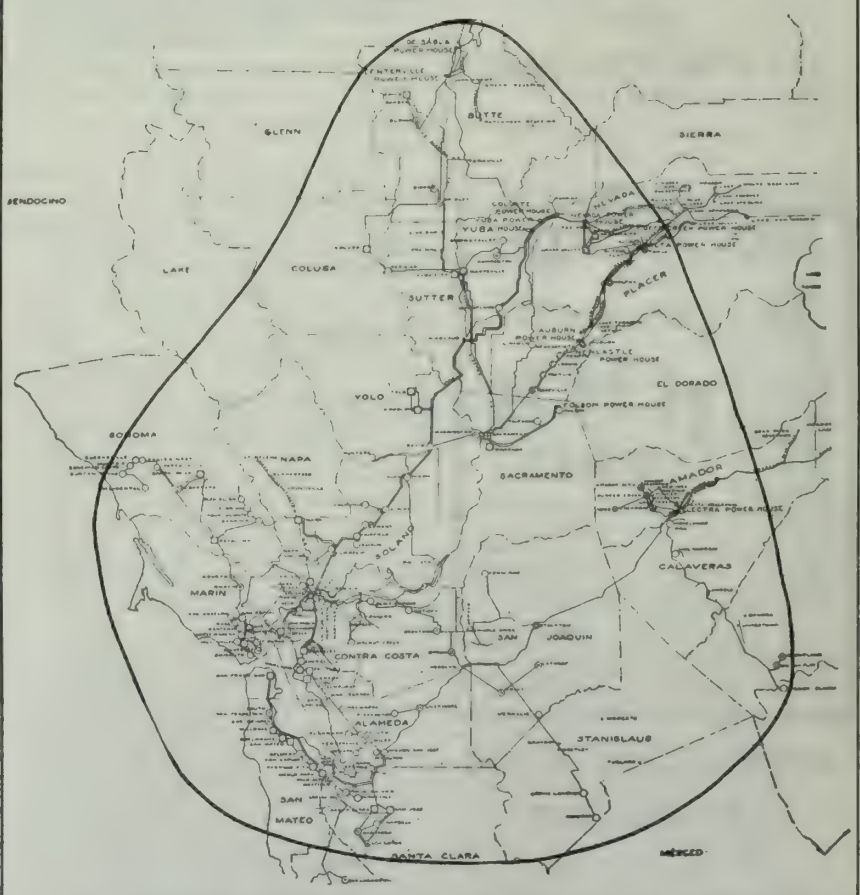
LIVER TROUBLE IN FOWLS.

For the past three weeks I have been losing my two and three-year-old hens. Not many—four in all of the Leghorns, and one Buff Orpington. They seem well in every respect up to the time of their combs changing color, when they die within three days. The combs turn a faint yellow, almost white; they are heavy, have their usual appetite up to the last 24 hours. I have treated by giving small doses of castor oil and Douglas mixture in the drinking water, feeding on dry mash with plenty of green feed. There is no tendency to lameness nor limp neck. The droppings are loose and very white. I have had two other hens die suddenly when on the nest. The second one we opened and found one egg broken near the vent and another with shell formed ready to be laid. I have a good open range planted to barley; keep 200 hens in about a quarter of an acre space; feed a dry mash of ground horse beans, middlings and bran—one-third of each. At night a grain feed in litter. This consists of cracked corn, wheat, and Egyptian corn, two parts of each of the former grains to one part of the latter being the proportions in mixing. Fresh-cooked meat is fed once a week; charcoal, grit and shells always in the hoppers, and plenty of green feed daily. The eggs from these hens have given unusually good tests for fertility and produced strong, sturdy chicks. Am I losing my hens from overfeeding, and if not, can you say what the symptoms point to? Will you give your opinion as to feeding ground horse-beans?

I haev some fine White Leghorn roosters a year old this April—would you advise keeping them for mating with the same hens next season, or do you advise selling each year and getting fresh stock? —Mrs. B. W., Gilroy, Cal.

The fowls with yellowish combs that died were victims of jaundice, which is a form of liver disease and caused by overfeeding on rich starchy foods that also cause fowls to become overfat. Rupture of the oviduct was probably the cause of the hens dying on the nest and is due to the same condition in the hens; that is, the straining to expel the egg necessary in the engorged condition of the internal organs from overfatness. Our inquirer should use more meat and less starchy food. Egyptian corn and Indian corn have almost the same nutritive ratio and should not be used in the same mixture. Cut out the corn and middlings entirely for awhile, also the dry mash, and feed instead a moist mash (only enough to be well cleaned up in an hour) made by cooking lean meat or plucks with vegetables and rolled barley, and drying with bran, and about once a week during the warm weather add a little powdered charcoal and sulphur to the mash; also use the same treatment as given in the foregoing article for diarrhea in fowls. Be sure that the fowls have an abundance

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of tender green feed. The barley and other such feed on range are getting tough and dry now, and do not fill the bill.

However, we would say that at the end of the laying season and the beginning of the molt the poultry keeper will lose some hens in as large a flock as 200, even when kept under the best conditions, and especially hens of that age. In doctoring such cases as described by Mrs. W., if the fowl does not improve in a couple of days, the hatchet cure is the most profitable. Horse-beans are fine for poultry.

The young males will be all right to mate with the same hens net season—that is, if they come through the molt with vigor. They will be just two years old and at their best. The molt is the test for both hens and cocks. If they show no signs of ailing or weakness during that period, it is proof of the proper stamina and vigor.

BLACKHEAD IN TURKEYS.

I would like you to give the general cause of blackhead in turkeys. I have lost a good many old ones, and do not know the cause or what I should do to prevent the spread of the disease, or the cure.—H. E., Corcoran, Cal.

We trust our inquirer is not up against "blackhead" in his flock of turkeys, for in that case he might as well sell off his birds and turn his attention to some other class of poultry. This disease has been traveling westward, but we had not heard of any certified case in California. Perhaps some bowel trouble of lesser note may cause the death of Mr. E.'s turkeys. He should open one of the birds that has died of the disease, and if he should find the liver very much enlarged and covered with spots in size from an eighth to nearly an inch across of yellowish white color shading to dark yellow or yellowish green, the evidence is pretty conclusive that death was caused by blackhead. The external symptoms are much the same as those of other digestive and liver troubles. The fowl loses appetite and gradually grows weaker and has constant diarrhea; later the head becomes dark or bluish in color, from which arises the common name of "blackhead." There are cases, however, in which this discoloration does not occur.

The origin of the disease is not fully determined By some it is attributed to inbreeding. It must be understood that turkeys are simply tamed wild birds and cannot accommodate themselves to conditions very far removed from those of their natural environments. They soon succumb to the artificial conditions of crowding and forcing which chickens endure with more or less success, being thoroughly domesticated birds. The disease is spread by a parasite. This minute animal germ, to which the scientists have given the long name of Amoeba meleagridis, is carried into the fowl's body through the food and water, and lodges in one of the small connecting intestines, where it multiplies and spreads to the liver, eventually causing death. There is no known cure for blackhead.

As suggested, our inquirer's turkeys may be suffering from ordinary digestive troubles, in which case the treatment already given for diarrhea and liver disease in chickens will apply to turkeys.

TEACHING CHICKS TO PERCH.

Will you please explain your method or some good method of breaking in young brooder chicks to use the roosts, and oblige?—A. L. A., Corcoran, Cal.

At from six to eight weeks old the chicks should be taken from the brooder quarters to the colony houses and range, or wherever they are to be located, and at this time they should be taught to perch. Have the new quarters arranged with low wide perches (1 by 3-inch scantling); also make slatted frames by nailing lath or other such narrow strips two inches apart. Set these frames against the wall so that they will extend slantwise under the perches, and have the corners on the other side of the room cut off by nailing boards across them. The chicks will run up on the frame to find a huddling corner and land on the perches, as they cannot rest on the open slanting frame. A little care for a few evenings in putting up those that remain on the floor and straightening them out on the perches will teach them the ropes. Where there are but a few to be taught, all that is necessary is to provide the low wide perches and shut out the corners, and a few of the smart ones will soon take to the perches, and gradually others will follow until all will be roosting. The careful poultryman will always go through the chick quarters at dark and see that all are comfortable and in place.

In Petaluma where there are a thousand or more chicks brooded in one bunch, they are taught to perch at eight weeks old and just before leaving the brooder house. In such large numbers the risk of huddling if put in cold houses before learning to perch is too great to be taken. Wide perches are placed over the brooders where the heat from the latter strikes under the perches, which extend clear across the brooder house. In front of the perches is placed a slanting frame made of slats which shuts the chicks out from the brooders and leads them onto the perches instead of into the brooders. The warmth from beneath keeps them from climbing on top of each other, and they spread out on the perches and soon get the perching habit, after which the heat is gradually dropped, and they may be safely transferred to the colony houses at night and set upon the roosts.

Five hundred wild turkeys are soon to be liberated from the State game farm.

A poultry association with 15 charter members has been formed at Ukiah.

About three acres of land is being used in connection with the Chico Normal School for agricultural training of the children and normal students connected with the institution.

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Use for 30 days. At the expiration of that time, if you do not see a **marked improvement** in your flock, if your **egg production is not increased,** and if you are not **absolutely satisfied** with the machine in every respect, **or find one objectionable feature,** return it at our expense and we will at once refund our money. Write for descriptive circular.

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DAY-OLD CHICKS—Barred Rocks; also eggs for hatching; good laying strain. Fairmount Hatchery, Box 29B, R. F. D., Santa Cruz, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea fowl and eggs. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

WAYSIDE YARDS—A few settings from special S. C. White Leghorn matings, at $5 for 30. Carl Gregory, Petaluma, Cal.

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HATCHING EGGS—White Leghorns. Circular 164. A. H. Gregory, Fruitvale, Cal.

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The Home Circle.

The Garden Patch.

When the apple trees are blooming,
And a hum is in the air,
When the garden truck is looming
Into view—all fresh and fair.

Do not "load" your dinner table
With potatoes and with meat,
But use all the dainty "green things"
From that garden, fair and sweet.

Let a toothsome lettuce salad
Often on the board be seen,
And red radishes, encircled
By their own leaves' lovely green.

Onions, "long and slim" and pungent,
With a slice of home-made bread;
Cups of sassafras, more lovely
Than "the wine when it is red."

Eggs, found in a nest that Biddy
Made within the hollow tree,
Poached, and placed upon a platter—
Parsley wreathed—are fair to see.

When the apple trees are blooming,
And their fragrance fills the air,
Pile your table with the treasures
Of that "garden patch" out there.

—Lida Keck-Wiggins.

Once Again.

The Chicago health commissioner gives out this statement: "So long as people poison themselves with bad air, just so long will pneumonia prevail."

So much has been said and written about the actual necessity of pure air that one hesitates to mention the subject again, as if questioning the intelligence of his readers, but, as a matter of fact, it is not alone among ignorant people that this foundation principle of good health is violated; on the contrary, people intelligent in every other way oftentimes seem to use no judgment when it comes to the matter of ventilation.

The writer was recently present at a very beautiful social evening. About forty-five couples gathered in the ball room for a cotillion and about twenty couples in a smaller room for cards. Every detail had evidently been carefully thought out by the host and hostess to give their guests the pleasantest possible evening. The hall was beautifully decorated; the cotillion was led by a professional, assisted by several attractive misses; the favors were all that could be desired; delicious frappe was served through the evening and refreshments at the end of the evening. The same consideration was shown to those who played cards. Everything seemed to have been provided for except ventilation. The ball room had ten windows, the upper parts of which were intended to swing inward, but of the ten windows, just two could be opened—the others stuck fast.

In the card room there was no attempt at ventilation, and the air was offensively impure. The condition had come on gradually and those who sat there the whole evening did not realize it, but to one entering from another room it recalled the stories of Libby prison.

Does it not seem impossible that such a hostess could fail to provide for this need? It might, except that we are not accustomed to anything else. How often do you see any provision for ventilation when numbers are gathered together in our homes? If every window were lowered a very little from the top the air would probably remain pure without a draft on anyone, but usually our window draperies make this almost impossible. Just how it can be accomplished will be thought out in each case if it is really and truly believed to be vital.

Good health is the foundation upon which an effective life is built; one might almost say that it is the foundation of a moral life as well. If that is true, then health becomes a sacred duty, and anything that makes for health is worthy of our most thoughtful consideration. Good food, enough but not too much, pure air, plenty of sleep and exercise; these are essentials of health and as such are not trivial.

Care of the Eyes.

Teachers and parents should watch children when reading and studying. Is the book held close one moment and away the next? Do they wink often and rub their eyes? Do they stumble along in reading? Do they turn from side to side to catch the best light? Do they complain of their eyes at night? Are the pupils of their eyes large? Do they suffer from severe headache while attending school or after reading for some time, which is not relieved by the usual means? The eyes may look as clear and natural as any, yet there may be malformations in shape of the balls. Question them closely, and while they are reading place your hand over one eye, and then over the other, and see if there is any difference in vision. Notice whether either eye turns to right or left, and if any action or function is wrong take the child to an expert optician for examination, and to learn how sight can be improved through care and attention. Many a child has been punished for bashfulness and stupidity, when the fault was in the eyesight.

Cross-eyes can be made straight and sight preserved with use of proper lenses if employed in time. Neglect will cause loss of sight in one eye, even if the eyes are straightened by surgery in after life.

Mother's Ten Commandments.

Dr. Lena Sadler, who lectured before the Chicago Medical Society, gave ten commandments which she said every mother ought to observe:

1. Kiss not the baby's mouth.
2. Fail not to give the baby boiled water to drink.
3. Feed not the baby between meals.
4. Breathe not in the baby's face.
5. Thou shalt not deprive the baby of fresh air and sunshine.
6. Make not a plaything of the baby.
7. Jostle not the baby during colic.
8. Give not the baby unclean milk from unwashed bottles.
9. Neglect not coughs, running ears and nose.
10. Thou shalt not give the baby soothing syrup, beer, tea, coffee or candy.

Dr. Sadler denounced baby "soothers" as germ carriers, and urged the utmost care in keeping bottles and nipples clean.

For a Cold.

One of the best and simplest ways to cure a cold, whether on the lungs or in the head is this: Buy a dime's worth of eucalyptus oil. Drop nine drops into a tea cup and put over them enough boiling water to nearly fill the cup. Hold the hands, inverted funnel shape, over the cup to keep the steam from escaping too rapidly. Place the nose between an opening in the hands and inhale the steam with long, deep breaths. It will make you cough and sputter, but the phlegm will soon loosen up and breathing will be made easy. The fumes penetrate far down into the lungs as well as the head, and there is a general clearing out of foreign matter. Use this treatment two or three times a day until the cold is better. A dime's worth of oil goes far enough for several colds.—Janet T. Van Osdel.

Good Night.

How commonplace is this expression, and yet what volumes it may speak for all future time! We never listen to it in passing that this thought does not force itself upon us, be the tones in which it is uttered ever so gay. The lapse of a few fatal hours or minutes may so surround and hedge it in with horror that, of all the millions of words which a lifetime has recorded, these two little words alone shall seem to be remembered—Good night! The little child has lisped it, as it passed, smiling, to a brighter morn than ours; the lover, with his gay dreams of the nuptial morrow; the wife and mother, with all the tangled threads of household care still in her fingers; the father, with the appealing eye of childhood all unanswered. Good night! That seal upon days passed, and days to come. What hand so rash as to rend aside the veil that covers its morrow?

The Plain Things.

It is not always the cheap things that are simplest; neither is it always the "simple" things that are the least expensive.

It is, however, the simple things that are the most beautiful.

A table with plain straight legs is much more artistic than one with carved legs, or "claw" feet. The plain table may "cost" more than the ornate one, but in addition to its good looks, it is a time-saver for the busy housewife, for it takes a much shorter time to dust it and keep it looking "new" than it does to "fuss" with the carved portions of the "cheap" table.

What is true in this respect of tables is also true of any piece of household furniture.

Short Stories.

A recently divorced gentleman was invited to a friend's house to dinner. As soon as he was seated the host's little daughter asked abruptly, "Where is your wife?"

The man, in some confusion, answered: "I don't know."

"Don't know?" replied the enfant terrible. "Why don't you know?"

Since the child persisted, he thought the easiest way out would be to make a clean breast of the matter. So he said: "Well, we don't live together. We think, as we can't agree, we'd better not."

But the little torment would not stop. She exclaimed: "Can't you agree! Then why don't you fight it out, as pa and ma do?"—Ladies' Home Journal.

Wasp and Bee Stings.

An old-fashioned remedy, but one that is excellent for the treatment of slight wasp stings, bee stings, or of any other insect, is the laundry blue bag. Moistened with water and applied to the spot it will quickly allay the smarting sensation. Another very good remedy is to touch the inflamed part with a few drops of a solution of ammonia. Honey, fresh butter, or even treacle ought to answer the same purpose.

What Bothered Him.

"Brown has wired me to send him up some fishing tackle."

"A nuisance, isn't it?"

"No, that isn't it; but I can't remember whether he favors Scotch or rye."—The Widow.

"There are two kinds of bores—one talks while you yawn, and the other yawns while you talk."

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OUR YOUNG FOLKS' DEPARTMENT.

Conducted By M. Russell James

Little Streams.

Down in valleys green and lowly,
Murmuring not, and gliding slowly;
Up in mountain-hollows wild,
Fretting like a peevish child;
Through the hamlet, where all day,
In their waves the children play;
Running west or running east,
Doing good to man and beast;
Always giving, weary never,
Little streams, I love you ever.

—Mary Howitt.

Poultry Course for Young Folks.

DESCRIPTION OF BREEDS.

The Cochins.—These were but another variety of the big Chinese fowls imported into England when Shanghai and other ports of northern China were thrown open to the commerce of other nations. The finest of the first lot of Cochins were presented to Queen Victoria in 1843, and in December of that year cuts of these wonderful fowls appeared in the London Illustrated News. They made a great sensation, and people were crazy to obtain some of the breed at any price. These fowls became the delight of the fancier, both in England in in this country, who at once set to work to breed them to a standard in color and markings. Their full feathering and many rich colors gave wide scope for the fancier's skill, which he has exerted so industriously that many of the fine utility points of the Cochins have been sacrificed to fancy feathering—which shows the danger in running too much to fine clothes.

The Cochin is a big massive bird with broad, deep body, and small wings and tail, and is buried in a fluff of soft, abundant feathers which gives it the appearance of being much larger than its weight. A noticeable difference in the shape of this bird as compared with other large breeds is the development of the cushion, that is, the feathers on the upper rear portion of the back. These are so long and abundant in the Cochin hen that they form a hump that looks like a soft, rounded cushion on her back. The standard weight of the Cochin is 11 pounds for cock, 8½ pounds for hen, 9 for cockerel, and 7 for pullet. The head is short and broad, with curved beak, single medium-sized comb, rather long wattles and ear-lobes. The stout thighs and shanks are covered with long, soft, abundant feathers to the very tip of the toes. These feathers must be the exact shade of the plumage color. The Cochin is a gentle, contented fowl that may be confined with a two-foot fence. It lays a brown egg, rather small for the size of the bird, and is considered a good winter layer. The hen is a champion setter and a devoted mother. Although so large a bird, they do not grade high as a market fowl, but as an exhibition bird they are the most showy and attractive class in the showroom.

The Buff Cochin.—This is the most popular variety of the Cochins. The even buff plumage with a metallic golden luster is a wonder in color. It may be noted that the coloring of other buff varieties of breeds has been borrowed from the Buff Cochin. This golden buff must extend throughout the plumage; no other color or even shade is allowed, and the under-color is also required to be buff of a lighter shade.

The Partridge Cochin.—This is a beautiful bird, but difficult to breed true to color and markings. The female is prettier than the male, with plumage of red, orange, and mahogany red, wonderfully penciled and striped with black and brown.

The Black Cochin has plumage of a rich glossy black throughout. This variety may be more easily bred true to color than either of the others. The White Cochin is pure white in plumage.

The Cunning Coyote.

AN INTERESTING LETTER FROM ONE OF OUR NINE-YEAR-OLD BOYS.

Atwater, Merced Co., May 19, 1911.

Dear Editor: I am sending a true story about how coyotes fool dogs, and hope it will be all right. I live on a big ranch and see lots of wild things.

A pair of old coyotes have their den under an old deserted house about a mile from our home. They have four little ones. We boys sleep out on the lawn, and at night we hear their sharp bark as they try to get our dogs to chase them. One of our dogs is old and he always runs out after them; our other dog is a young collie that stays near the buildings and does not let them get our chickens.

One day the collie went to the river ranch with Dad and did not get home for several days. Just about daylight one morning while the collie was away, the coyotes began barking. The old dog ran out and chased them, and away they ran, their barking growing less and less. All at once the chickens began to make a great fuss and to fly down from the trees just as if something was after them. We looked quick and saw a coyote run in and grab a chicken. Then we knew that only one coyote had run off with the dog and that the other coyote had stayed to catch a chicken. When they barked and only one dog answered, they made up the little game for one of them to draw him off while the other got the chicken. They are indeed very cunning animals.

Yours truly, Hal Shaffer.

The Bloody Aigrette.

No doubt the girls among our young folks have often admired the aigrette on expensive hats, and perhaps have longed to possess so dainty an ornament. This plume is indeed a very fairy of a feather, its snowy, silken barbs like floating filaments of silver. It is one of the curious and wonderful things in nature that the snowy heron and plumed egret wear this beautiful spray of feathers only during the mating and nesting season, when they are "adorned like a bride for the bridegroom." Consequently, that is the season when the plume-hunters begin their cruel and deadly work. Then the heron rookeries are sought and the birds ruthlessly slaughtered, and the young left to perish in the nests. Here is but a paragraph from the sworn statement of a collector of aigrette plumes in Venezuela, as given at the hearing of the Shea bird-protective law before the Game Committee at Albany last month and reported by the New York Herald:

"The birds gather in large colonies to rear their young. They have the plumes only during the mating and nesting season. After that period the plumes are virtually of no commercial value because of the worn and frayed condition. It is the custom in Venezuela to shoot the birds while the young are in the nests. The natives of the country, who do virtually all of the hunting for feathers, are not provident in their nature, and their practices are of a most cruel and brutal character. I have seen them frequently pull the plumes from the wounded birds, leaving the crippled birds to die of starvation, unable to respond to the cries of their young in the nests above. I have known these people to tie and prop up wounded birds on the marsh, where they would attract the attention of other birds flying by. These decoys they keep in this condition until they die of their wounds or from the attacks of insects. I have seen the terrible red ants of that country actually eating out the eyes of these helpless wounded birds that were tied out by the plume-hunters."

An equally revolting tale comes from Australia and other countries wherever the egret plume trade is carried on. After hearing these sickening disclosures, we are sure that there will not be a girl among our young folks who can look u the bloody aigrette without a thrill horror.

Premature.

The Fair Purchaser—"Your eggs are all very small today, Mr. Jones."

Mr. Jones—"Yes'm, they are, but I'm sure I don't know the reason."

The Fair Purchaser—"Oh, I expect you took them out of the nests too soon."

Use all the fresh, green vegetables you can.

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THE MARKETS.

San Francisco, May 31, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Prices show no further change. The general situation remains about as before, the local market being dull, with both supply and demand limited. Considerable business is going on in the North, though offerings are diminishing.

California Club	$1.50	@1.52½
Sonora	Nominal	
White Australian	1.60	@1.65
Northern Club	1.52½	@1.55
Northern Bluestem	1.65	@1.70
Russian Red	1.50	@1.55

BARLEY.

Some new barley has come in from the Sacramento valley, and shows good quality. It is reported that buyers in the country are offering $1.25 for new crop. Trading in the spot grain is quiet, and with the harvest near at hand prices are beginning to show some weakness.

Brewing and Shipping	$1.52½	@1.55
Choice Feed, per ctl	1.45	@1.50
Common Feed	1.40	@1.45

OATS.

This market remains without special feature. There is a fair demand, as for some time past, and prices are steadily held, though offerings are sufficient for all current requirements.

Red Feed	$1.37½	@1.42½
Gray	Nominal	
White	Nominal	
Black Feed	1.30	@1.50

CORN.

Trading in all descriptions is on a very moderate scale, with little Eastern corn coming in, and no great demand locally for California stock. Prices, however, are firmly held.

Cal. Small Yellow	$1.75
Eastern Yellow	1.55
Eastern White	1.55
White Egyptian	$1.70 @1.75

RYE.

Rye remains nominal, with little demand and nothing offered that arouses any interest.

Rye, per ctl	Nominal

BEANS.

Horse beans continue to advance, as the supply is running short, though there is no very heavy demand. The market in general, according to local dealers, is extremely dull, and aside from a few varieties, which are firm because of a short supply, there is some weakness in prices. Pinks and bayos have both taken another drop, the latter suffering from the competition of imported beans. Some interest is being shown in future beans of several descriptions, but it is too early to make any predictions in regard to either crop or market conditions, as the planting will not be completed for several weeks. It is apparent, however, that the acreage devoted to beans will be considerably larger than usual. Not only is a lot of new land being used for limas, but local dealers say there will be a larger acreage of pinks. Some land formerly used for whites, however, will be devoted to the colored varieties, owing to the comparatively high prices of the latter. It is believed that there will be quite a lot of white beans carried over into the new season.

Bayos, per ctl	$4.40	@4.55
Blackeyes	7.00	@7.25
Cranberry Beans	3.75	@4.00
Garvanzos	2.85	@3.25
Horse Beans	3.25	@3.50
Small Whites	3.40	@3.55
Large Whites	3.25	@3.40
Limas	6.35	@6.45
Pea		4.25
Pink	5.00	@5.20
Red Kidneys	6.25	@6.50

SEEDS.

Most descriptions stand about as before, but in the absence of any general movement prices are largely nominal. Alfalfa is now offered at a reduction from the prices last quoted, while timothy is about cleaned up.

Alfalfa	17	@18 c
Broomcorn Seed, per ton		25.00
Brown Mustard, per lb		5½c
Canary	3½	@ 4 c
Hemp	3½	@ 4 c
Millet	3½	@ 4 c
Timothy	Nominal	
Yellow Mustard		5¾c
Dried Peas, per ctl	3.75	@ 4.00

FLOUR.

Prices on local descriptions have been advanced, in line with the firmness and scarcity of good milling wheat. Local trading is about as usual, but so far export business has been fairly brisk.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.60	@4.80

Hay and Feedstuffs.

HAY.

Prices are not quotably changed, the local market remaining dull and oversupplied with ordinary stock. Choice wheat and oat hay, however, continue very scarce and is hard to get except at a premium. Arrivals, altogether, have been almost as large as last week. Consumers are limiting their purchases to immediate needs, and large lots are hard to dispose of. More new volunteer hay has come in within the last few days, but finds little demand, as old stock is generally preferred. The market has been helped, however, by a shipping movement in the last week. The harvest is now well under way in many sections, and the results appear to be somewhat better than expected, though it will be some time before any definite idea can be had of the actual crop, and so far all reports in this vicinity indicate a rather short yield.

Choice Wheat	$13.00@14.00
Good Wheat Hay	11.00@12.50
Other Grade Wheat	8.00@1100
Wheat and Oats	8.00@11.50
Tame Oats	8.00@11.50
Wild Oats	6.50@10.00
Alfalfa	8.00@11.50
Stock Hay	5.50@ 6.50
Straw, per bale	35@ 50c

FEEDSTUFFS.

Cracked corn is firm, with an upward tendency, the demand being active and supplies moderate. Other descriptions remain about as before, bran and middlings being firm, and other lines steady at former quotations.

Alfalfa Meal, per ton	$19.00@20.00
Bran, per ton	28.00@29.00
Cocoanut Cake or Meal	26.50@27.00
Cracked Corn	34.00@35.00
Middlings	34.00@37.00
Mixed Feeds	29.00@32.00
Rolled Barley	31.00@32.00
Rolled Oats	32.00@33.00
Shorts	27.50@31.00

Garden Truck.

VEGETABLES.

Onions stand as before, the demand at present prices being about equal to the current arrivals. Texas Bermudas are still a feature. Some new garlic is arriving, but old stock is still in demand at high prices. Tomatoes are higher, though some Eastern stock is now coming in. Green peas are arriving liberally, but with a heavy demand the market is kept well cleaned up. The bulk of the arrivals of asparagus is going to the canners, though there is still a fairly good demand in the regular trade, and price are still maintained at previous figures. The top price of rhubarb has been reduced. String beans are lower, as supplies are now coming in freely from nearby points, and okra is also lower. No green corn has arrived for several days. Other descriptions show little change.

Onions: New Red, sack	$ 2.15@	2.40
Bermuda, crate	2.00@	2.10
Green, box	60@	1.00
Garlic, old, per lb	10@	11c
New	6@	7c
Green Peas, per cak	1.25@	1.50
Tomatoes, per crate	1.75@	2.00
Cucumbers, per doz	40@	60c
Cabbage		1.50
Carrots, per sack		1.50
Rhubarb, per box	75@	1.10
Cauliflower, per doz		75c
Asparagus, per box	75@	1.50
String Beans, per lb	4@	6c
Summer Squash, per box	75@	1.00
Okra, per lb	8@	10c

POTATOES.

Considerable stock has been arriving from Texas, but most of it has been on orders for shipment to other points. Old Lompoc and Oregon potatoes are scarce and firm, the latter being a shade higher, and Eastern stock has also advanced. New potatoes are a little lower, but prices are still fairly well maintained, and the shortage of the river crop is becoming more apparent.

Lompoc Burbanks, per ctl	$ 2.85@	3.00
Oregon Burbanks	2.50@	2.75
New Potatoes, per lb	2½@	3½c
Eastern, per ctl	2.00@	2.15

Dairy Produce.

POULTRY.

Quite a lot of local chickens were held over from last week, and while arrivals from the East have been hardly as large as for several weeks past, the market is still unsatisfactory for sellers. Hens are doing a little better, but it is hard to sell anything but first-class stock, and arrivals from California points are larger than the market will readily absorb.

Large Broilers	$ 3.00@	4.00
Small Broilers	2.00@	3.00
Fryers	6.00@	7.00
Hens, extra	8.00@	10.00
Hens, large	6.00@	6.50
Small Hens	5.00@	5.50
Old Roosters	4.00@	4.50
Young Roosters	7.50@	8.00
Young Roosters, full grown	8.00@	10.00
Squabs	2.00@	3.00
Geese, per pair	2.00@	2.50
Ducks	6.00@	9.00
Turkeys, live, per lb	Nominal	

BUTTER.

Up to the holiday the regular trade demands were very moderate, resulting in some decline on all grades. The lower grades are still inclined to drag, but extras have regained their former firmness.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	22½	22	22	21½	..	22½
Prime						
Firsts	22	21½	21½	21	..	21
Firsts	21½	21	21	20½	..	20½
Seconds	21	20½	20½	20	..	20

EGGS.

The market for local stock shows very little variation, the large movement into storage serving to keep prices steady. Extras are occasionally up to 22c., but this price always brings out liberal offerings and 21½c. is the top figure most of the time. Eastern stock is lower.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	22	21½	21½	21½	..	22
Prime						
Firsts	20½	20½	20½	20½	..	20½
Firsts	19½	19½	19½	19½	..	19½
Seconds	18½	18½	18½	18½	..	18½
Selected						
Pullets	18½	18½	18½	18½	..	18½
Eastern	17½	17½	17½	17½	..	16½

CHEESE.

There has been little feature to the market of late, and changes in price are of small importance. The first grade of local flats is a little lower at the moment.

Fancy California Flats, per lb	12½c
Firsts	11½c
New Young Americas, fancy	13½c

Deciduous Fruits.

FRESH FRUITS.

Prices are lower on nearly everything. Arrivals are increasing in both quantity and variety, while the prevailing cool weather works against any heavy demand locally. Old apples are scarce and firmly held, and gooseberries bring about the same prices as before, while all descriptions of strawberries are lower, with liberal supplies. Good lots of cherries find a good market, but with large arrivals it is impossible to maintain the former prices. Some raspberries and loganberries are offered at about the prices quoted, and a few currants have been sold at $1.25 per drawer. Canteloupes from the southern end of the State are selling at quotations.

Raspberries, basket	12½@	15c
Loganberries, chest	$ 8.00@	10.00
Gooseberries, drawer	50@	75c
Apples, per box	2.00@	2.25
Strawberries, Banners, chest	5.00@	7.00
Longworth, chest	5.00@	7.00
Large varieties, chest	4.00@	5.00
Cherries, Purple Guigne, box	75@	85c
White	50@	60c
Canteloupes, crate		7.50

Dried Fruits.

Trading is still confined to rather narrow limits, both here and in the East, though there is some export business, and packers are succeeding in getting some contracts for the new crop. As for old crop goods, everything but peaches and raisins is cleaned up, and the former are bringing an advance. The top quotation for old raisins still remains at 4½c., and local packers report some business at this figure, though according to advices from Fresno they are making concessions in regard to handling that amount to a slight advance. The amount coming out at this figure, however, is small. A few apricots are being contracted at the price quoted, but most growers are holding for an advance, and according to an unconfirmed report, as high as 16c. has been paid in some cases. The situation on figs is still uncertain, but high prices are expected, as the outlook for the crop is poor at present. New peaches are higher, but 9½c. is still about top. Local packers are quoting lower prices for prunes, and are making a good many contracts at 4c., though some growers report sales at 4½c., and many are holding for still higher prices. A good many packers are apparently trying to bear the market, quoting lower prices in the East, though they do not appear to be very anxious to get business at the reduction. Some dried apples have been contracted at 7½c., with 8½c. for early delivery. The New York Journal of Commerce says:

"In the matter of future prunes, there is said to be a very large short interest. The export buyers were accommodated at a 4c. or 4¼c. f. o. b. four-size bag basis, and a good many cars were also sold to American buyers at similar prices. The average grower has nothing to lose and everything to gain, it is said, by insisting upon his prices since he has at least four months before deliveries will be exacted from him, and in the meantime much may happen to compel the packer to pay full toll and more for what he can get."

Evaporated Apples, per lb	10½@11	c
Apricots, new crop	14	c
Figs, black	4½@ 5	c
Figs, white	5 @ 7½	c
Peaches, Spot	8 @ 8½	c
New crop	9 @ 9½	c
Prunes, 4-size basis	9½	c
New crop contracts	4 @ 4½	c
Pears	8½@12	c
New crop	9 @10	c
Raisins—		
Loose Muscatels, in sweatbox	4 @ 4½	c
1911 Crop	4 @ 4½	c
Thompson Seedless	4½@ 4¾	c
Seedless Sultanas	4¼@ 4½	c

Citrus Fruits.

The Eastern auction markets are holding up fine, especially on valencias and lemons. On Monday at New York, lemons sold for $4.75 to $5.90 per box. At Boston they sold at $4.55 to $5.25. At Philadelphia, $3.50 to $5.10, and at Pittsburg they brought around $5.50. These prices mean good profits to the lemon grower. Up to May 28 there had been shipped 3812 cars of lemons, as against 2600 cars to May 31 last year, and 3300 cars same date in 1909.

The orange markets also show good demand in the East, especially for valencias. At New York on the 29th the best navels brought as high as $4.40 per box, and valencias a little higher, being $4.45 for top of the auction. On the same date at the Philadelphia auction, prices were somewhat lower. There navels brought only $3.45 at the highest, and valencias went as high as $4.25. Florida had two cars of valencias on the market which averaged $3.15.

Up to May 28 there had been shipped from California, for the season, 28,884 cars of oranges, as against 20,000 cars last season to same date.

At the Los Angeles auction Monday, three cars of valencias sold for $2.12½ for extra fancy, down to $1.50 per box for standards. Lemons brought from $3.42 to $3.92½.

In San Francisco ordinary navel oranges are lower, but fancy stock is still held at full prices. Valencias are coming in freely, and find a fairly active market at the former prices. Lemons are very firm, some descriptions being higher, and an advance in all grades is expected. There is nothing new in limes and grapefruit.

Navel oranges—		
Extra choice	$ 2.50@	3.00
Choice	1.50@	2.00
Valencias, choice to fancy	2.25@	3.00
Tangerines	Nominal	
Choice Lemons	2.50@	3.50
Fancy Lemons	3.50@	4.00
Standard	1.50@	2.00
Limes	4.50@	5.00
Grapefruit	2.25@	3.15

Nuts, Honey, Hops, Etc.

NUTS.

The movement of old nuts is of a small jobbing nature only, everything being pretty well cleaned up and held at firm value. It is too early for any definite prediction on the walnut market, but good prices are assured for almonds and buyers are already in the field. Growers outside the Association have made contracts at 15 and 16 cents, and these prices are expected to prevail for the more favored descriptions.

Almonds—		
Nonpareils	16½@17	c
I X L	15½@16	c
Ne Plus Ultra	15 @15½	c
Drakes	12 @14½	c
Languedoc	12	c
Hardshells	8 @ 8½	c
Walnuts—Softshell, No. 1	15	c
Standard	14½	c
Softshell, No. 2	11	c
Budded	17½	c

HONEY.

No comb honey has come in yet, and the little extracted that has arrived is bringing full values. Late reports from San Bernardino indicate a good yield, but the crop in the State as a whole is very snort.

New Extracted, White, per lb	8 @ 9	c
Comb	Nominal	

HOPS.

Prices have taken another jump this week, both here and in Oregon. In Oregon large contracts have been made at 25 cents, and many California growers are holding for the same figure, recent offers of 23½ cents having failed to bring out any business.

Hops, 1910 crop	20 @25	c
1911 crop	20 @25	c

Live Stock.

DRESSED MEAT.

Beef Steers, per lb	9 @ 9½	c
Cows	7½@ 8½	c
Heifers	7½@ 8½	c
Veal, large	10 @11	c
Veal, small	11 @11	c
Mutton: Wethers	8½@ 9½	c
Ewes	8 @ 9	c
Lambs	10 @11	c
Hogs, dressed	10½@11	c

LIVE STOCK.

Prices show very little change this week, calves and lambs being a little stronger, while other descriptions are easy as last quoted. Arrivals of hogs are still limited, but in the absence of any strong demand prices have a downward tendency. In other lines, shipments are now fairly large, and values are not very well maintained.

Gross weight:		
Steers: No. 1	5¾@ 6	c
No. 2	5¼@ 5½	c
Cows and Heifers: No. 1	4¾@ 5	c
No. 2	4¾	c
Bulls and Stags	2½@ 3½	c
Calves: Light	6½	c
Medium	6	c
Hogs: Grain-fed, heavy	6 @ 6¼	c
150 to 250	6½@ 6¾	c
100 to 150 lbs	6¾	c
Small prime wethers	4¾@ 5	c
Large prime wethers	4¾@ 5	c
Ewes	4 @ 4¼	c
Lambs	5¾	c

WOOL.

There has been a little more activity in the last week, and the outlook is more encouraging, though so far no quotable advance has been made in local prices. Nevada wool, however, has advanced quite sharply, and heavy sales are reported in Oregon. Most of the Red Bluff wool has been sold. Notwithstanding the talk and depression caused by the tariff outlook, there appears to be some demand, and some advance is by no means unlikely.

Spring Clip—		
Choice Southern, Year's staple	9 @12	c
7 months	8 @11	c
Lambs	5½	c
Northern, year's staple	13 @15	c

HIDES.

There is some weakness as to prices, according to local dealers, and the demand is quiet, though quoted values stand as before.

Heavy Steers, over 56 lbs.	10	c
Medium	9 @ 9½	c
Light Steers, under 48 lbs.	9	c
Heavy Cows, over 50 lbs.	9	c
Light Cows, 30 to 50 lbs.	8½	c
Kip	10½	c
Veal	14½@15½	c
Calf	15 @15½	c
Dry—		
Dry Hides	17 @18	c
Dry Bulls	16	c
Dry Kip, 10 to 15	17 @18	c
Dry Veal, 5 to 10	16½@17	c
Dry Calf, 7 down	23	c
Sheep Skins—		
Long Wools	$ .75@$1.00	
Medium Wool, 6 to 9 mos	50@ 75	c
Short Wool, 3 to 6 mos	25@ 40	c
Lambs	15@ 50	c

HORSES.

There is still a strong demand here for good drafters and truck horses, and anything having weight can be moved off easily at full prices. In fact, it is hard to get enough of this class of stock to fill the current demand. Horses of the lighter descriptions are quite plentiful, and at present find little demand, farm and delivery horses being neglected. Quite a lot of mares with colts have been sold at about $140, and prices on all ordinary descriptions are somewhat lower than a few weeks ago.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	235@285
Chunks, 1350 to 1500 lbs	200@250
Wagon Horses, 1250 to 1350 lbs.	165@190
Delivery Horses, 1050 to 1250	115@140
Desirable Farm Mares	120@140
Old Mares	90@115

MULES.

1200 lbs	$250@300
1100 lbs	215@240
1100 lbs	175@200
900 lbs	150@175

SPECIAL DECIDUOUS FRUIT MARKET.

Sacramento, Cal., May 29, 1911.

There has been very little change in the situation East since our last letter. Though the recent cold wave is somewhat retarding the ripening of the fruit, the crop throughout the State appears to look better, and the fruit is swelling fairly well at this time.

Plums are reported light in Placer county, though in Vacaville the crop seems to be heavy. Pears have been dropping in Placer county, owing to the north wind, but they don't seem to have been affected on the Sacramento river or in Suisun in the past two weeks.

The Eastern markets are still maintaining high prices on good quality stock, and even fruit arriving in fair condition is bringing what ordinarily would be a good price in other seasons. New York averaged last week on Chapmans from $2.74 to $3.12; Tartarians, $4.12 to $6.12; Rockports, $2.43 to $3.32; Purple Guignes, $2.25 to $3.17; Advance, $2.30 to $2.92; Knights Early, $2.52. St Louis averaged $2.35 to $3.65 on Tartarians. Chicago averaged from $1.85 to $2.70 on Chapmans, $2.30 to $3 on Tartarians, $1.55 to $2 on Rockports, $1.30 to $2.20 on Purple Guignes and $1.75 to $2.30 on Advance. Tartarians brought from $3.30 to $3.55 in Philadelphia and $3.25 in Pittsburg. Cincinnati averaged $3.10 on Chapmans, $2.25 to $2.80 on Tartarians, $2 on Rockports and $2.75 on Advance.

PUBLISHER'S DEPARTMENT.

Last week we stated that we hoped to gain over 100 new subscriptions for the week, but for some reason we were disappointed. When our subscription clerk gave us the final report Saturday we found that 89 was the total gain for the week. Perhaps this week we will break over the century mark.

Read the new advertisement in this issue of the Layne & Bowles Co. of Los Angeles. This company has just issued a very valuable catalogue pertaining to pumps and irrigation. By all means send for it if you are using water.

A new cooler is being placed on the market by L. Anderson Co. of Martinez, which promises to be just what the farmers' wives want in their homes. A cooler that will keep household eatables in good condition without the use of ice should be in every home.

The Byron Jackson Iron Works, 357-361 Market street, San Francisco, Cal., with works at Carlton Station, Cal., manufacturers of pumping machinery, have recently perfected a new and improved pumping system for irrigating farm lands which possesses unusual merit. Their patented automatic water-balanced irrigation pump, direct-connected to electric motor, is self-operating and makes an ideal pumping plant, superior to gasoline-engine power in every way. The electric-driven, direct-connected pumping plant allows of irrigation during the night. This means a big gain to growing plant life. The attention required with gasoline-engine power absolutely prohibits all-night irrigation, unless extra help is provided. The electric-driven-direct connected pumping plant is self-operating and requires no attention. The valuable time saved means much; simply turn on the switch to start the plant, or close the switch to stop operations. If desired, the switch can be placed in the home; any member of the family can operate the plant from the house, start or stop the plant in one second of time.



In acreage

"Twenty's Plenty—
Forty's a Fortune"

A good stand of alfalfa a year old will support from 10 to 20 hogs on an acre throughout the year on one of our small farms in the Sacramento Valley.

That Hog

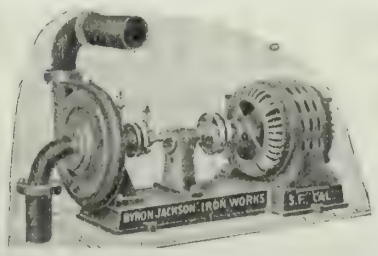
THAT HOG was a little suckling pig one year ago. To-day he weighs from 200 to 250 pounds and will sell for from 6 to 8 cents a pound, live weight. A good stand of alfalfa a year old on one of our small farms in the Sacramento Valley will support from 10 to 20 of these hogs to the acre throughout the year. Figure out the possibilities of 20 to 40 acres of alfalfa one year old stocked with hogs.

You can purchase one of these small farms from the SACRAMENTO VALLEY IRRIGATION CO. on very liberal terms—

$15 DOWN THAT'S ALL **$11 A YEAR** THAT'S EASY

They will sell you from 20 to 80 acres at $125 an acre. Pay $15 an acre down and the balance spread over 10 years. Write to-day for full information.

H. L. HOLLISTER & CO.
WILLOWS, CAL.
412 Market St., San Francisco, Cal.
137 So. La Salle St. Chicago, Ill. — 1027 Ninth Street Sacramento, Cal. — 345 Fourth Ave. Pittsburg, Pa.



Patented Automatic Water Balance Irrigation Pump, direct-connected to electric motor; self-operating; ideal; will require no attention.

The New Way

This is the modern way of irrigating and the one that gives the least trouble.

Turn on the switch, and the pump does the rest.

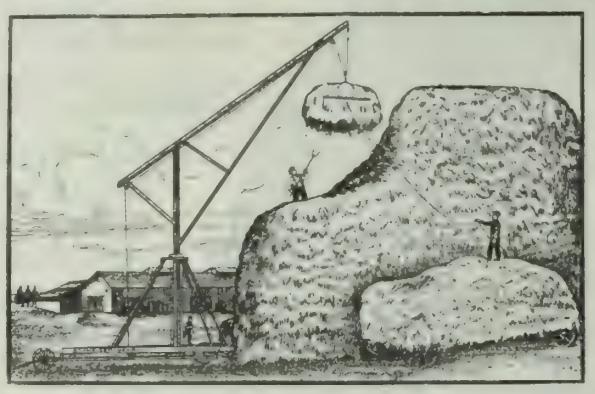
You can operate the switch from the house.

Write for booklet—it tells you how.

BYRON JACKSON IRON WORKS, Inc.
357-361 MARKET ST., SAN FRANCISCO
212 N. Los Angeles St. Los Angeles.
Works: Carlton Station, W. Berkeley, Cal.

WESTERN MACHINERY COMPANY
4th & BRANNAN ST., SAN FRANCISCO, CAL.
Largest dealers in all kinds of
SECOND HAND STANDARD PIPE AND SCREW CASING
We make a specialty of IRRIGATING PLANTS
Write for information and Prices. Mention this paper.

MR. HAYGROWER



More for the money than any tool on the ranch.
Will furnish the Portable Automatic Derrick

FREE

for one season.
Write today and we will tell you all about it.

Schmeiser Manufacturing Co.
DAVIS, CALIFORNIA

CALIFORNIA FRUITS AND HOW TO GROW THEM
Price $3
PACIFIC RURAL PRESS, - - - - - - - - - - SAN FRANCISCO

HAY PRESSES

GLADIATOR, THREE-QUARTER BALE PRESS
STEEL BEAUTY
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A COMPLETE HAY PRESS CATALOGUE ON APPLICATION.

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SAN FRANCISCO SACRAMENTO LOS ANGELES

FREE to RANCHERS



A Course on
MODERN
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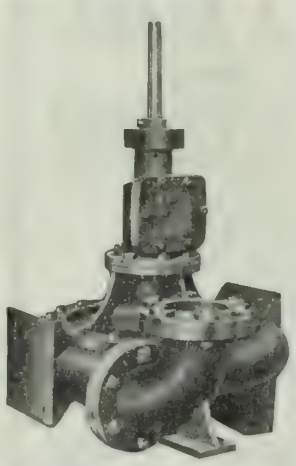
An illustrated book showing the best Money-Saving Irrigation System—the result of 20 years experience of two practical Ranchers. Mailed Free on Request.

The Kellar-Thomason Manufacturing Company
1234 EAST 28th ST., LOS ANGELES, CAL.

REDWOOD TANKS

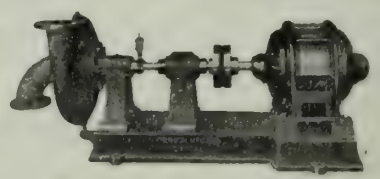
I deal direct with the consumer. My lumber is brought direct from the forest. Latest improved machinery. Up-to-date methods. A two cent stamp and some paper will show you that I can increase the purchasing power of your dollars. Redwood Tanks, Picking Boxes, Peach Boxes, Drying Trays, Egg Cases. A tank 5 ft. diameter, 2½ ft. deep, $7.50. A tank 6 ft. diameter, 2½ ft. deep, $10.50. A tank 8 ft diameter, 2½ ft. deep, $13 50. Spraying tanks.

R. F. WILSON, 447 W. MAIN STREET, STOCKTON, CAL.



Krogh New Vertical Water Balanced Pump

¶ Careful irrigationists are investigating our new water balanced Pump---then buying it.



Krogh Electric Pump

¶ Experience has taught them that a successful pump must be not only efficient but must also be capable of withstanding, to a reasonable degree, the cutting action of sand. Our pumps excel on this point. Bulletin No. R10 tells all about them.

¶ Our branch house, 206 N. Los Angeles Street, Los Angeles, carries a complete stock.

Krogh Manufacturing Company

149-157 BEALE STREET, SAN FRANCISCO, CAL.

MT. DIABLO CEMENT

best for foundations, dairy floors, fruit dryer floors, etc., etc.

SANTA CRUZ LIME

best for bricklaying and plastering.

MT. DIABLO ◇ LIME

best for spraying and whitewashing.

WRITE FOR INFORMATION AND PRICES ON ALL BUILDING MATERIAL.

HENRY COWELL LIME & CEMENT COMPANY
9 MAIN STREET, SAN FRANCISCO

THE PACIFIC RURAL PRESS

Vol. LXXXI. No. 23. SAN FRANCISCO, SATURDAY, JUNE 10, 1911. Forty-first Year.

CALIFORNIA STATE

Country Milk for City People.

Written for the PACIFIC RURAL PRESS by Mr. DUDLEY J. WHITNEY.

To supply a city, or group of cities, containing 700,000 persons with milk has been the problem connected with the growth of San Francisco and the cities across the bay, and this has caused a radical change in dairying conditions for a half a hundred miles north and south of the Golden Gate within only a few dacades. In early days large amounts of butter were produced in Marin and Sonoma counties, but now practically all dairies where milk can be sent away readily in these counties, as well as others near the bay, sell to milk distributers, and butter producing is a secondary occupation. The furnishing of 700,000 persons with milk calls for a great number of cows, and the milk has often to be shipped from long distances before there is enough to supply the demand. San Francisco, for instance, has but 20 dairies within the county limits, practically all the cows being kept on small areas and fed on food that is raised in other places and shipped in. The rest of the milk comes from other counties. Across the bay where the population is less dense there is still room for many to keep cows that can feed on vacant lots, and the bovine population of Oakland alone amounts to 2000 animals, which figure would be greatly increased by adding the cows owned in Berkeley and Alameda.



Up-to-Date Cemented Cow Yard—Silo on the Right.



Complete Ration for Dairy Cows—Corn and Alfalfa.

In San Francisco the daily consumption of milk amount to 26,700 gallons. In Oakland it amounts to a little over 12,000 gallons, and the other bay cities would raise these figures several thousand gallons more. The exact figures on the east side of the bay are difficult to obtain on account of the large number of small producers. For instance, the San Francisco inspectors have to look after but 127 dairies, not including distributing points, while for Oakland, with a much smaller population, there are 500 places for inspection, where milk is either produced or distributed. Milk is produced in about half of these points.

Milk is purchased from dairies in almost all parts of the bay counties. Shipments are regularly made from as far south as Morgan Hill, Santa Clara county, as far east as Stockton, and as far north as Dixon, in Solano county, as well as many places in Sonoma, Napa and Marin counties.

All dairies where milk is produced for city sale are inspected by officers from the cities where sold, and if conditions are contrary to provisions in the several municipal ordinances, the inspectors or health authorities are permitted to prevent the importation of milk from such places. San Francisco has four inspectors and Oakland and Berkeley each one.

In all three cities score cards are used, by which dairies are scored according to health of animals, facilities for handling and actual management. When a dairy fails to score a given percentage, or when any one thing is radically wrong the inspector can order a change and prevent shipment of milk until it is made. San Francisco and Berkeley require milk to have 3.4 per cent butter-fat, while in Oakland the State percentage of 3 per cent is all that is required.

Milk is distributed in two ways, by can and bottle. The price to the consumer for ordinary milk varies from $2.50 per month to 10 cents a quart straight. When the milk is delivered in bottles a charge of 25 cents a month over the cost of can milk is sometimes made to cover cost of handling to the distributer and breakage. When a large amount of milk can be sold in bottles it is often preferred by the distributer to handle milk in this way, on account of the greater satisfaction to consumer and the reduced cost of cleaning when large quantities are washed at once. It is also found that more milk can be delivered in bottles than in cans. Besides the ordinary milk there is also a growing demand for certified milk. This is produced under exceptionally sanitary conditions and at a cost that makes the price to the consumer much greater than for other milk. Certified milk is sold at 15 cents a quart, and the owners of the Walnut Grove Creamery, who produce their own certified milk on their dairy at Santa Clara, claim that the extra price gives them but little more profit than the other milk, most of the extra price going into extra care.

There are but three other certified dairies supplying milk to the bay cities, the others being the H. R. Timm and Hutton Brothers dairies at Dixon, and the Ideal Farm Dairy at San Anselmo, Marin county.

Certified milk has been produced for only three years here, but the demand has increased approximately 100 per cent a year on account of its known purity. The greatest demand that can be expected, according to some dealers, will be about two per cent of the total supply, the price preventing a much greater demand.

Midway between certified and other milk is "inspected milk," which is produced under similar conditions to certified milk, but less expense being put upon the handling. While certified milk can have only 10,000 bacteria per cubic centimeter (about 15 drops), the inspected milk can have 100,000 bacteria. The price of inspected milk is 12 cents a quart. It is sold mainly on the east side of the bay and has not been long enough on the market to be well known.

Pasteurization is also done to destroy bacteria in some of the largest San Francisco creameries, although the milk cannot be sold as inspected milk on account of difference in production. This is done to prevent souring, and when a very large amount of milk is pasteurized it is found by the dealers who practice it to be but little expense.

The producer receives usually about 15 to 17 cents a gallon from the distributer on a contract at the station ready for shipment. The price where freight is high may go below this, and where the milk is excep-

(*Continued on Page 468.*)

Pacific Rural Press

ISSUED EVERY WEEK AT 667 HOWARD STREET, SAN FRANCISCO.

TWO DOLLARS PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

PACIFIC RURAL PRESS CO. - - - PUBLISHERS

Advertising rates made known on application.

S. J. WICKSON - - - - - - - Editor
FRANK HONEYWELL - - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., June 6, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	00	31.77	45.28	50	46
Red Bluff	00	24.42	24.69	88	54
Sacramento	00	21.86	20.00	84	50
San Francisco	.03	25.49	22.16	60	48
San Jose	.06	22.63	12.98	76	46
Fresno	00	11.82	9.65	94	54
Independence	.02	6.28	9.51	86	40
San Luis Obispo	00	34.42	20.48	74	44
Los Angeles	00	16.15	15.57	86	50
San Diego	00	11.98	10.01	90	54

The Week.

Things are moving along with full strength and confidence toward the harvest and the farmers' clean-up of their year's undertakings. So far as we can see, everyone will be busy, and although the course of farm products in most parts of the country is downward from the abnormal heights of recent years, local values are likely to be well maintained because of moderate production in the face of expanding local requirements. This seems to be the condition in animal products and all field crops which are involved therein. Articles which depend upon the export demand, like fruits and fruit products, are strong because of exceptional distant requirements and opportunities, and the fact lends new zest to the meetings which are being held in all parts of the State in the interest of standardization, better transportation arrangements and local economies of fruit handling. We never knew a time when producers were more wide awake, better disposed toward co-operative effort and more confident of the future of their investments and enterprises. We take it that anyone reading the pages of the PACIFIC RURAL PRESS from week to week hardly needs to have these facts pointed out, for our publication is a faithful mirror of all of them and of the manifestations of the spirit which actuates these facts. We hear from all sides appreciation of our reports of the coming fruit crops and the effective way in which probable percentages are connected with the special producing capacities of the counties reporting. Hitherto reports have been largely unintelligible or misleading because a dispatch from a section having only a handful of trees has been given just as much weight as one from a section having hundreds of thousands. From this point of view our tabular statements are an interesting study in the distribution of fruits in California as well as the outlook for this year's production. As the season advances the later fruits will of course be taken up in the same way that the earlier fruits have been set forth.

Reciprocity.

Of course those cruel words we said about reciprocity in a recent issue were not directed against our charming but chilly sister, Canada. We earnestly admire her chaste beauty and we yearn to throw sunshine into her young life in trainloads and shiploads of the fruit which nature denies her. These she welcomes without requirements of reciprocity except in sentiment, and in the nature of things always will do so for her own good health and the joy of living. So far as we can now see into the question, California Congressmen, figuring that California has largely to sell in Canada and little to buy, would naturally stand for reciprocity, hoping to get something later of more importance to California in the way of maintaining present protective duties. What we fear in reciprocity is not competition with Canada, although we do hope to send flotilla of California barley up the Mississippi via the Panama Canal to make St. Louis famous on the Wilwaukee basis. But still cherishing that hope, our objection to reciprocity is a matter of principle, not of arrangement merely. As we look at it, every free trader is in favor of reciprocity as a half-way house to his economic heaven. Now, all we need to destroy any protection which may be gained for California's chief products is to have a few reciprocity treaties scattered around in the places where they will do most good to foreign producers. We oppose reciprocity, then, not because we love Canada less but because we love California more. We invoke a plague on all the houses of the free traders, and the little shack called "reciprocity" as the most dangerous structure of them all.

The Farmers' Lawyer.

Perhaps the most ridiculous action which has been indulged in on the reciprocity issue is the hullabaloo which has been raised by the friends of the measure because the "farmers have hired a lawyer" to get up and promote their movement against the treaty. It is ridiculous because it is the inalienable right of a farmer to have a legal scrap if he feels like it, and none enjoys it more than he. We all remember the "celebrated calf case" in which a couple of farmers "lawed away" their farms over a four-dollar calf. Many of us have seen hundreds of dollars joyfully blown into lawyers over a contested ribbon of land worth ten dollars, or less perhaps. Now, having this inborn taste for and enjoyment in the law, whose right is it to question the farmers' title to indulgence in it? It makes us weary to have any one object to a farmer being just as foolish as the rest of the community if he chooses to be. But this objection to the farmers' reciprocity lawyer does not rest alone on this broad question of human rights; it has specific supports in the modern ways of doing things. No one has objected to the right of the great interests which expect to profit by reciprocity to maintain their legal bureaux and other well-paid promotive machinery. They, of course, have lawyers and legislative agents by the score and by the year, but when the Master of the National Grange uses a few dollars out of the treasury of his concern to give point and weight and style to the farmers' view of the reciprocity question he is denounced as though he had stolen a congressional cuspidor or committed some other high crime against decency or right. We have no patience with this way of fighting. The farmers have a right to all the lawyers they can pay for in cash or political favors just as other more highly organized interests do. In fact we are rather proud of the fact that the farmers are learning to play the game in the regular way, and if they need to assess the expenditure against the whole output of cabbages and get it back out of the consumer, they surely have a right to do so. It is part of the cost of production, because it prepares the way for trade. Other producing interests might as well get down to brass tacks on this line just as soon as possible. The holy-horror attitude because the farmer begins to fight the devil with fire is out of date.

The Bankers' Broadening.

We do not seem to be able to talk about lawyers without getting exhilarated, so we go to the other extreme and talk about bankers, because they usually steady a fellow if anything can. The lawyer takes your money beforehand and the banker takes it afterward and does not give you any fight for it, and that's what makes it depressing. However that may be, we are sure that a jolly banker is a community blessing, and when a whole lot of bankers get together and do not hold an undertakers' convention, there ought to be a public rejoicing. Now just this thing is going to happen, and it will not be our fault if our readers are not glad. The California Bankers' Association will meet next week at Lake Tahoe and have a jollification in which both fish and veracity will suffer severely, we doubt not. Judging from the preliminary statements made by various banks they are doing all they can to jolly up beforehand. One of the San Francisco banks, in order to show the sources of California's never-failing wealth, uses in its May financial letter these notes of gladness:

"As an illustration of the diversified character of California's products, it may be cited that the mineral output of the State in 1910 was about $95,000,000; the orchard, vineyard and garden products about $126,000,000; the forest products nearly $30,000,000, while the output of grain, hay, farm animals, eggs and poultry brought the total value of California's marketed products to approximately $500,000,000."

What strikes us pleasantly is that these are practically all rural products being exalted by city bankers, and this is so different from the behavior of city bankers of the last generation, who always had the rooms they used for consultation with ruralists tinted dark blue lest rural securities should by any chance assume a rosy shade. It is all changed now, and the man with a good rural proposition has to be careful lest he be snapped up too soon.

And another banker looks to seaward and sees the rose even on the blue water. This is the outlook:

"The approach of the time when the Panama Canal will be opened to commerce is already proving of advantage to Pacific Coast industries. Of late years and until recently nearly all traffic between this Coast and the Atlantic ports, whether foreign or domestic, has moved by rail, the route by Cape Horn being more and more neglected and the Panama route not actively seeking business. The average annual tonnage both ways for the last decade has probably not exceeded 40,000 tons —1200 or 1300 carloads. At present the total shipments both ways are estimated by transportation men to be at the rate of 390,000 tons a year via Panama and 400,000 tons a year by the Tehuantepec route. This real sea competition, while doubtless profitable to the carriers, is already opening up new markets for our products and enabling the Coast to compete effectively in old markets."

We take it this is a pretty joyful mood for bankers of the metropolis. It will mean much for general development and for the promotion of individual enterprise.

Worthless Walnuts for Americans.

But then wet get angry again as another spectre of free trade or of reciprocity arises, and this time it has a horrid shape. California is

trying to teach the American people what a good table walnut is, and is making much headway therein under the protective tariff which prevails. How much need there is for such a demonstration is shown by a sentence which we find in a report from the U. S. Consul at Saloniki, in European Turkey. After stating that many walnuts are grown in that country and considerable shipments are made to Austria and Germany, he says: "The quality of the walnuts is not so good as it should be, because the peasants do not know how to cultivate the trees, but it is suitable for the American trade. The prices asked are 5 to 7 cents per pound now, and 3½ to 4½ cents per pound in years when the crop is abundant." Poor in quality but "suitable for the American trade"! That is the sort of thing the California producers of high-class walnuts would have to compete with if protection is withdrawn or reciprocitated! How much of this do Californians wish?

That Sulphur Handicap.

We do not know which we like less, reciprocity or that old sulphur regulation of Dr. Wiley. It has been practically annulled in this country by the reference to the Referee Board, as we have previously stated, but it has been doing harm all the time abroad. In Germany, for instance, it was accepted and enforced at once, although Germany had practically abandoned its old position against the use of sulphur. The result is that our fruit is not only interfered with, but we get lectured by our foreign consuls who apparently do not know that this country has no regulation now in force. For instance, the Consul at Magdeberg recently wrote: "There is a ministerial order prohibiting the admission and sale of dried fruits in the preparation of which there has been used more than 0.125 per cent of sulphurous acid. In spite of repeated attempts on the part of local importers to prevail on American exporters to observe this regulation in the preparation of those fruits intended for export to Germany, little success has been attained. The local dealer is placed in an unpleasant and false position, owing to the illegal preparation of the fruit, and of course he blames the American exporter." The fact is that it is not an illegal preparation of the fruit in this country, and it would not be illegal there if they did not see fit to retain abroad a regulation which has long been dead here. It is vexing, at least.

Australian Aspect of Sulphuring.

here is another aspect of sulphuring which our fruit-drying readers may like to know about while they are patching up their sulphur boxes for this year's run. They have a regulation which passes less sulphur than Dr. Wiley's regulation, but they do not condemn as unwholesome fruit which carries more. In South Australia, it appears from a recent account that the authorities do not care to have any further experiments made to determine the wholesomeness of sulphured fruit or not, because their regulation only refers to natural sulphur which may possibly be contained in the fruit itself. This quantity which is allowable by regulation, however, namely, 0.015 per cent, is in excess of what is likely to be found in fruit, but it is set up as a basis, and all sulphur above this quantity will be called added sulphur. The Government Analyst says: "There is nothing to prevent sulphuring of fruit; but the packages of dried fruit must have branded upon them the amount of added sulphur contained in the fruit. This would necessitate the obtaining of an analyst's determination of a sample of each drier's produce, and the result could then be stamped on the cases, and the retailer might in turn copy this statement on to his smaller packages."

The South Australian producer is therefore allowed to have much less sulphur than we, if the decimals are printed right, but at the same time he can have apparently all the sulphur he wants if he stamps the amount on the package. This is both undesirable and impracticable. It is undesirable because it seems to be a warning, which, if no unwholesomeness exists, as California claims, would be foolish. It is impracticable because no drier's output is uniform, nor can be, for it is affected by time, character of fruit, and many other variables. No drier could afford to keep a chemist to determine sulphur in each package, nor could the determination be of any value if the fruit were stored for a time. The only question is whether the fruit, when rationally sulphured, is wholesome or not. This is the problem which rests with the Referee Board, and it should stay with them until after the year's crop is disposed of.

Queries and Replies.

The Yard-Long Bean.

To the Editor: I wish you would answer through the Pacific Rural Press or otherwise some questions relative to the very long bean which I think was introduced from China into California, and I remember seeing one vine when I was living in California which I think must have been twenty or thirty feet long and had hundreds of pods and each of these pods were from two to three feet long. It was a very unusual sight to me, and I write to ask if these beans are generally considered eatable and if they can be shipped to the market, and if there is market for them. Are they generally used in the green state or as a dried bean? And on account of their enormous growth would like to ask if they would be at all suitable to get as a field bean which the hogs eat. Any further information in connection with them would be very much appreciated.—C. J. Moore, Rockport, Texas.

You probably refer to the "yard-long" pole bean. It is a world variety and may have come to California from China as you suggest, but it has also been well known for generations in Europe and was brought thence to the Eastern States at some early date. It is generally accounted as an unimportant species and certainly has not risen to commercial account in California. It is not important enough to be listed by our seedsmen. You can probably get the seed from Eastern dealers, who carry more curiosities. The beans are edible and the whole plant available for stock feeding, but there is no doubt but that the growth of some of the cowpeas which are successful in our State would be altogether preferable as a field crop for hog pasture.

Probably More Manure, Water and Cultivation Required.

To the Editor: I have a small place on a hillside, with brown soil about one to two feet deep to hardpan and I have been pegging away at it for a year, but am getting rather discouraged, as so many things fail to come up and others grow so very slowly after they are up. A neighbor planted some dahlia roots the same time I did. Only one of mine came up and it is not in bloom yet, while several of his have been blooming for some weeks and are ten times as large in mass of foliage as mine with its lone stalk and one little bud on the top. Peas came up and kept dying at the bottom with blossoms at the top till they were four or five feet high, but I never could get enough peas for a mess. Can you help me get this thing right?—Amateur, San Diego.

We can suggest nothing in the way of treatment except a free use of stable manure and water. It, of course, would not do to say anything against the climate of San Diego, and your neighbor's success shows that there is no need to say anything against it. Your trouble probably lies either in the lack of plant food or of moisture in the soil. This, of course, is supposing that you cultivate well so that the moisture you use shall not be evaporated and the ground hardened by the process. At this time of the year a good surface application of stable manure to which water can be applied would be better than to work manure into the soil, which should be done at the beginning of the rainy season. As your soil is so shallow it will be well for you to stand along the side of the plant much of the time with a bucket of water in one hand and a shovel of manure in the other.

Alkali and Gypsum.

To the Editor: Will you kindly advise me how to apply gypsum, and how much, to heavy, sticky soil, the worst sort of adobe and heavily saturated with alkali. We want to plant shade trees. Eucalyptus and peppers succeed fairly well after once started. Gypsum seems to help, but I don't know how much to use.—Reader, El Centro.

The amount of gypsum required to neutralize black alkali depends upon how much black alkali there is to be neutralized, and no definite amount, therefore, can be prescribed beforehand as sufficient without a determination of the amount of alkali. In some experiments gypsum to the amount of thirty tons to the acre or more has been used just for the purpose of seeing how much the land would take, and a fine growth of grain has been secured after using that much gypsum, but that, of course, would be out of the question because the outlay would be more than the land or the crop would be worth.

In the planting of trees at some distance apart, the tree can be protected from destruction and enabled to make a stand in the soil by using gypsum on the spot rather than the treatment of the whole surface. In this way five or ten pounds of gypsum could be used by mixing with the soil to fill a good-sized hole. You can apply gypsum to the whole surface at the rate of one thousand pounds to the acre, repeating it several times without danger of injuring anything.

Soaking Seeds.

To the Editor: Do you think it a good practice to soak seeds before planting?—J. D., Walnut Creek.

It is usually desirable; more desirable with some seeds than others and more desirable when the ground is rather dry or the sowing time rather late, than when sowing in moister ground or earlier in the rainy season, when heavy rains are to be expected. Soaking is simply a way to be sure that the seed covering has ample moisture for softening and the kernel has what it requires for awakening its germ and meeting its needs. The soil may not always have enough to spare for these purposes and germination may be delayed or started and arrested. Ordinarily seeds can be helped by soaking a few hours in water at ordinary temperatures. Some very hard seeds like those of acacia trees, etc., are helped by hot water—even near the boiling point. Much along this line has to be learned by experience.

Will Muskmelons and Squashes Mix?

To the Editor: Many persons here think muskmelons and squashes will mix if planted near together. I would like your opinion in this matter, as well as others who have no doubt raised both melons and squashes near together. I would like the opinion of others as to this matter to appear in the Rural Press.—Ira W. Adams, Potter valley.

The members of the cucurbitae have the reputation of being the best mixers in the plant kingdom. Who has caught these two at it?

Choice of Crops for Alkali Land.

[In some respects alkali is like greatness: Some people are born to alkali; some achieve alkali by excessive irrigation which results in increasing surface evaporation on lands not well drained; some have alkali thrust upon them by the skill of land sellers or by seepage of alkali water from higher levels. To all of these there arise two questions: First, how to get rid of alkali; second, how to grow something on alkali which they cannot get rid of by soil-washing with fresh water into adequate under-drainage channels. It is the second question to which this present printing is addresed.

Mr. Thomas H. Kearney has been a sort of an Alkali Ike to the arid region for the last 15 years or so, and has given attention and observation to alkali occurrence during all of this period. His latest product is a Farmer's Bulletin on "The Choice of Crops for Alkali Land," an underflow and outeropping of wisdom from all of Mr. Kearney's work for the U. S. Department of Agriculture. We shall take therefrom portions of concentrated public interest.—Editor.]

Quantity of Alkali Present.—The harmfulness of alkali depends upon the quantity as well as the kind of salts present. The alkali content of a soil is usually expressed in percentages of its total dry weight. Thus, if 100 pounds of dry soil contains 1 pound of salts that are easily soluble in water, its alkali content is said to be 1 per cent. As a rule, if the soil contains more than one-half of 1 per cent of white-alkali salts, only decidedly resistant plants can be grown.

The kind of salts present in a given alkali soil can be determined only by chemical analysis, but if there is not enough black alkali to turn red litmus paper blue when brought in contact with the wet soil it will usually suffice for practical purposes to ascertain merely the total quantity of easily soluble material.

Soil Moisture.—Salts can affect plant growth only when they are dissolved in water. Hence, even if the total quantity of alkali in a given volume of soil remains the same, the strength of the solution which surrounds the roots and from which they must extract the water and plant-food salts needed for growth will vary with every change in the soil moisture. For example, if 20 pounds of water be added to 100 pounds of air-dry soil containing 1 pound of alkali salts, the bulk of the salts will be dissolved in the 20 pounds of water and the concentration of the soil solution will be approximately 1 part in 20, or 5 per cent. If an additional 20 pounds of water is added without increasing the quantity of salts present, the concentration of the soil solution will be reduced to 2.5 per cent. If the soil is now allowed to dry out until it contains only 10 pounds of water, a 10 per cent solution will result, supposing the moisture and the salts dissolved in it to remain evenly distributed throughout the soil.

It is therefore evident that a mere statement of the percentage of alkali present in a soil tells us little about how plants will be affected. It is the strength of the solution around their roots which concerns them. Plants which could make a thrifty growth in a soil containing a given percentage of alkali, provided that irrigation were so managed as to maintain a moisture content of 30 per cent, might suffer severely if the same soil, without change in the alkali content, were allowed to dry out until only 20 per cent of moisture remained.

Similarly, some plants which can endure 1 per cent of alkali if present in a heavy soil would quickly perish in a sandy soil containing the same quantity and the same kind of salts, the reason being that the heavier soil can hold more water. If a clay loam and a very sandy soil both hold 1 per cent by dry weight of alkali and are both saturated with water, the soil solution in the former may be only one-fourth as concentrated as in the latter.

The moisture content of the soil is, of course, subject to the control of climatic factors, especially precipitation and evaporation. In regions of winter rainfall like California a winter crop might succeed better in alkali land of a given concentration than a summer crop that is actually more reistant. During the rainy season the soil solution is frequently diluted by the water that falls upon the land, and evaporation is relatively slight. Hence, the surface soil is likely to remain nearly free from salts during the entire period when the crop is growing. On the other hand, the growth of the summer crop takes place during the period when evaporation is most rapid and is tending to accumulate the salts near the surface of the soil. At the same time the dry, hot weather stimulates transpiration or loss of water from the plants themselves just when the increased concentration of the soil solution makes it hardest for their roots to take up water. An irrigated summer crop is subject to great fluctuations in this respect, the soil solution being very dilute immediately after an application of water, but becoming daily more concentrated through the action of evaporation.

Methods of irrigation have a great deal to do with the movement of the soil moisture and consequently with the distribution of the alkali. If the land is level, a heavy flooding will cause the water to move downward over the whole surface of the field, carrying the salts with it. On the other hand, furrow irrigation drives down whatever alkali is present at the bottoms of the furrows, but sub-irrigates the soil between them, causing an accumulation of salts at the summits of the ridges. This action will be intensified if the irrigation water itself carries considerable alkali.

Stage of Growth of the Plant and Character of Its Root System.—Another important consideration in determining the effect of a given quantity of alkali is its vertical position in the soil in relation to the depth reached by the plant roots. A comparatively small quantity of alkali, if mostly accumulated near the surface, will prevent getting a stand of many crops which can be successfully started if a heavy rain or irrigation has occurred just before planting is done. The effect of the large quantity of water thus added is, of course, to drive much of the salt into the lower depths of the soil, leaving a comparatively dilute solution in the portion occupied by the germinating seeds and the roots of the young seedlings. Then by the time evaporation has produced a new accumulation of salts at the surface, the feeding roots of the plants may have penetrated deep enough to be out of reach of the concentrated solution that has once more formed in the topsoil. Alfalfa serves to illustrate this relation, since the seedlings develop a taproot that penetrates very rapidly into the soil. If the salts have been washed out of the surface 6 inches just previous to seeding, a stand may be obtained and the plants may escape injury, even if an alkali crust is subsequently formed. This doubtless explains the fact that flourishing fields of alfalfa several years old are occasionally seen where the quantity of salts now present in the topsoil would make it impossible to get a stand, the alkali having evidently risen since the seeding was done.

On the other hand, most of the alkali may be located in a deeper portion of the soil, a condition which is especially unfavorable to deep-rooted plants, such as alfalfa, cotton, and trees. In irrigated land this condition is nearly always associated with a high water table, which is itself unfavorable to deep-rooted plants, but deep-lying deposits of salts may occur in unirrigated soils or in irrigated soils having a low water table. Such deposits are often associated with a clay subsoil or a lime hardpan. In these cases comparatively shallow-rooted plants like the cereals and the meadow grasses can often be successfully grown where deep-rooted plants would soon die.

Grades of Alkali Distinguished.—The following grades of alkali may be distinguished, the grades being based upon the percentage of soluble salts by weight in a given depth of the soil. In referring to the different grades when discussing the alkali resistance of any particular crop plant, it is assumed that the depth of soil is that ordinarily occupied by the roots of the plant in question.

Proportion of soluble salts to total dry weight of the depth of soil reached by the roots:

Designation of the grade.	Per cent.
Excessive	More than 1.5
Very strong	1.0-1.5
Strong	0.8-1.0
Medium strong	0.6-0.8
Medium	0.4-0.6
Weak	0.1-0.4
Negligible	Less than 0.1

As shown, it is the concentration of the soil solution within reach of the roots and not the mere quantity of salts present which actually determines the effect of alkali upon plant growth. But as the soil moisture and hence the strength of the solution are extremely variable, alkali land can be classified only on the basis of percentages of the salts to the dry weight of the soil. In using the above classification in discussing the resistance of plants it is assumed that the soil contains a degree of moisture favorable for the growth of the crop in question; also, that the soil is not extremely sandy, for sandy soils hold much less water than loams or clays and hence a given percentage of alkali produces a more concentrated solution in very light soils.

Crop Plants Adapated to the Different Grades.—The limits given are those for crop production and take into consideration such matters as quality of the grain in cereals, of the fiber in cotton, and of sugar content in sugar beets. The term "good crop" implies an approach to the normal production in alkali-free soils, while "fair crop" implies a product giving a reasonable return on the investment, the relatively low value of the land being considered. The limits as given apply to the maturing crop. For germination and growth during the seedling stage the limits will in many cases be considerably lower.

It should be understood that any classification of crops on the basis of their alkali resistance can be applicable only in a very general way, owing to the varying nature of the conditions which determine resistance in any particular locality or soil. The classification applies most closely where the alkali is of the sulphate type. In localities where common salt (sodium chloride) forms the bulk of the alkali it will be found that most of the crop plants mentioned succeed best at the lower limits of the respective grades. If an appreciable quantity of black alkali is present, the classification will not hold good at all.

In spite of these limitations, it is believed that the following grouping will be useful as a guide to the selection of crops for testing in alkali soils, since the comparative tolerance of the different plants is sufficiently indicated.

Excessive Alkali.—Only a very few useful plants can be depended upon to grow where more than 1.5 per cent of the dry weight of the soil consists of alkali salts. Chief among these are the native and foreign saltbushes and related plants of the goosefoot family (Chenopodiaceae), which are of some value as forage. Certain native grasses, notably salt-grass (Distichlis spicata), which affords pasturage of rather inferior quality, can endure more than 1.5 per cent of white alkali. Sugar-beet plants can grow in the presence of as much as 2.5 per cent, but the roots produced are small, the sugar content low, and the ash content of the juice too high. Among fruit trees the date palm is the only species that is at all likely to succeed.

Very Strong Alkali.—Where there is not more than 1.5 per cent of salts in the soil, if other conditions are exceptionally favorable, sugar beets may give a fair crop, although they are not to be recommended for soils containing this quantity of alkali. The date palm is still the only fruit tree which can be expected to yield fruit of good quality. Pomegranate bushes will grow, but will probably not yield edible fruit.

Strong Alkali.—Under otherwise favorable conditions the following plants may be expected to give fair crops in soils holding not more than 1 per cent of salts: Sugar beets, western wheat-grass, awnless brome-grass, and tall meadow oat-grass.

Medium-strong Alkali.—In soils that contain not more than 0.8 per cent of salts, good crops may be grown of the following meadow and pasture grasses: Western wheat-grass, brome-grass, tall meadow oat-grass, and, when once established,

of Italian ray-grass (or rye-grass), meadow fescue, and slender wheat-grass; also, of sugar beets and common or foxtail millet. Fair crops of rape, kale, sorgo, and barley hay may be grown.

Medium Alkali.—The following plants should give good crops in soils containing not more than 0.6 per cent of salts: Sorgo, common or foxtail millet, rape, kale, redtop, timothy, orchard grass, barley, rye, cotton, and asparagus. Fair crops are possible of milo, kafir, proso millet, wheat, oats, emmer, alfalfa, field peas, sweet clover, vetches, and flax. Among orchard crops, pears, and possibly figs, may be grown if other conditions are favorable.

Weak Alkali.—Where the soil contains not more than 0.4 per cent of salts, good crops may be expected of nearly all forage plants and of the cereals except corn. Among truck crops, the beet, cabbage, cauliflower, celery, eggplant, kale, spinach, Irish potato, sweet potato, tomato, and watermelon are the most likely to succeed. Grapes of the European type (Vinifera) can be produced if other conditions are favorable.

Negligible Alkali.—Practically all field-crop plants can be expected to produce profitably in the presence of less than 0.1 per cent of white alkali if other conditions are favorable. Few of the truck and orchard crops are likely to suffer.

As previously stated, however, the limits for all of these crops will be lower if the alkali is largely accumulated near the surface of the soil, especially at the time of seeding. Moreover, less alkali can be endured if the soil is very sandy or if an appreciable quantity of black alkali is present. The existence of other unfavorable conditions, such as a deficiency of necessary plant-food elements in the soil, disease of various kinds, and in the case of trees and other deep-rooted plants a high water table, may lower the limits of tolerance below what would be the case where alkali is the only injurious factor.

CHERRY SEEDLINGS: HOME GROWN AND IMPORTED.

To the Editor: Having read an article in your valuable paper dated May 20, as to the cause of the death of the young cherry trees of which I would like to submit my idea. My idea is that the death of the young cherry trees of today is purely due to the root upon which the stock has been grafted. Most growers when ordering trees from a nursery will specify the root upon which they wish to have their stock, yet in the case of the cherry, there are very few who take into consideration the root of the cherry when price is considered. Of late years competition in the nursery business has been very great, and in order to secure cheaper goods a great many have been using Oregon seedling root upon which to work their stock, being a cheaper stock than the imported cherry seedlings. Take the Oregon root from its point of origin, as you possibly know, and you will find that by working our stock upon this root you are working a stock upon a mother root, thereby inbreeding your cherry trees; and what is the result? It is the same proposition as your live stock; take and inbreed your stock and what have you got? You have a scrubby animal, a poor producer and an animal that will be mostly subject to any and all diseases of its class; also one of a very short life. Practically speaking, it is the same thing with your cherry trees. Work a good sound healthy cherry scion upon an imported wild stock, the Black Mazzard or the Mahaleb, and you can rest assured that you will have a good substantial tree, one that you can depend upon to resist a great many diseases, a good bearer and of long life. Using the Black Mazzard for an unirrigated soil and the Mahaleb for the irrigated ground, you will find that you will have no trouble to grow young cherry orchards.

Taking this from actual experience, I will now relate an instance of the difference of roots, which speaks for itself today. Some eighteen years ago one of the largest growers of cherries of Alameda county purchased one thousand Black Tartarians on the Black Mazzard root and planted them in one block in soil suitable for the cherry. The following year he purchased a second thousand. This time price was considered and not root. For the sake of 2½ cents on a tree he purchased them on Oregon seedling root, planted them next to the block planted the previous year. The first block mentioned grew to an enormous size and bore well, and are continuing to do so yet today, with very few trees missing. On the other hand, the second block kept dying from the first year of planting and continued so more and more each year, never bearing a fair crop of fruit, and today there are no more than ten of these trees standing.

In San Leandro there is an orchard of five acres of Royal Anns, another of ten acres of Tartarians, both blocks on the imported Black Mazzard root. These trees came into full bearing this season and are in excellent condition. There is another orchard of seven acres in this same district, the root of which has not been designated, and show to be on the Oregon root. These trees are now seven years old and there is not one-half of the first planting standing, and those that are left are a poor, sickly looking lot of trees. From a careful study of the cherry for the last twenty years I have come to this conclusion.

E. F. Petersen,
Alameda County Horticultural Inspector.
Hayward.

[This is a case in which multiplication of observations is most valuable. What other readers have experience to relate?—Editor.]

The New York Orange Auctions.

To the Editor: No wonder New York is the heaviest buyer of California oranges. It couldn't do otherwise and be human, after the alluring array of golden fruit which is dished up to them every morning at the fruit pier. Although it is a far cry from the orange groves of California to New York, yet the fruit does not show any traces of the long journey. It looks as fresh and inviting as though it had just been plucked from the tree. It is well that the California orange grower takes so much care with his fruit, because the New Yorker is the most critical person in the world. He wants what he wants when he wants it, but is willing to pay the price.

It is an interesting sight to see the keen-eyed fruit buyers going down the long rows of oranges and inspecting the fruit prior to the auction, jotting down in the catalogues or shipping lists what they will bid on the various lots. As one of the carloads was being opened and stacked for inspection, two buyers came along, and one of them remarked: "Here's just what I want. That's the real goods. Those are sure put up in fine shape." In a subsequent conversation with that buyer he said: "I liked that lot for several reasons. First, it will make a dandy display in front of the fruit stores. You wouldn't think it, but a blend of rich colors attracts the eye of the rich man as well as the poor, and it is the only thing which will draw their attention in the hustle and bustle of the busy New York streets. It's like a catchy cover on a magazine—one will pass by a dozen book shops until he sees some clever cover rich in colors, and he will stop to look if not to buy. It's the same way with fruit. I have seen people go by a fruit-stand when a new box of oranges has been opened up where the label, wrappers, and yellow fruit make a blend of rich colors. They would stop to look even when they had been reading as they walked along, on account of the color scheme flashing across their eyes. Now, on the other hand, you can make them too gaudy. Take, for instance, those oranges packed in blue wrappers and a red label on the outside of the box. That's rotten. There is no harmonious blending of the yellow fruit with those colors. It does not give you the mute appeal, 'Come in and take me home.'

"Some more reasons why I like this particular lot. See this beveled center-board? Well, there is not going to be any loss from fruit being cut and bruised on the sharp edge, as often happens when the square center-piece is used. Also notice how full the boxes are packed. Well, that's a number one solid pack. The fact that these boxes are packed so full that the top cover has to be bent a couple of inches in order to nail it down, causes all the buyers to want the lot. He thinks he is getting something for nothing. Maybe he is, but the growers profit from it in the long run. The buyers wait for his consignment every day, and when many people get to bidding on anything it is only human nature for everybody else to want it, so the bids climb up higher than if only a few were after the lot. Another feature of these packs is that the size and variety is not only stamped in plain sight, but also the packer's number, so that if by any mischance I should get a poor box and make a complaint, they can get the one who packed the box and find out the reason. It helps the grower and insures the buyer that he is getting good goods."

The oranges to be auctioned off are brought up to the fruit pier in barges. As all the carloads are catalogued, the buyers have no trouble in finding out the district where the fruit was raised, who shipped it, the variety, the "marks" or the number of oranges to the box, and the number of boxes in each line. In that way the sales go on very rapidly, and everyone knows just what he is buying, although there will be some 28,000 boxes for sale.

Most of the buyers are Jews and Italians, and being human, want the best for as small a price as possible. They do most of the inspecting and decide on what lines they want before 9 a. m., when the sales commence. They bid for the first choice on every carload and must take at least 20 boxes. If there are only 12 boxes in the line, or 22, they must take all. They then bid for second choice, and on down each line until the car is sold. On account of the large number bidding, there never can be any danger of the buyers holding off and letting the fruit go for a much lower price than it is worth.

The rules in the auction by which all sales are governed read: "Reference to goods by words, signs, figures under the head 'Marks' in the body are not representations or warranties. Sales are not by sample, nor does the seller represent the bulk of the goods to be like that examined or exhibited to buyer. Goods are subject to buyers' inspection, sold and bought as they stand at the buyer's risk."

New York is learning to eat more oranges every day. Take, for instance, on May 15th—some 70 carloads of oranges, or about 28,000 boxes, were sold between 9 a. m. and 3 p. m. The next day the buyers were hungry for more. A few minutes in the New York Orange Auction, where the buyers fall over themselves to get California oranges, will surely make the alarmists who have been crying overproduction run to their holes.

This increased demand in New York is due to the fine condition of the California packs and the excellent work of the California Fruit Growers' Exchange. They keep their fingers right on the orange consumer's pulse. If the consumer over in the East Side tenements is only getting three oranges for 10 cents when he ought to get four, the Exchange finds out the reason and tries to bring the retailer and the consumer together, so that the consumer buys more oranges and the small fruit merchant has more sales, and incidentally the California farmer sells more oranges.

The following figures show how the desire for good oranges is growing among the New Yorkers. And it is increasing every day, for, as one wholesale buyer said: "You deliver the goods and we will be 'Johnny at the rat-hole' buying all you bring in." In 1909-10, New York alone consumed 1,410,000 boxes of citrus fruits; this has jumped up to 2,000,000 boxes in 1910-11.

New York is also a hungry market for lemons, and consumed last year one-half of the total consumption in the United States. After the people once see the California product they pass up the Italian lemon and always call for it. So the cry in New York is, "Bring on your citrus fruits, but pack them in good shape, and we will do the rest."

Visitor.

New York City.

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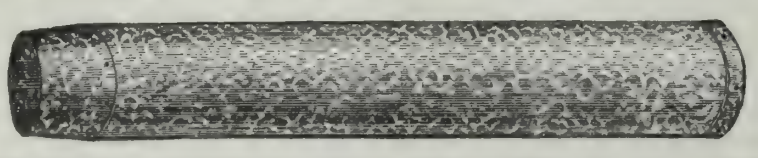
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AGRICULTURAL REVIEW.

With the Fruit Men.

Considerable success in the use of the insect parasites sent out from the State Insectary is reported in San Joaquin county by Horticultural Commissioner W. Garden and the county inspectors. Mr. Garden states that in one prune orchard where ladybirds were liberated last year without the knowledge of the owner, the trees are practically free from the aphis and bearing well, while surrounding orchards are considerably troubled by the pest. In orchards in which the ladybirds were freed this year they seem to be feeding well on the aphis and keeping it under control. Where the comys fusca was liberated last year the black scale is stated to be much less injurious than in other parts. Only one consignment of the parasites for the cabbage fly has been freed in the county this season, as the insects in other shipments were dead when received, owing to delay in the mails.

In Kings county thinning of Muir peaches is going on, while several other varieties will bear very little, if any. Grapes in the county are setting both on the old wood and on the shoots that followed the frost.

The Sebastopol Apple Show will be held from August 14 to 19 this year.

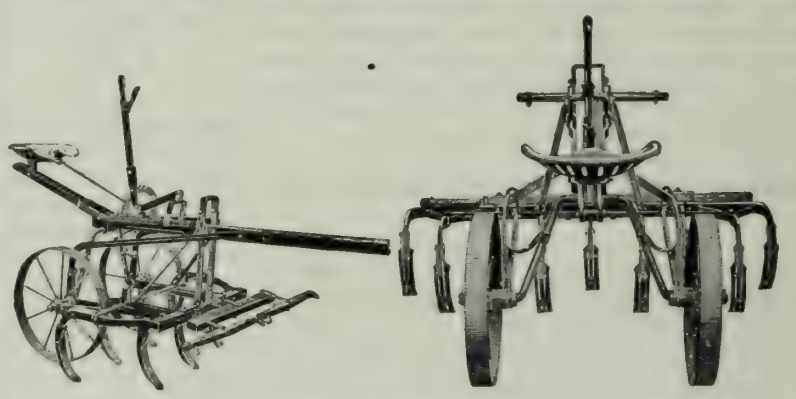
Resolutions were passed at a meeting of the Farmers' Educational and Co-operative Union in San Jose, on May 27, asking that the vacation periods of schools and colleges be made to coincide with the ripening of fruit, so that pupils could help in the orchards. Special efforts are being made in the valley to employ school-children and white help generally whenever possible.

Fertilization and a standard pack are the two subjects to be especially considered at the meeting of the Citrus Chamber of Commerce in Porterville, June 16.

S. V. Green, city sealer of weights and measures of Los Angeles, is conducting a campaign against short-weight berry boxes.

Offers of $35 per ton are being made for apricot pits at Suisun.

Benicia-Orr Cultivator



These Illustrations Show the Frame Raised Out of the Ground.

Just note how the frame extends out beyond the wheels so that the driver can work up close to the trees, vines or vegetables.

Note that the frame is level in every position.

Note how well the various parts are bolted and braced so as to get the desired strength and rigidity and still be light in weight and draught.

The **BENICIA-ORR** is made in two sizes—seven and nine teeth—which cultivate a width of four and five feet respectively. By the loosening of six bolts it can be changed from one size to the other. Center tooth can be removed, if desired, for cultivating small vegetables, as beets, beans, etc.

Bear in mind that this implement was designed and is built by practical men who understand the need of agriculturists.

For **good, hard, thorough work in garden, orchard, vineyard or field, the BENICIA-ORR has the lead over any other cultivator on the market.**

If you want to use the latest, **up-to-date cultivator,** place your order for a **BENICIA-ORR.**

Code.	Size.	Width.	Net.	Weight. Gross, Cased.	Measurement. Cu. Ft., Cased.
Sevenor	7 teeth	4 feet	283 lbs.	365 lbs.	8
Nineor	9 teeth	5 feet	308 lbs.	390 lbs.	8
	Pole		32 lbs.	32 lbs.	1

IF THERE IS NO AGENT IN YOUR VICINITY WRITE DIRECT TO

BENICIA IRON WORKS

451 BRANNAN STREET, SAN FRANCISCO, CAL.

FACTORY BENICIA, CAL.

MR. DEALER: We are receiving many inquiries for Benicia-Orrs; have you secured the agency in your vicinity?

The orange growers of Redlands will net about $3,000,000 from their crop this season.

Contracts at Davis, Yolo county, have been signed for almonds at 16½ cents per pound.

Shipments of early grapes have begun from Imperial county.

Notes of the Fruit Market.

Two belated crop estimates have reached us since we printed the table of estimates last week. Our correspondent at Bakersfield says that apples, peaches, and pears will make 50%, and apricots and prunes 25% of a full crop in Kern county this season. From our Sacramento informant we learn that cherries will average 75%, apricots 60%, apples and prunes 75%, peaches 90%, and pears 60% of a full crop in that county. He also states grapes are in blossom and the outlook is good; oranges have set well and almonds promise a fair yield.

At a meeting of the San Jose Grange held Saturday, June 3, it was reported that the crop outlook had not improved in Santa Clara county. It was also stated that in some instances 5¼c. had been figured as the basic price on prunes, but that growers are unwilling to sell at that price and feel confident that a better figure will obtain when the small yield is realized.

The first shipment of ripe apricots was made from San Joaquin county, for the season, last week. Peaches will start moving in about ten days.

From Marysville we learn that buyers are offering from $35 to $40 for Phillips and Tuscan cling peaches for canning purposes. Freestones for canning are bringing $26 per ton.

Deciduous Fruit Conditions.

The following gives number of cars of deciduous fruit shipped from all points in California by the California Fruit Distributors for the week (seven days) ending Friday morning, June 2, 1911:

Cherries—Twenty two cars. The cherry movement is now in full swing with cars being forwarded from all the cherry shipping points in the State. In the early section Royal Anns, Bing, Tartarians, and Centennials are going forward, while in the Santa Clara section the movement is restricted to the early varieties. In the Vacaville district this fruit will last for a week or ten days, but will probably be available from the Santa Clara districts for the next three weeks.

Apricots—One-quarter car. This fruit is now moving from Vacaville and Winters. Pringles are nearly done and Royals are increasing in quantity every day. There will be no considerable shipments, however, for another week.

Peaches—The early varieties of peaches are ripening. Like apricots, shipment will cut no figure for several days.

During the last week there has been no change in the fruit situation, except that all crops continue to look better and show increased quantity. Grapes are now blooming and promise to set well. Bunches are unusually large and fine, and the crop could not look better.

Weather—The cool, cloudy, and threatening weather of the past few days has again changed, and with the advent of sunshine and congenial warmth, we anticipate the more rapid ripening of fruit, which the growers of California and the Eastern trade are both anxiously awaiting.

On Monday there were shipped East 10¼ cars of cherries and 1½ cars of apricots, making a total to that date of 54½ cars. Total shipments to same date in 1910 were 279 cars. Last year several cars each of apricots, peaches and plums had been shipped by June 5. This season deciduous shipments are late.

Tires 10% Oversize

25% More Mileage—No Extra Cost

If you buy tires for an automobile, let us explain how to cut the cost half—as tens of thousands are doing.

The tires which we tell of—Goodyear No-Rim-Cut tires—are now the sensation of motordom.

Last year our tire sales trebled—jumped to $8,500,000 — because we controlled these tires.

This year 64 leading motor car makers have contracted for them. They outsell our clincher tires six to one.

And these are the reasons:

No Overloading

About 25 per cent of the average tire cost is due to overloading.

The tire size is adapted to the car when stripped. But when you add extras—top, glass front, gas tank, extra tire, etc.—the tires have too much weight. And you overload them otherwise frequently.

The result is a blowout.

Goodyear No-Rim-Cut tires, to take care of these extras, are made 10 per cent oversize. The rim flanges flare outward when you use this tire, so this extra size is possible.

We supply this extra size at no extra cost. That means 10 per cent more air, and air carries the load. It means 10 per cent greater carrying capacity. It means, with the average car, 25 per cent additional mileage per tire.

You get the same result as though you paid for a 10 per cent larger tire.

No Rim-Cutting

Then these patented tires end the damage of rim-cutting. Other tires are ruined when you run them flat. Rim-cutting, on the average, adds one-fourth to one's tire bills.

Note the picture below.



The No-Rim-Cut Tire

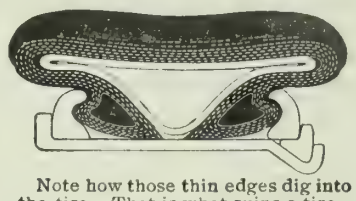
This tire is fitted on a Universal rim—the standard rim now adopted by nearly all motor car makers. But the tire fits any rim.

The removable rim flanges are simply set to turn outward, instead of inward, as with the old-type tires.

The tire, when deflated, comes against a rounded edge. You can see why rim-cutting never occurs.

Ordinary Clincher Tire

With ordinary tires these removable rim flanges are set to curve inward, to grasp hold of the hooks in the tire. That's how the tire is held on.



Note how those thin edges dig into the tire. That is what ruins a tire—in a moment—when puncture makes it flat.

How We Avoid It

In the base of our tire we vulcanize 126 braided wires. That makes the tire base unstretchable. It can't be stretched over the rim flange—can't be forced off—until you remove the flange.

When this tire is inflated the braided wires contract. The tire is then held to the rim by a pressure of 134 pounds to the inch.

That's why the hooks are unnecessary. That's why the rim flanges don't need to dig into the tire.

This feature is controlled by our patents. And there is no other feature ever invented which makes a practical tire of this sort.

Tire Book Free

We have sold enough of these tires to equip over 150,000 cars. The demand has become overwhelming. You should know the reasons if you own a car.

They are told and pictured in our Tire book in a clear, convincing way. Let us mail it to you. Write us a postal for it.

You will insist on tires which cut upkeep cost half when you know the facts about them.

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No-Rim-Cut Tires

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Branches and Agencies in 103 Principal Cities — We Make All Sorts of Rubber Tires

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General Agriculture.

F. H. Blanchard, who has carried on investigations in rice growing in this State for the Federal Government, recently inspected the experiments being made on the City Farm at Merced, and stated that much land in the county now practically worthless for other crops could be used to raise rice worth about $2,000,000 per year.

A shipment of 300 tons of wine, one of the largest ever made from California, was sent from San Pedro this week for New York by the Pomona Wine & Brandy Company.

In the New York market 4000 bags of lima beans were recently received from Peru.

The first Likfreshing plant to be installed in this State by the California Likfresh Co. has been completed on the ranch of J. S. Walton, near Sanger, Fresno county, and has proved entirely successful in all tests made of fruits. Mr. Walton expects to Likfresh both the fruit, pumpkins and squash produced on his ranch this season.

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Oil Cook-stove

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Dealers everywhere; or write for descriptive circular to the nearest agency of the

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(Incorporated)

Agricultural Uses of Lime.

We constantly receive questions on this subject which we answer as fully as we can. Doubtless some readers will be edified by a general review of the subject, prepared by Prof. C. B. Williams of the North Carolina Experiment Station, from the point of view of the Southern States, but his comments hit many California conditions, and are therefore helpful.

If the land contains a large amount of organic matter (usually indicated by dark color of the soil) it is fairly safe to assume that such soils, if crops do not yield well on them and they have not received an application of marl in recent years, that they would be benefited by liming or marling.

If sheep sorrel, button weed and the water grasses are growing in the fields it will usually be found that such soils will respond favorably to applications of lime. If blackberries, cranberries, raspberries or gallberries are growing wild on the same type of soil in close proximity to the field in question, it will generally be found that an application of lime will prove beneficial for ordinary crops like corn and the small grains on such a field.

When Lime May Be Needed.—If it is an old field that has been robbed of its humus by continuous cultivation in some clean cultured crop, like cotton, and the soil of which runs together and cements after each rain, it is quite likely to respond profitably to an application of lime, especially for the growth of such crops as clover, vetch, peas and other legumes. If a heavy growth of some green crop is turned under, especially in the spring, an application of lime or marl should be made before turning in order to prevent the formation and accumulation of a large amount of organic acids in the soil by the rotting of the crop turned under. If the soil has been poorly drained, and has become tight and water-sogged, lime will in most cases prove highly beneficial when applied soon after drainage and before a crop has been put in. If clover, vetch, cowpeas and peanuts are to be grown upon ordinary upland soils, it will usually pay to make a good application of lime to the soil, the best results usually following with cowpeas, if the application is made to the crop growing previously on the land; while with peanuts the opposite is frequently true.

Testing for Acidity.—If a soil is quite acid its presence may be determined by means of litmus paper. Take a portion of the soil to be tested into the hand and make it into the consistency of a mud pie by adding water and working with the hands. Now take a small strip of blue litmus paper, which may be secured from any local drug store, and bury it in the mud pie. After remaining for a minute or two remove the litmus paper and wash in clear water, and if the soil is acid or sour the color of the paper will have been changed from the original blue to a red color. Of the commonly grown farm crops probably oats and Irish potatoes are the most tolerant of large amounts of acidity in the soil.

When to Apply.—Although conditions and systems of rotation will modify to some extent the time of application, yet, usually, the safest time to apply this material to the soil will be during the fall or early winter, especially so if either the caustic or slaked form is used. If carbonate of lime be employed it may go on in the spring with less danger of injury to the seed of the crop than when either of the two forms mentioned above is used When the application is made in the fall, time is afforded for the lime to become well mixed with the soil before spring, especially so if it is put in properly. The carbonate or air-slaked form of lime does not act as energetically as do the quick and water-slaked forms.

How to Apply and Amount.—As a general rule lime should be applied broadcast and then thoroughly harrowed and disked into the soil. Of slaked lime the quantity required per acre varies quite considerably with different soils, crops and conditions. Usually, however, the amount necessary to use will vary between 1000 and 3000 pounds, or its equivalent of some other form, per acre. Never mix lime, especially in the caustic or water-slaked forms, with any material containing ammonia, before applying it to the soil, because the lime would tend to set free into the atmosphere some of the ammonia, and hence it would be lost. For this reason it is exceedingly unwise to mix lime directly with stable manure. Do not add lime to acid phosphate or to mixtures containing this material, for such a procedure would result in some or all of the available phosphoric acid of the acid phosphate being changed to a less soluble or available form, the amount changed being governed largely by the proportion of lime to acid phosphate in the mixture and by the mechanical condition of the mixture.

When lime is added to permanent pastures and meadows it should be applied broadcast in the fall or early winter and left on the surface.



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No better fodder and grain crop can be planted on dry or alkali and than this prolific member of the Sorghum family. This dwarf variety possesses the advantages of more foliage, smaller stalk and ease of harvesting. Its great root system enables it to produce wonderfully in drought sections, and breaks up new ground for other crops.

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The grain is a valuable food for poultry and will crop 2,000 pounds and upward per acre.

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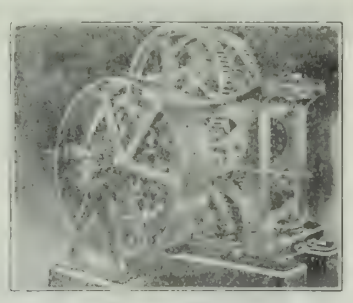
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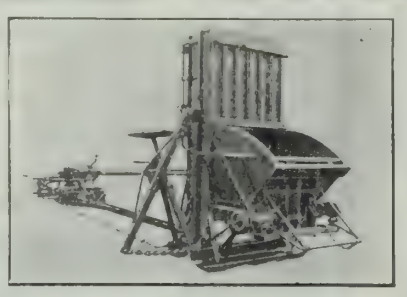
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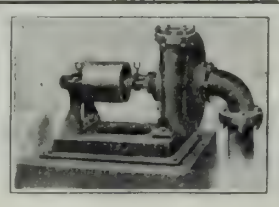
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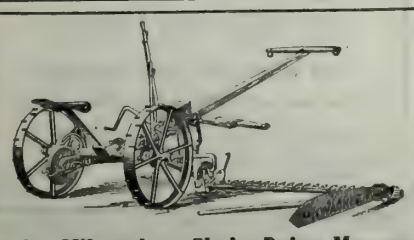
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THE H. C. SHAW CO., Stockton, Cal.
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Sorghums and Eucalyptus.

To the Editor: Through the columns of you good paper, let me know which sorghum is the most profitable to plant for the seed only—White Egyptian, Brown Egyptian, or Yellow Milo? Farmers' Bulletin No. 288 says that the Egyptian belongs to the dhoura group and shatters badly as soon as ripe, but not so with Milo. Does the market discriminate against Milo, or is Milo the Brown Egyptian? Would it be advisable to plant as late as July 15? The bulletin, No. 288, says that Milo matures in 90 to 110 days.

Will eucalyptus succeed if planted along a ditch just above the water-line (about a foot)? If so, what species is best? The soil is well drained and deep.

Marysville. FARMER.

Which sorghum is best is apparently a local question and governed by local conditions to a certain extent. Egyptian corn (with the goose-neck stem) has held more popularity in your part of the Sacramento than elsewhere, while Kafir corn (holding its head upright, as do many other sorghums) has been for years very popular in the San Joaquin. Brown Egyptian grows like White, but has a dark-brown grain. It is not Milo, but there is some confusion on that point, because Yellow Milo is sometimes called red dhoura. The growth of the dhouras and the milos is different and the heads are unlike. The milos are of more rapid growth than the dhouras and Yellow Milo and Brown Egyptian are usually considered better than the whites of each kind. Sowing as late as July 15 may be done for forage on moist land if the situation is not too frosty.

OBSERVATIONS IN THE SAN JOAQUIN.—A very interesting account of these grains in the San Joaquin is prepared by Mr. G. W. Davis for the Business Farmer of Stockton as follows: I note in a late issue an inquiry relative to the existence of a variety of Egyptian corn that blackbirds will not eat. I presume that any kind of corn that a hungry blackbird would not eat would be of little value for any purpose. However, there is a very great difference in the different varieties of so-called Egyptian corn regarding the waste from the blackbird nuisance. The ordinary white Egyptian corn is very easily shelled, and the birds waste many times more of the grain than they eat, after it has become thoroughly ripe. The Milo maize, or red Egyptian corn, does not shell nearly so easily as the white corn, and the grain is considerably harder and less attractive to the blackbirds. In fact, blackbirds will not work in a field of this variety of corn if there is any white corn in the vicinity to be had. It is possible that if the blackbirds are very numerous and feed scarce, that they would do considerable damage to Milo maize, or red corn, but under ordinary circumstances we have never known them to do any damage to that variety of corn, of any consequence. The drawf Milo maize, introduced into this locality in recent years from Oklahoma, yields much more crop than the white Egyptian corn, or any other variety, within our knowledge.

Blackbirds do not damage the white Kaffir corn to the extent they do the ordinary white Egyptian corn referred to. The Kaffir variety yields, and is the only variety within our knowledge the fodder of which is of much value. We consider the fodder of this variety of Egyptian corn much more preferable than that of the ordinary Indian or field corn, and we find our stock eat it much more readily than the sorghum or sugar cane. However it requires a much longer season in which to ripen than does any of the other varieties of Egyption corn, for which reason it is less desirable as a mid-summer crop. We consider the Milo maize referred to one of the best and most profitable mid-summer crops grown on the irrigated lands in this section of the State, when it is considered from the standpoint of the amount of labor required in production. Good crops can be secured from land that does not possess a sufficient amount of moisture to grow any other crop, within our knowledge, and without any cultivation whatever.

EUCALYPTUS.—You ought to get grand eucalyptus in such a place as you describe, and probably the common blue gum is best in your district.

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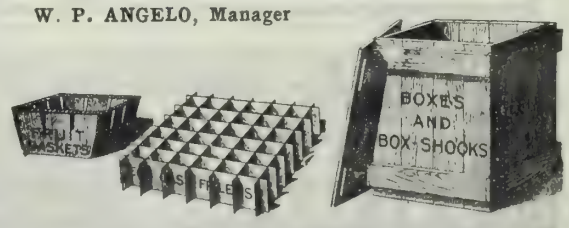
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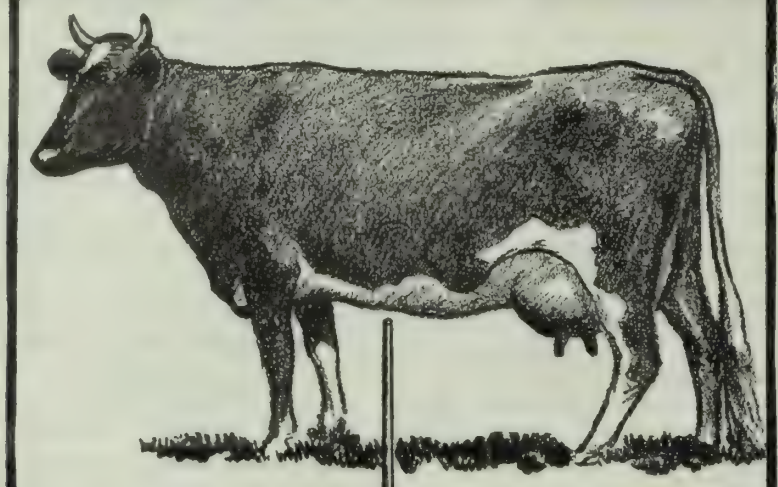
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A CARTRIDGE CHARGED WITH DEATH—Positively the most effective method known for exterminating burrowing pests. Better than poison, for it is absolutely safe and acts ONLY on pests that burrow. Tests made by the Department of Agriculture resulted inunqualified satisfaction. Awarded the Grand Prize A.-Y.-P. E., Seattle. Simple, safe, effective. Send for booklet. Sold by Dealers. If not, write to Hitt Fireworks Co., Seattle, Wash.
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MR. HUDSON says:

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Sacramento Valley Irrigation Co.

Gentlemen: I am milking a small herd of common grade cows—part grade Jerseys and part grade Durhams, and my cream check amounts to $15 per head per month.

These cows are getting alfalfa pasture and wild oat hay. One of the cows will calve in a month—two were fresh in January and are two heifers under two years old in the lot.

I have farmed in Utah and am familiar with farming conditions throughout the West and know that dairy products can be produced cheaper here and a higher price secured for them than any place I have ever been.

I can keep dairy cows here for from three and a half dollars to four dollars a month the year around. It might cost a little more in the winter, but would run as low as $1.50 per month per head in the summer. A good dairyman can easily make $100 a head clear each year with grade cows. Yours sincerely

(Signed) ARTHUR HUDSON.

It doesn't take a large sum of money to own a dairy farm here. We make the terms most reasonable.

$15 DOWN THAT'S ALL

$11 A YEAR THAT'S EASY

You will have no trouble to sell the products of your dairy.

There is plenty of competition for all of the cream produced in the Sacramento Valley. There is a creamery at Jacinto, a creamery and cold storage at Willows, a creamery at Colusa and at Meridian, several at Woodland and at Sacramento, and all are bidders for cream at any point of the valley.

The skim milk and the manure from the dairy are products that are seldom rated at their full value. For raising poultry, hogs and calves, and for the maintaining and increasing the fertility of the land, and thus adding to the value of the investment, dairy by-products have a higher value every year.

Another strong argument in favor of dairying is that it forms a most satisfactory basis for diversified farming. With the monthly cream check as a foundation, and the chickens and hogs to consume the by-products, everything is turned to the best account.

Being able to harvest from six to nine crops of alfalfa a year you will realize that

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COUNTRY MILK FOR CITY PEOPLE.

(*Continued From Page 449.*)

tionally rich considerably above. Most of the contracts are made so that the dairyman can ship 5 or 10 per cent either above or below the amount contracted for, according as his cows give much or little milk. A few distributers agree to buy at a reduced price all that is produced, and take their chance of disposing of the surplus when the cows are giving much milk and buying in other places when they have not enough.

This variation in the supply is one cause of considerable loss to the distributers, as the demand for milk is about constant and they are forced to take more than they want in spring and summer when the cows give a large amount of milk in order to have enough in fall and winter. The surplus milk is separated for the butter-fat, and some has to go into the gutter for lack of other means of disposing of it.

The amount of milk shipped by the producer varies from six or seven cans of 10 gallons each to 100 cans, only two or three dairies shipping this amount. The morning's milking generally gets to the consumer in the afternoon and evening, and the evening milking in the morning, 12 hours after in each case.

The greatest problem from the health standpoint is to secure clean and sanitary conditions. Owing, however, to the amount of inspection that has been done, but few dairies are bad enough to call for radically different methods of handling. On the other hand, there are very few that do not need at least a little improvement in order to be satisfactory to the inspectors in the first few calls. Animals that show disease, under a State law, can be removed at once, and any other conditions that are dangerous to the health of the milk consumer can be remedied at once.

In the San Francisco health office all dairies are marked on a map with colored pins showing their condition. Of the 127 supplying milk only about 10 are now marked with a green pin, showing very bad sanitary conditions. The balance are about equally divided between good dairies, those scoring 60 or more points in 100; and fair dairies, scoring from 50 to 60. An inspection is also made, of course, of distributing depots, as well as the dairies, and samples taken from every place from dairy to wagon to insure unadulterated milk.

The use of preservatives has practically ceased on account of the enforcement of dairy and pure-food laws. Watering and skimming is found occasionally, though only in a small percentage of cases. Samples are taken where the milk is most suspicious, and defective milk found in only about 5 per cent of the cases at the worst.

Milk can be distributed to about 200 or 300 customers at each delivery, and where very little ground has to be covered to as many as 400 customers, the cost from the time the milk is put into the wagon being about $150 per month for a team of two horses.

At the present time there is but little surplus, if any, taking the year as a whole, and the dealers have found difficulty this year in getting contracts. The contracts that have been signed have been in many cases at an advance of ¾ of a cent a gallon—this in spite of the fact that butter is selling for less than a year ago. At the same time cows have gone up in price, and stock that four years ago could have been bought for $45 or less now commands $100 each.

With the growth of population in the bay cities and the facilities for shipping, this demand may be increased, as the territory from which milk can be secured readily is now about as large as can be expected for some time to come. At the time the battleship fleet was here, milk was shipped from greater distances, and if the supply from present sources is not sufficient, this territory can again be drawn upon.



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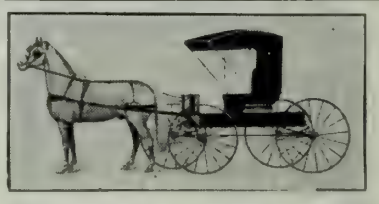
has been tested thoroughly by farmers in every section of the country and found to be a great saving of expense, a protection against fire, and a relief from repair bills.

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University Butter Scoring Contest

To the Editor: Following is the report of the Third Entry, third year, scored May 30, 1911, at the University Farm, Davis, Cal.

Highest score, 94, obtained by Suisun Creamery, Suisun, Cal.

In response to the call for third entry of the 1911 California Butter-Scoring Contest, twenty-eight creameries responded, which is the largest number of entries sent to a single scoring since the contest began in 1909. Such a general renewal of interest in the work is encouraging, and it is to be hoped that all the participating buttermakers will continue to lend their support to the remaining three scorings of this year. W. B. Thurston, Dairyman in the U. S. Division, directed the scoring, being aided by members of the Dairy Department.

The scores placed were as follows:

No.	Creamery and Location.	Score.
12	Suisun	94
25	Salinas	93½
8	University Farm, Davis	93½
13	Laton Co-op.	93½
27	Grizzly Bluff	93½
26	Castroville	93
24	Glenn Co. Cold Storage & Creamery Co., Willows	93
9	Cal. Pol. School, San Luis Obispo	93
15	Cottonwood	92½
2	Elk Grove	92½
22	Visalia Co-op.	92½
4	Santa Ysabel, Paso Robles	92
7	Riverdale Co-op.	92
11	Delta, Imperial	92
20	Elkhorn, Santa Barbara	92
21	Dairymen's Co-op., Tulare	91½
28	Eclipse, Beatrice	91½
14	Meridian	91
16	Lampenheim, Hardwick	91
23	Pozzi, Marysville	90½
1	United Creameries, Arcata	90½
19	Elite, Nicasio	90½
18	Stanislaus, Modesto	90
10	Ceres	90
6	Bridgeport, Manchester	90
3	Standish	90
17	Unannounced	88½
5	do	88

The butter on the whole represented a better lot than was received at the April scoring. That the buttermakers had put forth their best efforts was noticeable under all points on the score-card, even under package. Most of the boxes were very carefully made, and indicated that pains had been taken toward a neat, attractive cube. Paying attention to this detail usually follows careful attention to all those points which the buttermaker has under his control in the manufacture of good butter.

It was necessary to cut but two cubes for defective salt, these being very high or gritty. Many of the entries were slightly low in salt, especially when most markets will stand 2 per cent. The low salt content of these entries was possibly responsible for a flat flavor which was prevalent, the general criticism of the judges on flavor being, a "light flavor", or "lack of the desirable delicate butter flavor". In contrast with the previous entry, very few pieces showed any marked evidences of feed flavor, and such would not be expected so much at this season. A few cuts were made under body, due largely to faulty temperatures. Most of the entries arrived at the University Farm in time to have the advantage of at least 36 hours hardening in the refrigerator-room, and when scored were in excellent condition. Several cubes were shipped in iced boxes.

With an occasional exception, the buttermakers taking part in the contests are doing remarkably well in view of the raw product with which they have to work, and their lower scores must be charged to those of their patrons who will assume no responsibility in the production of good cream. The few creameries in the State which are grading have made a wise step, and sooner or later their example must be followed by all.

The call for the next entry will be made in July, due notice being given. Information regaring the Scoring Contest will be gladly furnished to any buttermakers who have not as yet taken part.

LEON M. DAVIS.

University Farm, Davis,
May 31, 1911.

MANHATTAN STOCK FOOD
RED BALL BRAND

Some time when you visit San Francisco, take a look at those Wells-Fargo Express horses. You can see them all over the city—sleek, glossy-coated, spirited looking animals. It's good to see them. While the driver is in the stores picking up freight, they stand gentle as lambs. Buzzing autos don't disturb them in the least. But observe the willingness with which they go to work when the driver picks up the lines. In the pink of condition and with hoofs clean and springy looking. O me, O my! how they can tackle a heavy load and deliver the goods to the depot on time. They are fed a little **RED BALL BRAND MANHATTAN STOCK FOOD** each day. It costs ¾ cent per feed, 1½ cents a day (two feeds), or 10 cents a week. Their hoofs are treated with Tulol Paste **(RED BALL BRAND).**

See what the Stable Superintendent says:

Gentlemen:—The perfect condition of our horses is owing to the uninterrupted use of your Food, Red Ball Brand, for thirteen years. We find it saves grain, rapidly improves the condition, hardens the flesh, increases the power of endurance, glosses the coat and rapidly prevents as well as cures all ordinary complaints. We would not be without it.

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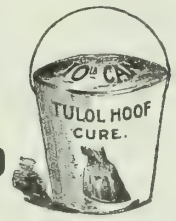
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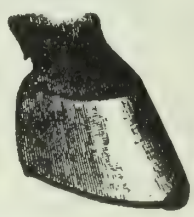
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At the recent California State Fair our Percherons and French Coach Stallions won 14 Gold Medals and both Championships.

When you want the best come to us.

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The New Stallion Laws.

We are glad to be able to report, says the Butchers' Journal, that the act regulating the public service of stallions and jacks received the Governor's signature, because we consider it of the greatest importance to the future horse breeding business which promises to be the utmost value to the State. It requires a veterinarian certificate, together with the enrollment of the name, description and pedigree of the animal at the office of the secretary of the California State Board of Agriculture, and the license then issued must be recorded in the county or counties in which it is proposed to stand him for service. Such veterinary certificate must show the absence of the various hereditary diseases set forth in the act. There are other points, but these are the principal, and any one sufficiently interested should obtain a copy of the act, which we are glad to say is sufficiently stringent to prevent the dumping of diseased and unsound animals in this State. This act takes effect and will be in force on August 1, 1911; it will, therefore, not interfere with the present season's breeding.

THE NEW OREGON LAW.—In Oregon they have to get busy immediately with their new law. Mr. Ermine L. Potter, secretary of the Oregon Stallion Registration Board, writes to the Rural Spirit as follows: "The new stallion law which was passed by the last session of the Oregon Legislature will go into effect May 25. The Stallion Board has been organized and plans for the work are being made, but no licenses will be issued until after May 25. Stallion owners should, however, get in their applications before that date.

"It will not be possible to register and have examined all the horses in the State in a day or two, so that some time may intervene between the receipt of the application and the issuance of the licence. It is not expected that the owners stop using their horses during that period, but it is expected that no horses be used after May 25 until an application for license has been made.

"Animals having county licenses will also have to get State licenses under the new law, as there is no connection between the State license and that issued by the county. Money paid for county license will not count toward securing State license. Copies of the law and application blanks may be obtained from the secretary at Corvallis. It is not necessary, however, that the application be made on the regular blanks. A letter will do as well, provided the necessary information is included. All applications must be accompanied by the $10 fee, and, in case of registered horses, by the pedigree certificate. These pedigrees will be returned. For horses not pure-bred the owner must give a complete statement of the horse's breeding."

SOME POINTS ON MILKING.

Mr. H. C. Dairs of Granger, Washington, is disposed to hold that dairying is not so tedious after all, if one has the right spirit. He recognizes the fact that it is the opinion of some farmers that dairy work is so hard and you have to put in so many hours. To all such he would say that they have not yet learned the elements of the business, and continues:

"As to handling cows in connection with other work, pardon me for telling how I have done it for the last seven years. Our rising hour is 5 o'clock in the morning, milking being the first thing to do. We all milk, that is, myself and hired men. Then we separate, feed calves and hogs, and then go to breakfast, after which one man feeds cows, cleans barn, and washes separator and milk vessels; then takes up farm duties for the day until time to get cows up in the evening, he having them in barn and ready to milk when the other men come in from their work, which is in time to be all done and ready for supper by 6:30, which is as soon as a man can get in if he is working straight ten hours with a team.

"I try to have my cows mostly dry in June and July, which is the busiest season here and also the poorest for dairying. By following this plan and looking after the details myself I have had very little trouble securing help.

"Just look around you at the successful men you know, and see how many you can find who have attained to success that were not at their work every day, and that for more than eight or even ten hours. The greatest single need in the dairy world, as I see it, and the one least spoken of, is to get men who know how to properly milk a cow. It is not enough to just milk out what milk a cow easily gives you, but it is altogether necessary to properly manipulate the udder each time after milking to keep it in right condition to help to secrete more milk next time. I mean by this the rubbing or massaging of the udder between your hands, each time after milking, from top to bottom and on all sides, taking from one minute to more, according to the cow. I would not let a man milk for me who milked ten or more cows in one hour unless they were strippers and I wanted them to dry up. Not that he might not draw the milk, but I want my cow put in shape to be milked next time before leaving her this time.

"I feel like saying, do not try dairying if you are determined not to like it, and the same applies to anything else. You could die of starvation at the labor of picking up dollars from the floor if you hated the work so badly you would not bend your back."

A registered Durham bull owned by Manuel Avera, who conducts a dairy a few miles east of Hanford, Kings county, died last week from rabies, probably contracted through the bite of a mad dog. A cow also died a few days before, supposedly from the same cause. Several dogs suffering from rabies have recently been found in the vicinity, and a close watch is being kept on all animals subject to the disease.

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100 Short-Horn Bulls



400 Blacuo Roberts Glide French Merino and **100 Pure Bred Shropshire Rams**

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For Cattle, Poultry and all Farm Animals

Will double your milk, cream and egg supply.

Takes the place of BEEF SCRAPS for laying hens at about half the cost.

ANALYSIS:

Protein	46%
Fat	9.91%
Crude Fibre	3.82%
Ash (Mineral matter)	6.36%
Carbohydrates	24.93%
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Analysis furnished by Curtis & Tompkins, Chemists, 108 Front St., San Francisco.

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Write for booklet "SYSTEMATIC FEEDING AND THE VALUE OF SOY BEAN MEAL."
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Most machinery makers say:
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ALL DEALERS

BE READY FOR EMERGENCIES.


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SHOULD BE IN EVERY HOME AS A SAFE-GUARD AGAINST SORE THROAT, SWELLINGS, SPRAINS, RHEUMATISM, NEURALGIA, STIFF JOINTS, LAMENESS, STOMACH CRAMPS, DIARRHOEA, Etc.
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They Last Longer
The only sure way to get a HOME Industry Harness is to look for the Hercules stamp. Made by W. DAVIS & SONS, San Francisco, Cal. Your Dealer has our Catalogue

Veterinary Questions and Answers.

TREATMENT FOR NAIL PUNCTURE.

To the Editor: Could you prescribe treatment for a horse that got a nail in its foot? It was a wire nail, rusty, entering about one inch from the point of the frog, and just puncturing far enough to reach a sensitive part of the hoof. It occurred six days ago; the nail was pulled at once, the hoof cut open, and thoroughly cleaned with turpentine (the first thing we could get), then later filled with iodine. Since then I have kept on a flaxseed poultice. At our request some years ago, through you, Dr. Creely prescribed at different times, and the treatment proved very sensible and successful. E. M.

Napa, Cal.

ANSWER BY DR. C. A. PYLE, ASSISTANT TO DR E. J. CREELY AT SAN FRANCISCO VETERINARY COLLEGE.

The treatment with turpentine and iodine was proper and should prove a success. If the foot becomes tender and inflamed, it will be because all dirt was not removed from the wound, and the poultice should be taken off, all foreign matter removed from the wound, and the treatment repeated. In case of similar accidents, other disinfectants could be used in place of turpentine or iodine.

FAILING TO BREED.

To the Editor: I have a seven-year-old cow which I value very much. She was fresh last October and I have bred her regularly ever since, but cannot get her with calf. I am feeding her on green alfalfa and one feed dry alfalfa daily. She is a good milker and too valuable for beef. What can I do to get her with calf?

Tulare county. SUBSCRIBER.

REPLY BY DR. E. J. CREELY OF SAN FRANCISCO VETERINARY COLLEGE.

At the last parturition she probably had the neck of the womb lacerated and scar tissue has formed, which prevents the entrance of the spermatoza. I would advise that you call in the nearest qualified veterinarian to break down the adhesions.

You might give the following prescription: Pulv. acacia, 2 ounces; pulv. buchu, 4 ounces; resorcin, ½ ounce. Mix and give one teaspoonful once daily.

STIFF JOINTS.

To the Editor: I have a horse that was bruised on the ankle about two years ago. This is now producing an enlargement of the bone and stiffness of the joint. Would you please name some remedy to use to reduce same, and oblige? B. B.

Angiola.

PRESCRIPTION BY DR. E. J. CREELY OF SAN FRANCISCO VETERINARY COLLEGE.

Sulphuric ether, 1 ounce; tinct. iodine, 1 ounce; pulv. camphor, 1 ounce; alcohol, 5 ounces; turpentine, 2 ounces; oil of cedar, 2 ounces.

WHAT IS THE MATTER WITH THE PIGS?

To the Editor: One of my neighbors has a litter of pigs weaned about a month and several of them have itchy scabs on their legs, ears and noses, and those having white feet show reddish spots through the hoofs. What is the cause and cure of this trouble? They did not get it until after they were weaned. They are fed on soaked whole barley and have alfalfa pasture to run on and running water through the pasture.

Fresno. GEO. N. SKOEGARD.

To the Editor: The trouble as set forth in the above letter, which you ask me to answer, is evidently the result of bad management on the part of the owner of the pigs. I am only a farmer and not a veterinary surgeon, hence I have not made a special study of swine diseases. I have always gone on the idea that an ounce of prevention was worth far more than a pound of cure.

The pigs have been weaned a month and have been fed soaked whole barley and had the run of alfalfa pasture. The alfalfa is all right and could not well be improved upon, but the soaked barley is bad indeed. It is hard on the digestive organs and has, no doubt, had the effect of deranging the whole system of the pigs.

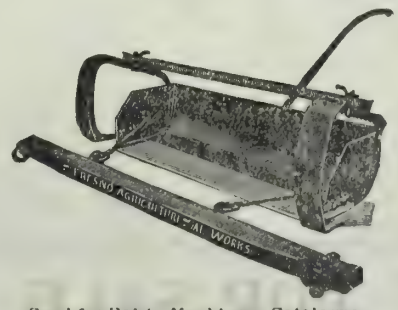
I presume that the sow had the run of the alfalfa and was fed whole barley during the nursing period, and if a heavy milker, she was giving the youngsters a good supply of milk which was probably cut off suddenly by weaning, which was the worst thing to be done, as the sudden change in the diet of young pigs invariably has an injurious effect. If these pigs had been taught to eat a slop composed of wheat middlings and barley ground fine, with the hulls removed, and milk, or, in the absence of milk, about 8 or 10 per cent of meat meal, they would have, no doubt, weaned out all right on the alfalfa pasture.

If I had this lot of pigs to deal with, in the light furnished by Mr. Skoegard's letter, I would put them on the slop described above, to which I would add some good stock food. I would dip them with some standard brand of dip or apply crude oil to be sure that they were free from lice, fleas, etc. Give them good, clean, comfortable sleeping quarters and trust to nature to do the rest. I have seen these itchy scabs on but one hog, and that was a fine gilt that I received from the East. Of course I gave her good care and the trouble soon disappeared. I always thought it was the result of the change of climate and the discomfort of the trip.

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LIVE STOCK NOTES.

The entry list for the meeting of the California Harness Horse and Stock Breeders' Association to be held in Stockton the latter part of June is being prepared and many owners of blooded stock have signified their intention of taking part in the racing and exhibition.

Ranchers near Campo, Imperial county, have been losing a number of valuable cattle and horses through the efforts of a Mexican bandit who has been taking advantage of the disturbed conditions in Mexico to loot ranches on both sides of the line.

Mrs. Jerry Berger, residing between Orland and Berger, Glenn county, recently suffered serious injuries by being attacked by hogs.

About two-thirds of the wool clip of several sheepmen of Shasta county, comprising 1000 bags, was sold in Red Bluff for 14½ to 15½ cents.

M. Quella, of Natividad, Monterey county, has purchased a thoroughbred mule-foot boar to be used to improve his swine.

W. T. Carr of Illinois has purchased a large tract of land about 12 miles south of Chico upon which he will raise Shetland ponies.

Since the first of this month auction sales have been held of the herds of dairy cows of W. Wigley, H. H. Huls, E. E. Neboli and Wm. Sprowl, near Modesto, Stanislaus county.

DAIRY NOTES.

The Azores Dairy Co. of Stockton has purchased the J. L. Blossom ranch near Holt station which it has leased for several years. The ranch comprises 983 acres.

The Tagus ranch of 3000 acres near Tulare has been subdivided and leased as small dairy farms.

At a sale of dairy stock at the Beckwith ranch near Empire, Stanislaus county, 28 cows and a bull averaged $105 each, only three of the cows bringing less than $100. The animals were mainly high-grade Holsteins.

Mr. Nunez, of Hanford, who has purchased a part of the Browning ranch near Laton, Kings county, will have 1000 acres seeded to alfalfa this fall, and have a creamery established to handle the milk produced from dairies on the place.

By a new ordinance all milk sold in Riverside must have less than 100,000 bacteria per cubic centimetre. This requirement is what is demanded in the bay cities for "inspected milk", for which 12 cents per quart is asked. A certified milk depot is also being established in Riverside, certified milk being required to be produced under almost perfectly clean conditions, and have less than 10,000 bacteria to the cubic centimetre. The herd from which the certified milk will be produced was brought from Pennsylvania by Dr. J. F. Butterfield, who will conduct the dairy. The herd is composed of pure-bred Ayrshires.

An auction sale of 220 head of dairy cattle is to be held on the Premo and Beedy ranch west of Porterville, June 12.

The daily shipment of cream from the Crows Landing station is now amounting to about 6000 pounds, or 2500 pounds of butter-fat.

FOR SALE
AT A BARGAIN

5-acre poultry ranch, close to city limits of Petaluma; fine view of surrounding country; 5-room house, barn, brooder house, windmill and tank; water piped to yards; over 1000 hens and pullets; furniture, tools and horse and wagon; net income last year $1200; price $4800, $2500 cash; terms on balance if desired. Call or address H. A. SMITH, Bodega Ave., Petaluma, Cal.

POULTRY DEPARTMENT.

Conducted By M. RUSSELL JAMES.

POULTRY PERPLEXITY.

The following letter from a PACIFIC RURAL PRESS subscriber in San Benito county, is a sort of heart-to-heart talk in regard to the discouragement and perplexity which often some to the beginner who strives to have the very best in the way of poultry and to keep it according to the very best methods.

"As you were kind enough to answer an inquiry of mine some time ago, I am going to try it again. I have done my best with poultry for a couple of years, but have not made any start yet. A neighbor has hens confined in dirty, cramped quarters with no litter to scratch in, and just throws them whole corn, and his hens do better than mine that have a nice dry litter to exercise in and plenty of green food and everything necessary. My flock gets too fat, combs get purple and I don't get many eggs. If I let them run in the orchard they fill up on everything and don't improve any. It may be they have too much to eat, but I have always been told that pullets needed a lot to eat to get them to lay. I also have to work to keep them free from lice. Their quarters are kept clean and sprayed, but I have to go over the hens every little while and grease their heads for head lice and powder them for common yellow lice in their fluff. It seems to me that a hen should dust and keep herself clean if she has dust and things handy. I have visited some large fancy breeders, but don't seem to get any satisfaction from them. One said 'It is natural for hens to have lice.' I have hens that will stretch their necks and open their mouths like the gapes, and I lay it to indigestion or the effect of dry mash. Am I right? I saw the same in the yards of two large breeders of fancy stock, and they informed me that it is natural for fowls to do that way. At poultry shows one sees the same thing when fowls are out of condition.

"A short time ago I bought a few Buff Orpingtons of a well known breeder. They seem strong, healthy stock. The hens are workers and good layers. Their breeder claimed he was not bothered with vermin, but I found head lice on the birds. I am following this breeder's method of feeding: 'Dry mash before the fowls all the time and whole grain at night and green food in plenty.' The hens are doing nicely, but the male bird's comb is looking a little purple. Is it liver trouble or lice? I found a few in the fluff, but can't think so few would make him go queer. I keep roosts sprayed with coal oil and a little carbolic added, but it don't seem to have any effect. Today the rooster and a couple of the hens began to gape and kept it up for some time, just as if they felt distressed. I want to keep this breeding pen strong and healthy and see if I can get a start. I have tried to make this plain. I am sorry to trouble you, but I can get no satisfaction from

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Instead of salt meats, the choicest cuts of home-grown beef are kept in an electrically operated cooler, and ice-cream, formerly an unattainable luxury, may be served every day.

The actual saving in dollars and cents, over any other way of doing the same necessary work, is far greater than the cost of electricity, including the comforts not otherwise obtainable.

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anyone else, and it will be a great favor and help to have your opinion and advice.—E. W. W."

Our subscriber's letter might be taken as the text for a sermon, under several heads, to the beginner in the poultry business.

THE COSTLIEST STOCK NOT ALWAYS THE BEST FOR HIM.

In poultry as a commercial undertaking one should secure a strain of sturdy utility stock which can stand a bit of roughing it on occasion. The novice is pretty apt to consider the prize-winners among the display birds of the showroom the only simon-pure specimens of their various breeds and be willing to go to the bottom of his pocket to obtain a start from such birds.

This is well enough if he wishes to keep only a few fowls for pastime. It gives the necessary eclat to the subject when talking of his poultry to friends, and may be the means of selling some of his stock at a stiff price to said friends. But for the person taking up poultry as a branch of the farm business, the points that score in his fowls are vigor and prolificacy.

Professor Dryden, in his lecture before the School of Agriculture at Ames, Iowa, last summer, emphasized the importance of these points over "feathers" in farm fowls, and advised securing them by selecting prolific layers from vigorous cross-bred hens and grading up the flock by the use of vigorous pure-bred males on such hens. Incidentally, the professor has brought down upon his devoted head the animadversions of the poultry press from Boston to Seattle.

However, it is not necessary to go outside the breed to secure new blood to keep up the vigor; nor to pick up hit-or-miss stock as a matter of cheapness. As a matter of fact, by far the larger portion of the stock of even the breeder who gets the cream of the prizes in his class, could never be prize winners and might even be disqualified in the show-room, but they are just as pure-bred as the winners and may be superior for utility purpose—and they come lots cheaper. The reliable breeder will explain this point to his novice customer, even if it causes the sale of a $2 or $5 bird instead of a $25 or $50 one.

PAMPERED FOWLS.

Though our correspondent has not said so, one may read between the lines that he has paid such a high price for his fowls that he has been overanxious that they shall have the best of care and the best of everything—in short, that he has pampered them. They have become bilious and out of condition, and fat and too lazy to "louse" themselves. His neighbor's fowls that have to "scratch gravel" as well as to "louse" themselves, and have only whole corn thrown to them, do better than his which have a balanced ration before them all the time and grain and green feed at night, and nice dry litter to scratch in and "everything necessary."

That tells the whole story of sturdy fowls whose "innards" are not clogged with heavy concentrated foods, but are kept healthy and active grinding the whole corn and manufacturing it into eggs.

THAT DRY MASH ALWAYS BEFORE FOWLS.

That this is a sort of fling in the face of the canons of the authoritative and academic in poultry culture, I am well aware when I say that keeping a hopper of concentrated foods always before fowl is one of the most mischievous and unnatural and liver-destroying methods of feeding. It is bad for the active Leghorn, but many times worse for the heavier breeds which have a tendency to the taking on of internal fat. That fowls must be well fed goes without saying. The hen must have a surplus of food in excess of her bodily needs out of which to manufacture hen fruit. The point in egg production is to induce the hen to eat as much egg-producing food as she can digest. To do this, such food must be made appetizing. The hen eats most and digests best the food she relishes. These requirements are met in the properly made moist mash. The hen relishes it keenly, and eats and digests it quickly, and assimilates it properly, for it stimulates all the digestive organs to healthy action. But this must not be fed more than once a day, what she will eat up quickly, else it cloys both her appetite and system, which is exactly what the concentrated dry mash does when kept always before fowls.

There is little doubt that we feed too much concentrated millstuffs and beef scrap, blood meal, etc., to poultry. The hen should grind pretty much all of her own food in order to secure a healthy action of her digestive organs, and though some animal food is necessary, she requires only a little of such. Dr. Wood, who has been at the head of the consulting departments on poultry diseases for many years in the East, recently gave it as his opinion that such concentrates as oil meal, gluten meal, etc., are in a measure the cause of the increasing digestive and liver troubles in fowl. I have cut all such out of my own feedings for the last three years, using cracked corn instead of meal in the mash and no other millstuffs except shorts and rolled barley, with the result that digestive troubles have been practically eliminated from my poultry yards.

AS TO LOUSY FOWLS.

If it were really necessary, as our correspondent has found it, to go over mature fowls every little while for head and body lice, I would quit the poultry business. It is the poultry-keeper's business to keep the poultry quarters free from the pestiferous mite, flea, tick, and other such vermin, but it is up to the hen to do her own "lousing", and if she is furnished with mellow, moist dusting-places, the hen with any get-up to her will keep herself free of that class of vermin.

Capons are great louse-breeders because they are too lazy to dust themselves; so likewise are all weak or ailing fowls, and for this reason, if for no other, all such fowls should be rigorously excluded from the yards. The chicks must be carefully guarded against body and head lice until they are big and lusty enough to do the work for themselves. However, if they are kept healthy and clean, and the general stock are not infested, there will be none such on the chicks. In fact, unless lice have been brought into the flock from outside sources, a healthy, well-cared-for flock will not become lousy. Once the lice locate on the fowls it is a difficult thing to eradicate them, because the nits are soon like the sands of the seashore, and almost as indestructible.

THE PROPER DUST BATH.

Almost invariably dry road dust, ashes, etc., are given as the proper dusting material for fowls. How an observing poultry keeper who understands anying of a fowl's anatomy can hold to this old superstition, as it might be classed, is surprising. A fowl's lungs, eyes and nostrils are as sensitive to irritating substances as those of a human. Bronchitis in fowls is often caused by dust, lime and such irritating substances being breathed into the bronchial tubes. Again, the dust from the road is well mixed with powdered filth and manure, and yet misguided poultrymen will laboriously gather up this stuff for their fowls instead of mellowing up some clean soil for the purpose. The proper dust bath for fowls is clean mellow soil slightly dampened so that it is friable as meal but will not fly in the air—just like the soil under the currant bushes where the hen delights to wallow. Furnished this sort of a bath, the healthy hen can hardly pass it without stopping to take a dip, and incidentally the lice have to go.

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The Home Circle.

A Home Truant.

"Out in the world," she cried, "these hands,
My hands, so weary of their task—
I'll cut away these galling bands,
And let them in the sunshine bask."

She leaves the door of home behind,
The sunlight streams across her face,
The woodland winds her locks unbind
And touch her cheeks with unknown grace.

But backward now, across the hill
She turns her eyes toward that door;
Its homing nooks her pulses thrill
And draw her to that task once more.

Then strange it seems she has not heard
Before these birds that sing at morn,
Nor known what strains of music stirred
With low winds in the growing corn.

For sweet within her bosom stays
And in her round of life finds part
The magic of those freedom days
When she was learning Nature's Heart

—Cora A. Matson Dolson.

Making the Best of It.

Forty years old! Not old for a man, but old for a boy, certainly; and little, so that the coat he wore and the shoes which covered his feet were bought of juvenile stock. And he shaved his face, every hair off, and perpetually wore a little bell-crowned hat, more crown that brim, making him look beneath it like a court jester or like Barnum's buffoon.

As his ears were quick to hear, he knew that many called him "the little old boy." But he had a manly heart, manly principles, and, moreover, he was a man, his vote being as weighty and consequential as that of any other man.

It was true, however, that he was just about mature when he became forty. All his life he had plugged about at this thing and that—gardening, cow-milking, rough carpentry, and such like employments, but with little or no success at any of them, and injured by a fall while shingling a barn, was so hurt as to be of little good along that line ever afterward. There were odd jobs for the women folks then, and as his patrons had little money, he got little.

In an old, half-dilapidated building which, somehow, he had acquired possession of, he bestowed himself with his few belongings and lived. Small as he was, care rested upon him, drawing little wrinkles about his eyes and ploughing a furrow or so along his broad white brow. Though his body was small, his head was big, and with a good deal in it.

But a crisis had come. His fall had injured him, and his chore work brought him so slender an income that he was nearly on the town. On his pallet in his little, old, unused building, he lay deliberating about it. And the more he thought about it, the more he realized the necessity of his having a business of his own. How foolish he had been, to be sure, serving others year after year for the miserly pittance they paid! "I shall have a business of my own." So he declared to himself, en-soliloquy, as he deliberated. And it was his accident that had precipitated the necessity. Despite the little fellow's poverty, he had hidden away a funeral fund—a small sum to buy the coffin with and fee the gravedigger when life should cease. Like many another, he had a horror of the potter's field. "This little sum I'll use for a starter." So he soliloquized, and so he did, first securing a long lease of the half-ruined building for a song, and next getting a good, strong handcart and a few other matters to his liking. Evidently under the weather, no one paid much attention to his movements. But eventually they saw that he was out early and in late, scouring the little city in all kinds of weather for refuse tinware, and in fact for all sorts of old junk. So he made his first stake. Then he bought, repaired and sold old furniture, employing a likely young fellow to tend shop while he was abroad with his goods. In an inner room he passed his evenings and the long, stormy days of winter. It was secluded and few saw it; but when seen, as some were prying enough to peep through the crack of the door, they saw day-books, ledgers, cash-books, and all the paraphernalia of a great business. Then the news spread that "the little old boy" was doing exceedingly well. But he was not, simply common or ordinary in the matter of trade. What the prying ones had discovered was a business college, the little fellow being both principal and pupil. But he mastered his studies, and after awhile when real estate was at a lag, he bought the little old house and the patch of ground which went with it. Then he new-weatherboarded, shingled and painted the building, making it look as near like the other business houses as possible.

"Oh, yes," he soliloquized when no one was by, "I must have a sign—in fact, two of them."

Eventually there appeared over the double front doors: "Daniel Dicker, Dealer in Furniture, New and Second Hand," and over the end door: "Expert Accountant. Business Solicited."

After that no one called him "the little old boy." It was, "Mr. Dicker, I wish you would overhaul my books," or "Friend Dicker, come around again and set my books right."

Then it was that he did accomplish something; his shopman managing the furniture, himself getting good pay for his own services and saving, as he did, the reputation of many a giddy-brained youth and the business of the employer. And he added to his own reputation and skill constantly.

One morning there was great commotion in the city. The County Treasurer had committed suicide: the books were found to have been falsified, and moneys retained to the extent of thousands. Just what condition the office was in was hard to determine, so the matter was brought to Dicker for him to figure out, he having to closet himself with the deputy for days. He finally found that fifteen thousand and some odd dollars had been abstracted and used—as a little detective work revealed—in stock gambling, the stock which the speculating official bought dropping 50 per cent instead of increasing in value that much. It was that unexpected decline that determined the official's suicide; but his widow came to time finally and paid the deficit out of her own private fortune; while the office affairs continued in the deputy's hands, but under the watchful eye of Dicker.

Strange! but three months later that same stock rose rapidly, doubled and quadrupled in price, and the widow realized a fortune. When election time came again, Dicker was chosen Treasurer by an overwhelming majority. It was current rumor that it was his influence that had secured of the widow the $15,000. In Dicker's hands the office affairs ran as smooth as clockwork, and the new treasurer's appearance changed somewhat to suit the new position, the credit and decency of the place he occupied—a fine soft suit of blue-black topped off by a new beaver.

It was the same Dicker, but a little more presentable. And again one day he soliloquized: "As I am a man," said he, "it is time I was getting married." And as he continued, he smiled: "How would I look, a little fellow like me, nearly 50 years old, asking a woman to have me?"

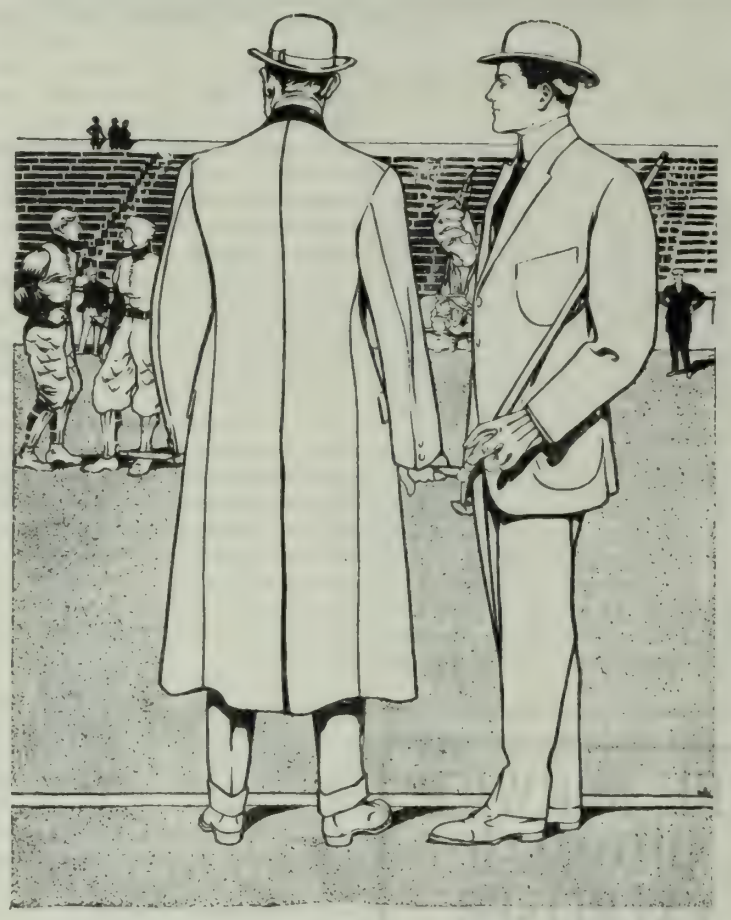
By a strange coincidence he was spared the necessity, for that same day the widow of the deceased treasurer sent her carriage for him to come up. And when they were alone after his arrival, said she: "Some one must look after my investments; will you not, Mr. Dicker?"

After some reasonable hesitation Dicker consented.

Then the lady grew more familiar, even tender, and said, as she impulsively laid one of her fat red hands on one of Daniel's slender pale ones: "Daniel, why not take this business for life, and superintend me whilst governing my money? Say you will, Daniel, and let us swear out the warrant Saturday and be married Sunday. You see," she explained, "Borden's death, such as 'twas, lost me social position and I rather wish to be the treasurer's wife again."

Dicker was so much in the habit of embracing his last best chance that he consented.

A year or two afterward, while Dicker was one day full of business as ever, dodging about the streets here and there, two men sitting on a dry-goods box at a store front noticed him. Said one of the men: "Who is that fellow? He looks like a regular little, old boy." "That is just what he used to be called," responded the other; "but it is the Hon. Daniel Dicker, our present county treasurer and candidate for Congress for this district. He's the smartest business man in this section of the State. While shingling, he fell from a barn roof, years ago, and it was the making of him, because, after that, he had to use his wits, and his wits brought him business, notoriety, fortune. A fall is a good thing sometimes, especially a fall upstairs."—Duane Morley.



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Many a "self-made" man was made by his wife.

The greatest sacrifice comes from a mind stored with wisdom.

It is always safe to keep to yourself what you think of the other fellow.

It is necessary to convince but one member of the family if it is the right one.

The trouble with most of us is that we are critical rather than constructive.

When things go wrong many times the only comfort—and a poor one—is that they might be worse.

'Tis not an indication of prosperity to see the railroads hauling long trains of empties either East or West. Look for the loaded cars.

The Picnic.

Too little importance is often attached to the proper packing of the picnic basket. The Saratoga potatoes which have been so carefully prepared will lose all their delicious crispness unless protected from the moisture of the other food in the basket. A glass jar or tin can is the safest receptacle for them, though a heavy paper bag will answer if they are not to stand too long. Wrap the chicken in oiled paper. The butter should be packed in a small glass jar and carried with the ice. Olives and pickles should be in closely corked bottles. Rolls and bread may be wrapped in a towel. Carry the lemon juice already mixed with the sugar in a glass fruit can—water and ice may be added later. The iced tea, also, which may be prepared very strong and diluted with water later on, can be safely carried in the same way. Wrap the ice closely in heavy paper and it will keep for hours.

OUR YOUNG FOLKS' DEPARTMENT.

Conducted By M. Russell James

What Have We Done Today?

We shall do much in the year to come,
But what have we done today?
We shall give our gold in a princely sum,
But what did we give today?
We shall lift the heart and dry the tear,
We shall plant a hope in the place of fear,
We shall speak the words of love and cheer—
But what did we speak today?

We shall be so kind in the after-a-while,
But what have we been today?
We shall bring to each lonely life a smile,
But what have we brought today?
We shall give to truth a grander birth,
And to steadfast faith a deeper worth,
We shall feed the hungering souls of earth—
But whom have we fed today?

We shall reap such joys in the by-and-by,
But what have we sown today?
We shall build us mansions in the sky,
But what have we built today?
'Tis sweet in the idle dreams to bask,
But here and now we do our task;
Yes, this is the thing our soul must ask:
"What have we done today?"

Poultry Course for Young Folks.

DESCRIPTION OF BREEDS.

Langshans.—The fowls of this breed differ materially from the others of the Asiatic class in having white skin and dark shanks; they are also more closely feathered and more active. The Langshan has a very deep body and erect carriage which gives it a stately appearance, and is often referred to as the "lordly Langshan." The breed is the latest importation of the Asiatics, being introduced into England about 1870 and from England into our country some ten years later. At first, the Langshans met with little favor, but their fine utility qualities, added to their fine appearance, soon won them friends and they became very popular, and continue popular with all who breed them.

The Black Langshan.—This is the only distinct breed of Langshans as found in China, the Whites, it is thought, being merely white fowls with Langshan characteristics moulded to the tpye, as there is no record of any pure white Langshan "sports." The plumage of the Black Langshan is a glossy black with a greenish sheen on neck, back, and sickle feathers, and black breast, shank and toe feathers. The standard weight is 10 pounds for cock and 7 for hen; 8 for cockerel and 6 for pullet. The Langshans are fine utility fowls for the farm, being good foragers and very hardy, excellent layers of large brown eggs, and good setters and mothers.

The White Langshan must have pure white plumage throughout.



SUMMARY.

The Asiatic fowls came from China originally, and are divided into three breeds and eight varieties. They are classed as meat breeds, and are large, massive birds, heavily feathered to the tip of the toes. They lay brown eggs and set and rear their young.

Wonderful Things in Nature.

The Bower-Bird.—How many of our young folks have read of the gardener bower-bird, that builds bowers and decorates them with flowers, not for a nest, but for a playhouse? There are several species of this bird, which is related to the starling and crow, and found in Australia and parts of Africa. A naturalist in a recent journey of exploration, when ascending the western slopes of the Central Arfak mountains of Dutch New Guinea, found several bowers of the gardener bower-bird, the most rare of the species.

The bower itself is described as five feet long and two feet high, and built of dead twigs, supported in the center by a cone, woven all around with an amazingly fine, black, hairlike lichen, so finely and skillfully worked that it is difficult to believe that it has not been done by the hand of man. The brilliant colors of the decoration are true to nature. Little heaps of blue, yellow, and red flowers and seeds, and black fungi, most daintily arranged in separate heaps to make a simple and beautiful entrance to the bower—a garden laid out with artistic precision—and in the bower the male bird with crest erected dances to his mate.

It may not be known that the distant relation of the wonderful bower-bird, the hunted and despised crow, is one of the smartest and cutest of creatures. The tricks which a tame crow may be taught, together with the ones he already knows, show a wonderful intelligence. And the same is true of the blackbird and bluejay. All three of these birds, when tamed, evince the most devoted attachment for their caretaker.

Ants That Cook.—The remarkable habits of the harvester ant have long been known to naturalists, says American Medicine. Certain species not only harvest and store in granaries the seeds upon which they feed but actually plant and cultivate an annual crop of their food seeds. But now a still more wonderful story is told of an ant which is common in Dalmatia. According to Prof. Neger, of the well known forestry school near Dresden, this ant not only cuts leaves and gathers seeds, but actually makes bread or biscuit. The seeds are first sprouted, then carried into the sun and dried, and then taken back to the underground chambers, where they are chewed into a dough. This dough is made into tiny cakes, which are baked in the sun, then carefully stored for future use.

From these observations it appears that the art of cookery is not confined to the human race. All cooking is done by the sun, whether in the ripening of fruit or the baking of bread in the stove. The heat obtained from fuel is simply stored-up sunlight set free. The Arab and the native Mexican speak of ripe fruit as fruit which has been cooked in the sun. The ant has learned the art of sun cookery, the saliva with which it moistens the grain probably taking the place of yeast and sweetening through changes set up by its influence upon the starch.

A Letter From One of Our Small Girls.

Modesto, Cal., May 19, 1911.

Dear Pacific Rural Press:

I like the 'Young Folks' Department fine. I thought a "Plucky Girl" very good. Mamma has many little chickens now. A little brown one that hatched she gave to me. It is growing fast.

I am a little girl eight years old. I am in the third grade at school. The name of our school house is "Hart School." Our school will be out today. I like my school fine. I live in Blue Gum Avenue, near Modesto. Next letter I will tell you more about the place. Yours truly,

Maggie Hart.

A Paradox.

Be good; don't expect to be paid for it, but don't be good for nothing.—Judge.

The good thoughts never written are probably more than all the good ones ever penned.

THE MARKETS.

San Francisco, June 7, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The Northern market shows increasing firmness, and prices are fully maintained on Northern grades in this market. Local grades, however, are easy, both Club and White Australian being considerably lower. The crop outlook through the North is favorable, but is said to be poor in some parts of California.

California Club	$1.45 @1.50
Sonora	Nominal
White Australian	1.55 @1.60
Northern Club	1.52½@1.55
Northern Bluestem	1.65 @1.70
Russian Red	1.50 @1.55

BARLEY.

Brewing and shipping barley is pretty well cleaned up and largely nominal in value. Feed grades have declined quite sharply, and are still easy, as there is plenty of old grain on hand to last until the new crop comes in. New barley is said to be moving at $1.15 in the country. The first lost of choice new barley in this market appeared June 1, being held at $1.40.

Brewing and Shipping	$1.52½@1.55
Choice Feed, per ctl	1.35 @1.40
Common Feed	1 25 @1.30

OATS.

The local market is uninteresting, current demand being quiet. Prices are steadily held at the former level. The Government is in the market for a lot of oats for July delivery.

Red Feed	$1.37½@1.42½
Gray	Nominal
White	Nominal
Black Feed	1.30 @1.50

CORN.

Local business is confined to narrow limits, though there is a fair movement of California stock at outside points. Prices are steady as last quoted.

Cal. Small Yellow	$1.75
Eastern Yellow	1.55
Eastern White	1.55
White Egyptian	$1.70 @1.75

RYE.

Some recent business has been reported around $1.50, but no desirable stock is offered at that figure. There is little demand.

Rye, per ctl	Nominal

BEANS.

The current movement is very light, and while particular varieties are extremely scarce and closely held, most descriptions are inclined to easiness. The only change in prices this week is a further decline in bayos, of which there is a plentiful supply, including large offerings of imported stock. Lima beans are again moving in fairly large quantities from southern California, but the small remaining stock is closely held by the Association, which is anxious to have something to ship up to the end of the season. Conditions are so far extremely favorable for the new lima crop. Arrangements are being made to plant beans on a large acreage of San Joaquin delta land that was flooded last winter.

Bayos, per ctl	$4.25 @4.40
Blackeyes	7.00 @7.25
Cranberry Beans	3.75 @4.00
Garvanzos	2.85 @3.25
Horse Beans	3.25 @3.50
Small Whites	3.40 @3.55
Large Whites	3.25 @3.40
Limas	6.35 @6.45
Pea	4.25
Pink	5.00 @5.20
Red Kidneys	6.25 @6.50

SEEDS.

Alfalfa is nominal at present, as there is practically no demand. Millet is lower, other descriptions standing as before.

Alfalfa	Nominal
Broomcorn Seed, per ton	25.00
Brown Mustard, per lb	5½c
Canary	3½@ 4 c
Hemp	3½@ 4 c
Millet	3 @ 3½c
Timothy	Nominal
Yellow Mustard	5¾c
Dried Peas, per ctl	3.75@ 4.00

FLOUR.

Local prices are steadily held at the recent advance. There is little feature to the market, local trade being of normal proportions and the shipping movement about up to the recent average.

Cal. Family Extras	$5.40 @5.80
Bakers' Extras	5.40 @5.80
Superfine	4.50 @4.70
Oregon and Washington	4.60 @4.80

Hay and Feedstuffs.

HAY.

Arrivals are heavier than last week, the total arrivals last month being larger than for the same period last year. The buying movement in the Bay cities is light, consumers showing no desire to take on more than enough for current needs, and local prices accordingly have shown no improvement. A little new hay is coming in, but business is mostly on old stock. The harvest is well under way, with quite a lot of hay already baled, and there is a fair movement through the country at better prices than those quoted by city dealers. Private reports from most producing districts indicate a considerable shortage in the crop, and the present rain is not likely to do any good, though it is too early to tell what damage may result. Most growers are inclined to hold out for fairly firm prices.

Choice Wheat	$13.00@14.00
Good Wheat Hay	11.00@12.50
Other Grade Wheat	8.00@1100
Wheat and Oats	8.00@11.50
Tame Oats	8.00@11.50
Wild Oats	6.50@10.00
Alfalfa	8.00@11.50
Stock Hay	5.50@ 6.50
Straw, per bale	35@ 50c

FEEDSTUFFS.

Cracked corn is a little higher, as offerings are light and the demand brisk. Rolled barley is considerably lower, owing to the decline in the raw grain. Other descriptions are steady as last quoted, most lines finding an active demand.

Alfalfa Meal, per ton	$19.00@20.00
Bran, per ton	28.00@29.00
Cocoanut Cake or Meal	26.50@27.00
Cracked Corn	34.00@37.00
Middlings	34.00@37.00
Mixed Feeds	29.00@32.00
Rolled Barley	27.00@30.00
Rolled Oats	32.00@33.00
Shorts	27.50@31.00

Garden Truck.

VEGETABLES.

A little green corn is reaching the market, and finds ready sale as quoted. Green peppers and eggplant are also arriving in sufficient quantities to quote. Bermuda onions are about out of the market, as offerings of new reds are ample for the current demand. The latter are considerably lower, and green onions have also dropped. New garlic is lower, with increasing supplies, but good old stock is held firmly as before. Shipments of green peas have been very small for the last few days, cuasing a sharp advance. Other vegetables, however, are easy. Tomatoes are beginning to come in from nearby points, and a decline is expected before long, though so far prices have been maintained. Cucumbers are arriving from many places. Rhubarb is a little higher, and asparagus is no longer obtainable at the former bottom price, the market being improved by the demand from canners. String beans, summer squash, and okra are all lower.

Onions: New Red, sack	$ 1.25@ 2.00
Green, box	40@ 65c
Garlic, old, per lb	10@ 11c
New	4@ 6c
Green Peas, per sack	2.25@ 2.50
Tomatoes, per crate	1.75@ 2.00
Cucumbers, per box	1.50@ 2.00
Cabbage	1.40@ 1.50
Carrots, per sack	1.25
Rhubarb, per box	75c@ 1.50
Cauliflower, per doz	50@ 60c
Asparagus, per box	90c@ 1.50
String Beans, per lb	3@ 5c
Summer Squash, per box	75@ 85c
Okra, per lb	5@ 8c
Green Corn, per doz	25@ 30c
Egg Plant, per lb	10@ 15c
Green Peppers, per lb	10@ 15c

POTATOES.

Old Lompoc Burbanks are out of the market, and all old stock is very scarce and firm. Arrivals of new potatoes are increasing, but are still comparatively light, and with a very short crop in the principal growing district prices are slow to decline. Sales are being made all the time at full quotations. There is now some demand for shipment to Oregon, where the old stock is about exhausted.

Oregon Burbanks	$ 2.60@ 2.75
New Potatoes, per lb	2½@ 3½c
Eastern, per ctl	2.00@ 2.25

Dairy Produce.

POULTRY.

Local stock is arriving more freely than last week, and shipments from the East, though not excessive, are still quite large. The market is not in very good shape for sellers, many descriptions being lower, and only the most attractive offerings will sell at present quotations. Old roosters and small hens are hard to move.

Large Broilers	$ 3.00@ 4.00
Small Broilers	2.00@ 2.50
Fryers	5.50@ 6.50
Hens, extra	8.00@10.00
Hens, large	5.00@ 6.00
Small Hens	4.50@ 5.00
Old Roosters	4.00
Young Roosters	7.50@ 8.00
Young Roosters, full grown	8.00@10.00
Squabs	2.00@ 2.50
Geese, per pair	2.00@ 2.50
Ducks	6.00@ 9.00
Turkeys, live, per lb	Nominal

BUTTER.

Extras have shown no change whatever in the last week, and with the exception of a slight advance in prime firsts everything remains precisely as last quoted, the market being firm. Packing stock is now moving at quotations.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	22½	22½	22½	22½	22½	22½
Prime Firsts	21	21	21	21	21½	21½
Firsts	20½	20½	20½	20½	20½	20½
Seconds	20	20	20	20	20	20
Packing Stock	17½	17½	17½	17½	17½	17½

EGGS.

There has been a little easier feeling in the market for the last day or two, resulting in lower prices for both extras and selected pullets. There is no apparent reason for the decline, as storage operators profess satisfaction with former prices, but have, nevertheless, been selling quite heavily. Arrival are very heavy, but the bulk of the arrivals has been going into storage for some time.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	22	22	22	21	21½	21
Prime Firsts	20½	20½	20½	20½	20½	20½
Firsts	19½	19½	19½	19½	19½	19½
Seconds	18½	18½	18½	18½	18½	18½
Selected Pullets	18½	18½	18½	18½	18½	18
Eastern	16½	16½	16½	16½	16½	16½

CHEESE.

Fancy flats are a little lower, but otherwise the market is unchanged. Trading is on about the usual scale, and fluctuations in price are of little importance.

Fancy California Flats, per lb	12 c
Firsts	11½c
New Young Americas, fancy	13½c

Deciduous Fruits.

FRESH FRUITS.

The list shows considerable revision, due to the arrival of more varieties in the market. Apples are not much of a feature, being pretty closely cleaned up. A few peaches have come in, but prices show too wide a range to establish any value, varying from $1.25 to $3 per box. A few Southern watermelons have appeared, bringing 5c. per lb., while cantaloupes are lower. In the berry department, some reduction is noted in raspberries and loganberries, while Longworth strawberries are higher. Blackberries are offered in fair quantities as quoted. Cherries are plentiful, but find a good demand, prices being fully maintained. Royal Annes are held at an advance. So far the apricots offered have been of rather poor appearance, and do not find a ready sale.

Melons—	
Watermelons, pr lb	5c
Cantaloupe, standard crate	$ 3.50@ 4.00
Raspberries, basket	10@ 15c
Loganberries, chest	7.00@ 8.00
Gooseberries, drawer	50@ 75c
Apples, per box	2.00@ 2.25
Blackberries, crate	1.50@ 1.75
Strawberries, Banners, chest	5.00@ 6.00
Longworth, chest	5.00@ 8.00
Large varieties, chest	4.00@ 5.00
Cherries, Purple Guigne, box	75@ 85c
White	50@ 60c
Royal Anne, box	75@ 90c
Apples, box	2.00@ 2.25
Apricots, crate	1.25@ 1.50
Apricots, box	1.00@ 1.25

Dried Fruits.

The market continues in a rather quiet condition, as packers, though anxious to buy, are not willing to pay the prices demanded for most fruits, and growers see no reason to hurry their sales. Old-crop goods are moving slowly throughout the country, but in view of the shortage, prices are firmly maintained. No change is noted in Muscatel raisins, but packers are anxious to get old Thompson's Seedless, and sales in the country as high as 5½ to 6c. are reported, though these figures are not confirmed by local packers. Sales of new Muscatels are reported at the prices quoted, though so far there has been very little business. The jobbing trade in general is holding off almost entirely in regard to futures, owing to the number of conflicting reports on crop conditions, and the fact that few packers are making any quotations, and that the goods offered one day at a moderate price are frequently withdrawn the next. No changes have been made in quotations on new crop contracts with growers, ond local packers appear unwilling to make any advance as yet. They are able to pick up a good many odd lots of fruit at the present figures, and in view of the apathy of Eastern buyers, are willing to wait for the crop. Prunes are receiving more attention than anything else, but growers in several localities are demanding 5c., while 4½c. is about all that any packers are willing to pay at present. The New York Journal of Commerce says:

"There are no established prices, apparently, on future California prunes, the quotations made from day to day being subject to confirmation by the packers who make them, and so far as can be learned the few orders wired out are seldom or never confirmed, either because the goods have been sold or the packer has changed his quotation. No two packers seem to be quoting on the same basis. The f. o. b. market has a bearish tone. In one quarter offerings have been made for first half October shipments on a 4½c. f. o. b. Coast four-size bag basis on 40s to 70s, inclusive, there being no premium on 40s. Other packers quoted 40s to 90s for October shipment on 4½ and 4⅞c. f. o. b. four-size bag basis, with premiums of a quarter to half a cent, according to seller."

Evaporated Apples, per lb	10½@11 c
Apricots, new crop	14 c
Figs, black	4½@ 5 c
Figs, white	5 @ 7½c
Peaches, Spot	8 @ 8½c
New crop	9 @ 9½c
Prunes, 4-size basis	9½c
New crop contracts	4 @ 4½c
Pears	8½@12 c
New crop	9 @10 c
Raisins—	
Loose Muscatels, in sweatbox	4 @ 4½c
1911 Crop	4 @ 4½c
Thompson Seedless	4½@ 4¾c
Seedless Sultanas	4¼@ 4½c

Citrus Fruits.

The lemon growers of California are to be congratulated upon another good selling season. Prices on the Eastern auctions are better than $5 per box, which means good profits to the growers. Orange prices are also good throughout the East, and, as usual, the valencias are topping the markets. Shipments from southern California are averaging about 150 cars of oranges and 50 cars of lemons daily.

On the New York markets, Monday, June 5, navel oranges sold for $2 up to $4 per box, seedlings brought from $1.85 up to $3, sweets sold from $1.60 to $2.65, St. Mikes brought up to $2.85, and valencias topped the quotations. The lowest averages for this variety were $2.55, and the highest was $4.40 per box, which Chapman's Old Missouri brand brought. Lemons on this market were from $5 to $5.20 per box.

At St. Louis on the 5th, oranges were about the same price as New York, but lemons were some higher. The prices varied from $3.25 to $6.60, the average being near the $6 mark.

On the same day at Philadelphia the orange prices were a trifle lower, lemons being $4 to $4.55, while Florida oranges averaged $2.50, grapefruit $1.40 to $4.20. On the Los Angeles auction held Monday the 5th, valencias brought $1.75 for choice, $2 for fancy, and $2.20 for extra fancy, all f. o. b. California.

At San Francisco oranges are not especially active at present, though prices are fully maintained, and valencias find a fair demand. The only change is on lemons and Mexican limes, which are considerably higher, the advance in lemons being due to the high prices paid for shipment to other markets.

Navel oranges—	
Extra choice	$ 2.50@ 3.00
Choice	1.50@ 2.00
Valencias, choice to fancy	2.25@ 3.00
Tangerines	Nominal
Choice Lemons	3.00@ 4.00
Fancy Lemons	4.00@ 5.00

Standard	2.00	@	2.50
Limes	5.00	@	5.50
Grapefruit	2.25	@	3.15

Nuts, Honey, Hops, Etc.

NUTS.

The market on old stock is uninteresting, everything being closely held, and the movement small. Business on new crop almonds has so far been of a scattering nature, and prices are hardly quotable, though it is evident that values will be high. Several sales have been made around 15 and 16c. for the more desirable varieties, and some growers report sales as high as 16½c. A considerable acreage in southern California is said to be coming this year, and an Association is being formed to handle the output. There is nothing new in walnuts.

Almonds—			
Nonpareils	16½	@17	c
I X L	15½	@16	c
Ne Plus Ultra	15	@15½	c
Drakes	12	@14½	c
Languedoc		12	c
Hardshells	8	@ 8½	c
Walnuts—Softshell, No. 1		15	c
Standard		14½	c
Softshell, No. 2		11	c
Budded		17½	c

HONEY.

A little new extracted is held here at a slight advance over the former figures, but so far the movement has ben small. A lot of new comb is expected in a day or two, but local dealers refuse to make any quotations at the moment. Some new extracted is being shipped to Chicago.

New Extracted, White, per lb.	8	@ 9½	c
Comb	Nominal		

BEESWAX.

The demand is moderate, but offerings are also limited and prices are firmly held. Only fancy stock, however, is held at the top quotation.

Light	28	@32	c
Dark	23	@26	c

HOPS.

Shipments from San Francisco last month were unusually large for this period. While prices show no further change, the market is extremely firm, a Sacramento handler expressing the opinion that record values may be expected. Many growers are accordingly holding back, while buyers are unwilling to offer more than quotations at the moment.

Hops, 1910 crop	20	@25	c
1911 crop	20	@25	c

Live Stock.

DRESSED MEAT.

Cows		8	c
Heifers		8	c
Veal, large		10½	c
Veal, small	11	@11½	c
Veal, small	11	@11	c
Mutton: Wethers		9½	c
Ewes		8½	c
Lambs		10½	c
Hogs, dressed		11	c

LIVE STOCK.

Several unimportant changes are noted in dressed meats, which are not appreciably lower. Live stock, however, is weak, with large arrivals of cattle and sheep from California points, and these descriptions are lower. Hogs are held at the former level, but the demand is limited and the market shows no strength.

Gross weight:			
Steers: No. 1	5½	@ 5¾	c
No. 2	5	@ 5¼	c
Cows and Heifers: No. 1	4½	@ 4¾	c
No. 2	4	@ 4¼	c
Bulls and Stags	2½	@ 3½	c
Calves: Light		6½	c
Medium		6	c
Hogs: Grain-fed, heavy	6	@ 6¼	c
150 to 250	6½	@ 6¾	c
100 to 150 lbs		6¾	c
Small prime wethers	4½	@ 4¾	c
Large prime wethers	4½	@ 4¾	c
Ewes	3¾	@ 4	c
Lambs	5	@ 5¼	c

WOOL.

Aside from an advance in lambs' wool, prices are unchanged. The situation is more favorable, however, with large sales of Nevada, Montana, and Oregon wool at fair prices, and some advance is expected here. The Healdsburg wool sale has been set for June 22.

Spring Clip—			
Choice Southern, Year's staple	9	@12	c
7 months	8	@11	c
Lambs	5	@ 7	c
Northern, year's staple	13	@15	c

HIDES.

Prices show quite an advance on many descriptions, and the market is in better shape than for several months. There has been considerable buying by tanners throughout the country, and there is some prospect of continued firmness, the advance, however, being mainly due to the offering of short-haired stock.

Heavy Steers, over 56 lbs.		11	c
Medium		10	c
Light Steers, under 48 lbs.		10	c
Heavy Cows, over 50 lbs.		10	c
Light Cows, 30 to 50 lbs.		10	c
Kip		12	c
Veal	14½	@15½	c
Calf		15½	c
Dry—			
Dry Hides	17	@18	c
Dry Bulls		16	c
Dry Kip, 10 to 15	17	@18	c
Dry Veal, 5 to 10		20	c
Dry Calf, 7 down		23	c
Sheep Skins—			
Long Wools	$ .75	@$1.00	
Medium Wool, 6 to 9 mos.	50	@ 75	c
Short Wool, 3 to 6 mos.	25	@ 40	c
Lambs	15	@ 35	c

HORSES.

Conditions remain about the same as before, the only feature being increasing weakness on wagon, delivery and farm stock, which is considerably lower. Recent sales of this class of stock have brought out very little interest, quite a lot of good horses being sold at the inside quotations. Good drafters of the style and weight wanted in this market are scarce, and with a lively demand full prices are readily obtained.

Desirable Drafters, 1700 lb. up.	$300@350
Light Drafters, 1500 to 1650	235@285
Chunks, 1350 to 1500 lbs.	200@250
Wagon Horses, 1250 to 1350 lbs.	150@190
Delivery Horses, 1050 to 1250	110@130
Desirable Farm Mares	110@130
Old Mares	90@115

MULES.

1200 lbs	$250@300
1100 lbs	215@240
1100 lbs	175@200
900 lbs	150@175

SPECIAL DECIDUOUS MARKET REPORT.

Sacramento, Cal., June 5, 1911.

This past week has brought about more favorable weather incident to the maturing of the crops, and we have noticed a decided change in the entire situation.

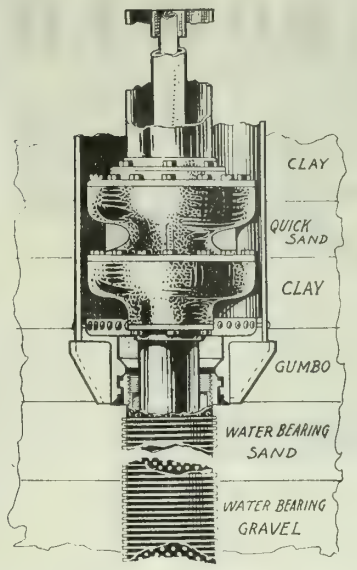
Tartarians are cleaning up rapidly, except in the Santa Clara valley; Royal Annes are moving at good prices, and, by the middle of this week the shipment of Black Oregons will be very heavy.

Owing to the severe windstorms which were prevalent in the cherry districts two weeks ago, several thousand boxes of cherries that arrived in the different markets were noticeably bruised, which was the cause of a sharp decline in a few markets, as a result of the unsatisfactory condition of the arrivals. However, the cherries now going forward are in fine shape and show no effects of the recent wind, and we look for a favorable reaction in all markets, as we feel confident that the fruit will arrive in first-class condition.

Apricots are now leaving the State at the rate of from 500 to 1000 crates a day, and, as they are clean and of good quality, what few have arrived in the East have brought fancy prices, from $2.50 to $4 per crate. As soon as heavy shipments reach the East, however, it is not expected that the market will remain at these fancy prices.

There has been a noticeable dropping of Bartlett pears in Placer county, but the crop remains about the same on the Sacramento river. Clyman plums will be moving by the latter part of the week, as will also a few boxes of Alexander peaches, but we doubt very much if assorted cars can be made up from any district much before the 15th of the month, although some shippers are quoting for shipment on the 9th or 10th. We doubt very much if they will be able to fill on varied assortments, and unreliable quotations have a damaging effect upon the market.

The market averages for the past week were as follows: Philadelphia—Tartarians, 85c. to $3.35; Rockports, 75c. to $2.20; Gov. Wood, 95c. Kansas City—Chapmans, $2 to $2.25. New York—Tartarians, $1.20 to $4; Rockports, 75c. to $2.50; Royal Annes, $3.25 to $4.25; Gov. Wood, 75c. to $1.70; Orleans, $2; Chapmans, $1.42 to $2.65; Advance, $1.10 to $2.10; Purple Guignes, 95c. to $2; Jones Seedlings, $1.20 to $2.12. Chicago—Tartarians, 90c. to $2.75; Rockports, 80c. to $1.70; Royal Annes, $2.15 to $2.70; Gov. Wood, 80c. to $1.65; Orleans, 95c. to $1.20; Chapmans, 75c. to $2.30; Advance, $1.05 to $2.05; Jones Seedling, $1.55 to $2.35; Knights Early Black, $1.40 to $1.65; Centennial, $1.40 to $2; Pontiac, $1.75; Biggereau, $2 to $2.50.



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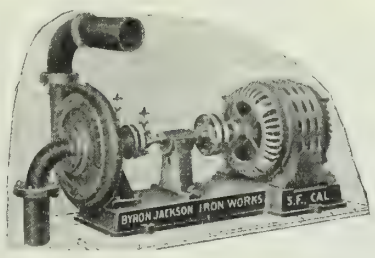
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PUBLISHER'S DEPARTMENT.

The Ames-Irvin Co., of this city, is offering through our advertising columns surface-irrigating pipes, which places the water just where needed. Read the announcement and send for circular.

A mistake was made in the table of fruit estimates given in these columns last week. The total number of apple trees for Sonoma county was given as 3450, while Solano county was given 229,120 trees. These totals were correct, but they were transposed, and should have read, Sonoma county 229,120 apple trees, and the smaller number credited to Solano county.

The Trumbull Seed Co., of this city, will move on June 10 to new quarters, at 257-259 Market street. This seed company is the pioneer in its line on the Coast, having been established in 1852. Besides carrying a full line of garden and field seeds, plants, bulbs, etc., we are told by the manager, Mr. Colmore, that the company is now making a specialty of handling alfalfa and green manuring seeds, which our readers will do well to bear in mind. Remember the new address when you want to do business in their line.

It is interesting to note the gain of interest in gardening in California. One way we have to serve as an index is the comparison of sales of Professor Wickson's two books, "California Fruits" and "California Vegetables." Ordinarily the "Fruits" outsells its companion two to one, but of late the "Vegetables" has been in heavy demand, and last month it sold at the rate of double the number over its older brother. California vegetable growing is becoming more and more a business from which good returns may be secured.

NOTICE TO STOCKHOLDERS

Notice is hereby given that the Annual Meeting of the Stockholders of the Grangers' Business Association (a corporation) for the election of officers to serve for the ensuing year and for the transaction of such business as may come before it, will be held at its principal place of business at the Merchants Exchange Building, No. 431 California St., San Francisco, State of California, at 10 o'clock a. m. on Tuesday, June 13, 1911.

A. D. LOGAN, President.
R. H. CHILDS, Secretary.

Dated May 9, 1911.

MR. HAYGROWER



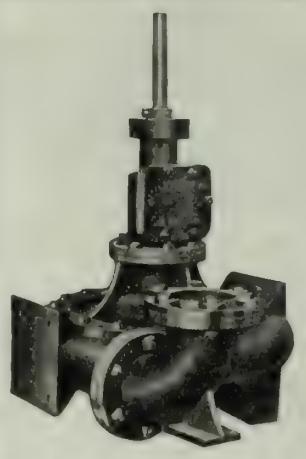
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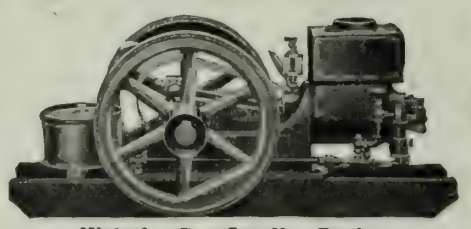
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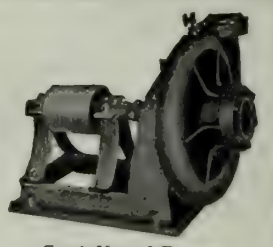
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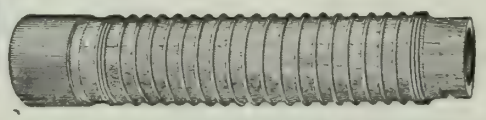
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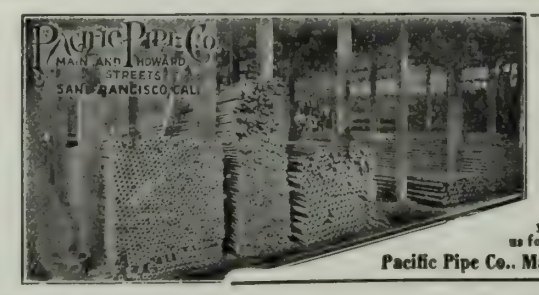
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THE PACIFIC RURAL PRESS

Vol. LXXXI. No. 24. SAN FRANCISCO, SATURDAY, JUNE 17, 1911. Forty-first Year.

A Breeze Through the Prune Trees.

Written for the PACIFIC RURAL PRESS by Mr. W. H. SCHRADER.

The pages of our esteemed contemporary, the San Jose Mercury, have recently served as the arena for a spirited talk over the prospective prune crop of the Santa Clara valley. A well known packer gives it as his private opinion, publicly expressed, that the crop is a big one and will reach two hundred and fifty million pounds of green prunes, which means about one hundred million pounds dried. This statement brought forth a storm of protest from the growers. One of these, subscribing himself "A Citizen of the Orchard," not only intimates that the aforesaid packer was "full of prunes," but went so far as to seriously charge him with attempting to bear the market with a sinister object. These are the very words he used: "It is apparent that some indiscreet packer is attempting to depress the prune market and frighten the timid orchardist into selling at a price below that which conditions justify."



Drying Prunes Near Campbell.

So far from agreeing with the packers estimate of the crop, he declares strongly that the prune crop of the State will not exceed one-third of the normal, which he places at an average of one hundred and sixty million pounds of dried fruit. Under no circumstances will he concede a crop of more than 70,000,000 pounds this year, declaring his estimate is based on a careful examination of orchards by himself and friends.



An Attempt to Estimate the Prune Crop at Blossoming Time.

We were much interested by this discussion, and, believing that our readers would like a conservative and unbiased report, we spent several days in the Santa Clara valley prune orchards interviewing both growers, packers and driers, endeavoring to get under the real situation. It did not take us long to see how it was possible for packers and growers to form their widely divergent opinions. In most any orchard, large or small, the packer standing in one part could see prunes all around him, while the grower standing elsewhere could see but few, or looking at the same tree, even the packer looking on the outside could see a big crop, while the grower looking on the inside, could see but a small one. In short, the prune crop of the Santa Clara valley is so spotted this year that it is impossible to form a very definite idea of its size, and anyone essaying to estimate the number of pounds stands in great danger of losing not only his reputation as a prune prophet, but his reputation for veracity (if he has one) as well.

In our tabulated report on the deciduous fruit crop of the State published in our issue of June 3, we gave the prune crop of Santa Clara County as 45% of a full crop. The last full crop was 125,000,000 pounds, therefore, our estimate was between 50 and 60 million pounds. This estimate was based on the best information we could obtain. We hasten to inform our readers that we do not wish to stake the reputation of the PACIFIC RURAL PRESS on that estimate and that we shall not be surprised if it is a few pounds out one way or the other. Very few of the growers we interviewed could give any definite idea as to the crop on their own trees, but nearly all were ready to give an estimate for the valley. Their estimates ranged from 50,000,000 to 75,000,000 pounds.

We think it best to state the conditions as we found them and let the reader form his own conclusions. During the five years that have intervened since the last fall crop of prunes was harvested in the Santa Clara valley, a considerable number of trees have been taken out and very few new trees have come into bearing. Just what percentage of the acreage has been lost, we are unable to state. Then, too, many of the orchards are in poor condition, some

(*Continued on Page 476.*)

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., June 13, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	00	31.77	45.58	56	46
Red Bluff	.26	24.68	24.83	96	58
Sacramento	.12	21.98	20.07	92	48
San Francisco	00	25.49	22.23	70	48
San Jose	00	22.63	13.05	84	50
Fresno	00	11.82	9.68	102	54
Independence	00	6.28	9.53	96	46
San Luis Obispo	00	34.42	20.51	80	50
Los Angeles	00	16.15	15.63	86	50
San Diego	00	11.98	10.01	68	54

The Week.

The Sacramento valley has its innings in public favor this week, and surely the world will never see the valley in more delightful June attire than we saw it as we traversed it at the close of last week. The season is late, as we have had frequent occasion to remark, and the effect is to carry forward many of the beauties of the May landscape into an unwonted combination with June joys. The result is a prolongation of wild verdure and blossom so that they environ the yellows and browns of curing hay and ripening grain—thus extending almost everywhere the pleasing contrasts for which June generally has to depend upon the interposition of grains and orchard, vineyard and alfalfa acreages. Of course these latter verdant areas are effective as usual—even more so, because the conditions which have prolonged field verdure have also given broader leafage to vine and fruit tree, and the same is true of the grand valley oaks and of the multitude of trees, shrubs and vines which enfringe the streams. The whole valley displays a charming freshness and lushness of vegetation which is the large compensation for a slowly advancing springtime. In California we do not have to bewail that trying eastern phenomena of "winter lingering in the lap of spring," because in the first place winter is not with us suggestive of chilling age, but of abounding youth; second, spring is itself a prolongation of that youth of the year. The same is true of the valley people and the valley industries. There have been favoring conditions for every promising and genuine thing to advance toward its rewards, and we can see now that the unique celebration of the opening of the first nationally irrigated district in California, which will take place at Orland on Friday and Saturday of this week, will be an outpouring of public interest and confidence and a demonstration of neighborhood content and satisfaction, which will be long memorable as an inspiration to progress and development.

The Shasta Region.

To fully exorcise the demon of rustle and hurry of the San Francisco bay district and possess ourselves of the spirit of the valley in advance of the Orland celebration, we betook ourselves, at the close of last week, to the heart of Shasta county, where beneath the shadow of Castle Crags and in view of the eternal snow of Mt. Shasta, we could dream of the future of the valley from the point of view of the lofty region which, in a way, holds the secret of its ultimate greatness. In a way, we say, because the Orland district takes no water directly from the great future supply of the valley's irrigation, but garners on its local watershed a wealth of water which has hitherto poured idly into the Sacramento. There are many other irrigated sections which thrive by robbing the river of the devotion of its tributaries which flow from enclosing ranges east and west of the valley area, and yet in the future and in the large, the Sacramento river will claim the valley plains as the arena of its colossal service for coming generations of producers and not as flood plains for the evaporation of unproductive waters as it has used them for generations past. All the enterprising work upon the tributaries of the Sacramento is a foreshadowing of the ultimate achievement of the great river itself and at the same times parts of them. But we have no idea of writing now of dreams of the valley's greatness, but rather a few words of the relation of the Shasta-Siskiyou district to it when attained. This rumple of ridges and river meadows, oer-topped by sky-piercing crags and loftier mountain masses is the region of California where one can get great floral and climatical contrasts with valley conditions at less elevation than elsewhere in the State. This is probably due in part to north latitude, in part to local topography, especially to the local effects of Mount Shasta and his bunch of imitators—and in part to other influences greater and of remoter origin. However this may be, it is clear to anyone who has lived in the valley or on the coast or on the mountains in other parts of the State, that the Shasta region is different, and the testimony of those who know the district best is that this difference is delightful. We do not say that it is better or worse; that is a problem which defies solution; it is a matter of taste. But we can clearly see this, viz.: that in the time to come, when the Sacramento valley reaches its greatness, the Shasta region, to use a trite expression, is to be the crown of it. We have no time to weigh the crown nor to describe the manner of its putting on, although that is a fashionable subject this summer. It will, however, settle down firmly and gleam undimmed for thousands upon thousands of years. We base the prophesy upon the contrast between Shasta and Sacramento valley conditions which we have hinted at. There is no such difference between the lower valley and its eastern and western mountains; no such difference between the San Joaquin and its environment; no such difference between the valley of southern California and its encompassing tablelands—no such difference anywhere in California—at anything like the same small differences in elevation between the valley plains and the uplifts around them. What does a rise of two thousand feet do for you in any of the great regions of the State which we have cited? It simply leaves you in the same climate you started from; that is, in the main features at least. From some points of view in production this is an advantage. We are not discussing that matter, either for better or for worse. We are after the fact, and you can estimate it as you like. This essential difference to which we elude comes to us sharply in the terms of wild meadows and the plants which clothe them. We have specially in mind a beautiful unirrigated meadow on the summer-home ranch of Mr. Harmon Bell of Oakland, on the banks of the Sacramento river about two miles south of the little rail-side town of Calpella. The elevation of this meadow is about 1800 feet. It has been a natural meadow since the clearing of the land, decades ago. It has been "improved" by several reseedings, probably by different owners: the last breaking up was alfalfa-sown. Now it stands a striking example of the survival of the fittest. One can find a few plants of alfalfa, but the land is thickly tufted with plants which one does not find elsewhere at such low elevation in such free association. We note a few of them: Timothy, Kentucky blue grass, orchard grass, meadow soft grass, white clover, Eastern red clover, English rye grass—and probably many others. We have seen them at twice or thrice the elevation in mountain meadows elsewhere in the State and in low rich valleys on the upper coast, but nowhere so near to thoroughly interior valley conditions as in the Shasta region. Thence they continue northward, probably all through the more humid portions of Siskiyou county and beyond. Of course the acceptance of the locality by all these plants which do not usually agree to accept California together, some of them refusing even irrigated situations, emphasizes a distinctness in the region which others can establish as they choose, and there are many ways to do it. To us, however, this beautiful little meadow lying in the sun beside the everlasting murmur of the Sacramento, which bathes its feet, proclaims the region so clearly sui generis that we do not care to listen to other arguments, nor to invite our readers to do so.

True and False Citrons.

And this brings us to suggest to our young friends who are studying agriculture in the California schools, and some, also young, who are teaching them, that one of the most comforting and satisfactory things in the world is to try to understand the language of plants. In our own school days they had what they called the "language of flowers," which young lady teachers taught to young girls with many a blush and many a "tee-hee" involved in the operation. It used to be a very nice study, especially as rehearsed on homeward paths through the woodlands—but we are not now thinking of that language. We do refer to what a plant can tell you of climatic and soil conditions wherever you find it. And of course to know what you can believe of plant language you have to know the plant itself—just as you do a man when he is saying something remarkable. Some plants are so easy that you can hardly believe anything they seem to say; others are so unyielding in their judgment that you can listen to their speech without a question. For example, we believe more about what Timothy tells us of that Shasta meadow than what all the others say put together, because we know that Timothy will not take ordinary California conditions, as most of the others will if they have water enough. Therefore when we see Timothy in California we say to him: "Hello, Tim: this is different." And he answers: "You bet." And we take Tim's head off by pulling his chaff between our fingers just as we did when a boy in New York meadows. But we did not intend to let Timothy mislead us into this homily, because we were really thinking of something else and something which ought to bring a blush of shame to a Californian—shame for not having decent knowledge of plants. These goings on were in an appraisers court in San Francisco: A Chinese importer received a consignment of Chinese dried preserves and was obliged to pay 4 cents per pound duty on the thin slices of sweet stuff, which the appraiser's office declared to be citron. The importer paid under

protest and appealed on the ground that the sweets were not citron. Several Chinese and Japanese experts on the stand testified for the importer that the stuff was sliced from a yam root and dried in sugar. A customs examiner testified that he believed the preserve to be citron, because it looked like citron and tasted like citron. Witnesses for the importer said it was known as yuen pin, and yuen pin didn't mean citron. The judge asked whether citron was not a small melon, and he was informed that it was. The case was taken under advisement. Here we have a customs examiner and a judge claiming in the face of the world that a citron is a small melon, and doing it right in California—the greatest citrus fruit country of the world. Of course, we know that in the East, where they cannot grow citrus trees, they do have a poor relation of the watermelon, the rind of which they preserve with sugar and call citron preserve. But a Californian, even a judge or an examiner, ought to know that the citron is a fruit something like a lemon and grown on a tree. It looks as though the poor Chinaman would get soaked because of the ignorance of Californians. So we say: learn about plants in the schools.

The Best Citrus Fruits for Long Shipment.

We have always felt justified in contending that the fruits grown under arid, semitropical conditions surpassed in shipping quality the same fruits grown in the tropics or in humid semitropical conditions. The positive demonstration is found in the fact that California-grown citrus fruits go farther and sell at the end of the longer shipment for higher prices than other citrus fruits wherever produced. Florida has never had a fair chance at long-distance shipments, for the great freeze of 1905 cut her production to pieces just as transatlantic sale was under trial, and now is disposed to try again, if we mistake not. We have no idea, however, that the Florida orange will reach Covent Garden so well as the Cailfornia fruit does, even after 3000 miles by rail to the starting point across the Atlantic. The arid semitropical citrus fruit is different in its very constitution, and we believe that this is a case in which blood will tell. But wo do not desire to prejudge that question: the answer will come in time. Another experiment shipment just made from Brazil to New York has, as reported, gone against the Brazilian fruit: It was of 100 boxes of navel oranges which reached New York June 7 and sold at auction for $1 per box. The telegraphed account says the shipment was an experiment, fostered by merchants in Brazil with a view to opening a market in the United States for their products: "The oranges, when shown in the auction rooms, were in fair condition, considering the time in transit, nearly fourteen days, and in close storage in the hold of the vessel. The fruit itself lacked the rich taste of the California navel. It was sold almost entirely to East Side peddlers. Among fruit men the opinion is that the experimental shipment proved a flat failure." We are not at all sure that this fruit had a fair chance, so the result may not be conclusive, and yet it is only what might be expected of fruit grown under tropical conditions. The tropical orange nowhere compares at all in shipment with the semitropical, and the traffic in it has no world value to speak of. The south European citrus fruits are, of course, semitropical, and our own are in the same class, except that we have the advantages of more arid conditions. Thus Brazil starts under a serious handicap. We secured her best orange, the navel, but it has become an entirely different fruit, from a commercial point of view, as grown under our conditions. It will be interesting to have further trial to justify these conclusions or to condemn them.

Grapes From Brazil Also Fail.

It may be with grapes as with oranges for long shipment. The grapes of Spain which set the pace for the world are grown in an arid semitropical country, of course, and California is fighting Spain with the same sort of a world-beating product. Brazil tried to get into this game also, and this is the New York report of it: "In the same consignment with the oranges from Brazil there were 120 packages of grapes resembling in appearance the California Tokay. This suffered severely while in transit, and the entire lot was seized and condemned as unfit for food by the Health Department. An examination of the grapes showed that they were too watery for transportation that distance." Of course, our Brazilian friends may not have packed the fruit to carry any distance. All that will come out in the future, but we really believe they are not in our class.

University Extension in Agriculture.

Of course, the College of Agriculture is expecting much from the schools in the extension of its own efforts to disseminate more exact and useful knowledge about plants and other agricultural things. It is also doing much to promote the demand, and, as far as possible, to satisfy it. The last legislature believed so thoroughly in the work that it increased the funds available for it during the next two years. A few figures in this line as furnished by Prof. W. T. Clarke, who has charge of the work, are interesting: The average attendance per session at institutes for 1910-11 was 127, as against 98 in the previous year. The attendance on the demonstration trains for 1910-11 was 78,224, for 1909-10 it was 73,663; at picnics and farmers' week, 6800, as against 6000 for the previous year, and the number of schools in touch with teachers and pupils, 3410, as against 2400, being an increase of 42 per cent. The recorded total of individuals actually in touch with the College of Agriculture of the University through the work of university extension in agriculture is 122,472 for this year, as against 111,171 for the previous year, indicating an increase of 10 per cent.

Queries and Replies.

A Summer Forage Crop.

To the Editor: I have 20 acres in the interior of southern California which at present, if not already cut, is in oats. I would be glad to know just what would be the best crop to put on the land after the oat crop is taken off to furnish hay for horses during the coming winter. I had thought millet would be good. I have water for irrigation. If you would advise me as to the best crop and the best way to put it in I would be obliged.—Owner, Spokane.

You could get most out of the land you mention during the hot season by growing sorghum like Kafir corn, Egyptian corn or milo maize, cutting for hay before the plant gets too far advanced. If your land can be flooded and takes water well, so that you can wet it deeply before plowing, the sorghum seed can be broadcast and the crop cut with the mover while the stalks are not more than half an inch in diameter. This makes a very good coarse hay. If you have not water enough and the land does not lie right for flooding, you can grow the sorghum in drills and irrigate by the furrow method, being careful, however, not to let the crop go too far if you desire to feed it as hay. Under the heat and drouth of mid-summer there is no annual forage plan which yields so much from the water available as these sorghums.

Cowpeas in the San Joaquin.

To the Editor: Would like some information regarding the sowing and cultivation of the cowpea. How late in the season will it be profitable to plant? What is the best manner of planting? What quantity of seed per acre? Are there several varieties? If so, which one is best adapted to this locality to be planted on ground now occupied by oats? The land can be irrigated until about August 10. Will it be advisable to plow up a poor stand of alfalfa about July 1 and plant to cowpeas?—Easterner, Modesto.

You can plant cowpeas all summer on land which is moist enough by natural moisture or irrigation to promote growth. What you will get by late planting depends upon moisture and the date at which an early fall frost may occur in your locality. If your alfalfa stand is bad enough to need re-sowing anyway, you may get a good catch crop of cowpeas by doing as your propose. If, however, you plow under much coarse stuff in putting in the peas the growth may be irregular. It can, of course, be improved by free irrigation. On clear land moderately retentive much more is being done in summer growth of cowpeas than expected, as it shown by the results at the University Farm at Davis. There are several good varieties. One of these is the Whippoorwill, and the seed of this variety is to be had from the seedsmen. Cowpeas can be sown in furrows three feet apart and cultivated, using about 40 pounds of seed to the acre, or they may be broadcasted, which takes about twice as much seed.

Sweet and Sour Clovers.

To the Editor: Several times I have heard of sweet clover seed being produced in your State, especially of the yellow annual blooming variety. Would thank you very much to advise me something of this clover, its habits, use and culture. Would like to know where the seed can be procured. We have here the white blooming and yellow blooming biennial varieties. Have you these in your State also. Does sweet clover grow wild or only as a cultivated crop?—Enquirer, Kentucky.

Sweet clovers, both white and yellow, are considered undesirable weeds in this State, except perhaps by the bee-keepers. They are certainly pests in alfalfa fields and in grain fields. In the latter case the yellow sweet clover gives its ill-flavor to the grain, with the yellow clover seed from the thresher, although such seed is perfectly removed by the cleaner before grinding. We do not know of anyone who is growing these seeds for sale. There would probably be a large quantity available at the warehouses in the infested districts where wheat is cleaned, but then it would be in connection with many other kinds of seeds.

Patience Required.

To the Editor: Some years ago I wrote to you for advice about getting rid of snails, and your advice was gilt-edged, as I followed it up and got rid of the snails, so I thought I would trouble you for some more. I set out several walnut trees in 1906, being French walnut grafted on the black roots. The trees bear nicely, but most of the nuts fall off when they get about the size of a Bayo bean. The soil is sediment beside the Sacramento river. Can you tell me the cause and cure for that?—Orchardist, Freeport.

It is difficult to tell just why your walnuts do not set without a chance to see the tree and the product which is cast off. The probability is that the trees are growing too rapidly in your deep moist soil and that they will carry fruit when they overcome the exuberance of youth which they are now enjoying.

A Great Magnesia-Lime Mix-Up.

[We conduct this journal upon the profound governmental philosophy announced by those distinguished publicists, the late Messrs. Gilbert and Sullivan, in their great work on national law and policy entitled "The Mikado." In this work the potentate of the title rôle declares: "My object so sublime, I shall achieve in time: to make the punishment meet the crime." In pursuit of this principle, we have below Dr. Snowden's defense of his position in the magnesia-lime phase of citrus chlorosis which was attacked by Prof. Lipman in our issue of May 27, and Prof. Lipman's reply thereto. We expect that our strenuous effort to allow our readers to look upon both sides of the shield at once may earn us freedom from taking any more medicine in this line for awhile.—EDITOR.]

To the Editor: Reviewing Professor Lipman's article in your issue of May 27, discussing the causes of chlorosis, etc., the writer entertains the highest regard for the professor's opinions in general; yet he cannot afford to neglect certain facts which speak for themselves.

Ratio of Magnesia to Lime.—Accepting the results and conclusions of Oscar Loew and other investigators of the subject, it is conceded that the permissible ratio varies within wide limits for any particular plant, and that it also varies for different plants. While oats and rice are favored by 1 to 1, buckwheat requires 3 of lime to 1 of magnesia as the optimum, as determined by Japanese investigators.

I have not tried to fix the most favorable ratio for any plant, although there is much evidence to show that available lime must not drop below two parts to one of magnesia in the soil of the orange orchard if chlorosis is to be prevented.

This minimum ratio was not adopted from the conclusions of any other investigator, since, so far as I know, no one has ever heretofore studied the needs of the orange in this connection; but it is the result of fully one hundred observations made in the field and correlated with the analytical indications of the corresponding soil samples. The territory covered in this work is not confined to the Covina district, as Professor Lipman supposed, but extends from Porterville to Santa Ana.

To show how positive the evidence has been in some instances: An orange grower submitted twelve samples of soil for magnesia and lime determination, saying that his orchard was not suffering excepting in one location, with "variegated leaves". With no other knowledge of the case the writer reported, upon the analytical indications alone, that number 8 should be the chlorotic location. The grower replied: "I will say that the most pronounced case of 'variegated leaves' occurs at number 8, where you found 0.38% magnesia and 0.53% lime, thus confirming your theories".

Methods of Making Solution.—My method requires boiling—not simply digesting—since it is necessary to eliminate the carbonic acid, and also to dissolve enough iron to engage all the phosphoric acid dissolved.

Prof. Lipman's results:

Sample No. 1—

Methods of dissolving:	Findings: Magnesia.	Lime.	Ratio.
Snowden	0.42	0.51	1-1.21
Official	0.93	1.19	1-1.28
Hilgard	1.23	1.82	1-1.48
Sample No. 2—			
Snowden	1.02	0.64	1-0.63
Hilgard	1.68	1.82	1-1.08

In both these orchards the trees are suffering with chlorosis; in both the lime is below the relative limit of safety fixed by me, by all the methods used. Thus Prof. Lipman's findings actually sustain my conclusion. Now, to make his endorsement complete, I suggest that he take samples of orchard soils where the orange trees are thrifty and show not a trace of mottled leaf. I predict he will find in these samples at least twice as much lime as magnesia, by my method.

The professor points out that not the total lime, but the form of the lime, is very important; and yet he favors a method that makes no distinction between the available and the unavailable, as against one that does.

Lyon and Fippin, writing on this subject, say: "The exact limits of the ratio of magnesium to calcium beyond which the former is a toxic depends upon the combinations and solubilities of the two, and also upon the crop grown." ("Soils", page 350.)

Doctor Hilgard recognizes the principle of the greater activity of the soil materials soluble in weak acids, as evidenced by his practical endorsement of Dyer's 1% citric acid solvent for some of the plant foods in the soil. ("Soils", page 339.)

Dr. H. W. Wiley says: "Particles of lime-minerals in soils are corroded only superficially by the rootlets of plants, and any process which would attack only the superfices of the lime particles would thus more nearly represent the activity of the solvent forces of plant growth." (Agricultural Analysis, Vol. I, page 440.)

A Matter of Magnesia?—Admittedly because the ratio found by the Hilgard method is very much like that first recommended by Loew as the approximate ratio necessary between the two for plants in general, Prof. Lipman concludes that there is no justification for my conclusion, notwithstanding that it is based on much practical as well as theoretical evidence.

If we ignore the availability of the soil elements it is proper to assume that all the lime may be combined as silicate and all the magnesia as carbonate. Dr. C. G. Hopkins found in his experiments that with 0.57% magnesia thus combined the plants were seriously injured. With 0.762% they were usually so nearly killed as to produce no grain. While with 0.923% they were practically all killed. ("Soil Fertility and Permanent Agriculture", page 170.) Now, in such a case, where would the orange tree "get off" with its 1.23 or 1.68% of magnesia without the available antidote my method alone shows to be present?

Purpose in Using Lime.—On acid soils I always advise the carbonate; and on alkaline, the sulphate provided the magnesia-lime ratio demands any at all.

I advise no one to use lime in any form until a chemical analysis shows that it is needed. If one does not wish to incur this expense, he should consult his official advisers.

It is fortunate for the growers that there is one enterprising grower who was willing to use 50 tons of gypsum per acre, and I anticipate no loss to him through damage to his trees from this source. In '89 I was engaged to examine and report on a gypsum deposit in Citrus county, Florida, and found a number of orange trees growing and thriving on this deposit of low-grade gypsum; and this orchard maintained its standing as valuable orange grove property until its career was closed by the freeze of '95.

Fifty tons of 92% gypsum per acre will add 0.86% lime to one foot depth or 0.29% to three feet depth of the soil. This does not look so dangerous.

Neither do I, for technical reasons, share with the professor the fear that the reserve supply of potash will be made available all at once.

Causes of Chlorosis.—A number of causes of chlorosis are recognized; among them—on the authority of Raumer—a lack of magnesia (Bull. 18, Division of Vegetable Phys. & Path.). Nevertheless, it is likely that upon impartial investigation Prof. Lipman will find that relative excess of magnesia is by far the most potent and widespread one in southern California.

I have seen several cases where chlorosis is clearly caused by too much lime, and its appearance in such cases is quite different from that due to too large an excess of magnesia. The rationale of this difference is simple enough. The trees in the limy soil are always planted at the time of maximum content of lime and begin to suffer as soon as development begins, the change of color rapidly becoming acute. But those planted in the normal soil are subjected gradually to the declining ratio of lime through its gradual loss. Dr. Hilgard found that lime is the most abundantly leached of the minerals in the soil ("Soils", page 24), and it was found at Rothamsted in England that this loss of lime amounted to as much as 785 lbs. per acre per year as an average for forty years, in some instances. The mottling of the orange leaf, of course, increases proportionately.

This matter, however, will in the next year or so be finally settled by the growers themselves, regardless of my views or anyone else's, through the response the trees will make to the applications of lime already made, if large enough. In this sense, if it be error "it will come to naught; but if it be true, ye cannot overthrow it."

R. R. SNOWDEN.

Los Angeles, June 6.

REPLY BY PROFESSOR LIPMAN.

To the Editor: I have Dr. Snowden's letter replying to my letter on the subject of the present status of chlorosis, and I beg to answer it as follows:

As to the Ratio of Magnesia to Lime.—Dr. Snowden seems to have fixed, from the evidence that he claims to have at hand, the ratio of two of lime to one of magnesia as the optimum ratio in soils for the orange tree. Just what this evidence may be, upon which this ratio was based, I do not know, but the following data gleaned from the extensive investigations of Drs. Hilgard and Loughridge at Porterville, on the chlorotic trees in the orange groves there, certainly do not by any means support Dr. Snowden's claim. I give below a column of ratios of magnesia to lime which were found in soils growing good trees, and another column showing the ratios of magnesia to lime in soils showing badly mottled leaves on the trees, or advanced stages of chlorosis:

Good Trees. Magnesia.	Lime.	Chlorotic Trees. Magnesia.	Lime.
1	0.9	1	1.7
1	1.4	1	1.7
1	1.6	1	1.8
1	1.7	1	1.9
1	1.8	1	3.5
1	2.2	1	3.5
1	3.0	1	3.7
		1	4.0
		1	4.0

One glance at these two columns of ratios makes it quite clear that certainly in the case of these trees, the chlorotic condition is entirely independent of the lime-magnesia ratio. As a matter of fact, the very worst tree was found in soil which showed a ratio of magnesia to lime of 1 to 1.7, which is very close to that which Dr. Snowden has arbitrarily taken as the necessary ratio. Moreover, the figures above given show a range of variation which is even far beyond that noted by Loew and other investigators in studying the relation of the lime-magnesia ratio to plants. These figures also, I believe, are in themselves so striking that no additional argument is necessary to justify our relegation of the lime-magnesia ratio as a factor in chlorosis to the background. I did not take occasion to use these figures in my first letter to you because of the fact that Dr. Loughridge exhibited them on a chart at Covina, when the demonstration train last stopped there, and, at an evening meeting at which Dr. Snowden was present, explained the results of his investigations at Porterville, which, in the light of the most recent developments, confirmed him in the belief that neither the excess of lime nor magnesia were responsible for chlorosis there.

Dr. Snowden's Observations.—I am perfectly willing to accept the statements of Dr. Snowden to the effect that he has reached his conclusion on the basis of more than one hundred observations in the field with which were correlated the analytical results of the soils involved, but I can not see how any number of observations can be

of value when they do not take all the possible factors which may be concerned into consideration, and that has manifestly been done in this case. For example, the case of the twelve samples of soil, which Dr. Snowden states in his letter he examined for lime and magnesia and in which he at once discovered the one on which the chlorosis was most marked, is a case in point. It may just as well have been an acid condition very much more marked in the case of that soil, than in any of the others, which was responsible for mal-nutrition of the tree. It may have been poor drainage conditions or the lack of water. It may have been an excess of fertilizer or not enough of certain of the plant foods. Indeed, it may have been any one of many other causes connected with fungous diseases, either in the soil or above, an abnormal bacterial development in the soil which could have contributed to the diseased condition of the tree and manifested in its chlorotic condition. In the same case just cited, Dr. Snowden found a ratio of magnesia to lime which was represented by 0.38% magnesia to 0.53% of lime, which he designated as unfavorable, when as a matter of fact Dr. Loughridge has found equally good trees at Porterville, where the ratio of magnesia to lime was 1 to 0.9 on one hand and 1 to 3.0 on the other hand, and again, very bad trees in soil showing a ratio of magnesia to lime of 1 to 1.7 in one case and of 1 to 4.0 in another, as indicated in the table above given.

The Matter of Methods.—As to the method of making the solution, Dr. Snowden has evidently misunderstood my term "digestion" as I used it in my first letter to you. It really consisted of boiling for half a minute, just as Dr. Snowden told me he did in making his soil extract, so that he cannot take issue with me on my results as obtained by this method. I cannot see, indeed, how Dr. Snowden can take my results as an endorsement of his, nor how in any way they can be said to sustain his conclusion, because I fail to see how a ratio of 1 to 0.63 is sustained by one which is 1 to 1.08, or how another which is 1 to 1.21 is sustained by one which is 1 to 1.48. Dr. Snowden claims that my results sustain his conclusion, because they show a ratio of magnesia to lime which is not that adopted by him as the optimum, or even the minimum, but it is obvious that any arbitrary ratio could be adopted by anybody as the minimum or optimum without experimental evidence and yet would not necessarily mean that any soil which did not show that ratio would have to be improved by the application of lime. Dr. Snowden further states that my endorsement of his conclusion would be complete if I examined the soil from a thrifty orange grove, which does not show the mottled leaf, by his method, for I would be sure to find twice as much life as magnesia there, but I cannot see why anyone has a right to attribute the thrifty condition of the trees in such a grove to what has arbitrarily been claimed to be a proper lime-magnesia ratio. Why is not that thrifty condition rather to be attributed to good water conditions, good fertilizer conditions, proper tillage, naturally vigorous trees, optimum condition of bacterial development, careful green-manuring, a good alkaline reaction, and a dozen other causes and more, which are usually responsible for good, thrifty trees and profitable orchards?

Forms of Lime.—As Dr. Snowden states, I have pointed out as a very important factor the form of the lime which is found in soil, and I used the word "form" advisedly, because I feared that the phrase "form of combination" would not be as well understood by the large mass of my readers as the word "form". In this connection, it appears that Dr. Snowden has entirely mistaken my meaning, for a combination of lime which will react favorably by virtue of its power to transmit to the soil an alkaline reaction does so regardless of its availability or unavailability. The statement is not valid that Dr. Snowden's method of obtaining the soil extract is one that gives the available forms of the lime and magnesia. It must be remembered that the term "available" is a very elastic one in the parlance of the soil chemist. In fact, it is only a relative term which has been adopted on the basis of a different standard in nearly every case where it was used, just as a matter of convenience. There is very little justification for believing that a half-minute digestion with hydrochloric acid (strength 1:5) will show the available material any more than a digestion of a half an hour or an hour with the same material will show it, because of the fact that no one has ever ascertained, so far as I am aware, just how rapidly plant foods are made available through the natural agencies at work in that direction in the soil.

A Review of Authorities.—Dr. Snowden quotes from Lyon & Fippin, who in turn quote from Loew, whose most recent work shows him to be less confident than ever on the matter of establishing ratios for different plants. Furthermore, while there can be no doubt that the solubility of lime and magnesia compounds are important considerations in their reactions with other materials in the soil, Loew did not find it necessary to use anything but strong acid digestion when he determined the relations of these two substances to each other in the soil. It is quite true that Dr. Hilgard recognizes the greater activity of the soil materials soluble in weak acid, as evidenced by his endorsement of Dyer's method of soil extraction, but endorsing a method which shows "important available plant foods" because it comes nearest to the kind of solvents which are present in the soil, so as to indicate what we need in the way of fertilizers, does not by many means mean an endorsement of such a method to show the relations to one another of other soil constituents, which are only of minor importance as plant foods, but of prime importance in other directions.

The Significance of Ratio.—As regards the ratio of lime to magnesia, which I found by the Hilgard method and which I claim did not justify Dr. Snowden in drawing the conclusion that he did, I must say again that it is not merely sufficient to have a great deal of "practical and theoretical evidence" in establishing the truth of a theory, but it must be supported by all the evidence that can possibly be obtained before scientific men can adopt it. My contention is that we have not so far obtained sufficient evidence in the field or in the laboratory to lay down any rule for the lime-magnesia ratio, which should obtain in various soils for various crops. I have not advocated ignoring the availability of the soil elements at all, but even if such a thing were advocated, it would not be at all proper, as Dr. Snowden thinks, to assume that the lime may be combined as a silicate and all the magnesia as a carbonate. It would be more proper to assume that if the lime existed as silicate, the magnesia existed as a silicate, but, moreover, as Dr. Hilgard has shown, these silicates are changed to the carbonate form under the influence of the carbonic acid in the soil. In fact, the quotation given from Dr. Hopkins' experiments by Dr. Snowden are the very best evidence against his contention with reference to the soluble magnesia. In the work quoted, Dr. Hopkins found that enormous applications of magnesium carbonate, so far from being poisonous to plants, actually increased very materially the yields of grain, and only applications of amounts, such as never would be used in farm practice, proved to be poisonous. Moreover, the same experiments showed that where gypsum was added to neutralize the effects of the excess of magnesia, no effect was observed until it was added to the pots where an application of 1.2% of magnesium carbonate was made, and there it had only slight antagonistic effects. In fact, I can do nothing better in reference to this question and Dr. Hopkins' experiments, than to quote his own words from page 172 of his "Soil Fertility and Permanent Agriculture": "Loew's ratio finds little support from these data."

I cannot agree with Dr. Snowden that it is fortunate that one enterprising grower has applied fifty tons of gypsum to the acre, because I believe that large applications of gypsum are as wasteful as they are unjustified in such cases. I do not know what Dr. Snowden's "technical reasons" are for the belief that the reserve supply of potash will not be made available through the gypsum applications. This is, indeed, not a matter of anyone's opinion at all. I merely stated it as one of the best established facts in the science of soil fertility, that potash is rapidly set free by applications of lime or other bases to the soil, and anybody can easily assure himself of that point by a simple laboratory experiment.

Causes of Chlorosis.—As to the causes of chlorosis, I have already pointed out in my first letter to you, several possible ones, all of which may under different conditions be the real cause of that manifestation in our citrus trees. Moreover, I do not believe "that the relative excess of magnesia is by far the most potent and widespread cause in southern California for chlorosis", because there is no experimental evidence to prove it. "Impartial investigations" are indeed the only ones that can be made and should be made in this, as in every other problem in scientific work. We are, fortunately, in a position where only impartial investigations can be possible, and my deductions and conclusions with reference to this matter are made solely on the basis of the facts which we have at hand, and none other, and by a careful expert examination of these facts, I cannot see how anyone can come to any other conclusions. Other men have believed in the past that chlorosis may be caused by too much lime. For example, that was believed to be the cause of chlorosis in the Porterville district by Drs. Hilgard and Loughridge when they first started their investigations there, and in fact for some time afterward, but recently developments there, including the figures which I have above given, are ample evidence that the excess of lime has nothing whatever to do with the disease, and therefore has been rejected by the investigators named as a possible cause of it. Dr. Snowden claims to have found cases where chlorosis is "clearly caused by too much lime". What evidence has he to make him believe that? This is not a question which can be settled by superficial observation. Finally, Dr. Snowden says that this matter will be settled, in any event, during the next year or so by the growers themselves through their lime applications to the groves. I cannot admit anything of the kind for even a moment, for I have already pointed out, in my previous communication, that an application of lime may improve conditions with respect to chlorosis, where it is simply neutralizing the acidity found in soils and where the consideration of the lime-magnesia ratio does not at all enter in. In the case of gypsum, on the heavy soils, it may improve the physical condition so far as to make for better drainage conditions and better bacteriological conditions, may set free a larger supply of potash, all of which may be responsible for increased production and more favorable appearance of the trees, but yet be entirely independent of anything that concerns the lime-magnesia ratio.

Not a Controversy.—I do not like to put this in the form of a controversy; in fact, it is furthest from my intention to enter into any controversy on this matter, and I am only anxious to get before the interested public the facts which exist at the present time with reference to this important matter. I can see no justification in drawing conclusions from certain manifestations which we have in this State on the basis of investigations which cannot be looked upon as anything more than preliminary in their character, namely, those of Loew and his associates. I regret that, owing to the removal of our University Library from one building to another at the present time, there are not accessible to me the volumes of certain German publications in which the very recent work of several German investigators, among them Loew himself, which point clearly to the fact that it is very hard to establish a definite ratio for lime and magnesia in any soil for any crop, and that at best only within the very widest limits can we establish such a ratio. The reader can, however, find this information by referring to the latest numbers of the Journal für Landwirtschaft, Jahrbuch für Landwirtschaft, and Landwirtschaftliche Versuchsstationen.

I have tried to incorporate in this letter all the important phases of the question of chlorosis, which I did not speak of in my previous communication, so that no controversy will be necessary. I want these statements to be understood as an outline of the facts which obtain, or as one based on such facts, and not one which has anything to do with an unfounded theory of mine or anybody else's.

CHAS. B. LIPMAN.

Berkeley, June 9.

AGRICULTURAL REVIEW.

With the Fruit Men.

The Gold Banner Packing & Shipping Co. has been organized in Redlands, and has secured the packing-house of the Kingsbury Fruit Company.

About 200 tons of apricots will be shipped from Durham, Butte county, this year.

A fig crop equal to that of 1909 and 1908 is predicted in the San Joaquin valley this year.

An experimental shipment of navel oranges from Brazil to New York proved a failure, selling at only $1 per box.

An exceptionally heavy orange crop is looked for around Porterville.

Ripe Persian grapes and early watermelons have been shipped from Imperial valley. Several carloads of tomatoes are also going out, 50 carloads, or 40,000 crates, being expected from the largest planting of 80 acres.

Home-grown apples and tomatoes were put on the Fresno market this week.

A larger cherry crop than was originally estimated is being gathered in the San Bernardino orchards.

Shipping of valencia oranges from Lindsay has ended for the season, 157 cars having gone out.

A good deal of opposition is being met with in San Joaquin county on the proposition to formulate a scale of wages for packers and to enforce a standardization of fruit and grapes, and it is thought that no agreement will be made this year on these subjects.

Horticultural Commissioner Beers, of Santa Barbara, reports that the aphis-feeding parasite of walnuts which was freed last year is checking the aphis in encouraging style, and that prospects for a large crop of walnuts are good.

At a recent meeting of the Butte County Citrus Association it was shown that the growers of the Oroville, Thermalito, Palermo and Wyandotte sections averaged about $310 per acre from navel oranges, for the past season.

The Gridley (Butte county) cannery has made contracts for Tuscan and Phillips clings at $42 per ton and Lovells at $30.

Sutter county growers report that $50 per ton has been secured for choice cling peaches.

The assessment of land around Porterville, Tulare county, has been reduced $100 per acre and alfalfa land raised from $15 to $60 per acre to meet the difference.

Canneries around Fresno are said to be paying $40 per ton for clings and $35 for freestone peaches.

Apricots in the Santa Clara valley are bringing $70 per ton.

The Farmers' Union of Clovis, Fresno county, is considering the installation of a raisin-seeding machine, to cost about $6000.

Valencia oranges from the Drescher ranch near Oroville, are proving such a success that other ranchers are intending to make large plantings.

Almonds and alfalfa have been chosen by colonists from North Dakota as crops for their farms near Arbuckle, Colusa county, and some good-sized planting has already been made.

The largest single shipment of valencias from the Porterville district will be from the 100-acre orchard of Mrs. A. S. Benson, near Loma Vista. About 30 cars of fruit will be sent out from this orchard, netting about $1.25 per box.

J. R. Horton, of the Bureau of Entomology of the U. S. Department of Agriculture, is in Riverside making a thorough investigation of the thrips.

Arrangements have been made between the Santa Fe and the Pacific Navigation Co., operators of the steamers Harvard and Yale, by which freight traffic between the Orange and Riverside citrus centers and San Francisco will be accepted.

Considerable damage has been done to early apricot trees in Fresno county from shothole fungus, according to Horticultural Commissioner Schnell, due to insufficient spraying.

The Growers' Fruit Company of Southern California has opened a packing-house at Dinuba, Tulare county.

Under the leadership of Rev. E. S. Williams, 900 fruit trees are being set out by the Indians of Colusa county.

At the last meeting of the Santa Clara county farmers' union, the prune crop of the valley was estimated at from 73 to 76 million pounds, dried.

Campbell (Santa Clara county) prune growers have decided to hold their prunes until their goods are ready for shipment.

Deciduous Fruit Conditions.

The following gives number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, June 9, 1911, reported by the California Fruit Distributors:

Cherries—Forty cars. Cherry shipments show a marked increase. The early sections are now finishing on this variety and the later and larger varieties are just beginning in the San Jose section. Royal Anns and Bings have been of better average quality than the Tartarians. In the San Jose section all varieties are reported as unusually fine.

Apricots — Four cars. Considerable quantities of Royal apricots are now moving from the Winters and Vacaville sections. Pringles and Seedlings are nearly done.

Peaches—This variety of fruit continues in very light supply. A material increase may be expected in the next week or ten days.

Plums—Two or three of the early varieties of plums have made their appearance, but shipments will be of exceedingly small volume for the next week, after which time they will be in liberal supply and of several of the leading varieties, including Cherry Plums, Clymans, and possibly a few Climax.

Pears and grapes continue to look very promising. The crop of the former will be considerably better than was expected earlier in the season. From present appearances it is likely to equal that of last year. Barring unforeseen climatic conditions, the grape crop bids fair to be considerably larger than ever before.

Total shipment to June 13, 109¼ cars; total shipment to same date, 1910, 565 cars.

Agricultural Notes.

A large acreage in District No. 17, near Stockton, which was overflowed during the winter, has been planted to beans, water being removed too late for other crops.

The first carload of new potatoes sent out from Stockton brought $2.50 per sack to seller. About 40,000 acres are said to have been set out in the delta region.

The cool weather and rains during this spring and summer have caused the hay and grain crops, which promised to be almost a failure several months ago, to be almost as good as could be expected in normal years in most places. Where frosts were heavy some grain has not headed up well.

A larger acreage of beans than usual is being put out along the river in Sutter county.

John Cudahy and associates have obtained options on 200,000 acres in Impe-

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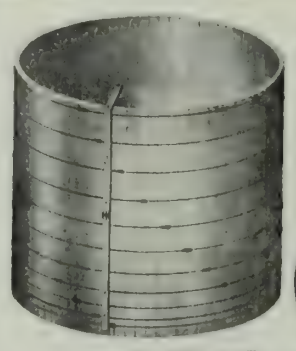
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R. F. WILSON, 447 W. MAIN STREET, STOCKTON, CAL.

rial valley which may be planted to cotton.

Notice has been sent by State Quarantine Officer J. W. Jeffrey warning agriculturists against the Utah alfalfa weevil, the Colorado potato beetle, and the Nevada gall worm of potatoes.

A large increase of planting of horse-beans has been made around Gilroy.

A considerable demand for currants, peas, and beans from San Leandro, Alameda county, is noted in the Los Angeles markets.

About 1500 crates of canteloupes are leaving Calexico a day, mostly toward the East.

Miscellaneous.

Several New Orleans dealers are importing a heavy shipment of onions from Egypt.

The rice acreage in Butte county will be doubled this year, 500 acres being now planted.

A small shipment of early corn, bringing $1.10 per dozen, was recently sent from Coachella valley. Jesse B. Payne, of the valley, received $988.46 for Bermuda onions grown upon two acres on his ranch.

The grain crop around Porterville, which appeared very unpromising early in the season, will be up to the ten-year average and greater than in 1910, owing to good growing conditions. From Ducor 60,000 bags will be harvested.

Currant picking has begun in the fields of Alameda county. Owing to the difficulty of securing pickers a crew of Mohammedans has been put on in one 40-acre field.

About 150,000 sacks of red onions will be sent out from Stockton this season. The onions have been selling for more than $2 at the first of the season, and growers have been making a good profit. The growers are getting more than 200 sacks per acre at a cost of about $100.

The Patterson, Stanislaus county, irrigating company's plant is now running to irrigate about 7000 acres. When completed it will supply water for double that acreage. Pumping is done by electricity, and there is an equipment of four centrifugal pumps of 20,000 gallons capacity per minute, and five pumps of 6000 gallons capacity.

A. J. Doty, of Porterville, has succeeded in producing a seedless blackberry which is being distributed to his neighbors. The seedless tomato developed last year is also being produced extensively this season.

The Arizona thistle, which several years ago became established at Porterville, is the object of a campaign by the city council and horticultural commissioners.

T. E. Rice, of Livermore, has developed a new seed wheat, which he calls the Livermore Gem.

Contracts for hops in the Sacramento valley are being made at 20c. per pound. In Oregon and Sonoma county 25c. is the price asked. The valley crop will be good, but below the average in Sonoma and Mendocino counties.

The Etiwanda Grape Growers' Association has filed articles of incorporation with the Fresno county clerk. The Association will probably join the California Fruit Exchange.

A record of rain every month from July, 1910, to June, 1911, was recently established in San Bernardino. The rainfall for the season has been 16.30 inches.

An organization for marketing eggs has been formed by farmers near Ukiah in connection with the Farmers' Club of that place.

Two strangers are alleged to have been operating near Santa Rosa, getting farmers to sign promissory notes, under the pretence that they were crop reports.

According to the Kings County Beekeepers' Association, the honey crop for the year will be below average owing to cool weather. The Orange county association reports an average crop and has decided to ask 7 cents per pound for white honey.

County Bee Inspector R. B. Herron, of San Bernardino county, has discovered a shipment of bees infected with foul brood which were sent from the San Joaquin valley.

S. T. Starrett, of Coachella, has been appointed by the Department of Agriculture as advisory horticulturist in the Hawaiian Islands.

W. G. Hummel, head of the department of agriculture of the Fresno High School, has been appointed to a position in the department of agricultural education at the University of California.

A new Farmers' Union has been organized at Oak View, Santa Clara county.

The Corcoran Sugar Co. has been incorporated in Kings county and will take over the plant of the Pacific Sugar Co. An increased tonnage of beets will also be set out.

The Elkman-Stow Olive Co.'s plant at Oroville has been taken over by the Sanitarium Food Co. of San Francisco.

The Modesto cannery will open on apricots June 20.

Large shipments of sweet wine have recently been made to Japan, which it is claimed is opening up as a good market for this product.

The elm-tree scale has been doing considerable damage in Colusa county.

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An electric motor is the most reliable way of driving an irrigation pump. The power is ready day or night, the water can be easily controlled by the irrigator, and the cost is within reach of any land owner.

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Think About It

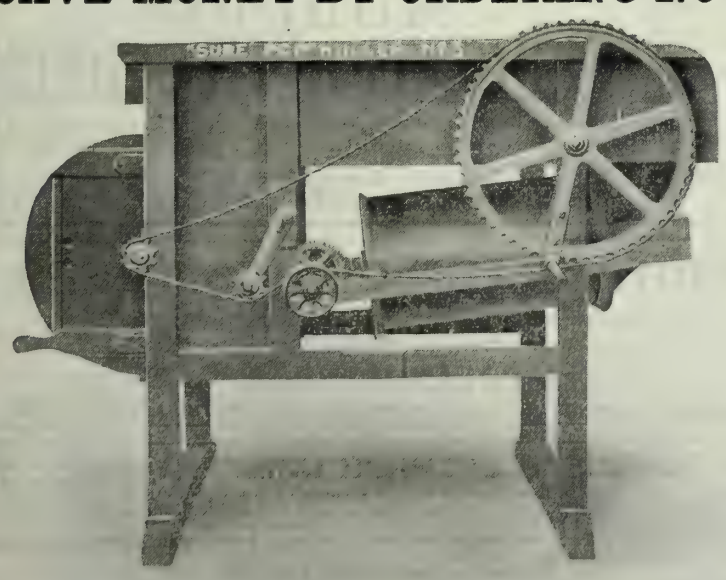
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Write for descriptive circular and price list.

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A Breeze Through the Prune Trees.

(*Continued From Page 469.*)

owing to the ravages of thrips, others to lack of proper cultivation and pruning. One has only to ride through the orchards on the steam or electric cars to note the latter condition as evidenced by the large amount of dead wood in the trees. We noticed in many places where a full crop had set on the trees, a considerable percentage of the fruits showed a lack of proper nourishment and were either dropping off or giving promise of doing so.

It is very difficult to determine in many cases what the factors have been that have made a crop in one place and failed to do so in another. Generally speaking, however, the best crops are found in the soils and locations where the trees blossomed earliest and in orchards where the thrips have been kept down by persistent and proper spraying, and where the trees have been properly cultivated and pruned. Good crops are most generally in the lower lands lying between Mountain View and Sunnyvale, Cupertino and Santa Clara. In the western side of the valley and the foothills, the crop is generally light, seldom exceeding 25 to 40% of the full crop.

Reverting to the wordy war between the packer and Citizen of the Orchard, it would seem to us that whether the crop is fifty million or seventy-five million pounds, there is little reason for even the most timid growers becoming frightened and selling at a low price. As we have stated earlier in the season, with the prune supply totally exhausted and with short crops of most all other deciduous fruits, not only in California (see our tabulated report in issue of June 3) but all over the country, there can be no question that prunes will be in strong demand at a good price. Practically all the growers we interviewed expressed their intention of holding for a from 5 to 6-cent basis.

Our friend, the Citizen of the Orchard, has our hearty sympathy and co-operation when he raps the "unreliable packer who seeks to bear the market". We are creditably informed that a number of dealers with sporting blood in their veins, sold a lot of prunes that they didn't have, in blossoming time when it looked like a bumper crop. These shortsighted dealers are now trying to cover and are depending on the timid grower to help them out. These speculators are a menace to the trade and ought to be put out of business. The growers can help bring this about by keeping informed as to conditions and refusing to be frightened into selling. It would also help if the banks were as prone to advance money to the grower on his crop as they are to loan it to the speculator. This would seem to be a reasonable policy in view of the fact that the grower produces most of the wealth the banks have to loan.

We desire to call the attention of the growers of the Santa Clara valley to the fact that, united, they are a very strong factor in the prune trade, and that a well-organized association would do much to improve the growers' chances of getting a fair price for his crop. It would help them to make a more effective fight against insect pests and would facilitate the standardizing of the product of their orchards. It would undoubtedly do away with such disputes between packer and grower as the one we have referred to above.

AN INTERESTING SPECIAL STUDY.

(By Mr. W. M. Herrold in San Jose Mercury.)

Correspondents of the PACIFIC RURAL PRESS from all over the State report the number of prune trees in each county, and give an estimate of the percentage of a crop from each county, from which I figure out the amount of the prune crop of the State for 1911 as follows:

	Trees.	Pct.	Pounds.
Alameda	154,600	50	1,932,500
Butte	84,405	95	2,004,918
Colusa	92,500	50	1,167,350
Contra Costa...	54,220	65	881,250
El Dorado	124,000	50	1,550,000
Fresno	83,000	75	1,556,250
Kern	4,100	75	35,875
Kings	6,860	50	102,900
Lake	29,622	30	222,165
Los Angeles ...	61,710	..	925,650
Mendocino	20,000	..	30,000
Monterey	3,350	90	75,375
Merced	1,525	..	20,875
Napa	91,180	75	1,709,625
Nevada	5,800	50	72,500
Orange	17,320	90	389,700
Placer	29,465	..	306,975
Riverside	22,140	50	276,750
Sacramento	46,000	80	920,000
San Benito	125,000	50	1,512,500
San Bernardino.	28,000	10	70,000
San Diego	3,240	..	48,600
San Joaquin ...	47,815	50	597,687
Santa Barbara .	1,250	96	30,000
Santa Clara....	5,257,900	45	58,151,375
Santa Cruz	99,100	..	1,486,500
Shasta	87,500	..	1,312,500
Sonoma	588,040	100	14,701,000
Solano	465,000	40	4,650,000
Stanislaus	7,190	100	179,750
Sutter	39,920	..	598,800
Tehama	115,700	60	1,735,500
Tulare	137,935	50	1,722,187
Ventura	19,000	65	308,750
Yolo	130,000	60	1,950,000
Yuba	5,055	60	75,825
Total	8,080,442		103,311,163

There being 8,080,442 prune trees in the State, divided into 200,000,000 pounds, THAT BEING THE LARGEST CROP OF PRUNES EVER RAISED IN THE STATE, will give an average of 25 lbs. of cured prunes per tree, figured on the percentages given by counties, will make for Santa Clara county (5,257,900 trees) 58,151,375 lbs. of dried prunes. The other counties of the State, having 2,822,542 trees, would make 45,159,788 lbs. of dried prunes, or a grand total for the State of 103,311,163 lbs. of cured prunes. If Uncle Sam can figure out the grain crop of the United States on the report of estimates approximately correct, why not the prune crop in the same way? In counties where no percentage is given I assume the crop to be 60 per cent.

W. M. HERROLD.

San Jose, June 5, 1911.

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Extra fine one-year stock—the best to be had. Be sure you are getting the genuine article. If you will send your orders in now, we are prepared to fill them, be they large or small; but order early, as the supply is limited.

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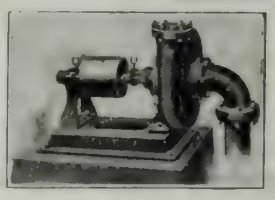
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How They Spread Water in Colorado.

Some of our newer subscribers who are beginning irrigated farming may get a hint or two from what is given in the Denver Field as an outline of Colorado methods:

How often to irrigate and how much water to apply must be decided by each individual in accordance with the character of the soil and the crop he wishes to produce. No one can irrigate by the clock. Water must be put on when the crops need it and taken off when the want is supplied. Enough water is better than too much. Two irrigations are usually sufficient for a crop of alfalfa or grass. Four or five are required for young orchards. Melons and beets should have no water for some time previous to maturity of the crop. Alfalfa, clover and timothy should have no water during the maturity of the seed if seed is desired.

Watch the Water.—Some foresight is required in using the water at command so that sections of the land may be irrigated consecutively for economy of both water and labor of applying it. Above all, watch your work. Do not start the water over a field and then go to town to spend the day. Each little stream requires attention.

Making Spouts.—If people would provide themselves with lath funnels for the head ditch it would save a whole lot of bother. A man can ordinarily set from forty or fifty spouts in a ditch bank in a day, but as many as eighty are sometimes set. They are made of wooden strips or laths one-half inch thick by two inches wide and three feet long. Four of these are nailed together, forming a square spout.

The strips cost $6 a thousand, or 0.6 of a cent each. It costs 1.1 cent to make each spout, thus costing 3.5 cents, and they will last for years. If a man sets fifty in a day they will cost in place 6.5 cents each. Placed four feet apart there will be 330 in a length of eighty rods, making the spout system cost $21.45 for each 80-rod line. With furrows eight rods long this will serve forty acres, making the cost about 54 cents per acre. When set they must be well puddled in. The quantity of water which is passed through them is regulated by a piece of lath or shingle placed vertically in the ditch against the end of each spout. The best work can be done by having the head ditches at short distances from each other, enabling the owner to save water and irrigate with greater ease and efficiency.

Don't Take Too Long a Run.—Only the other day an Arapahoe county farmer told us that he had made two serious mistakes when he began to improve a forty acre tract. He did not use a sufficient number of drop boxes in the head ditches and placed the ditches too far apart. He attempted at first to make one head ditch serve a length of eighty rods, but it was too far to run the water profitably in the irrigating furrows. Laterals are run down the slope from the spouts. The practice of irrigators varies much with respect to depth and distance apart. Some land wets up more easily and speedily than other soil, giving rise to the difference in furrowing. One point to be particularly noticed in irrigating by this method is to have the furrows carry as nearly full as possible without breaking over the sides.

Run the furrows as full as they will hold until the water gets half way across the field, then shut off the supply. The water already in the furrows is sufficient for the remainder of the field and there is no waste. For the best success with new seeding, make the furrows six inches deep, eight inches wide on top and four feet apart. Make them with a single shovel plow drawn by two horses. Keep the furrows straight by means of a side gauge which makes a mark parallel to the last furrow, which can be followed on the return passage. A man and team will furrow five acres a day, making the cost of furrowing 50 cents an acre.

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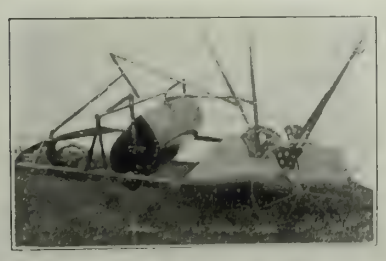
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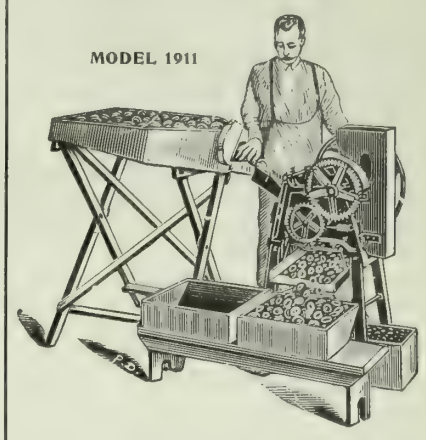
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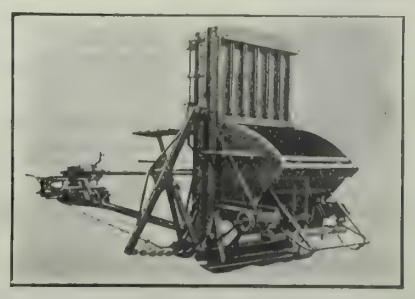
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TOMATOES DROPPING BLOSSOMS AND CRACKING FRUITS.

[These troubles are grievous to amateurs in California as elsewhere. They are less significant to commercial growers because they have largely learned to avoid them by keeping the plants growing regularly, neither receiving checks nor excessive spurts. In fact, these troubles are chiefly due to conditions causing irregularity in one or the other of these opposite directions. Professor H. W. Barre, of the South Carolina Experiment Station, recently gave the following account, which will be a timely hint for some of our newer subscribers.—EDITOR.]

SHEDDING OF BLOSSOMS.—Anything that brings about abnormal growth or hinders the normal functioning of the plant is apt to cause shedding. If tomatoes are planted in soil very rich in nitrogen or if by the application of too much nitrogenous fertilizer the plants are kept growing too rapidly, the fruit will not set. Rainy or moist weather during the blossoming period prevents the flowers from being fertilized and causing them to drop off. Hot and dry weather, especially when cultivation is neglected and a crust is allowed to form and the soil to become hard and dry, will cause the blossoms to drop before the fruit is set.

To prevent shedding cultivate the plants so as to retain as nearly uniform an amount of moisture in the soil as is possible and guard against too rapid growth and the formation of excessive foliage. Induce the plant to go more to fruit. This can be done by limiting the use of nitrogeneous fertilizers and by pruning on the excessive foliage. The lateral branches should be pruned off as soon as formed and the top of the plant pinched off as soon as the fifth cluster of fruit has set. Care should be exercised in this, however, as excessive pruning of plants which are growing in rich moist soil or which are highly fertilized disturbs the balance of growth. In such cases the roots would take in more water and soil salts than the leaves could use, and as a result the leaves would become curled or distorted and the plants would sicken.

CRACKING OF FRUIT.—Quite frequently large fissures or cracks occur in the fruit as it is approaching maturity. This seems to be due to certain conditions which affect the growth and maturity of the fruit. If the growth of the plant is checked for any reason, such as failure to cultivate or a period of dry hot weather, the growth of the outer portion of the fruit will be checked. If this is followed by a period of wet weather and rapid growth, the cells in the fruit fill with water and expand more rapidly than the epidermis can grow. This causes the epidermis and the underlying tissue to rupture. Where it is possible to maintain an uninterrupted growth during the fruiting season, this trouble can be avoided. It also seems to be true that some varieties crack worse than others.

LARGE CHEESE DAIRY.

One of the PACIFIC RURAL PRESS' force recently called at the Hubart & Carmichael Bros. Dairy, which is situated between Newman and Gustine. This is the largest dairy on the west side of the San Joaquin valley. They have a capacity for handling 400 cows, but at present have only 318. By the end of the year they expect to be running to their full capacity. They have their own cheese plant and are making 650 pounds per day, or over 19,000 pounds per month, which amount will be considerably increased when they work to their full capacity. They have four redwood silos, 18 feet in diameter by 32 feet high, each with a capacity of 250 tons. They use green feed only four months during the year. One silo furnishes feed for 300 cows for 40 days. They use green alfalfa and foxtail for silage. This dairy has been running less than two years, and the 20 men employed are required to adhere strictly to the rules of sanitation and cleanliness now being enforced in all modern dairies and cheese factories, which is becoming generally known and referred to as the "certified plan."

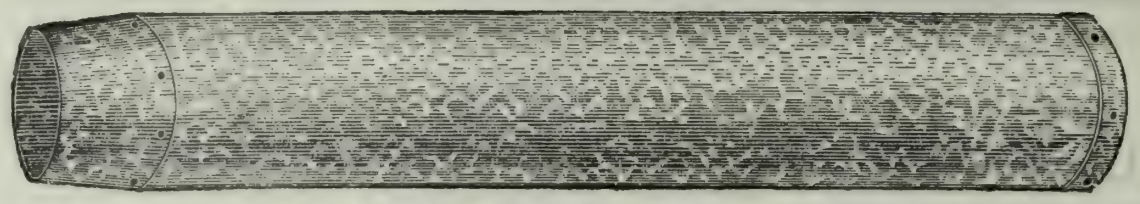
County Inspector T. W. Orme of San Bernardino county, in a report to the supervisors, states that coyotes have been responsible for a number of cases of rabies occurring in the county and requests that measures be taken to exterminate them. He also reports a slight outbreak of anthrax at Chino and black leg in San Bernardino valley.

TO KEEP FLIES OFF COWS.

In response to numerous inquiries for a cheap and effective substance to keep flies off horses and cows, S. Avery, the veterinarian and chemist of the Nebraska station, has prepared and tested a compound that gives excellent results. The formula is as follows: Neutral oil, 4 pints; oil of wood tar, 1 pint. Mix and shake well. Apply lightly with a flexible brush, or with a spray pump. Avoid excessive application, as a very light application is sufficient to protect the animal for some time, as, for instance, during a milking period or longer.

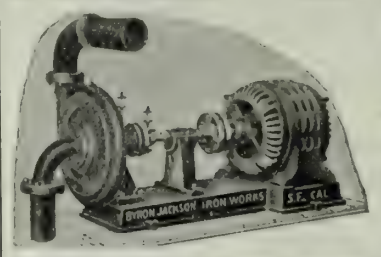
Work on the Amadee, Lassen county, irrigation project is now being completed.

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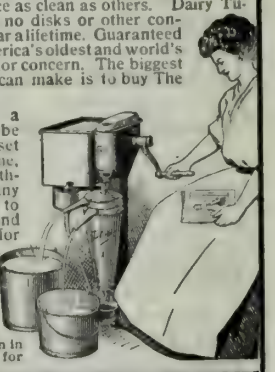
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What Is Butter-Fat?

To the Editor: I have been reading articles in the RURAL PRESS in which mention is made of the price of "butter-fat." Now I would like to know what "butter-fat" means. I have asked farmers around here this question and no one seems to know. I suppose all parties dealing with creameries understand what the standard of measure or weight of butter-fat is, but it is my guess that there are thousands of farmers whom, if they were asked this question, would not know. We, of course, know that butter is sold by the pound and cream by the pint, quart or gallon, but what is butter-fat sold by?

Angels Camp. J. F. M.

Butter-fat is the yellow substance which forms the larger part of butter. Besides this fat butter is composed of 16 per cent or less of water and small amounts of salt, and other substances of which milk is composed. From 80 to 85 per cent or so of ordinary butter is the fat itself. It is sold by weight.

The cream from which butter is made is taken to the creamery and weighed, not measured. A small sample is tested by the so-called Babcock test to determine the exact percentage of fat, and payment mode on this basis. For instance, if 100 pounds of cream is one-third butter-fat, the dairyman receives pay for 33⅓ pounds of this substance. If it is only one-quarter fat, he receives pay for 25 pounds. Ordinary cream varies within these limits, but may be much richer or thinner. Cream after the butter-fat is removed is much like skimmed milk, although it has less water in it.

The composition of milk is about as follows: water, 87%; fat, referred to in the above question, from 3 to 5%, more or less; sugar, 5%; casein, 2.6%; albumen, 0.7%, and ash, 0.7%. The more fat present the less water; the other substances are present in about the same amounts in all samples of milk.

Casein is the white part of the milk and forms the greater part of the curd. It is a close relative of the albumen, the same substance as is found in the white of an egg. Most of the albumen, however, remains in the whey, when the milk is curdled. The milk sugar, as its name indicates, is a kind of sugar. The ash is what would remain if the milk were evaporated down and burned. It is composed of lime, compounds of phosphorus, potash, etc. All of these constituents are found in both while milk, cream, butter, buttermilk, curd, whey, and other milk products.

The butter-fat resembles in chemical composition other animal and vegetable fats or oils. Its composition, as well as its amount, varies from different cows and in different breeds of cattle. It occurs in milk in small globules and cannot be removed entirely from it by skimming. More can be removed by the use of a separator than by raising in pans.

Jersey cows usually give richer milk than other breeds, and Holsteins the least percentage of fat, although the amount of milk is large. As a result of these variations in both breeds and individual cows all dairymen who wish to secure a large amount of fat usually weigh the milk of every cow at least once or twice a month and test to discover the percentage of fat in it. In every herd where this is not done animals can usually be found which are giving no more milk than the average, if as much, and very little butter-fat in it, while others may give only an average amount of milk, but produce much more fat on account of its richness.

The price paid for butter-fat is about the same as for butter, the creamery proprietor expecting to make enough from the excess butter over the amount of fat present, to pay for the expense of manufacture.

INTERESTING DEMONSTRTIONS IN DAIRY FEEDING.

One of the most up-to-date dairies in Napa county is that of W. L. Mitchel, situated on his ranch five miles from Napa City. The herd is composed of about 50 head of high-grade Jersey cows, 34 of which are now producing, though, as all will freshen this fall, the quantity is falling off from day to day. The herd is headed by the registered bull Index, bought when a calf from Mr. Taylor of Wisconsin. The object of this dairy is to produce butter-fat, hence the preference for Jersey blood, the owner holding that it is more profitable to sell butter-fat at Napa than to ship milk to San Francisco, which is the logical market for this section.

The milking and feeding barn, built to accommodate 50 cows, is provided with large cars running on light iron rails to carry hay, and smaller cars to carry ensilage from the silo which is at the rear of the barn. Corn ensilage and alfalfa form the principal crops of the ranch, as Mr. Mitchel is a thorough believer in the efficiency of corn ensilage and dry alfalfa hay for rich mild-producing feed, and cites the following figures to bear our his claims:

During November, 1910, the result of feeding 34 cows on ensilage and dry alfalfa hay was $408 worth of butter-fat, while in January, 1911, he fed 36 cows dry alfalfa hay and $168 worth of mill feed (having no corn ensilage) and the returns were only $373.30 worth of butter-fat, while the price received in each month was practically the same. The silo is one of the first built in Napa county and has a capacity of 110 tons, and now contains about 60 tons of first-cut alfalfa hay, which will be fed as soon as pasture gives out.

A manure-carrier operating on an overhead cable reaching all parts of the barn deposits the manure on the opposite side of a creek 200 feet from the barn. The separating room is some distance from the barn, has cement floor, water connection, and other necessary conveniences. Everything in the way of buildings are whitewashed once each year, and everything connected with the dairy is sanitary and inviting looking.

NO HOOF-NO HORSE

Especially is the dry season in this section very hard on hoofs. If you have a horse with a bad foot caused by tender, brittle, hard or contracted hoofs, split hoofs, quarter cracks, mud fever, scratches, corns, cracked heels or grease heels, send 16 cents postage and we will send you a 50c package of ESHELMAN'S WOOL FAT HOOF HEALER, and if satisfactory, send us the 50 cents. If not, write us to that effect, and you need pay nothing. We take all the risk, you just try it. Send for it today, or send for folder with many testimonials of big horsemen, vets and others.

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CHAS. G. LATHROP, Stanford University, Cal.

From above herd I offer for sale a few choice bull calves from such sires and grand sires as

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IMP. RAYMOND OF THE PREEL—11353

Winner of the first prize 1906, Island of Guernsey.

For further particulars write to above address. Inspection solicited.

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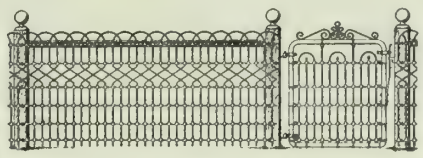
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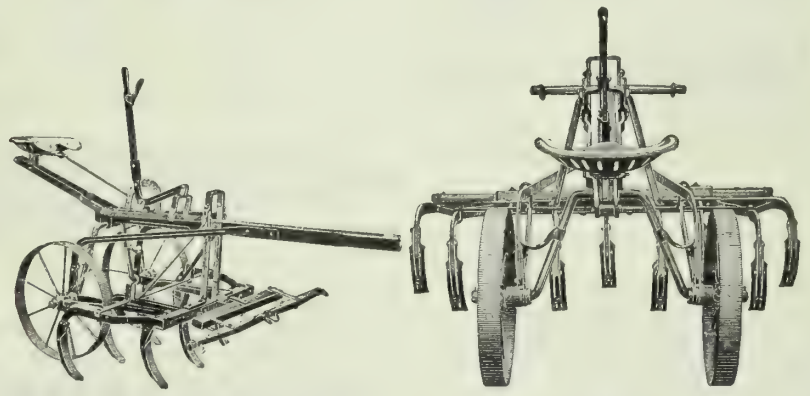


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Code.	Size.	Width.	Net.	Weight. Gross, Cased.	Measurement. Cu. Ft., Cased.
Sevenor	7 teeth	4 feet	283 lbs.	365 lbs.	8
Nineor	9 teeth	5 feet	308 lbs.	390 lbs.	8
	Pole		32 lbs.	32 lbs.	1

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MR. DEALER: We are receiving many inquiries for Benicia-Orrs; have you secured the agency in your vicinity?

A Great County Attack on Bovine Tuberculosis.

Tulare has set the pace for the agricultural counties of California in the advance against bovine tuberculosis. The announcement is embodied in the following report from Visalia, dated June 7:

The first concerted action to be taken in California looking to the extermination of tuberculosis in dairy cattle was taken today, when the supervisors appropriated $10,000 for the testing of every one of the 50,000 dairy stock in Tulare county.

Every cow found affected will be isolated from the herd, and the board will pass a strict ordinance prohibiting the sale of milk from any cow which has not been tested and found free from tubercular germs; also where the dairy is not up to a high standard of cleanliness. A heavy fine will be imposed for violations.

State Veterinarian Keane, who was present at the meeting today, will send a half dozen men from his office, and will have direct charge of the work. Federal and county inspectors will assist.

A Broadside.—This seems to be a broader attack than has been made hitherto, because it seems to cover all cows, whether they serve the towns with milk or not. The idea seems to be to have no milk go from tuberculous cows to butter or cheese factory or for any other food use.

In view of the action thus begun, possibly some reader who does not remember our earlier publications on the subject may like a review in the form of a catechism on tuberculosis which we draw from a circular just isused by Director Russell of the Wisconsin Experiment Station and Prof. Hastings of the same institution:

"On the Nature and Testing of Tuberculosis." Over sixty questions pertinent to the most practical survey of this disease are considered and answered in the best scientific light obtainable. Among them are the following:

What is tuberculosis?

A transmissible disease caused by a specific kind of bacteria. The organisms leave the body of the diseased animal in various ways and enter the body of a second healthy animal.

What animals have tuberculosis?

All warm blooded and some cold blooded animals. In the northern portion of this country it is the most important disease of cattle. Of the domestic animals, cattle, hogs and fowls are most often affected; sheep, horses, dogs and cats but rarely. Most of the wild animals in captivity die of tuberculosis.

Is one breed of animals more susceptible to tuberculosis than another?

Cattle of any breed, beef or dairy, acquire tuberculosis quickly and easily, when once brought in contact with diseased animals giving off tubercle bacilli. The reason why more dairy than beef cattle have been found to be effected is because of the much greater exchange, the longer period for which they are retained and the closer confinement to which they are subjected.

How is the disease introduced into a herd?

1. By the purchase of diseased animals.

2. By feeding mixed factory by-products, such as raw, creamery skim-milk and whey.

3. By direct contact with an affected animal.

What percentage of domestic animals have tuberculosis?

It varies widely in different countries and in different parts of the same country. From July, 1908, to July, 1910, over 90,000 animals, largely milk cows, were examined for tuberculosis in Wisconsin and about five per cent were found to be diseased.

What is the tuberculin test?

If a tuberculous cow has a small quantity of tuberculin introduced beneath the skin, a temporary fever will result, which can be detected by taking the temperature of the animal; a healthy animal shows no such fever.

Does the use of tuberculin injure animals?

Tuberculin has no ill effect whatever on healthy animals, and no harmful effect on tuberculous animals. It does not, in the amount used in testing, have any effect on the progress of the disease in the animal, nor can it in any way produce the disease. With many of our best herds it has been used regularly for 10 to 15 years with absolutely no injurious effects. The statements that the test causes abortion or other ailments are without foundation. The flow of milk is not changed to any appreciable extent, even in the case of tuburcular animals.

How can a diseased herd be freed from tuberculosis?

Test the whole herd. Remove all reacting animals. Re-test all suspicious animals in three months, and the entire herd again in one year and annually thereafter. Disinfect the stable.

How can a herd be kept free from tuberculosis?

Test annually, or at least every two years, and re-test all suspicious cases in three months. Test every animal introduced into the herd at the time of purchase, and again in three months. Use a farm separator or feed only skim-milk and whey that have been heated.

THE RED BALL BRAND

Tulol Hoof Paste

is sterling preparation, to be used in **Lameness** caused by Hard and Brittle Feet, Cracked Heels, Quarter Crack, Contraction and Corns.

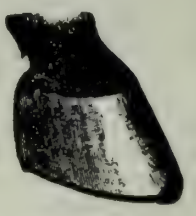
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In Single or Carload Lots

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Proteina is concentrated from the Soy Bean and contains 33⅓ more Protein. The U. S. Agricultural Dept. says: "A bushel of Soy beans is at least twice as valuable for feed as a bushel of corn." ¶ Poultry men find Proteina better than Beef Scraps for laying hens. Write for signed letters from Poultrymen and Dairymen.

Proteina SOY BEAN OIL MEAL manufactured by PACIFIC OIL MILLS SEATTLE

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Los Altos Stock Farm, established for breeding with a choice selection of pure-bred, imported, registered stallions and mares with pedigrees running into the best blood lines. All of the big draft type, first class in every way. Some of the stallions and mares reach a ton in weight.

Now ready for sale, a few selected, coming three-year-old and one coming four-year-old stallions. All registered. These colts are fine in conformation, size, bone, and disposition, and give great promise. They can be seen at the barn near the station at Los Altos.

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Boars, different ages. Sows, both open and bred. State Fair Prize Winners. Over 100 Spring Pigs to select from. Sired by large Boars and out of prolific Sows. Write your wants.

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Cheapest Food in the Market to-day. If your dealer doesn't carry it,

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Dairy Clean-Up in San Joaquin County.

After meeting with radical opposition from many quarters and receiving at first but little support from any one but its originators the dairy ordinance recently passed by the San Joaquin county supervisors has finally been given a hearty reception, and a general clean-up among many dairies has resulted.

Up to a short time ago the dairies of the county in which, according to the data obtained by the county assessor, were kept 14,000 cows were given no other supervision than that provided for under the State dairy law. Many of them were run under very insanitary conditions and included cows suffering from tuberculosis and diseases, as in the case in all districts where little supervision is given.

Owing to the small number of inspectors provided under the State law, and the difficulty of supervising their operation without further inspection it was found necessary to provide county supervision to supplement the work of the State dairy inspectors. This work was begun through the initiative of Dr. Wm. Friedberger, county health officer.

Dr. Friedberger was familiar with conditions in many of the dairies, and before taking other steps secured photographs of dairies which were run in insanitary ways. With 150 of these photographs ready he called upon supervisors for an ordinance which should require the same care of herds and milk that was demanded by the State law.

The board of supervisors were at first unwilling to act where the State law was already applied, but an oral description of some of the worst places, supplemented by a display of the photographs was enough to cause a realization of the demand for a better source of supply of milk.

Dairies were found in which cows in the last stages of tuberculosis were being milked, bringing in a small income, perhaps, to their owners, but contaminating the milk and spreading disease to healthy cows. Cesspools and hog wallows often drained into wells from which water for dairy purposes was secured, and cows covered with mud and manure were hardly washed. In one case the milk was separated in an open shed under which the ranch hogs had shade and shelter.

To remedy these conditions the ordinance adopted provided for nothing, with one exception, that was not required by the State law. Cleanliness and healthy cows were what were demanded; floors impervious to moisture, removal of manure and other animal discharges from yard and barn, a clean water supply, clean milk utensils, good food and a clean barn —these were the main requirements of the law.

Besides this, any herd which the health officer considered infected with tuberculosis was required to be given the tuberculin test and the animals suffering from the disease and removed from the healthy cows. This test is not demanded in every dairy, but only in those which can be seen to need the test.

For aid in enforcing the ordinance, and here was the ground for the most opposition, every dairyman was required to obtain a permit, without expense, however, to himself, from the health officer. This provision was inserted to enable the health officer to keep track of all dairies, so that none would be overlooked. Nothing in the ordinance required the dairymen who are not living up to it to go to any expense other than cleaning up, except perhaps to provide other quarters for hogs, and to see that dirt was kept from milk.

Through a misunderstanding of what was required in the ordinance radical opposition was expressed and many indignation meetings were called to protest against it. A reporter is said to have overheard one man remark to another that 'It is an outrage to charge a dairyman $20 a quarter for a permit to operate his dairy', and his paper came out with the statement that $80 was an excessive sum to charge a man for conducting a business like dairying.

Dr. Friedberger, who prepared the bill and was responsible for its passage, was called upon to explain it and defend it, if such an ordinance could be defended. At mass meetings he spoke to hostile audiences, who, however, when they found exactly what was required, generally endorsed the ordinance before adjourning.

"Many dairymen", said Dr. Friedberger, "were greatly opposed to the ordinance under any conditions, but when they realized that it would prevent a man who ran his dairy in a filthy condition from sending his milk to the same market with theirs and getting just as good a price, they decided that it was a good thing. When a person did speak against it, I could nearly always tell where his dairy was at fault, on account of the reasons he would put up in opposition to it.

"Opposition to the work of the county and State with health officer, inspector and veterinarian, I find, nearly always arises through a lack of understanding of what inspection and work means to the dairyman himself. In one herd for instance, where several of the cows were suffering from lumpy jaw the owner refused to permit the county veterinarian to see them. I called his attention to the fact that the cows would die if not treated, and communicate the disease to the healthy animals, which would die. He thought it over and then only wanted the veterinarian to see them, but offered to pay for the work which the county has done at its own expense.

"In a similiar way persons who once opposed the ordinance now see that it is to their advantage to have it enforced and there is now but little opposition to it. It was a hard fight to get the ordinance accepted throughout the county, but after the fight was on support was volunteered from many quarters, and practically every organization or meeting which heard the reasons for adopting these regulations, and knew of the injury done through the production of milk in filtny surroundings has given it hearty support, and now as the ordinance goes into effect it is meeting the approval and not opposition of those concerned."

Warranted to Give Satisfaction.

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A Safe, Speedy and Positive Cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

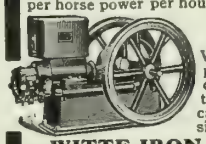
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Protein	46.00%
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JOHN LYNCH, breeder of Registered Short-horns; milk strain. High class stock. First-class dairy breeding Smooth cattle. Best pedigree. P. O. Box 321, Petaluma, Cal.

PURE-BRED SHORT-HORNS, Poland-China hogs, and Shropshire sheep. Roselawn Stock Farm, Woodland, Cal.

STEVENSON & WAGNER, Newman, Cal.—Holstein-Fresian bulls, heifers for sale.

HENRY WHEATLEY, Napa, Cal.—Breeder and importer of Shires and Percherons.

THOROUGHBRED SHROPSHIRE SHEEP, both sexes. S. H. Fountain, importer and breeder, Dixon, Cal.

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For QUICK Sale.—Six registered Berkshire sows and one boar, too good for the butcher even though the papers are lost. Also their Spring litters and 15 sows of the Fall litter. These must move, as June 1st I enter into a milk contract instead of selling cream. M. H. Diepenbrock, Sacramento.

THOROUGHBRED BERKSHIRE PIGS ready, from the best bred stock in the State; $15 up. James F. Reed, Box 321, Vacaville, Cal.

FOUR OAKS STOCK CO., breeders of Berkshire and Hampshire hogs and Importer Hampshire Down sheep. Woodland, Cal.

POLAND CHINA HOGS; Barred Rocks and Black Minorca poultry; young stock and eggs for sale. M. Bassett, Hanford, Cal

THOROUGHBRED MULEFOOT AND BERKSHIRE HOGS. California Hog & Land Co., Calistoga.

GEO. V. BECKMAN, Lodi, San Joaquin Co., Cal. Registered Poland-China Hogs, both sexes.

G. A. MURPHY, Perkins, Cal. Breeder of Champion Herd of Berkshires; also Short-horns.

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BERKSHIRE AND POLAND-CHINA HOGS. Both sexes. C. A. Stowe, Stockton, Cal.

STUDARUS & CUNNINGHAM, Mills, Cal Registered O. I. C. swine.

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DEAR SIR.—We have used other Liniments in our stables, but none gave such entire satisfaction as your Red Ball Lotion (liniment) after sixteen (16) years use at the rate of 30 gall. per year, we can say with perfect confidence that it is the best liniment which we have ever used for Cuts, Bruises, Lacerations, Sprains, Barbed Wire Cuts, Burns, Scalds, Collar and Saddle Galls, Sore Shoulder and Weak Ankles. Yours truly R. CUSHING, supt of Stables
J. J. GIBSON, Foreman.

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THE CUTTER LABORATORY
P. O. Box 257, BERKELEY, CAL.

LIVE STOCK NOTES.

The 1200 acre ranch of Mrs. E. Beiby, near Wheatland, has been sold to George Trowbridge, who will subdivide it for small farming.

The last of the Harlan flock of Angora goats in Colusa, numbering 1838 animals, has been sold by H. H. Harlan to R. L. Bohannan and B. F. Clark and removed to the north fork of the Feather river in Butte county. The flock a few years ago numbered 6000 head, but owing to the establishment by the Government of the Stonyford Forest Reserve in the Colusa county mountains, the range was closed to them and the flock had to be disbanded. The flock, both in size and quality, was well known throughout the State, and many prize-winners were developed from it.

Isaac Goble, of Coachella valley, has secured a flock of seventy Angora goats, which he will use as the basis for developing a larger flock.

Matthews Bros. of Hanford have recently received 1500 head of cattle from Arizona, which will be fattened for the market. The cattle were driven over the mountains into Monterey county.

On investigating the cause of death of a poultry rancher named Alfred Alto, near Cotati, Marin county, from tuberculosis, it was found that the disease was due to drinking milk from a tubercular cow, and that other animals and chickens on the same place were apparently suffering from tuberculosis received in the same way.

C. Lossman, who owns a bee and goat ranch near Perris, San Bernardino county, recently purchased a number of thoroughbred Toggenburgh goats, from which he will breed up his herd.

DAIRY NOTES.

F. and H. Stenzel of San Lorenzo, Alameda county, are having 30 head of young registered Holstein heifers sent from Henry Stevens & Son of New York to add to their dairy herd.

A number of dairymen at Corcoran are organizing to erect a large creamery on the co-operative basis.

At a recent sale of dairy stock on the Huls ranch near Modesto 30 cows brought an average of $88. The highest price was $125 and the lowest $62.50.

The supervisors of Tulare county have agreed to appropriate $10,000 to be used in eradicating tuberculosis in cattle and hogs in the county. The work will be done under the direction of Dr. Charles Keane, State Veterinarian, who states that it will take at least three years to complete the work. Every dairy cow in the county will be tested for the disease, and all reacting to the test will be removed from the healthy cows and isolated. Animals not badly diseased can be killed for beef. The board will pass an ordinance forbidding the sale of milk from tubercular cows. Other nearby counties are expected to assist in the work.

The El Casco Dairy Company has been incorporated in San Bernardino county with a capital of $100,000. The company will farm the Singleton and other ranches in the San Timoteo canyon, comprising 3966 acres.

Some heavy shipments of cattle and sheep to the Los Angeles markets were made the first of this month from Santa Rosa island.

Thirteen carloads of spring lambs were shipped last week from Durham, Butte county, to Chicago, the largest ever made from that point. At Marysville an additional shipment brought the total number of cars up to 30.

Sheepmen and others wishing to take stock over the Sierras in the northern part of the State are still being delayed by the large amount of snow still in the passes.

POULTRY DEPARTMENT.

Conducted By M. RUSSELL JAMES.

SUCCESFUL COMMERCIAL POULTRY RAISING.

[The following notes, sent in by one of the field workers for the PACIFIC RURAL PRESS, give in few words the important point in successfully conducting a large commercial poultry plant. Such information at first hand is worth "books" of ordinary poultry lore.—M. R. J.]

One of the men who is making a large success of the poultry and egg business in California is R. D. Hunter of Corcoran. I called on him May 10th and found him busy taking off a hatch of 7680 pure-bred White Leghorn chicks. He uses twelve 640-egg incubators and has hatched over 23,000 chicks so far this season. A few particulars regarding his methods may interest your readers.

His hatching average has varied from 91 to 97% of fertile eggs, of which he raises 80% of the chicks. He keeps about 4000 laying hens in one large alfalfa field, the field being dotted with houses sufficient to shelter them without crowding. The houses are sprayed every ten days with a creosote sheep dip, to keep them clear of vermin, and then moved to fresh ground.

He gives the chicks their first feed on the third day, and it consists of hard-boiled eggs mixed with green alfalfa, kale or other green stuff, chopped fine and liberally sprinkled with red pepper; their food for the next four weeks being a mixture of millet, canary, cracked corn and wheat, with a little hemp seed, grit, shell, ground bone and charcoal. He finds it less trouble and no more expensive to buy the chick feed from the poultry supply dealers who advertise such feeds in the PACIFIC RURAL PRESS than to mix it himself.

After the fourth week larger grains are fed twice a day and one feed of mash, the latter either of home mixing or purchased ready for use. For the laying hens, Mr. Hunter uses a food of his own mixing.

The poultry yards cover nearly 80 acres of choice alfalfa lands, and there is a system of running water laid down in the most convenient way. The brooder and incubator houses are heated by natural gas.

Poultry Notes.

STAKING OUT HENS.—This is a new wrinkle with us, although it is an old practice among poultry keepers over the seas. We find that a hen with chicks does much better when she can patrol a radius of some ten or twelve feet around her coop than to be shut up in it, and she can also protect her chicks. This also applies to the broodies when we wish to break them from sitting. They lose the broody idea sooner and get in better shape than when confined in a stuffy coop. The soft white cord such as used by grocers is the proper tether. Of course, the hen must be placed where there is no brush to get tankled up in, or boxes and the like to hang herself on. At first she will get mixed up in the string, but she soon learns "the ropes" and how to keep t'other foot out.

BEST BREEDS FOR MARKET POULTRY.—The Experiment Station of the Kansas Agricultural College has secured data from the large poultry-packing establishments upon the rating of breeds of poultry for market purposes.

For dressed fowl (hens) Barred Rocks hold unquestioned first rank. For broilers or roasters the White Rocks and White Wyandottes are considered equally. Outside of the American varieties the Indian Games rank highest by those who include them in the list. The Leghorns are especially desired for their yellow skins and legs and plump bodies. Some dealers say that they equal any chicken where the trade demands a small carcass. It was also remarked that Leghorn hens continue to grow and improve in appearance with age, ranking batter as an old hen than a pullet. The Leghorn cockerels are desired as broilers, but when older are not wanted, and if purchased are classed as staggy. Of the Asiatic breeds the Langshans are the most popular, Brahmas next and Cochins next. The Brahmas, and more especially the Cochins, are remarkably unpopular among the Kansas packers. This fact is worthy of notice when it is remembered that these breeds are spoken of as meat breeds by many poultry writers. The chief objection is because these varieties possess a large frame with not enough meat to cover it. As capons the Brahmas and Cochins are considered among the best.

TRESPASSING FOWLS.—Among the questions sent in to a California poultry journal we note an astonishing plaint from a woman who has 100 chicks that get

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through the dividing fence onto her neighbor's premises "where there isn't a thing that little chicks can hurt, and yet this woman insists that I must keep the chicks out," as naively put by the complainer.

But even more astonishing than the complaint is the answer given, which reminds one of the judgment of a certain class of partial mothers who are sure their progeny, like the king, can do no wrong. Instead of telling this woman who is aggrieved because she cannot pasture a hundred chicks on her neighbor's grounds, that though the neighbor may be captious and unaccommodating, she is certainly within her rights, this question expert soothingly says that "the devil in her (the neighbor) asserted himself," and ends by advising his inquirer that the best thing she can do is to move away from such a bad neighbor! At this distance from the contestants it would appear that the woman sending in the complaint is the kind of neighbor to move away from.

We mention this little incident because it has a bearing upon the poultry industry. Poultry raisers and poultry associations often have cause to complain of ordinances passed for the restriction of poultry-keeping. If all persons keeping poultry would consider the rights of their neighbors and would keep their fowls from trespassing on streets and parks, at the same time taking care that the poultry quarters were not an offence to the eyes and nostrils of the neighborhood, there would be fewer of such ordinances passed.

SMALL CHICKS AND THE GARDEN.—The assertion that chicks small enough to go through the mesh of two-inch netting cannot hurt vegetation is not borne out by the facts in the case. At this writing we have chicks which readily slip through such wire netting, that are making havoc among the lettuce, chard and such tender truck. The fact is poultry and garden do fine together—when they don't mix. The garden truck is necessary for the poultry and the poultry droppings are excellent for the garden, but there the mutual benefit ends. We read lots about planting the poultry yards and decorating the poultry fences with vines. Our word for it, this sort of gardening can be done on paper, but not in the poultry yard—we know, for we have tried it. If fowls would eat only the outer leaves of vegetation it would be all right, but they will eat the heart out of a plant and take delight in pulling down a vine even if they do not eat it, and even a small chick can by this procedure kill a large plant. In this connection we give the following by the alfalfa specialist of the Colorado Experiment Station, with the side remark that unless the poultry yard is large enough to be practically free range even the resistant alfalfa crowns will have to give up the struggle:

ALFALFA FOR POULTRY YARDS.—"Alfalfa is one of the best plants to furnish green food for chickens, but ordinarily it soon kills out if over-pastured. Alfalfa crowns that have been cut off and plowed under and that have taken root again, are much harder to kill out as many have found by repeatedly grubbing out the same stool that has taken root the second time. Such crowns seem to put out shoots from each piece of root that is left in the ground, if the soil is in favorable condition. Those who desire to establish alfalfa in their poultry yards can succeed in this way by plowing or spading under alfalfa crowns that have been freshly plowed out from some nearby field. The crowns should be covered four to six inches deep, and the soil wet down and kept moist and the chickens kept off until the crowns have become established, which will be sooner than alfalfa from seed and will stand much harder pasture."

The Australian Egg-Laying Competition.

The eighth egg-laying competition conducted by the Agricultural College at New South Wales has just been completed with a pen of White Leghorns winning first place. The following excerpts from the report of the competition has many points of interest and value to our poultry raisers. They represent the conclusions of Prof. Thompson, the poultry expert at the college who has had all these competitions in charge:

"The data here produced and confirmed year after year are of great importance to the State. They include:

"The demonstration has been given that egg-production pays well.

"That poultry farming can be conducted on small areas.

"That it can be made to pay even by purchasing all the feed.

"That good strains of good breeds are most profitable and will respond most quickly to selection for intense egg-production.

"That White Leghorns, Black Orpingtons and Silver Wyandottes are the best breeds, and that the fewer number of breeds used for commercial poultry farming the better will be the improvement obtained. This question in itself is of vast importance. From a chaotic list of innumerable breeds in which the embryonic farmer was lost in bewilderment, the list is now a very short one, and the prospective poultry farmer has no trouble in making a selection.

"The story of skimp feeding and the danger of overfeeding layers has been exploded, and the method of full and plenty has been substituted with very much better results.

"That while a varied diet is best, a fair proportion of maize (Indian corn) can be fed profitably to poultry.

"That divisional pens will give best results; it is better to divide a lot of 100 into ten pens than to leave them all together."

THE SYSTEM OF FEEDING.—"Although so much has been written on feeding in connection with these tests and otherwise, the subject is an ever green one. It is one of primary importance and cannot be too fully dilated upon. The natural grasses in a run (range) form the greater proportion of the feed consumed by fowls; consequently, good grass runs is half the battle in poultry farming. At times of the year when the grass gets withered off in dry seasons or by frosts in winter, the poultryman must supply the deficiency by growing green feed of some sort, and alfalfa, clover and rape are preferred.

"At 7 a. m. the fowls are fed with a mash composed of one-quarter bran and three-quarters pollard (middlings.) Since the tests have been commenced the proportion of bran has been diminished and that of pollard has been increased, as we are satisfied that the stiffening comes from the pollard. These measurements are in bulk, not weight.

"The mash is mixed in the winter months with boiling water and in summer with cold. Twice per week only, both summer and winter, the mash is mixed up with minced bullock's liver (about sixty pounds; this is one pound of liver to each ten hens). On no consideration would we depart from this method so long as meat is reasonably procurable. Like all other staple feeds for poultry the costs should always be the qualifying question.

"The birds are fed gross. That is they are fed more than they will eat up clean just at the time of feeding. With the skilled poultryman the surplus will have disappeared within two or three hours of the time of feeding. It is wonderful the difference in the appetites of the hens the morning of the meat mash compared with the mornings of the ordinary mash. The grain feeding in evening consists of wheat principally throughout the summer with crushed maize for change. For cold weather and damp spells the maize predominates. The grains are fed heavily, but an imperial pint, more or less is pretty near the quantity required for six well-fed hens. Plenty of sea shell grit is all that is required for grit and lime feeding.

"The whole of the tests have been carried out on plain, practical lines within reach of the ordinary farmer. Plain houses, plain yards, and plain feeding, and there is general satisfaction to all concerned that the methods employed have formed a standard for the whole Commonwealth."

Telling the Sex of Baby Chicks.

Is it possible to pick out the little roosters immediately the chicks are taken out of the incubator? It appears to the questioner that an accurate observer might pick them out.—J. A. S., San Francisco.

With Leghorns and some other breeds of the Mediterranean class the cockerel may be guessed at by the comb extending further up on the head than in the case of pullet chicks. By this means a keen observer may pick out the most of the cockerels as soon as the hatch is taken from the incubator, though he will miss it in some cases. With the larger, slower maturing breeds it is often impossible to tell the sex even at eight or twelve weeks old.

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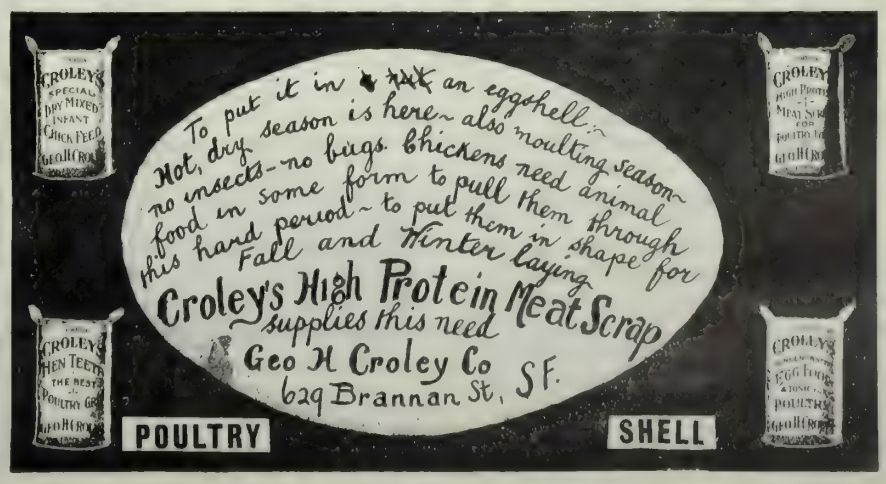
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The Home Circle.

In June.

No matter how barren the past may have been,
'Tis enough for us now that the leaves are green;
We sit in the warm shade and feel quite well
How the sap creeps and the blossoms swell;
We may shut our eyes, but we cannot help knowing
That skies are clear and grass is growing;
The breeze comes whispering in our ear,
That dandelions are blossoming near,
That maize has sprouted, that streams are flowing,
That the river is bluer than the sky,
That the robin is plastering his house hard by;
And if the breeze kept the good news back,
For other couriers we should not lack;
We could guess it all by yon heifer's lowing,
And hark! how clear bold chanticleer,
Warmed with the new wine of the year,
Tells all in his lusty crowning!

—James Russell Lowell.

Henry the Rooter.

"O, you men, you men!" she said.

And while our hero shuffled his feet with a certain devil-may-care sang froid we will look well at this particular member of his sex and see what, if anything, the surface indications may show. Ah, yes. So, so.

He was, then, one of those bashful young men who never eat oranges openly, and whenever he walked along Park row on a rainy morning he always kept his glance modestly directed down his nose. But nevertheless it was his ambition to be taken for a dashing sort of a fellow who would break a heart or scuttle a ship with equal nonchalance.

Age—About 25.

Nose—Freckled.

Eyes—Imploring.

Grin—Nervous.

And as for his Adam's apple, his Adam's apple always seemed to be peeping over the edge of his collar like a palpitating cuckoo that peeps o'er the edge of its nest.

While as for her, let it suffice to say that she was a daughter of Eve—which nearly tells all—and that he was sitting in her parlor—which is all sufficient. Whereupon we will consider our hero as he shuffled his feet with a certain devil-may-care sang froid and looked over at her sheepishly and said:

"Well, you can't blame us, can you?"

"Blame you? Well, I envy you!"

And with a coolness he couldn't conceal, he sought to apply the finishing touches by cutting off the end of a cigar and saying:

"D' y' mind if I smoke?"

"I'd love it," sne said. And, gazing at him presently, as he sat back in his chair puffing out smoke, she drew a deep sigh of admiration and said: "Why is it that men have nearly all the fun in life?"

He smiled at the smoke, and an auger never had a more inscrutabdle smile.

"Take baseball," she said. "To me baseball is a mystery. To you, I suppose, it is one of the greatest games in the world."

He nodded and still smiled at the smoke, mysteriously and as though he were reserving some great masculine secret.

"Well, what is there so wonderful about it?" she asked. "Tell me. What do you men do when you go to a game?"

"Watch it!" he exclaimed with almost touching pride.

"Yes?"

"Yes — and snout — and holler — and carry on like old Harry!"

"And do you do these things, too, Henry?"

Henry gave her a look which conveyed the impression that he was the leader of the riots.

"I'd love to go some time," she said, "just to hear you."

"Well," said he, "I'll tell you what we'll do. We'll go on Saturday afternoon. Shall we?"

"O, lovely!" she cried, and "O, lovely!" she cried again on Saturday afternoon, when a scholarly gentleman in uniform banged the ball with a hickory club and plowed a furrow to the first base.

All around them the bull-voiced rooters were bellowing and shaking the earth. And as for Henry, he breathed loudly and gave symtoms of considerable promise.

"I think it is simply grand!" she laughed when the tumult had died away. "Listen!"

Around them the bull-voiced gentry were making bull-voiced and individual comment.

"Good boy, Red!"

"Now, then! Now, then! Paste it on the nose!"

"O, you Red!"

"It only takes one!"

"Look! Look! Look!"

"O, you Red!"

And as for her she smiled at Henry with such admiration in the turn of her eyes that he, too, aspired to deeds of daring. The pitcher was about to wind up; Red was on the bench out of sight. Absolute silence reigned, and in this silence Henry half arose from his seat as pale as a peeled potato. He shut his eyes, and in a voice that would have shamed a clam, he piped out:

"O, you Red!"

He sat down, blushing scarlet and breathing hard. She squeezed his hand (no one else had heard him) and gave him such glances of pride and affection that for the rest of the game he was content to rest on his laurels and his air was that of an old veteran who says: "Behold, it is I who has borne the heat and brunt of battle. It is meet that now some other man shall work."

"And you ought to have heard Henry!" she cried when they got home.

"Did he holler, too?" asked the family.

"O, louder than anybody! My, you could hear him all over the lot!"

And when she took him out into the hall to show him the picture of the coliseum and ask him if the old Romans could have played ball in it, she came back blushing, and when she whispered the news to her mother and the family stepped forward to shake Henry's hand it was easy to see that Cupid, the robber, had called three strikes on him and that he had lost the game.—Exchange.

A Difference Indeed.

A little girl of about 5 was finding keen enjoyment in twirling the knob of the candy box on the seat in front of her at the theater, says the New York Sun.

"Don't do that, Ethel; it makes too much noise," said her mother.

Ethel paused, undecided, her hand outstretched for another twirl.

"I warn you," said her mother, very sternly.

Still Ethel hesitated. Finally she queried audibly: "With a hair-brush, mama, or just your hand?"

Children and Stories.

Morally the story is invaluable in its power. Through it the child forms ideals from the characters presented. He can see his own life better as it is revealed, as in a mirror, from the lives of the actors. For, to a child, the characters are, for the time being, real and vital, made so by his interpretation of them through his own personality. Hence the grave danger of giving false ideals through unwise stories—ideals he may pattern his own little life by. It spoils it all to say: "That's only a story. Of course you wouldn't do that." "Tell it again" is a sure indication of the success of a story.

Homely Hints.

When making baby quilts use shaker flannel instead of cotton, as that will not lump when washed. Soak in warm soapsuds, wash out and hang in the sun to dry. At intervals shake up thoroughly, that the sun may reach every part.

Pour pure turpentine on a scald or burn, quickly, before the blister rises, and it will ease and cure without pain or scar; keep applying.

After the meal when you have left over mashed potatoes, put them in glasses well dusted with flour. Then when wanted to fry, turn out like jelly on a floured paper, cut into slices, and brown in hot fat.

Anyone suffering with corns will find great relief by soaking the feet in good warm water, and applying salt lard on the corns, over night; repeat until soreness is gone. This nearly always will take the soreness out by one application.

One of the best ways to remove old wall paper is to dip a large and clean whitewash brush in warm water and apply it evenly to the wall before scraping with a kitchen knife. Holes in the plaster should be filled with plaster of paris mixed with mortar.

To prevent thin material from drawing or puckering along the seams, when machine stitching, place strips of paper under the seams. The paper can be very easily torn away after the stitching is done, and there will be no difficulty in stitching the finest of cloth or lace.

If troubled by moths in carpets, take up the carpets and put them where they will get a thorough sunning. Then wash the floor, where the moths have been, in water containing turpentine. After carpets have been replaced add a few drops of turpentine where the moths were found.

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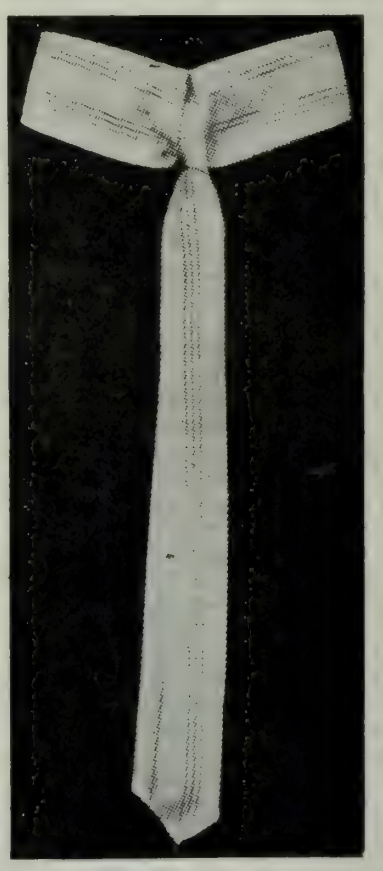


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OUR YOUNG FOLKS' DEPARTMENT.

Conducted By M. Russell James

The Evening Star.

Just above yon sandy bar,
As the day grows fainter and dimmer,
Lonely and lovely, a single star
Lights the air with a dusky glimmer.

Into the ocean, faint and far,
Falls the trail of its golden splendor,
And the gleam of that single star
Is ever refulgent, soft and tender.
—Longfellow.

Poultry Course for Young Folks.

Class III. Mediterranean. You will recall that Class I represents all-purpose breeds and Class II meat breeds, and that both classes are made up of large, easy-going, gentle fowls. In Class III we find the egg breeds, and an entirely different type of fowl from the two preceding classes. Here are trim, close-feathered, graceful birds, full of activity and sprightliness, busy foragers and all-around hustlers, that manufacture their surplus rations into eggs instead of flesh and fat.

This class of fowl leads all others in commercial importance because the egg is the most important of all poultry products. Eggs are more generally eaten than any other one article of animal food. They are wholesome alike for the small child or delicate invalid and the strong man. Many who eat neither fish or flesh depend largely upon eggs as a substitute, and even the few who do not eat them directly partake of them in cookery. For a fact, the thousand and then some kinds of cakes and confections which delight our eyes and tempt our appetites would fall flat without the fresh egg. And not alone as food is the egg useful. Millions of dozens are used in the arts and sciences—in photography, calico printing, bookbinding, kid-glove manufacturing, finishing fine leather, wine clarifying, etc.

Origin of the Mediterranean Class.—The fowls from which the perfected breeds of this class were produced were brought from Italy and Spain by vessels trading in Mediterranean ports. The distinguishing characteristic common to all these breeds are large red combs and wattles, white earlobes, full, quick-glancing eyes, smooth, compact plumage, and alert, upright carriage. They are prolific layers of large white eggs, and non-setters.

The Wonderful Egg.

Next time that you run and gather the new-laid egg when Biddy cackles, stop and think what a wonderful thing you hold in your hand! All the elements required in the making of every part of an animal have been put together in that golden yolk and silvery white, and placed in a case that is a wonder in itself—so graceful in shape and so delicate in texture that the expression "egg-shell china" is used to describe the most dainty production of the potter's art. And then think that it may contain a little germ of life so tiny that it cannot be seen with the naked eye, but which will be developed by warmth, and grow and feed on the egg, to come forth a chirping, downy chick! The great naturalist, Huxley, has said that the development of the embryo chick in the common hen's egg is the most wonderful thing in the world. In truth, the egg was recognized as a symbol of creation by the Magians, or Persions, ages ago, who established the practice of giving eggs to their friends with the bursting of buds and seed vessels as symbolical of the re-creation of life. The Christians borrowed this practice from them to symbolize the resurrection of Christ at Easter time.

There are many other wonderful things in relation to the mechanism of the egg for the protection of its precious germ. A knowledge of these wonders is better than sermons to teach our young folks to revere the Great Creator and to be considerate of the birds that lay the wonderful egg.

Peculiar Toes of Birds.

Let us note that the art of standing began with the birds, says a writer in the Strand. Frogs sit, and so far as I know every reptile lays its body on the ground when not actually carrying it. And these have each four fat legs. Contrast the flamingo, which having only two, and those like willow wands, tucks up one of them and sleeps poised high on the other, like a tulip on its stem. Note also that one toe has been altogether discarded by birds as superfluous. The germ or bud must be there, for the Dorking fowl has produced a fifth toe under some influence of the poultry yard, but no natural bird has more than four toes. Except in Swifts, which never perch but cling to rocks and walls, one is turned backward, and by a cunning contrivance the act of bending the leg draws them all automatically together. So a hen closes its toes at every step it takes as if it grasped something, and when it settles down on its roost it grasps that tightly and holds fast till morning.

But to birds that do not perch, this mechanism is only an encumbrance, so many of them, like the plover, abolish the hind toe entirely, and the prince of all two-legged runners, the ostrich, has got rid of one of the front toes also, retaining only two.

More About the Cunning of the Wolf.

Apropos of the incident given by our little friend Hal Shaffer of the cunning of the coyote, here is one of the coyote's cousin, the timber wolf, which occurred last February and was reported to the Globe-Democrat:

A thrilling tragedy in which the cunning of the wolf species was most strikingly illustrated, was witnessed on the Missouri river, near Council Bluffs, when three hounds belonging to Mr. Blair, of Whiting, Iowa, were lured to their death by a wolf.

Blair was out with his pack and started the wolf. After a short chase on land the wolf struck for the middle of the stream over the ice, which in places was too thin to support Blair's weight, so that he was forced to stand on the bank and witness the tragedy that followed.

The wolf now and then cast a backward look to see if the dogs were following. When about midstream he made a quick detour, then faced about as if to give battle. The wolf had led the dogs to an airhole and to their death. Standing upon the off side of the hole, the animal baited the hounds. One by one they plunged into the hole and to their death. Then apparently satisfied with the result of his strategy, the wolf ambled to the shore in safety.

Gardening Makes Good Boys.

A Harvard professor says: "There is no doubt that the occupation in which one engages reacts upon one's personality, and I believe that gardening has an elevating effect upon those employed in it. No man can make a success as a gardener unless he loves plants. A wayward boy thrown into work among growing plants would be brought under a better influence than in almost any other occupation he might follow. Any association with plants and flowers cannot fail to have an elevating effect on the human mind."

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AT PACIFIC RURAL PRESS OFFICE, 667 HOWARD STREET, SAN FRANCISCO

THE MARKETS.

San Francisco, June 14, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

There is a fair amount of trading in this market, but values here depend mostly on Northern conditions. Washington interests have been buying quite heavily, and with a material reduction of stock in growers' hands the market is quite firm all around. White Australian is in demand at an advance, and Northern Red is very strong.

California Club	$1.45 @1.50
Sonora	Nominal
White Australian	1.55 @1.65
Northern Club	1.52½@1.55
Northern Bluestem	1.65 @1.70
Northern Red	1.55 @1.65

BARLEY.

Brewing is steady, with little offering, but feed is plentiful and rather weak, prices showing a further decline. Since the close of May trading there has been some movement for export, as there is considerable old grain on the market. New barley is quoted at $1.25 at some country points.

Brewing and Shipping	$1.52½@1.55
Choice Feed, per ctl	1.25 @1.30
Common Feed	1 25 @1.30

OATS.

The movement is very moderate, and with no excessive offerings prices are steadily maintained at the former level.

Red Feed	$1.37½@1.42½
Gray	Nominal
White	Nominal
Black Feed	1.30 @1.50

CORN.

Egyptian is nominal, with none offered locally. There is not much trading in other descriptions, prices standing as before.

Cal. Small Yellow	$1.75
Eastern Yellow	1.55
Eastern White	1.55

RYE.

There is hardly any business in this grain at present, and there is not enough desirable stock on hand to be worth quoting. Some odd lots are offered around $1.50.

Rye, per ctl	Nominal

BEANS.

The market has been unusually quiet for the last month or so, and shows no indication of improvement at present. With heavy offerings and little demand, bayos continue to decline, and several other descriptions are easy, though prices on most lines are as last quoted. The dullness on most varieties is caused by abundant supplies and the competition of imported stock; and on others, such as limas and blackeyes, by the fact that available supplies are already closely cleaned up.

Bayos, per ctl	$4.00 @4.25
Blackeyes	7.00 @7.25
Cranberry Beans	3.75 @4.00
Garvanzos	2.85 @3.25
Horse Beans	3.25 @3.50
Small Whites	3.40 @3.55
Large Whites	3.25 @3.40
Limas	6.35 @6.45
Pea	4.25
Pink	5.00 @5.20
Red Kidneys	6.25 @6.50

SEEDS.

The market is featureless, with no trading of any consequence. Prices stand as before, but on most lines are only nominal.

Alfalfa	Nominal
Broomcorn Seed, per ton	25.00
Brown Mustard, per lb	5½c
Canary	3½@ 4 c
Hemp	3½@ 4 c
Millet	3 @ 3½c
Timothy	Nominal
Yellow Mustard	5¾c
Dried Peas, per ctl	3.75@ 4.00

FLOUR.

The export movement continues well ahead of last year, but the local demand shows little variation. Prices are firmly maintained, the condition of the grain market causing a slight upward tendency. proportions and the shipping movement about up to the recent average.

Cal. Family Extras	$5.40 @5.80
Bakers' Extras	5.40 @5.80
Superfine	4.50 @4.70
Oregon and Washington	4.60 @4.80

Hay and Feedstuffs.

HAY.

Prices in this market have shown no change for some time. Arrivals in the city market are smaller than for some time past, but offerings are still larger than the consuming trade will readily absorb. There is said to be some pressure to sell among dealers, and consumers show no disposition as yet to provide for future needs. A considerable tonnage of new hay is now ready for shipment in the country, but trading is quiet, and arrivals of new stock here consist mostly of alfalfa. There is some buying on the part of outside interests, usually at fair prices, and growers in general are firm in their ideas as to values.

Choice Wheat	$13.00@14.00
Good Wheat Hay	11.00@12.50
Other Grade Wheat	8.00@1100
Wheat and Oats	8.00@11.50
Tame Oats	8.00@11.50
Wild Oats	6.50@10.00
Alfalfa	8.00@11.50
Stock Hay	5.50@ 6.50
Straw, per bale	35@ 50c

FEEDSTUFFS.

Rolled barley is a little lower, owing to the weakness of the raw grain, and rolled oats have also declined. Other lines are steady at former prices, and the demand continues active for nearly everything on the list.

Alfalfa Meal, per ton	$19.00@20.00
Bran, per ton	28.00@29.00
Cocoanut Cake or Meal	26.50@27.00
Cracked Corn	34.00@37.00
Middlings	34.00@37.00
Mixed Feeds	29.00@32.00
Rolled Barley	27.00@29.00
Rolled Oats	30.00@32.00
Shorts	27.50@31.00

Garden Truck.

VEGETABLES.

Values are a little stronger on a number of lines, but this is attributed to a temporary decrease in arrivals, and some descriptions are lower. Onions show no further change, but are easy, with liberal supplies. A few Australians are offered at about $2.50. New garlic is now fairly plentiful, and the recent high prices are no longer obtainable. Green peas are still rather high, though easier than last week. Tomatoes are coming in freely from many points, and are much lower, lug boxes being offered as low as $1.75. Cucumbers are also lower with increasing supplies, while rhubarb is a little higher. Asparagus is coming in freely, and canners occasionally get supplies as low as 75c., though as a rule 90c. is about the bottom price. String beans are a little scarcer at the moment, and show an advance, and green corn is also higher. Okra, eggplant, and green peppers are still offered in rather limited quantities, and prices are steadily held, while cabbage, carrots, and cauliflower stand as before.

Onions: New Red, sack	$ 1.25@ 2.00
Green, box	40@ 65c
Garlic, per lb	3@ 4c
Green Peas, per sack	2.00@ 2.50
Tomatoes, per crate	90c@ 1.00
Cucumbers, per box	1.00@ 1.50
Cabbage	1.40@ 1.50
Carrots, per sack	1.25
Rhubarb, per box	1.00@ 1.25
Cauliflower, per doz	50@ 60c
Asparagus, per box	90c@ 1.50
String Beans, per lb	4@ 7c
Summer Squash, per box	75c@ 1.00
Okra, per lb	5@ 8c
Green Corn, per doz	30@ 50c
Egg Plant, per lb	10@ 15c
Green Peppers, per lb	10@ 15c

POTATOES.

Old Oregon and Eastern stock is very firm at another advance, with a fair demand and very little to be had. New potatoes are coming in a little more freely and stock from around the bay brings rather poor prices, selling around $1.50 to $2 per sack, though good river stock is steady as quoted.

Oregon Burbanks	$ 2.75@ 3.00
New Potatoes, per ctl	2.15@ 2.65
Eastern, per ctl	2.20@ 2.25

Dairy Produce.

POULTRY.

The market is in very poor condition, prices being lower on a number of lines, including ducks as well as young roosters, extra hens and fryers. Shipments from nearby points continue large, and small stock finds very litle demand. Arrivals from the East are also rather large.

Large Broilers	$ 3.00@ 3.50
Small Broilers	2.00@ 2.50
Fryers	5.00@ 6.00
Hens, extra	8.00@ 9.00
Hens, large	5.00@ 6.00
Small Hens	4.50@ 5.00
Old Roosters	4.00
Young Roosters	6.00@ 7.00
Young Roosters, full grown	8.00@ 9.00
Squabs	2.00@ 2.50
Geese, per pair	2.00@ 2.50
Ducks	5.00@ 7.00
Turkeys, live, per lb	Nominal

BUTTER.

Extras are a little lower than last week, and while the Exchange reports a firm market, the general feeling appears to be rather easy. Lower grades are on about the same level as last week, though there has been some fluctuation caused by temporary large arrivals. There is a continued heavy movement for shipment, packing, and storage.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	21½	22	22	22	22	22
Prime Firsts	20½	21	21	21	21	21
Firsts	20	20½	20½	20½	20½	20½
Seconds	19	20	20	20	20	20
Packing Stock	17½	17½	17½	17½	17½	17½

EGGS.

Extras are steadily held on about the same level as last week, though prices were a little lower for a few days. Fluctuations have not amounted to over 1c. for some time past, the storage movement keeping the market pretty well cleaned up. Some of the lower grades are a little easier, and Eastern stock is 1½c. lower.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	20½	20	20	21	21	21
Prime Firsts	20	19½	19½	19½	19½	19½
Firsts	19½	19	19	19	19	19
Seconds	17	17	17	17	17	17
Selected Pullets	17½	17	17½	17½	17½	17½
Eastern	15	15	15	15	15	15

CHEESE.

Local cheese has been coming in quite freely for the week, and both flats and Y. A.'s are lower. Arrivals of Monterey cheese, however, are light at the moment and prices are firm with an upward tendency.

Fancy California Flats, per lb	11 c
Firsts	10½c
New Young Americas, fancy	13 c
Monterey or Jack Cheese	12½@13½c

Deciduous Fruits.

FRESH FRUITS.

This market is showing somewhat more life, owing to the arrival of an increasing variety. Several descriptions have appeared in quotable quantities this week, including peaches, pears, plums, and currants, all of which find a ready demand at quotations. A few figs are appearing, and are held at about $3 per box. New apples are also offered, at prices much lower than old fruit, which is about out of the market. There is little interest in melons, and canteloupes are lower. Strawberries are a little higher, but other berries are easy, with increasing arrivals. Cherries are firmly held, and bulk stock is selling at a little better figures than last week. Peaches are still rather scarce.

Melons—	
Watermelons, pr lb	5c
Canteloupe, standard crate	$ 2.50@ 3.00
Raspberries, crate	1.00@ 1.50
Loganberries, chest	4.00@ 6.00
Gooseberries, lb	6@ 11c
Blackberries, crate	75c@ 1.00
Strawberries, Banners, chest	7.00@ 8.00
Longworth, chest	7.00@10.00
Large varieties, chest	4.50@ 5.50
Cherries, Purple Guigne, box	75@ 85c
White	50@ 60c
Royal Anne, box	75@ 90c
Apples, New, box	$1.50
Apricots, crate	$ 1.00@ 1.35
Apricots, box	75c@ 1.00
Peaches, box	1.00@ 1.25
Pears, box	1.00
Plums, box	75c@ 1.00
Currants, chest	7.00@ 9.00

Dried Fruits.

Prices are quoted as before on everything except new-crop prunes, which are ¼c. lower, according to local packers, and rather easy at the decline. There is little immediate demand in other parts of the country, as the jobbing trade has pretty well provided for its early needs, and packers show no disposition to pay the prices which have so far been asked by most growers. The demand for export, however, is increasing. While the amount of prunes obtainable at the present quotations is not known, and the movement is by no means heavy, packers here say that there is an increasing disposition to sell. Old prunes are firm, with practically none to be had. Some business is being done in new apricots and peaches around quotations, but in view of the high prices offered for shipment and canning the dried-fruit prices are little inducement. The entire crop in some sections which have formerly dried their fruit will be shipped or canned. The raisin market is dull. Packers have not changed their offers on either spot or future goods, and while they are getting some stock of both, the majority of growers are very firm in their ideas. The New York Journal of Commerce says:

"Judging by the lower quotations made in several packing quarters the market for the 1911 crop of California prunes is weak. It is said that most, if not all, of the jobbers in this district have comfortably fixed themselves against early fall requirements by more or less liberal purchases some time ago when the basis price was in the neighborhood of 4½c. f. o. b. Coast. According to these reports, more than 150 cars have been purchased for October and November shipment by jobbers in New York and tributary markets.

"California raisins are dull. Futures are weaker in some quarters, offerings of Coast seeded for October shipment out of the 1911 crop having been made at 7⅜ cents for choice seeded without attracting attention from local buyers.

"There are few packers in the market with offerings of new crop apricots, while those who do quote demand 16c. f. o. b. for choice Royals and do not appear anxious to secure orders in view of the extreme high views of growers. On the other hand, Eastern buyers, at least in this section, show little if any interest in the situation.

"New crop peaches are neglected by the trade in this vicinity, as the prices demanded by packers, based on the present views of growers, are generally considered to be too high."

Evaporated Apples, per lb	10½@11 c
Apricots, new crop	14 c
Figs, black	4½@ 5 c
Figs, white	5 @ 7¼c
Peaches, Spot	8 @ 8½c
New crop	9 @ 9½c
Prunes, 4-size basis	9¼c
New crop contracts	3¾ @4½
Pears	8½@12 c
New crop	9 @10 c
Raisins—	
Loose Muscatels, in sweatbox	4 @ 4½c
1911 Crop	4 @ 4½c
Thompson Seedless	4½@ 4¾c
Seedless Sultanas	4¼@ 4½c

Citrus Fruits.

Although Eastern auctions are holding up well in price on oranges and lemons, yet the high values of last week have not been maintained. Lemons are now bringing around $4 per box, instead of $5 or better. Navels are also some lower, the prices averaging from $1.60 to $3.15. Valencias are doing very well, though the high prices are not as frequent as some seasons, and hardly up to last week's quotations. On Monday, June 12, the New York auction showed valencias as averaging about $2.50, the range being from $1.80 to $3.60. At Philadelphia, the same date, this variety averaged about $3, while at Boston the prices were a little ahead of either the other points noted.

Shipments are still going forward in large amounts, averaging fully 150 cars of oranges and 60 cars of lemons daily. Total shipments of oranges for the season to June 12 were 30,829 cars, and of lemons, 4439 cars.

Owing to the increased attention given to deciduous fruits, local trading in the citrus lines is rather quiet, and the weather is also unfavorable to any great demand. Supplies of oranges are ample for all requirements, and the feeling in the market is weak, though prices remain as before. Lemons, limes, and grapefruit are unchanged.

Navel oranges—	
Extra choice	$ 2.50@ 3.00
Choice	1.50@ 2.00
Valencias, choice to fancy	2.25@ 3.00
Tangerines	Nominal
Choice Lemons	3.00@ 4.00
Fancy Lemons	4.00@ 5.00
Standard	2.00@ 2.50
Limes	5.00@ 5.50
Grapefruit	2.25@ 3.15

Nuts, Honey, Hops, Etc.

NUTS.

There is practically nothing doing in walnuts, the old crop being closely cleaned up, while the new crop is too far off to warrant any predictions. Old almonds are also pretty well out of the market, and all quotations are little more than nominal. There has been some buying of new almonds in the country, the prices, as near as can be learned, being around 16½c. for the more popular varieties. Prices are not yet very well established, but are certain to be higher than last year, some of the local dealers having announced prices to the trade at 19c. for Nonpareils, 16½c. for IXLs, 16c. for Ne Plus Ultra, 14½c. for Drakes, and 13½c. for Languedocs.

Almonds—	
Nonpareils	16½@17 c
I X L	15½@16 c
Ne Plus Ultra	15 @15½c
Drakes	12 @14½c
Languedoc	12 c
Hardshells	**8 @ 8½c**
Walnuts—Softshell, No. 1	**15 c**
Standard	**14½c**
Softshell, No. 2	**11 c**
Budded	**17½c**

HONEY.

A limited amount of white comb honey has arrived in San Francisco, and is offerred by dealers as quoted, extracted being a shade lower. Producers in Orange county have set a price of 7c. on white extracted, and buyers are actively in the field throughout the southern districts.

New Extracted, White, per lb.	8 @ 9 c
Comb, White	12 @14 c

BEESWAX.

Prices show no change, and the market is without much feature, both demand and supply being limited. Only choice offerings will bring the top quotation.

Light	28 @32 c
Dark	**23 @26 c**

HOPS.

There is no general activity in California hops, though a few new contracts are being closed all the time, and prices show a further advance. Growers who have not already sold are strongly inclined to hold off in expectation of still higher prices, as the general situation seems to be greatly in favor of the seller.

Hops, 1910 crop	20 @25 c
1911 crop	22 @26 c

Live Stock.

DRESSED MEAT.

Cows	8 c
Heifers	8 c
Veal, large	10½c
Veal, small	11½c
Mutton: Wethers	9½c
Ewes	8 c
Lambs	10½c
Hogs, dressed	11 c

LIVE STOCK.

Very little change is noted since last week in either live stock or dressed meat, though live steers are quoted a little lower. Stock is being shipped in ample quantities to the principal markets, and the market is rather easy. Beef stock in the southern San Joaquin district is in good condition, and so far has been in good demand at fair prices. Mutton, however, is receiving less attention, and hogs are quiet.

Gross weight	
Steers: No. 1	5¼@ 5½c
No. 2	5 @ 5¼c
Cows and Heifers: No. 1	4½@ 4¾c
No. 2	4 @ 4¼c
Bulls and Stags	2½@ 3½c
Calves: Light	6½c
Medium	6 c
Hogs: Grain-fed, heavy	6 @ 6¼c
150 to 250	6¾c
100 to 150 lbs	6¾c
Small prime wethers	4½@ 4¾c
Large prime wethers	4½@ 4¾c
Ewes	3¾@ 4 c
Lambs	5 c

WOOL.

The general situation shows some improvement, prices being slightly higher than before, though there is no very heavy movement in California at the moment.

Spring Clip—	
Choice Southern, Year's staple	10 @12½c
7 months	8 @11 c
Lambs	5 @ 7 c
Northern, year's staple	14 @16 c

HIDES.

The market remains firm at the recent advance, with a fairly active demand. Pelts are stronger, owing to the improving wool market.

Heavy Steers, over 56 lbs.	11 c
Medium	10 c
Light Steers, under 48 lbs.	10 c
Heavy Cows, over 50 lbs.	10 c
Light Cows, 30 to 50 lbs.	10 c
Kip	12 c
Veal	14½@15½c
Calf	15½c
Dry—	
Dry Hides	17 @18 c
Dry Bulls	16 c
Dry Kip, 10 to 15	17 @18 c
Dry Veal, 5 to 10	20 c
Dry Calf, 7 down	23 c
Sheep Skins—	
Long Wools	$ .75@$1.00
Medium Wool, 6 to 9 mos.	50@ 75c
Short Wool, 3 to 6 mos.	25@ 40c
Lambs	15@ 35c

HORSES.

There is a continued demand for all drafters, and those over 1700 lbs. are so scarce as to keep prices at top figures Everything else on the list is lower, however, and recent sales in San Francisco have brought out very little interest in general offerings. Light and ordinary stock is very hard to move, even at the decline. Mules are also lower.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	190@240
Wagon Horses, 1250 to 1350 lbs.	140@180
Delivery Horses, 1050 to 1250	100@125
Desirable Farm Mares	100@125
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

SPECIAL DECIDUOUS MARKET REPORT.

Sacramento, Cal., June 12, 1911.

In checking our records for last season, we find our first shipment this year about two weeks late, and it now looks as if, as a result of the recent warm weather, all of the early fruit will come in in a rush.

Apricots are moving in car lots from Winters and Vacaville, and by the last of the week fairly liberal shipments of Alexander and Hale peaches and Clyman plums will be moving east. We look for a few Bartletts from the Sacramento river district to be ready for shipment about the 25th, although not heavy enough to say that the season had opened on pears.

Cherries in Placer county, Vacaville, and Suisun are cleaning up and will be out of the way in the next ten days. The Santa Clara valley cherries are moving in fairly heavy supplies, and under favorable weather conditions will last for at least two or three weeks more.

The crop in general throughout the State shows a decided improvement over last week, and all varieties will run to large sizes. The Tokay grapes on the American river, and in the vicinity of Florin, never looked more promising. Lodi will probably have as heavy a shipment as last season, provided, of course, that the late fall rains do not affect the crop. Trees and vines are making an enormous growth, and the country never looked more promising, nor the Eastern situation more encouraging. Georgia fruit is arriving in fairly heavy receipts, but the fruit is not up to standard, and the trade is anxious for the California movement.

The canteloupe crop in the Imperial valley is reported light, due to overproduction the last few years. Cants are moving at fancy prices, but the supply will be light. The Eastern markets remain firm and we look for continuing good prices, provided, of course, the shipments arrive in good condition.

The prices realized in the various markets during the past week are as follows:

Chicago—Tartarians, $1.05 to $2.50; Rockports, 95c. to $1.70; Pontiacs, $1.35 to $1.75; Black Biggereau, $1.05 to $2.35; Gov. Woods, $1.05 to $1.50; Advance, $1.20; Whites, $1.70; Yellow Spanish, $1.10 to $1.40; Burr Seedlings, $1.40; Black Eagle, $1.45 to $1.50; Royal Annes, $1.10 to $3.20; Bings, $1.55 to $2.55; Centennial, $1.10 to $1.95; Apricots, $1.15 to $3.50; Jones Seedlings, $1.55 to $2; Pringle, $2.10 to $2.30.

New York—Tartarians, $1 to $4.87; Chapmans, $1.55 to $2.70; Rockports, $1 to $1.65; Gov. Woods, 87c.; Mozelle, $2.75; Royal Annes, $1.65 to $5.28; Biggereau, $1.40; Jones Seedlings, $1.50 to $2.75.

Philadelphia—Black Tartarians, $1.25 to $4; Rockports, $1.75 to $2.55.

Boston — Tartarians, $1.85 to $2.50; Chapmans, $1.80 to $2.50; Gov. Woods, $1.50 to $1.70.

Minneapolis—Black Tartarians, $1.30 to $2.05; Biggereau, $1.15 to $1.25; Rockports, $2.

WONDERFUL CHORUS TO BE HEARD AT COMING SUNDAY SCHOOL CONVENTION.

Like a mighty diapason of tremendous, over-welling melody, a thousand trained voices are to be heard in a concert that will be the most attractive feature of the Thirteenth International Sunday school Convention which is to be held in San Francisco, June 20 to 27, at the Coliseum. Rehearsals for this monster musical event have been in progress in all of the cities about the bay since March 1, all of the leading church choirs and singers collaborating to make this an epoch in convention history.

The grand chorus, which has been rehearsing under Robert Husband, has always been a feature of the International Sunday-school conventions in London and other great cities, but this is the first time that such an undertaking has been attempted in San Francisco. From this choir it is expected that a nucleus will be made for the great world's fair chorus in 1915, when choirs from all over the country are expected to compete for honors, as has always been the custom with European choirs during international exposition conventions.

Mr. Husband, who is one of the well-known choir leaders of San Francisco, has been conducting these rehearsals in all of the towns and cities about the bay, organizing branch choirs made up of singers from the several churches in each community. Four general rehearsals of the entire 1000 voices are planned, one to be held in each of the bay cities.

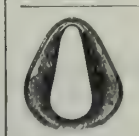
On Monday evening, June 19, the first rehearsal of this grand choir will be held in San Francisco at the First Babtist Church, corner of Market and Octavia streets. Singers desiring to join this choir are given an opportunity to do so, as Mr. Husband has kept the rolls open to enable those not already reached, to become a part of this chorus. A charge of 50 cents admission will be made to this concert, which sum will go toward defraying a part of the convention expenses.

The music to be sung is of a high order of classical excellence, with a few compositions by modern musicians, the works including those of Handel, Mendelssohn, Gounod, Mozart, Schubert, Alford B. Gaul and Wallace I sabin, the latter the well-known composer. An orchestra of a hundred veteran musicians will augment the pipe organ, Mr. Sabin being orchestra leader, while Mr. Husband directs the chorus.

No such aggregation of musicians has ever been brought together in San Francisco, and Mr. Husband feels highly elated at the progress which has been made, for it not only augurs well for the big entertainment feature of the International Sunday-school Convention, but it gives promise of what San Francisco may hope to accomplish as a musical center in 1915. When Mr. Husband first talked of organizing the choir singers last winter, no one hoped that such cordial support would be given by the professional and amateur musicians, the majority of whom are so busy with their own various ambitions as singers and musicians that it was not expected they would be so generous in volunteering to give their time and talent.

Besides the grand choral concert, there will be fine musical programs at all of the big mass-meetings during convention week. The Coliseum and the Greek Theatre will be occupied on Sunday, June 25, with noted speakers, when large choirs, made up of sections of the grand choral society of the convention, will add to the attractiveness of those occasions. Mr. Husband has worked diligently at the musical features of the big convention, with the result that unprecedented success has crowned his efforts.

A county fair is being planned for King's county for September 25 to 28.



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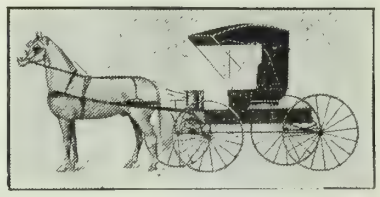
PUBLISHER'S DEPARTMENT.

The Pacific Tank & Pipe Co., who are old-time advertisers in our columns, have just issued a handsome booklet describing wooden pipe and its many advantages. This booklet contains valuable information for engineers, municipalities, and users of pipe for irrigation and water works purposes, and will be mailed free to anyone desiring the booklet who will apply to any one of the offices for a copy.

Bayley & Lyon, 149-D California street, San Francisco, who are Coast agents for the Norwich Automatic Feeder, have decided to sell the machines through local agents as well as direct. This firm also handles the Manhattan Stock Food through agents, and if there is no representative in your locality it will pay you to write them, as both lines are good sellers.

46 PER CENT PROTEIN.

Our attention has been called to the mistake in the part of the advertisement of the North American Mercantile Co. regarding soy beans. While the analysis of soy beans has read protein 46%, which is correct, yet the figures were so placed as to look like "protein .46%", which has caused some confusion in the minds of our readers. As has been stated in our columns many times, soy beans are a very rich food for stock and should be used more generally. The advertisement appears in correct form this week, and we trust the company will continue to secure plenty of this food for stock, for which they have so far had a good demand.



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KROGH'S NEW VERTICAL PUMP

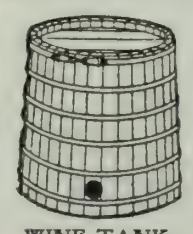
The Krogh New Water Balanced Vertical Pump contains many new and valuable improvements, same being fully explained in our Bulletin R-10, which will be mailed upon request.

We have a branch in Los Angeles at 206 N. Los Angeles Street.

The pump can be seen in operation at our place of business.

KROGH MANUFACTURING CO.,

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WINE TANK.

Tanks Tanks

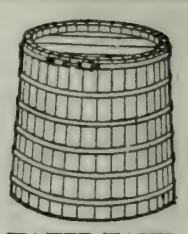
WINDELER'S PLANING MILL AND COOPERAGE

GEO. WINDELER, Prop.

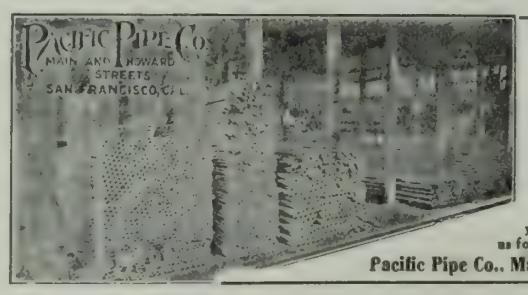
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THE PACIFIC RURAL PRESS

Vol. LXXXI. No. 25. SAN FRANCISCO, SATURDAY, JUNE 24, 1911. Forty-first Year.

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The Rejuvenation of the Sacramento Valley.

Although the idea of greatness in the agriculture of California first dawned upon the pioneers of the Sacramento valley, it is a part of our agricultural history that their conception of the ways by which that greatness was to be attained was inadequate. Possibly the error lay in the belief that greatness was a matter of area, and certainly conditions in pioneer days favored the pursuit of greatness by the multiplication of acreages. It was not long before the demonstration came that yield decreased so rapidly under slack farming that poverty rather than riches might result under expansion of area. The conclusion recently drawn from such experience is that high farming and not broad farming is the secret of income-increase, and in the highest farming and the greatest service of the land, irrigation is the chief factor because it is fundamental and indispensable and because it opens the way for the greatest efficiency of tillage, fertilization, plant-choice and animal development. We speak of the rejuvenation of the valley, then, to imply the renewal of the confidence and expectation of greatness—a renewal of the old spirit with a new power of attaining greatness which was denied the pioneers but is being given to the present generation of those who project sound enterprises and are willing to do honest and intelligent work and plenty of it.



Dam and Reservoir of the Orland Irrigation Project.



Olives and Orange in the Orland District of the Sacramento Valley.



Cosy Homes and Cows in Alfalfa in Orland District.

The people of Orland in Glenn county had a grand celebration on Friday and Saturday of last week over the completion of their irrigation undertaking and the outflow of water from their splendid new storage reservoir into the ditches on its way to the land which is to be insured and increased in production. We count the event particularly significant because it is the completion of the first step in national irrigation work for California. There have been many corporate and private irrigation undertakings in the valley during the last quarter of a century, and they will count for much in the future settlement and prosperity of the country. Fortunately they are now receiving wide recognition of the enterprise and confidence in the large investments they have made, and notable improvements are being made upon the lands which their irrigation systems have rendered available to small farming for large results. But it will require both public and private enterprise to bring the valley to its full development, and upon the government will naturally rest the burden of the greatest undertakings in irrigation, navigation, and drainage which the ultimate future of the valley requires. It is to the honor of the Orland people that they were willing to meet the conditions which the application of the national irrigation law requires and to hold together in their Water Users' Association until the project was completed. This service, we believe, will be found very productive in individual prosperity and in public interest. The significance of it will endure. Unless the Orland people had made good in qualifying for the project, governmental work for irrigation development might be still awaiting an opportunity in California. Now the pace has been set for greater undertakings whenever the land owners are ready for them.

In view of the relation of the Orland project to the question of the whole valley, as well as for the intrinsic in-

(*Continued on Page 498*)

Pacific Rural Press

ISSUED EVERY WEEK AT 667 HOWARD STREET, SAN FRANCISCO.

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E. J. WICKSON - - - - - - - Editor
FRANK HONEYWELL - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., June 20, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	00	31.77	45.87	54	44
Red Bluff	00	24.68	24.95	98	58
Sacramento	00	21.98	20.09	92	50
San Francisco	T	25.49	22.27	70	48
San Jose	00	22.63	13.05	86	50
Fresno	00	11.82	9.68	102	54
Independence	00	6.28	9.53	92	54
San Luis Obispo	00	34.42	20.51	68	50
Los Angeles	.02	16.17	15.64	72	54
San Diego	.01	11.99	10.01	68	58

The Week.

We wonder what the pampered, plutocratic farmers are doing that they do not fill up the summer resorts and thus act out to the life the parts which the loose writers of the literary magazines are assigning to them. It must be, of course, that the farmers have all the money, because no one else has any, and someone must have it—that seems to be the argument. The publications devoted to "the interests" give us an alternative. They say there is no money turned loose because the Government in its prosecution of "malefactors of great wealth" has frightened the malefactors to such an extent that their wealth has all slid down into their boots and left their pockets empty. Therefore, there can no money come to sight for any purpose until the Government stops knocking the business interests and the captains of industry can cease shaking things into their boots. That is, of course, a great question which we cannot settle in time to affect the summer boarder crop of this year, and to preserve the reputation of Californians as free spenders and the only first aid to the injured resort-runners which we can think of, is to appeal to the farmers to get out their automobiles, dig up their coin sacks, and storm the resorts. We fear that unless something spectacular of this kind is done at once, the impression may prevail that the literary magazines are wrong in claiming that the farmers have all the money. But we are at least half in earnest in these comments. There are many farmers who have earned a rest for themselves and their families, and they had better take it this year while the resorts are yearning for patronage. There is no need to apprehend that rural finery will suffer by contrast with city millinery, for the latter is not in it. We dropped into a very famous resort last week and found that our linen duster and slouch hat and our wife's shimmering bombazine were the most stylish things in sight. In fact, we had to choose separate benches and shade trees and start a little flirtation to give the place an air of business and banish the loneliness. And so we say to our readers, rally on the resorts and justify the current belief that the farmers are the only people with money.

The Gold Dust Twins.

Far be it from us to indulge in personalities and exploit private affairs in print, for we despise that sort of thing and those who engage in it; but when a personal choice is demonstrated in favor of California farming and it is preferred to all the opportunities of the great world, and published as such, how can we contrive to conceal the glorious fact from our readers? It is now announced from New York that Arthur and Reginald Paget, twin sons of Lieutenant-General Sir Arthur Henry Paget, K. C. B., commander of the eastern division of the army of Great Britain, and Lady Paget, are on their way to Butler, California, where they will henceforth make their home, the two boys having surrendered their places in England to become American citizens. Lady Paget was Miss Minnie Stevens, daughter of the late Paran Stevens of New York, whose money was countable in oodles. Three years ago the Paget boys, who are now 23 years old, came to the United States in quest of a fortune. They found employment in the freight department of the Northern Pacific Railroad at St. Paul, where they earned $60 a month each, and finally decided that no career would please them better than farming. Their mother gave the plan her approval, and the purchase of a 2500-acre fruit farm in San Bernardino county, California, is the result of the world quest of the boys, to whom we wish long life and prosperity: to their distinguished mamma also, who having led the British Lion captive, brings her sons to grow up under the wing of the Eagle. How, then, can our farmers refuse to answer the call to the higher life which is sounding for those who have the money for it?

A Rational View of the Tariff.

We apologized for our California congressmen's indulgence in reciprocity last week on the ground that there was more to gain by keeping in with the Government, so that they would have strength to get later other things of more local importance to California. We granted that point of view tenable, for, judged broadly, and as affecting the whole country, the tariff must be a give-and-take between regions thereof. We are glad to see that our representation in Congress, if we may judge from the declarations of Mr. Knowland of the Third District, is laying a broad foundation for maintaining the present protection for California's distinctive industries. In a recent speech in Congress, Mr. Knowland said:

"All we ask, or expect, is the imposition and maintenance of such duties as will permit us to successfully compete with foreign countries where the scale of wages is so low that to admit these competing articles free, or at too low a rate of duty, would spell ruin to these industries. We court a fair, intelligent, and thorough study of conditions by an impartial tariff board, and, for one, I am willing to abide by the result of such an investigation, and the representatives of any other State, or the champions of any industry, should be likewise willing to submit to facts obtained through a nonpartisan body composed of high-class men interested only in obtaining facts. It will mean the sustaining of just schedules, while those which cannot stand the light of day should not survive."

That is good ground to take, and California is getting ready to justify the protection her industries enjoy by such demonstration as is suggested. For instance, Mr. G. Harold Powell, manager of the California Citrus Protective League, returned last week to the Atlantic Coast from a close personal examination of the costs and methods of citrus-fruit growing in Mediterranean countries. The results of his investigation are likely to be reserved for presentation to the Tariff Board at the proper time, but a general intimation is given that Mr. Powell returns with ample demonstration of the claims of California growers that the foreign fruit is grown at a cost which would give no self-respecting American living and justify no such investment as is required in this country to develop productive properties and to place the product upon sale in competition with the foreign fruit. The same line of investigation and demonstration should be undertaken by those interests in other products, so that we can claim protection upon demonstrated merit and not upon favor. We are aware that some authorities do not favor the cost-of-production test, but it seems to us the only one which the public will give heed to in its present state of mind on the tariff question.

The Equal Suffrage Issue.

Of course, our male subscribers are getting plenty of equal suffrage in their homes nowadays, for the campaign for votes for women is getting warm in preparation for the special election on amendments to the constitution of California which will be held in October next. We take it no rural housewife will go out on the public warpath for votes before settling the matter definitely and finally at home; therefore, we hesitate to add to the weariness of our male readers, for every wife ought to be able to look after her own husband's voting. Strangely enough, we get this idea directly from an anti-suffrage utterance which shows how inconsistent and blind the antis really are. Cardinal Gibbons scored woman's suffrage in an address last Saturday at the commencement exercises of St. Joseph's College in Baltimore. He said: "I think the place for woman is in the home. Women should not want to vote, but if they took proper interest in the affairs of their husbands and brothers, they could easily have them cast their ballots in the right manner. In doing this, women will be the champions of what is right." Certainly, Cardinal, we agree to your proposition: for, if women who are always "champions of what is right" can "easily have their husbands and brothers cast their ballots in the right manner", they will in this case have them vote right on the amendment, and that will settle the whole matter. We thank you, Cardinal; we did not suspect that it would be so easy.

But if we were not so confidingly trustful in our disposition, we should be inclined to doubt whether the good Cardinal knows at all what he is talking about. He looks upon men and women from above, and not along the level. If he had had any experience on that line, he would know that men, as a rule, probably do not wish the advice of their wives and sisters on "politics", though they are willing to take it on most other affairs. We are almost inclined to believe the pugilistic champion Johnson is nearer right when he opposes women suffrage because the "women would close up all the saloons and sporting places and would in fact vote against everything that men wanted to do." It seems to us that the champion has the clearer view than the Cardinal in this case.

Live Stock Exports.

We are always urging upon Californians the desirability of doing more to supply the growing demand for work animals. Current prices would seem to effect this without exhortation, but of course there are many who do not take notice of current prices except in their own lines of produce. Last week a large shipment of horses and mules came down the river from Stockton for shipment to Hawaii, having been collected for such export by Mr. A. V. Rooker, who has been doing much business in this line. A few months ago he took the whole capacity of a sailing vessel

with horses and mules for Tahiti, and the shipment went through with the loss of only one animal. This last shipment is for Hawaiian planters and the animals were given the regulation Government test before being shipped to insure their landing. The authorities in the islands are very strict about the landing of all kinds of animals, but when they have once passed the Government test here, there is no trouble. We see no reason why this demand should not develop immensely at a number of points around the Pacific border, and California should largely supply it.

The Wool Outlook.

There is reason to believe that nothing will be done during the present session of Congress to settle the much-mooted wool tariff question, and that things are likely to remain as they are until this year's clip is out of the way. Dr. S. W. McClure, secretary of the National Wool Growers' Association, has written that he feels safe in assuring wool growers that there will be no legislation affecting the tariff passed at the present session of Congress. He says: "The bill as introduced is looked upon as a joke, for it represents no theory of political economics, as it affects neither free trade, revenue, nor protection. The bill should not affect the wool market, for it will never become a law." He advises wool growers "not to sacrifice their clip, for there is every reason to believe better prices will be received later in the season." However that may be, there seems good reason to think that nothing is likely to drop suddenly, and growers can proceed upon that assurance.

Queries and Replies.

The Loquat.

To the Editor: Please inform me whether any effort has been made within your knowledge of cultivating the loquat fruit and selling the same in the market. The tree has been called to my attention by the fact that it is readily grown from the seed, is a particularly rapid grower and the fruit is desirous for jelly, etc. There seems to be little demand in the market for the fruit as far as I am aware, but that may be owing to the fact that it has never been available and the public is not acquainted with its good qualities. I am considering the advisability of planting a large quantity of seed of this tree, and will thank you for your recommendations in the matter.—Planter, Butte county.

The loquat is commercially produced in southern California and elsewhere in the orange districts. Sales are usually quite satisfactory in Los Angeles and other southern cities, and some of the fruit finds its way to San Francisco. It is also sold by the train boys on overland railways running into Los Angeles. Some commercial product has been made in the lower part of Alameda county and elsewhere in central California. The Californian who has given most attention to the improvement of this fruit is Mr. C. P. Taft, Orange, Orange county, California, who has originated several varieties much superior to the ordinary seedling.

The results of undertakings so far have certainly been encouraging, but it is a strange fruit, unknown to the American people and it would be very easy to produce an amount beyond their demand for it if production were too suddenly increased. Still it is well worth attention and is likely to become vastly more important commercially than it is at the present time. The superiority of selected varieties over common seedlings is so marked both in size and quality of fruit and in different times of ripening that the use of improved varieties should be given heed to, as has been demonstrated to be essential with other kinds of fruit.

The Cherry Aphis.

To the Editor: Please tell me what to do to protect my cherry trees. They start to wither at the end of the branch, as per enclosed twig. The underside of leaves are covered with a round, dark insect which soon kills the entire branch. I think many other cherry trees in this vicinity are troubled in this way. If it is a common occurrence, are there any varieties that are immune?—Easterner, Modesto.

The work is done by the cherry aphis (Myzus cerasi), which is not abundant in this State so far as we have observed. We do not know of immune varieties. It must be fought zealously by thorough spraying with kerosene emulsion or soap or tobacco solutions as soon as seen in the spring. A proper nozzle to reach the undersides of the leaves must be used. It is easy to kill, but you must strike straight and early.

Peach Budding.

To the Editor: Four years since I purchased 2000 peach trees. They came into bearing last season. Many of them were not true to name. I would like your opinion in regard to grafting or budding. Which is the better of the two plans and the proper time to do it? I cannot mark the trees until the fruiting season in July and August. These trees are scattered through the orchard.—Grower, Atwater.

The peach is rather a difficult tree to graft, and budding, on the other hand, is quite easy. You can bud into new shoots of this season's growth in July, and, if necessary, you can improve the slipping of the bark by irrigation a few days before budding. Buds can also be successfully placed in the old bark of the peach, providing it is not too old. In that case you must select well matured buds from the larger shoots and use rather a larger shield than you would in working into new shoots. When the buds are seen to have taken, the top growth beyond it can be reduced gradually and some new growth forced on the buds this season if the sap flow continues as it might be expected to do on young trees well cared for.

Probably Impracticable.

To the Editor: Would it not be possible for us to grow coffee in Imperial valley under irrigation? We would like to do a little experimenting with same. We would also appreciate any information you may have as to the season for planting "pearl barley." Would it grow in this country? Do you know the yield?—Beginner, Calexico.

Coffee is a strictly tropical plant. Even if you had no frosts to injure it the plant would not thrive in such dry air as prevails in your district.

Pearl barley is simply ordinary barley put through the process of pearling, that is, removing the chaff and rounding the grain by proper machinery. Any plump barley would do for pearling, and as you grow barley well there would be no difficulty about getting the material, but you would be at a decided disadvantage in marketing pearl barley in competition with the pearling establishments in the great cities. Besides the cost of a proper mill for pearling would call for a large investment.

Giant Japanese Radish.

To the Editor: In discussing sakurajima (giant Japanese radish) Eastern publications advise planting late, about August 1, and not earlier than July 1. What can you tell me about the plant here?—Amateur, Napa.

The Asiatic winter radishes can be successfully planted in California in July or August if the soil is thoroughly saturated by irrigation before digging and planting. It is, however, not so necessary to begin early in California as at the East, because our winter temperatures favor the growth of the plant, while at the East they have to make an early start in order to get something well grown before the ground freezes. For the growth of winter radishes, then, in California you can wait until the ground is wet thoroughly by the rain, which we presume in your valley you may expect during September, and afterward you can make later plantings for succession at any time you desire during the rainy season.

Clover for Wet Land.

To the Editor: I would like to know what kind of alfalfa will do best on very much sub-irrigated land? I have a piece of land which is very wet. I have sown it in Utah alfalfa and it grows finely for two or three years, but then it seems as if the roots rot and die.—Farmer, Turlock.

It is impossible to make any kind of alfalfa grow well on very wet land, that is, where the water comes too near the surface. Alfalfa has a deep-running tap root which is very subject to standing water. You can get very good results from the Eastern red clover on land where the water is too near the surface to carry alfalfa, because the red clover has a fibrous root which is content to live in a shallow layer of soil above water. But red clover will not stand drought as well as alfalfa because it is shallower rooting. It is necessary, therefore, that water should be permanently near the surface, or surface irrigation be frequently applied, in order to secure satisfactory growth of red clover in the drier sections of California. It is also necessary that neither land nor water carry alkali.

Flat or Hill Culture for Potatoes.

To the Editor: Is it better to hill potatoes or not?—E. B., Los Angeles.

At this time of the year potatoes should be grown with flat cultivation, except as it may be necessary to furrow out between the rows for the application of irrigation water. Potatoes grown during the rainy season in places where there is liable to be too much water, can often be hilled to advantage, but dry-season cultivation of practically everything should be as flat as possible to retain moisture near the surface for the development of shallow-rooting plants.

WARMING PEACH BUDS IN NEW JERSEY.

Recently we heard that the old peach State of Delaware was giving up the peach because of discouragement caused by winter killing. Now cames a report that New Jersey is to revive her peach industry on the basis of orchard heating. They were all ready this spring for frosts which did not some, it seems, but that the Experiment Station the temperature approached the danger point three times, and the fires were started with excellent experience-results, as stated by Mr. C. P. Chase, horticulturist, as follows:

The results were in favor of crude or fuel oil for fuel, because the oil heaters are easily filled, quickly lighted, give off the maximum amount of heat immediately and can be instantly extinguished. The coal heaters are more difficult to fill and light, burn slowly and may throw out only a little heat, and cannot be extinguished without dumping out the fuel. Three types of oil heaters were used, the Troutman heater; sheet iron locally made heaters holding about two gallons; and sheet iron paint kegs. For the latter a large piece of roofing slate was used as a cover to keep out rain and to extinguish the fire. From our experience, the paint kegs and locally made heaters are entirely satisfactory. A good serviceable size is 9 inches in diameter and 11 inches high, holding three gallons. This size burns about one quart of crude or fuel oil per hour, and from 80 to 90 heaters are required per acre. The difference in price between crude and fuel oil will determine the one to use; they are apparently equally effective.

Notes on Currant Growing.

Writen for the PACIFIC RURAL PRESS by Mr. DUDLEY J. WHITNEY.

To be grown in a part of the State in which almost all of the typical California fruits and vegetables, oranges and peaches excepted, are produced commercially, and yet to be almost unknown from a commercial standpoint in the rest of the State, is the fate of the red cherry currant, one of the best paying small fruits known here. Other currants might be grown with success, but the fine quality of the cherry currant and the quantity that the bushes will bear makes other varieties unprofitable.

The cherry currant likes good growing conditions. A heavy frost will, however, destroy a good part of the blossoms or small fruit, and on the other hand a temperature of 90 degrees or over may cook the ripening fruit on the bush. The district where growing is good and these extremes of temperature can be best avoided seem to be around San Francisco bay, where the heavy frosts are infrequent and the ocean influence keeps down the temperature.

The kind of soil in which the currant grows to advantage further limits the extent of its production. It seems to thrive best on a heavy loam, almost an adobe A light soil is said to dry out too quickly, while a heavier soil may in seasons of much rain become water-logged and injure the plant.

Around San Leandro and Hayward, in Alameda county, where practically all of the marketable crop is grown, the best location for currants seems to be where the soil is from three to four feet deep and underlaid by clay. This brings up from the water level below a good supply of water during the longest dry seasons. It is said that in these soils the bushes have never shown distress for want of moisture.

Ten years in Alameda county is considered the life of a currant bush. Cuttings are planted in rows about five feet apart and two feet apart in the row. Some are planted in orchards, although the largest plantings are made on bare land.

In the first year cucumbers or other low growing vines may be planted between the rows. The second year the currants have the ground to themselves and devote their time to the production of wood. In the third year a fair sized crop is secured. Bearing continues until the bushes are about ten years old, when they become unprofitable, although the best crops are secured from the fifth to the eighth years.

In the Alameda county climate the weather causes very little variation in the size of the crop secured from year to year, especially when good care is given. This year the heavy frost killed in some fields about a quarter of the crop, but this is as much injury as can generally be expected.

Another thing about currants is the fact that considerable leeway can be given in the time of picking without having the fruit spoil on the bushes, although picking, of course, should always be done when the fruit is at its best. Picking began this year the first week in June, which is a little later than usual, and in average seasons continues for several weeks. The bushes gone over during the first few days need to be gone over the second time, as on these all the fruit will not be ripe at once. On the other vines one picking is sufficient.

Picking is usually done by women and girls from nearby towns, except when the fields are owned by orientals, and the difficulty in securing sufficient help for this purpose furnishes the main problem for the grower to face. The pickers secure a cent a pound or over for their work. They generally work in pairs, each person taking one side of a row.

The demand for the fruit is usually about equally divided between cannery and market, and any increased production will have to be looked after by the canneries, as the market will take but little more than at present without a considerable cut in price. The canners would be glad to get more than they do, and are paying this year 7½ cents a pound for the crop.

Practically all of the fruit going to the canners is used to make currant jelly, although some is made into jam, and to mix with berry jam, to which it gives a good color and fine flavor. Before the pure food law went into effect apples were used to make the larger part of the currant jelly, and a few currants gave sufficient color and flavor to enable the product to sell as the genuine article. Since this practice has stopped currants only can be used, and the demand for them is large enough to make it possible to use much more than is produced here now.

Eastern canneries manufacture considerable currant jelly, which can compete with that made here. There is, however, sufficient room for expansion to enable much planting before the market will be overstocked.

The care of the plants is not excessive. The ground must be gone over with a disk plow and weeds cut out along the rows, and sufficient cultivation given to keep the surface well loosened. Sulphuring for mildew may also be required if the weather demands it. The cost of all care aside from picking is about $25 per acre. The size of the crop on good bearing bushes is from 1¼ to 1½ tons an acre.

IS IT A DESERT FIG OR AN OLIVE?

To the Editor: I would like very much to have information about a fig which once grew on the Great Sahara desert. Can you tell me about it?

Selma. ENQUIRER.

Answer by Mr. Rixford.

To the Editor: I do not know what particular fig your "Enquirer" refers to as growing on the Great Sahara desert. Many varieties are cultivated in the oases in the shade of the date palms where water is available, but none can be grown on the desert without water.

It is not possible that your correspondent has in mind the Chemlali olive? This olive in Roman times covered hundreds of square miles of desert in Algiers and Tunis and supported many cities of considerable size. The inhabitants were exterminated or driven away by maurading Arabs and the great olive groves perished. A few of the old trees survived through several centuries, and a few years ago the French commenced replanting with the same variety, and the new groves now cover several hundred thousand acres.

From its resistance to drouth the Chemali may possibly be grown on our deserts. The U. S. Department of Agriculture imported it two or three years ago, and it is now being tried on the deserts of California and Arizona. It is likely to succeed without irrigation where the annual rainfall is 8 or 9 inches, which is the amount of precipitation over vast regions in southern California and Arizona.

It may be of interest to mention that the French plant the trees 75 metres apart and cultivate all the ground between and claim to get as great a yield of oil per acre as in southern France, where olives are planted as in this State.

G. P. RIXFORD.

1813 Pierce St., San Francisco.

THE IRISH COBBLER POTATO.

To the Editor: A few weeks ago I received from a dealer shipping seed potatoes to California two tubers sent him by a broker of Los Angeles, with the information that these potatoes had been sold on the Los Angeles market as Irish Cobblers. Greening tests show these potatoes to be not Cobblers at all, but instead one of the latest varieties we have.

In view of this fact, it might be desirable for you to publish a paragraph on the Irish Cobbler, less accurately called Eureka. It is white, early, and does not knot or crack, and is rapidly displacing the Ohio, the Rose and other early sorts north and south. It is not very white fleshed and is not always mealy, but is strong in looks, yield, earliness and freedom from knots. Its skin is yellowish white, usually with lenticles, and on exposure to the light turns to a dusty violet, spots of which can be seen on occasional noses of all lots, due to light having reached the potato in the ground, through a crack. Its sprouts exposed to the light are carmine colored at the base and later this color is diffused through the lower part of the lengthened sprout.

Information scattered among your potato growers and merchants as to this variety would not alone prevent wrong competition from this end, but would protect your people from fraud and disappointment. We recently nailed a similar fraud here in the sale of red Peachblow culls for new Triumphs, at ten times their value.

C. L. FITCH,
Fort Collins, Colo. Potato Expert.

[We are glad Mr. Fitch, who is doing the important potato work of the Colorado Experiment Station, sends us the above paragraph for publication. He has made several very important publications on the potato, and we presume our readers can obtain copies of them, so long as the supply lasts, by applying to Director C. P. Gillette, Fort Collins, Colo.—EDITOR.]

GOOD REPORT FROM RE-GRAFTED WALNUTS.

In the PACIFIC RURAL PRESS of April 4 and May 9, 1908, detailed accounts were given by Mr. J. B. Neff of Anaheim of the way he grafted over his walnut orchard, giving the poorer bearers a new head by taking scions from the trees which were most productive of the best type of soft-shell walnuts. The Anaheim Gazette, giving an account of the results of this grafting, says:

"These trees, set in an orchard of 55 acres, have many of them attained the same size as the other trees, and where top-grafting occurred three years ago the trees are as stately as any in the miniature forest. Planted 48 feet apart, the branches interlap, the growth being the dark green foliage common to the thrifty trees. One of the top-grafted trees which formerly did not produce a nut, now has a fine crop, while others top-grafted are doing well.

Mr. Neff expects three-quarters of a ton per acre from his tract this year. The trees are heavily laden, and little if any blight has appeared. He confidently believes he has solved the blight problem by top-grafting with scions from trees showing resistance to blight. Judging from appearances, it must be said that he has been successful, for it is difficult to find a particle of blight in the entire orchard.

Mr. Neff has recently installed a forty horsepower electric motor at his pumping plant, and raises a flow of 150 inches. Half his orchard is planted to vetches, which are four feet high and are now being plowed under. He plants vetches every year, going over half the orchard one year and the remainder the next.

A STUDY IN BUYING FERTILIZERS.

To the Editor: The great majority of the fertilizer manufacturers are, no doubt, honest and sell to their customers mixtures which they believe will give profitable returns. But as there are a few black sheep in all large flocks, so there is among the fertilizer manufacturers occasionally one who puts up an inferior article or misrepresents his goods. A firm in the East has recently been "raked over the coals" for selling stuff at from $15 to $20 per ton that contained only $1.75 worth of actual plant food.

A case was recently tried in the English courts that should be of interest to all buyers of fertilizers. This dealer sold a mixture to a farmer, guaranteeing it to contain two per cent of actual potash. The farmer had it privately analyzed and found that it contained less than one-half of one per cent. The farmer sued for damages, proved his claim by a well known chemist, although the manufacturer claimed that while the potash was short, the nitrogen and phosphoric acid were in excess, and that this value more than made up for the shortage in potash. The farmer, however, claimed that he wanted the potash, had bought the fertilizer under a guarantee, and did not get

it. The judge ruled that an excess of one element could not make up for the low analysis of another element, and imposed a fine of $35 and cost, over $50 in all.

The lesson from this is to buy your fertilizer only from the most careful and reliable manufacturers, just as nursery trees should be bought only from reputable firms. It also shows that farmers as well as horticulturists should study different mixtures and buy according to the content of actual plant food, without regard to the attractive but confusing statements printed on the tag. Our Pacific Coast manufacturers have a reputation for delivering just what is ordered; but if potash is wanted, see that it is there. The same is true of nitrogen and phosphoric acid, since each element has its work to perform, and an excess of one cannot take the place of another that is lacking.

D. I. DUNCAN.

Los Angeles.

Trying for More and Better Oranges.

By Mr. A. D. SHAMEL, of the U. S. Department of Agriculture.

[In the PACIFIC RURAL PRESS of April 8 we gave an interesting outline of his work upon citrus fruits which Mr. A. D. Shamel presented at the San Bernardino fruit growers' convention. There has just appeared as Circular No. 77 of the Bureau of Plant Industry, with which Mr. Shamel is connected, a more detailed account of his work to determine which trees really grow most oranges of the best type. It is easy to guess at this matter from casual observation, and this is a starting point, but nothing less than careful counting and weighing will determine which are best in one year, and a repetition of the process is required to determine whether the trees do it all the time or only once in a while. It is desirable for Mr. Shamel to do all that he can in this direction with all the assistants he can get, but there is no reason why individual growers should not do something in the same line if they have the inclination and can spare the time for it. For this reason we present such selections from Mr. Shamel's fuller statement on the subject as we can at the moment command space for.—EDITOR.]

Picking.—The picking of each tree is done by an expert regular picker furnished by the grower, under the immediate supervision of the writer. Every possible care is used to prevent injury to the fruits, both in picking and in all other operations. The fruit is picked in the usual manner and placed in picking boxes. All of the fruit is picked, the boxes are assembled, and the photograph of each tree is made before the sorting or any other operation is begun. No fruit is picked and allowed to stand overnight before the several operations are completed.

Grading and Sizing.—The fruit of each Washington Navel tree is sorted into three grades by the writer: (1) orchard grade, representing all of the perfect fruit, without injury or blemish; (2) standard grade, or fruits of irregular shape, blemish, or discoloration, but still suitable for shipment as an inferior grade, and (3) culls, or fruits so badly malformed or with such marked blemishes as to render them unfit for shipment or sale.

The orchard and standard grades are sized with a small automatic sizer into 11 different commercial sizes, viz., 80, 96, 112, 126, 150, 176, 200, 216, 250, 288, and 300 to a box.

In the beginning of the Washington Navel orange work, rings of the corresponding sizes were used and the sizing was done by hand. This is a perfectly satisfactory method, but with the large number of trees studied the automatic grader is more efficient. In the case of pomelos or lemons the sizing must of necessity be done with rings, as there is at present no satisfactory automatic sizer available. The orange sizer is small and compact and easily moved about the grove by two men. A small platform scale for weighing the fruit, mounted on a truck, is also used.

The fruits of each size of each grade are counted and weighed separately, and the results noted in the regular blank form, except in the case of culls, where no sizes are made and the weight is taken as a whole. By adding the totals of the three grades the total product of the tree is obtained. These data, including the number and weight of fruits of each grade and size from each tree, form a definite basis for scoring a tree as to its performance and make possible an accurate and comprehensive comparison of the value of individual trees under the same conditions. When, as is usually the case, the growers keep a record of the product of each size and grade from the grove as a whole, these data are of further comparative value. While oranges are frequently divided into additional grades commercially, for bud-selection purposes the three grades mentioned above are sufficient to give reliable data as to the quality of the fruit, and the personal equation in sorting into extra fancy and other grades of fine-drawn distinction is thus eliminated. Moreover, the quantity of sound, free-from-blemish, marketable fruit of good quality that the tree produces is the most important factor to be considered in this work. This matter, however, may vary under different conditions and can be adjusted to meet the prevailing methods of grading and sizing practiced in the locality where performance records are to be made.

Counting and Weighing.—It was found most convenient systematically to pick up five oranges at one time in the case of the smaller sizes, three in the right hand and two in the left, in order to make an accurate count. In the case of the large sizes a definite number is taken up, the same each time, in order to avoid mistakes in the count. This may seem to be a very simple matter, but errors are very easily made, especially after long-continued work, and it is probable that most workers along this line should practice checking up results in order to become absolutely accurate before attempting to count the fruit from select trees.

Note Taking.—Detailed descriptions or notes of trees or fruits have not been extensively made. Such general notes are usually somewhat vague and unsatisfactory as a means of preserving definite ideas of the objects described. There are, however, certain notes that are very valuable, for example, the history of the trees; a description of the past and present methods of orchard management, particularly methods of soil treatment; the history of the cultivation of the grove; the kinds and quantities of fertilizers used or other sources of soil improvement; the methods and system of irrigation; the methods of pruning, if any; and any other facts bearing on the maintenance of the grove. One objection to the taking of extensive notes in this type of work is that the time and energy devoted to this phase are likely to defeat the principal object of the work. The most eminently successful plant breeders with whom the writer has been acquainted have used but few notes preferring to have the plants themselves as notes and to devote their attention to a first-hand study of the plants. There is, perhaps, a happy medium, which must be discovered by each worker for himself, which will permit of the study of a sufficiently large number of plants and the preservation of all necessary data.

Citrus-Improvement Clubs.—The writer suggests the organization of citrus-improvement clubs in the various citrus-growing localities for mutual assistance in the study of this subject. Such clubs, with a membership consisting of interested citrus growers, could hold regular meetings for the purpose of discussing individual results and the criticism of methods of work. It would be possible for such clubs to maintain a set of record books in which a copy of each member's data could be kept, similar to the plan of certain live-stock breeders' associations. The membership in such organizations should be undertaken only by growers who are willing to devote the necessary time, care, and thought to their work, so that the results will be reliable and of permanent value. It would be possible for the local clubs to have a central organization through which annual or other meetings might be held for the purpose of bringing together interesting information from the different clubs. Some such active coöperation would be of great value in promoting a widespread and general interest in this work.

Importance of Uniformly Productive Trees.—The great difference between the yield of the best trees in a grove and the average yield per tree of that grove, found so far in every grove of Washington Navel oranges and Marsh pomelos, indicates that in the established groves there is a great lack of uniformity in fruit production. For instance, in the case of one orange grove the best tree produced 432 pounds of fruit, while the average of the grove was about 175 pounds. Similar proportions were observed in all other groves studied. The differences in the yield of the best and average pomelo trees were even greater than in the case of the orange trees. Conservative growers have frequently estimated that uniform trees like the best ones in their groves would more than double their crops. The yield test for individual trees, like the Babcock test for dairy cattle, should discover the "boarders", or worthless trees, that cost just as much to maintain as the productive, profitable ones. There is a certain definite investment in every tree in the grove which can easily be figured out by the grower, and the loss or profit of the trees can be determined by means of the yield test and the selling price of the fruit. Such information must be of intense interest to every fruit grower and can be secured at little expense of time or money.

The Value of Reliable Select Trees.—To every prospective planter of citrus trees the reliability and character of trees planted are of paramount importance. The expense for buds is a comparatively small item in the planting of a grove, not in any sense commensurate with their importance to the planter. It is probable that the additional expense necessary for the production of selected stock will be gladly borne by the planter, provided he is assured of its improved value. Performance records from trees which are extra heavily fertilized or favored in any way might prove misleading. Therefore, it will be necessary to avoid the error of depending on records that have been secured under unfair conditions. Too much emphasis cannot be laid on this point, as dishonest and unscrupulous nurserymen might mislead purchasers of their stock in order to reap a temporary, dishonest reward. The reputation of the grower of select buds of trees must be taken into account as well as the performance records of his breeding stock.

Summary.—The object of these investigations is the demonstration of methods for the elimination of unprofitable trees in citrus groves and the production of reliable select citrus trees for new plantings.

These investigations, begun in April, 1909, are being carried on with Washington Navel oranges and Marsh pomelos near Riverside, Cal. If desirable, this work will be extended to other sections of the citrus belt and to deciduous and other fruits as soon as men are provided to conduct the work.

A series of consecutive performance records is necessary to secure reliable select stock, and methods of securing these data and tabulating them for intelligent interpretation are described in the circular.

The yield of established orange and pomelo trees of the same variety varied greatly in the same grove and under similar conditions during the past season. Further data are necessary in order to know whether the high and low yielders of the past season are consistent in their behavior.

The importance of uniformly high-yielding trees bearing a large proportion of valuable fruit is apparent by comparing the yield of the best with that of the poorest trees in any grove. It is probable that the yield can be greatly increased and improved by securing trees of uniformly good performance.

The development of reliable select stock is of the greatest possible importance to the prospective planter.

AGRICULTURAL REVIEW.

With the Fruit Men.

The Oakley (Contra Costa county) Almond Growers' Association is planning to erect a large concrete warehouse.

The Zante Citrus Association of Tulare county is to install sweating rooms instead of shipping fruit direct from the trees.

Grape growers of Kings county claim that there will be no first crop of grapes, although later crops may be fair. Peaches there are quoted at 8 and 8½c. per pound.

Buyers in Fresno county are said to be offering $30 and $35 for green peaches.

The Davis Almond Growers' Association has estimated the almond crop for the State at about 50 per cent.

Tuscan and Phillips cling peaches on the Givlin orchard near Yuba City have been sold to a canning company for $60 per ton.

Apricots are bringing $40 per ton delivered at Redlands Junction, San Bernardino county.

Two carloads of Algerian date trees have been received at Coachella valley. There are 1000 plants in the shipment, representing an outlay of about $12,000.

An effort is being made by Porterville orange growers to have all fruit shipped out of the district sold f. o. b. in order to prevent variations in price after leaving the shipper's hands.

The Gravenstein apple crop around Sebastopol is not expected to exceed 30% of a full crop this year. Later apples look well, as do berries and other crops.

The Corona Foothill Lemon Co. has been incorporated and will plant out 816 acres to lemons on Orange Heights, near Corona.

According to Robert E. Skinner, Consul General at Hamburg, Germany, the European grape crop will be very short, and a good market opened for California wines.

The first pear shipment, including 51 boxes of Wilders, was sent out from Vacaville Monday.

Horticultural Commissioner Gallaway, of Sonoma, in his annual report, states that the brown apricot scale is less plentiful than last year, especially where colonies of the Comys fusca were liberated. Spraying of apple trees has checked the spread of the leaf-curling aphis and snout beetles. Pests have been injuring grape canes, walnuts, and potato fields.

To protect producers of seedless Sultana raisins, the Fresno Chamber of Commerce has protested to the U. S. Bureau of Chemistry, Department of Agriculture, against the condition of much of the Zante currants imported, which come into competition with the Sultanas.

General Agriculture.

In one day recently 132 cars of cantaloupes left El Centro, Imperial county, breaking all previous records. A melon festival for the valley is to be held at Brawley, July 3 and 4.

Crops in Monterey county are promising well for this season, owing to late cool weather. Grain is good, potatoes will be a good crop, although the acreage is short, and sugar-beets will be a big crop on an increased acreage.

A small beetle has been found near Newman cutting the heads off stalks of grain.

The Spreckles interests are said to be planning to enter the Kings county field in competition with the American Beet Sugar Co., and to have purchased 10,000 acres near Alpaugh.

Reports from Wheatland state that a large crop of hops will be harvested. The Durst brothers are said to have sold practically all their old hops.

A good crop of sugar beets is expected at Davis. Six hundred acres have been planted on the Robert Armstrong land.

In the Department of Agriculture crop reports for June the condition of California crops was stated to be 96.3% of the average for recent years. This does not take into consideration change of acre age. Conditions for the country as a whole for several crops are: Cotton, 10.8; sugar beets, 103.2; apples, 102.5; raspberries, 101.8; spring wheat, 101.1; watermelons, 100.6 per cent. Pears, 99.7; cantaloupes, 99.6; blackberries, 99.5; barley, 99.2; winter wheat, 98.5; rye, 98.2; oats, 96.9; alfalfa, 96.1; onions, 95.5; lima beans, 92.5; cabbage, 91.0; pastures, 90.2; hemp, 89.0; clover hay, 84.6; all hay, 85.1; peaches, 83.5 per cent.

Contracts to grow sugar beets on 2000 acres at Fallon, Nevada, have been made.

Notice of prizes to be given for wheat, corn, oats, cotton, potatoes, barley, sugar beets, apples hops, and alfalfa have been sent out by the management of the American Land and Irrigation Exposition to be held in Madison Square Garden, New York, from November 3 to 12. The competition can be entered by any farmer, and the prizes range in value from $500 to $1500.

Miscellaneous.

The supervisors of Imperial county have designated July 12 as the date for an election to create an Imperial irrigation district which will include practically all the cultivatable land in the valley.

Fifteen cars of wine in 90 days have been sent out by the Escondido (San Diego county) Wine Association.

An order for 130 incubators was recently received from Australia by the Petaluma Incubator Company.

An exhibition of farm and industrial products is to be held in connection with the Salinas carnival for the week of July 30 to August 6.

It is proposed to construct a cider and vinegar factory at Sebastopol, Sonoma county.

The boys of the Episcopal Armitage of San Mateo are to spend the summer near Sebastopol picking apples and berries for the Gold Ridge Orchard Company.

A large niter deposit is said to have been found near the line of the Western Pacific eighteen miles from Gerlach, Nevada.

The Likfresh Evaporating Co. has installed a plant for Wm. Hotle of West Gold Ridge, Sonoma county.

P. P. Martin, who recently purchased a large number of bees from David Finnell of Chico, has shipped a carload of hives to Lovelock, Nevada.

The board of supervisors of San Bernardino county is considering the adoption of an ordinance preventing the shipment of bees into the county without inspection by proper officials.

A number of farmers of Butte county have organized a mutual fire insurance company.

Resolutions in favor of smaller sacks for grain have been passed by the Soquel and Visalia Granges.

A purchase of 2200 acres of the Bidwell ranch, near Chico, for subdivision purposes, has been made.

The annual convention of the Pacific Coast Association of Nurserymen was held from Tuesday to Thursday of this week in San Jose.

An effort will be made at the meeting of the Country Life Convention to be held at Davis, to have the State exercise supervision over the sale of farm lands.

(*Continued on Page 498.*)

When the Irrigating Season is over Electricity still brings Profit

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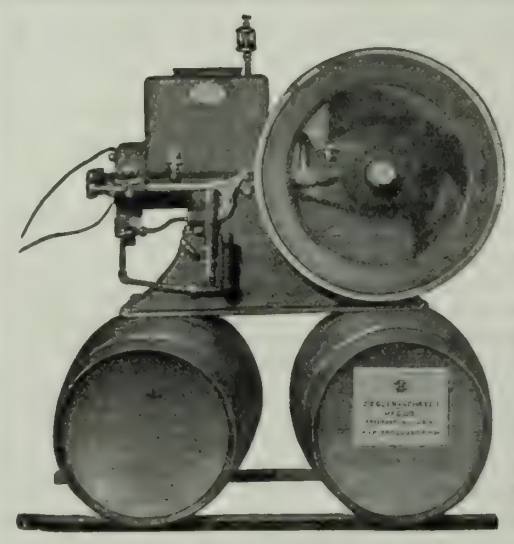
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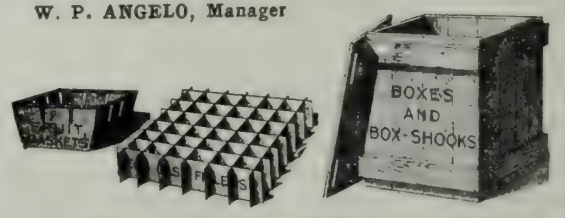
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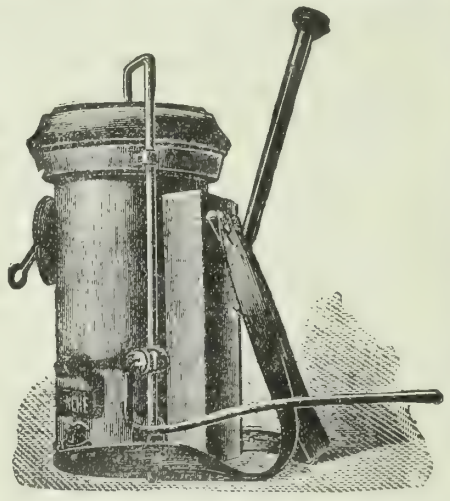
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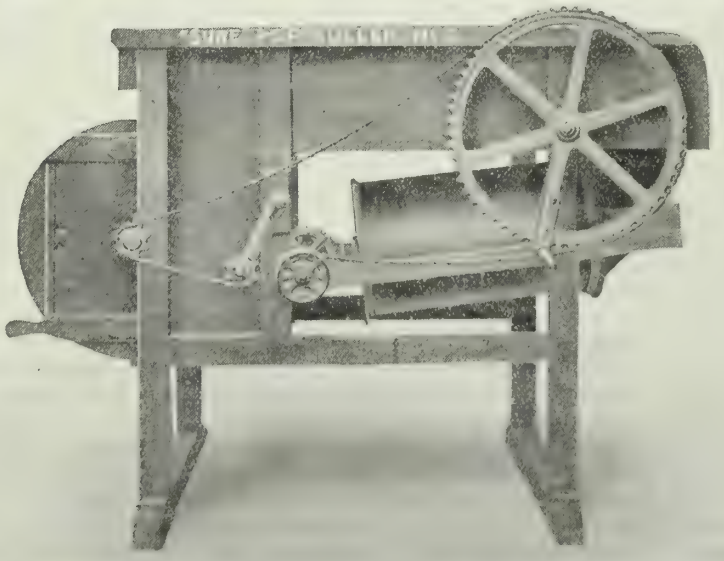
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AT PACIFIC RURAL PRESS OFFICE, 667 HOWARD STREET, SAN FRANCISCO

Grape Juice to Keep.

To the Editor: Can you give me a good, cheap recipe for making grape juice on a small scale? I wish to know how to make grape juice out of grapes in the fall to keep for use in the following spring and summer. I think that would make a very pleasant and healthful drink during hot weather. GROWER.

Fresno.

[To do good work in this line requires more than a recipe. It is necessary to understand principles involved and must be considered a rational process rather than a recipe. At the same time, after understanding clearly what is involved, the work can be successfully done by household appliances. Three years ago the method was described in detail for our columns by Prof. Bioletti, of the University. So many new readers are, however, coming upon our list in the grape districts that it may serve a wide purpose to repeat the publication now so that all may have a chance to consider it sufficiently in advance of the grape ripening.—EDITOR.]

BOTTLING GRAPE JUICE.—Unfermented grape juice put up in bottles has been produced in ever-increasing quantities for many years. Most that was produced formerly was unwholesome because of the use of antiseptics for its preservation; much that is produced now is defective in flavor and appearance, on account of an imperfect knowledge of the proper methods of preparation or an attempt to produce too cheaply.

PRINCIPLES.—A short discussion of the principles involved and some hints for household use may be interesting. The principles are identical, whether the juice is put up on a small or on a large scale, the only difference being in the mechanical means of handling large or small quantities.

The problem has two main parts: (1) Sterilization to preserve the juice from fermentation, mold or other injurious influences, with as little change of its flavor as possible; and (2) clarification, to make the juice perfectly and permanently clear.

STERILIZATION.—If the fresh juice is put in bottles or preserving jars and heated to the boiling point for half and hour, as is done in preserving fruit, it will keep. Its flavor, however, will be completely changed. If a sufficient quantity of benzoic acid or similar antiseptic is put in the juice, it will keep perfectly and retain its flavor. Preserved in this way, however, it is unwholesome, and contrary to the pure-food laws.

The only legitimate way is by the proper use of heat. If the heat is too great, as above, the flavor is injured; if too low, fermentation will occur. It has been found that heating in a closed bottle to 175 degrees Fahrenheit for five minutes will in most cases kill all mold and yeast spores, and therefore preserve the juice, so long as the bottle is not opened. If this heating is repeated one or two days later, keeping is assured.

The more acid the juice, the lower the temperature that will preserve it. A fairly acid juice is also more palatable. Grapes of full acidity are therefore most suitable for this purpose.

The flavor is very slightly injured at this temperature of 175 degrees Fahrenheit, but if much exceeded the juice acquires a caramel or jam taste. Much depends on the care in heating. It is quite possible to injure the flavor by heating some parts of the juice to too high a temperature, though the whole amount may not rise above 175 degrees. On the other hand, with proper care and precautions, it is quite possible to preserve the juice at 160 degrees, or even lower, with a corresponding improvement in flavor.

The main points to be kept in mind in this respect are: (1) Slow, gradual and uniform heating. (2) Elimination of all spores, germs and impurities possible before heating. (3) As little exposure to the air as possible during the process.

If the heating is slow, the germs are exposed to its effects for a longer time, and a lower temperature is effective. If the heating is uniform, no part of the juice is heated too high, and the danger of caramelization is minimized.

The fewer germs there are present the more certain we can be of killing all of them. The presence of impurities, dust, particles of skins, pulp, stems, etc., during the heating injures the flavor. The presence of air dissolves in the juice during heating not only makes the sterilization less sure, but tends to give a disagreeable "rancio" or sherry taste.

CLARIFICATION.—The problem of clarification is more difficult than that of sterilization. It is very difficult to filter the fresh juice, on account of its viscid nature. It can be easily cleared with gelatin or eggs after heating, but this involves the cloudy juice, which, as shown, injures the flavor.

The only practical and suitable method for the first clearing is by settling and "racking" or decantation.

SEPARATION OF JUICE.—Use sound, clean, moderately ripe, acid grapes, containing about 20 per cent of sugar by the Balling test, and about 1 per cent of total acidity. This is a little less ripe than they are used for wine-making. Crush the grapes and press out the juice. This should go directly into a vat, cask or other vessel for settling.

SETTLING OR DEFECATION.—The rapidity and completeness with which the impurities sink to the bottom varies very much in different cases. With some varieties of grapes, especially when they are very thoroughly crushed, so as to extract a little tannin out of the skins, the settling will be complete in 24 hours. Generally it takes longer, and some precautions must be taken to prevent fermentation before settling is complete. The lower the temperature and the cleaner the grapes and utensils, the more slowly fermentation sets in. The grapes therefore should, if possible, be gathered and crushed when cold, and everything with which they or the juice come in contact should be thoroughly cleaned with hot water. These means alone will usually delay fermentation for three or four days.

In practice it is very difficult, however, to apply these means perfectly, and some way of hastening the settling or delaying the fermentation, or both, is necessary. The fermentation may be delayed by the use of sulphur. This may be applied by burning a piece of "sulphur tape," such as is used in wineries, in the settling vessel before filling with juice. As much sulphur should be used as the air in the vessel will cause to burn. This is applicable only to closed vessels. A better method which can be used for open vessels also, is to use a salt of sulphurous acid known as potassium meta bi-sulphite. This can be purchased in a pure form from reputable dealers in wine-makers' supplies. It adds nothing to the juice but a little sulphurous acid, and in the amounts recommended is absolutely harmless and imperceptible to the taste.

The amount of this salt to use is about ¼ oz. to every 20 gallons of juice, a little more for very sweet juice in hot weather, a little less for acid juice in cool weather. In no case should more than ½ oz. be





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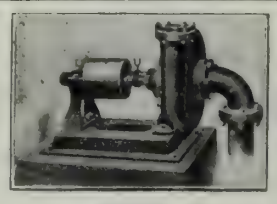
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BERRY PLANTS

LOUIS F. SCRIBNER
PASADENA, CAL. R. F. D.

added, and much less than ¼ oz. would do no good.

The juice of some grapes, even with all these precautions, will not clear rapidly enough. These may be helped by the addition of a little pure tannin. Only the very best tannin, free from all impurities or odors of ether, should be employed.

The sulphite should be dissolved in the juice first, by placing it in the tub from which the juice is pumped to the settling vessel. The tannin can then be added after the vessel is full. The tannin may be dissolved a short while before using, in a little warm water. Both sulphide and tannin must be well mixed equally throughout all the juice to obtain the best results.

First Heating.—After the juice has settled for from one to three days, it should be perfectly clear, or, at most, very slightly cloudy. If it were bottled and sterilized at this stage it would in most cases become cloudy again, and in any case deposit a sediment of cream of tartar and other solid matters. For home use, however, it is perhaps best to bottle at this stage. An addition of 5 to 8 ozs. of pure citric acid to 20 gallons of must helps to keep it clear and improves its palatability.

The bottles should be well cleaned and sterilized with hot water or by soaking in a 2% solution of sulphuric acid for 24 hours, followed by rinsing in clear water The corks also should be sterilized by steaming. As soon as the bottles are filled they should be placed in a heater or boiler filled with water, in such a way that no part of the bottle escapes a full heating. They should be raised to a temperature of 170 to 175 degrees Fahrenheit for five minutes, or to 160 to 165 degrees for 10 minutes, and then allowed to cool rapidly. This heating should be repeated two days later, or any time within a couple of weeks.

Second Clearing.—When made on a commercial scale the juice must be made perfectly and permanently bright. To accomplish this, a second settling for a considerable time is necessary. This settling may take place in closed bottles, carboys, jars or barrels. The juice may be heated in the way described, or by passing through a continuous pasteurizer at 175 degrees Fahrenheit directly into the settling vessels. It will require several months for all the solid matters to be deposited, and the colder the juice can be kept, the more rapid and perfect is the settling.

Second Heating.—As soon as settling is complete the juice is ready for bottling. If it is not perfectly bright it must be filtered. The bottles are to be filled, corked and heated in the way already described, taking care not to exceed the temperature of the first heating. Two heatings in the bottle are necessary to insure the keeping of every bottle, but the second heating can be obviated by the following means: After the bottles have been through the first heating, stand them up in a warm room and leave them undisturbed for about one month. If at the end of that time no mold has formed on top of the juice or under the cork, the juice can be safely cased and shipped.

OUTLINE OF METHOD.

1. Pressing out the juice.
2. Clearing by settling, aided by cleanliness and cold, and, when necessary, by sulphite and tannin.
3. Heating to 170 to 175 degrees Fahrenheit.
4. Settling for two to four months in a cold place.
5. Bottling (after filtering, when necessary).
6. Heating to 165 to 170 degrees Fehrenheit.
7. Testing by standing in warm room.

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THE REJUVENATION OF THE SACRAMENTO VALLEY.

(*Continued From Page 489.*)

terest of the enterprise locally we give on the first page pictures illustrative of water impounding and use which the celebration of last week commemorated. The date of the jubilee was the anniversary of the signing of the national irrigation law by President Roosevelt on June 17, 1902. One of the speakers at the celebration noted that it was also an anniversary of a much earlier event in the valley, for thirty years ago a meeting was held in the region for irrigation organization, and today two of the plans discussed at that meeting are in operation: the Orland project by the National Government and the Willows-Jacinto enterprise which has been realized through the Sacramento Valley Irrigation Co. of the Kuhn Syndicate, as our readers already understand.

Some figures are pertinent to a fuller understanding of the work which our pictures indicate. The dam which impounds the waters of Stony creek is 93 feet high, 86 feet thick at the botom, and tapers to 10 feet at the top. From bank to bank it is 249 feet. It contains 12,000 cubic yards of concrete, or 324,000 cubic feet. The cover over the stand at the top of the dam is the spot from which all the gates and mechanism are operated. The apparatus is ball-bearing and can be operated by a child.

The reservoir formed by this dam has 26 miles of shore-line and extends several miles above the dam, forming a beautiful lake, set among the most picturesque foothills and canyons. To convey this impounded water to the area of usefulness the Government Reclamation Service, through its officers located at Orland, has constructed 26 miles of main canals, 76 miles of lateral canals, and 100 miles of farm ditches. All the diversion dams, gates, chutes, siphons, and drops are constructed of reinforced concrete and are expected to last more than a century.

The cost is estimated to be nearly $650,000, that amount being appropriated by Congress for the completion of the project. The number of gallons of water contained in this reservoir has been carefully estimated by the conservative Government officials, but in this case numbers do not adequately convey the quantity to the mind, but an idea may be formed in this way: Each of the 14,000 acres of this Orland unit project is supposed to use during each season water enough to cover that acre four feet deep if used all at one time, and the East Park reservoir contains enough water to supply the entire 14,000 acres with that amount for two full seasons without another drop from any source.

The dam is 45 miles southwest of Orland. The water will supply all the farmers and ranchers in the district. The vast reservoir, or lake, formed by the dam, is now full, the water running over the spillways. The lake covers 3700 acres, and is 30 miles around. This body of water will be stocked by the Government with black bass. Since the reservoir has filled, ducks and geese have appeared in great numbers, and the surface of the reservoir is lined daily with the game.

The Orland projeet, as already stated, is the first to be undertaken in California by the Reclamation Service. It has been completed without an accident or miscalculation and is now doing the work for which it was intended as easily and smoothly as though in operation for years. Great interest has been taken in its construction and success, and now that the enterprise is completed, and the water turned upon the land, an occasion for rejoicing seemed demanded by the spirit of the people. To this end the people of Orland raised a fund of nearly $3500 to spend in bringing together and entertaining their friends from all parts of the United States in a big irrigation jubilee to commemorate the turning in of the water from the East Park reservoir upon the lands of the project. The celebration had all forms of joy from a beautiful queen and ponderous orators to dignified parades and grotesque street displays. No one who attended was allowed to depart without his fill of rejoicing.

AGRICULTURAL REVIEW.

(*Continued From Page 494.*)

Deciduous Fruit Shipments.

The following gives number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, June 16, 1911, as reported by the California Fruit Distributors:

Cherries—43¼ cars. Shipment of this fruit from the early section is finished, supplies coming almost entirely from the Santa Clara valley at the present time. A considerable volume of shipments from that section will continue for the next week or ten days.

Apricots—16¾ cars. Royal apricots are moving in considerable volume now, and shipments of this variety will continue to increase for the next two weeks. From this time forward we will have abundant supplies to meet all shipping requirements, although, as is well known, the crop of apricots in the early section is very light this year.

Peaches—3½ cars. Alexander peaches are now ripening rapidly. The first few boxes of Triumph have already made their appearance. Next week will nearly finish the Alexanders and should show a considerable volume of Triumph, which is our earliest yellow peach.

Plums—3½ cars. Clyman constitutes the principal variety of plum now being shipped. The first few scattering crates of Tragedy, Burbank, and Climax are now going out from the early sections. All varieties will be more plentiful next week.

The outlook for pears and grapes continues to be all that could be desired. Pears are growing rapidly, and the grape crop never looked better than it does at this time. Bunches are large and well formed, berries are well developed for the stage of growth, and unless the unexpected happens this crop will be as fine as was ever harvested in the State.

Convention of the Sacramento County Fruit Growers.

There was a meeting of fruit growers held at Fair Oaks, on Thursday, June 15, for the purpose of discussing fruit standardization and also to witness a demonstration of breaking up hardpan by explosives. On the arrival of the 8:15 motor from Sacramento every one proceeded direct to the Patterson ranch, where the representatives of the Du Pont company gave a demonstration of draining a swale that was covered with water which would not drain off on account of a hardpan layer about six inches thick. Three holes were fired and the water drained off through these holes to the subsoil below the hardpan.

At 11 o'clock a meeting was held at the Methodist Episcopal Church, and State Commissioner of Horticulture Jeffrey was asked to preside. He in turn introduced A. L. Jones, representing the technical division of the Du Pont company, who gave an hour's interesting talk on the discovery and manufacture of explosives, and to what advantage they could be used by the farmer, orchardist, and vineyardist. After this, for about a half-hour, there was a general discussion among those present in regard to the use of explosives.

At 12:30 the meeting adjourned and lunch was served by the ladies of the church, and promptly at 1 p.m. the standardization meeting was held. The meeting was addressed by Messrs. Jeffrey, Brandstetter, Patterson, and Wrangham.

After the standardization meeting, all proceeded to the Levering brothers' orchard, where the representatives of the powder company gave a demonstration of "rejuvenating"—that is, exploded two sticks of Red Cross 25% dynamite under a tree or in holes about three feet from the trunk. After the shots the hole was excavated, and it was found that the hard subsoil was thoroughly broken and pieces of hardpan weighing up as high as 50 pounds were completely thrown out of the hole. Those present were perfectly satisfied that explosives will hereafter be closely allied to the orchardist, as the shooting around the trees breaks up the hardpan and allows for free drainage, which before this was impossible. In all, 21 shots were fired and two sticks were used in each hole.



Riding and Walking

BEET PLOWS

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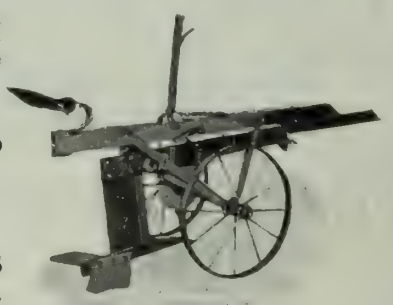
This is the strongest plow on the market. Can be had with straight or offset standard, and has one-piece land side. Nothing but hard plow steel is used in the Standard Shin Landside and point. Point and Shin are reversible. We guarantee this plow to do satisfactory work in any beet section.

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DAIRY NOTES.

Money has been raised and plans completed for a new creamery at Quincy, Plumas county.

T. B. Purvine, of Petaluma, is to dispose of a part of his dairy herd, owing to the difficulty of securing sufficient help.

At an auction of dairy cattle at the Premo ranch near Poplar, Tulare county, recently, nearly $10,000 was secured from buyers.

The permanent organization of the new co-operative creamery to be established at Corcoran, Kings county, will take place Monday, June 26.

Citizens of Diamond Springs, El Dorado county, have organized a company to construct and operate a creamery.

The Western Creameries Co. has taken over the creameries at Meridian and Marysville and will operate both plants in the future. The company has purchased three thousand acres of the Tisdale ranch in Sutter county and thirteen hundred near Gridley and will stock the two places with a thousand cows. The Colusa branch creamery is paying out $20,000 per month for cream.

A. J. Blaettler, of Salinas, has taken a five-year lease on the Mill Creek ranch, 10 miles southeast of Hanford, owned by Wm. Hoffschneider, and will erect a cheese factory on it shortly.

LIVE STOCK NOTES.

Cattle rustlers have been working in the foothills of Butte county near Pentz and Cherokee.

Dr. Frank Griffith recently shipped a number of thoroughbred Berkshire hogs to San Jose and Visalia from his ranch at Hanford.

W. H. Chism recently sold 25,000 pounds of wool in one transaction in Yuba City, at 14½ cents per pound.

Several additional cases of anthrax have been found at the Young ranch in the River Bend section of Kings county.

George A. Long, of Imperial, will receive 4000 head of cattle this season from Mexico and Arizona for fattening.

Hugh Garnet, of Willows, has shipped 140 mules to Honolulu. Several carloads of mules for the same place have been purchased near Durham, Butte county.

In a severe storm near West Butte recently a number of sheep in care of a herder on Sucker Run ridge were struck by lightning and killed.

Cattle scales for the use of Indians and neighboring ranchers have been put in at the Tule Indian Reservation, enabling shippers to weigh cattle at the time of sale.

Sheep kiling by dogs has started in Colusa county, 13 bucks belonging to Chas. Seaver, who farms four miles north of Colusa, being destroyed in one night recently.

The spring sale of wool was held at Ukiah Tuesday of this week and at Cloverdale Thursday.

Five thousand sheep were sent out from Tehachapi to Kansas City last week on one train. The shipment is being hurried on account of the hot weather. The animals filled 44 cars.

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Here are tires that can't rim-cut. Here are oversize tires which cost nothing extra. The 600,000 which we have sold have saved motor car owners many millions of dollars. They'll cut your tire cost half.

Goodyear No-Rim-Cut tires make rim-cutting impossible.

We have run them flat in a hundred tests, as far as 20 miles. We have sold enough to fully equip 150,000 cars. They have been six years in use. In all this experience there has never been a single instance of rim-cutting.

The ordinary tire, when punctured, may be ruined in a moment by running flat on the rims. And the damage is beyond repair.

Goodyear No-Rim-Cut tires avoid all this worry, all this expense. They have done it for tens of thousands.

Our No-Rim-Cut feature is controlled by our patents. Others cannot make it. That is the only reason why the old-style tire—the clincher tire—is now recommended by anybody.

Tires 10% Oversize

The removable flanges on your rims will be set to curve outward — instead of inward—when you use Goodyear No-Rim-Cut tires. You simply move them to the opposite sides. There is nothing else to do. The extra flare lets us fit the rim and still make the tires 10 per cent oversize. And we do it without extra cost.

That means 10 per cent more air to carry the load. It adds 10 per cent to the carrying capacity. With the average car this adds 25 per cent to the tire mileage. Yet it costs you nothing extra.

We say 10 per cent, but late comparisons with standard clincher tires show the average actual oversize to be 19.9 per cent, measured by air capacity. And it is the air that carries the load.

This is a vital fact.

Nine times in ten, tires are overloaded by the extras one adds to a car. And all cars at some time are overloaded with passengers.

That is what causes blow-outs.

It would pay you to pay for this extra size. It certainly pays to accept it when oversize tires cost the same as ordinary tires.

These two features together—No-Rim-Cut and oversize—will cut the average tire bill in two.

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No-Rim-Cut Tires

12 Years Spent in Testing Tires

The demand for Goodyear No-Rim-Cut tires seems like a sudden sensation. Last year our tire sales trebled—jumped to $8,500,000. Yet, until a few months ago, these patented tires cost one-fifth more than other standard tires. This year 64 leading motor car makers have contracted for Goodyear No-Rim-Cut tires to equip their latest models.

But back of this all lie twelve years spent in tire making. During that time we have tested out 200 separate fabrics. We have made comparisons of forty formulas for use in Goodyear treads.

We have had experts and inventors constantly studying how to improve these tires. And our tires of today—which have become the sensation—are the final result of all these years of effort.

Tire Book Free

If you buy tires it is wise to know what a difference there is between one tire and another.

If one tire will carry you twice as far as another, you ought to know that tire. This question of tires is important.

Our Tire Book pictures all the facts in the clearest sort of way. There are scores of facts good for you to know.

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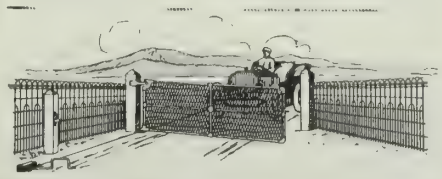
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Guernsey Cattle.

On the western coast of the New World, in a similar situation to their original home in the Old World, the Guernsey dairy cattle are coming to their own, and are now for the first time being given a thorough testing in California.

The Guernseys are a nearly related breed to the Jerseys, coming from the Channel islands of Great Britain, only a few leagues from the French coast. The climate there is tempered by the warm waters off the coast of southern Europe, and outdoor life is possible all the year, as in California. The temperature, climate and effects of ocean air are similar to those found in the ocean-bordering counties of this State.

Jerseys have been known and their worth proved for many years in California, but until recently the nearly related Guernseys have not been bred on a large scale. The last census of the Guernsey Cattle Club, however, showed that there were sixteen breeders of registered Guernseys in California, practically all of whom started their herds very recently.

The Alta Vista herd of Charles D. Lathrop at Stanford University is the largest, and numbers 82 head of stock, including bulls, heifers, and calves. All the animals, like most of the other herds, are young and cannot be compared for some time with full aged cows of other breeds under similar conditions.

Although in many ways similar to the Jerseys, Guernsey cattle are larger and somewhat coarser in style, showing rather more constitution. The color is lighter, and there is often considerable white marking of the hide. In the Alta Vista herd the mature cows are expected to weigh from 1000 to 1200 pounds. Lord Kitchener, five years of age, who heads the herd, weighs 1900 pounds. The milk is more plentiful than that of the Jerseys, and a little less rich in fat. The breed, however, is eminently a butter-producing type, and is said to produce butter more cheaply for the cost of the food given than any other breed of cattle.

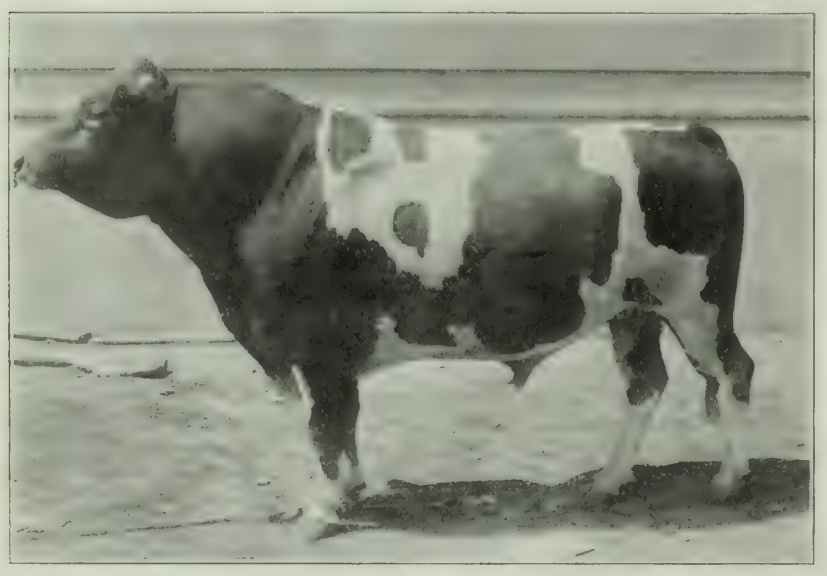
In the Alta Vista herd, 45 animals were imported from the Guernsey and the others either purchased in Eastern States or bred on the place. Only a month ago a shipment of 17 heifers was received from a large number of stock farms of the East, costing about $300 each when received at the ranch.

Official tests of the cows from a butter-producing standpoint will not be made for some time yet, and the only records are those regularly made in all well-kept dairies. The milk from each cow is weighed after every milking, and the Babcock test made several times a month. According to these tests, ten imported cows average 5.2% of buter-fat. One cow produces milk carrying 6.4%. Imported Schoolgirl of La Hoguse, four years of age, gave 4509 lbs. of milk in a four-months test, the milk testing 4.6% of fat.

Heifers drop their first calves on this ranch at from 24 to 26 months old, or occasionally at 22 months, which will partially account for the large size of the animals. This also gives a much more vigorous calf than would result from early breeding, as is often done with Jerseys.

The cows are dried up six weeks before calving, and are given the same food, although in smaller quantity as when being milked. Feeding is done so that the cows will have a balanced ration. They are out grazing on the hills both day and night when the weather permits, and are fed in the stall bran, grass, other concentrates, and alfalfa and other hay for roughage. If alfalfa were raised as it is in irrigated and warmer climates, this method of feeding would be changed, but as it is, alfalfa has to be purchased as hay and fed dry, and the grass on the range furnishes sufficient green food. When the grass is dry beets and other root crops are fed.

The milking sheds are all open on one



Imported Lord Kitchener—a Grand Guernsey Owned by Charles G. Lathrop.



Part of the Alta Vista Farm Herd of Guernseys Owned by Charles G. Lathrop.

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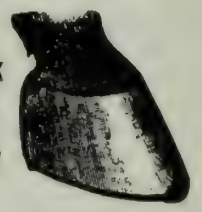
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Winner of the first prize 1906, Island of Guernsey.

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THOROUGHBRED SHROPSHIRE SHEEP, both sexes. S. H. Fountain, importer and breeder, Dixon, Cal.

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side, but built so that the cows are not exposed to the weather, although given plenty of fresh air and light. In the winter, when the ground is wet with the rains, the cattle are kept in the open-air barns with small graveled yards where they can get sufficient exercise without getting muddy and cold. The grain and hay is fed before milking, and immediately after milking the cows are turned out to grass. Perfect cleanliness is, of course, observed, and the barns have concrete floors, which are covered with straw in winter.

All of the milk, except that for home use, is separated and made into butter on the place.

Besides the Guernseys there are quite a number of ordinary dairy cattle of various or no particular breed, which are used only for the milk production necessary in running the creamery. They will probably be disposed of when the Guernseys are sufficient in number to supply all the milk that is needed.

The dairy manager, P. H. Quinn, claims that the grades obtained by breeding these cows to the dairy bull, Lord Kitchener, resemble full-blood Guernseys very closely, both in color, size, and in milking qualities, and that the offspring of a good Guernsey sire and an ordinary dairy cow resembles the Guernsey to a much greater extent than the other breeds of which it may be partially composed.

Lord Kitchener, who is an imported animal, is only five years old, but has taken first prize and been grand champion at the last two California State Fairs at which he was exhibited, as well as at the county fairs. Raymond of Alta Vista, a two-year-old, dropped on the place, was adjudged junior grand champion and given first prize at the last fair.

A HINT ON PIG GROWING.

A mistake is often made by hog raisers in trying to wean the pigs too soon. To do well pigs should not be weaned until they are eight weeks old, and if the sow is to have a second litter it is a good plan to let them suckle for several weeks longer. The sow should be fed to give a good flow of milk, and the young animals should be kept with her until they are able to feed well from pasture.

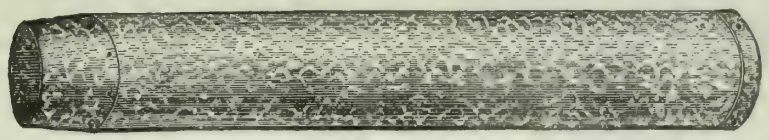
Before being weaned they should be trained to look after themselves by being fed soaked barley or wheat middlings and other solids and pastured on alfalfa or other fields so as to be accustomed to the life they will have to live later.

When the time comes to wean the pigs the sow's food should be cut down so that her supply of milk will be naturally diminished. If the litter is taken away while the flow of milk is strong, there will be danger of damage to the udder, and the sow's future nursing qualities may be greatly impaired. The stronger pigs, as a rule, should be taken away first, and the weaker pigs given the advantage of the milk that is left as the sow dries up.

Skim milk is, of course, the customary feed for the little pigs, with barley or other grains. Their food, however, should not be soured any more than can be helped, and the feeding pails and barrels should be kept sweet and clean. The same is true of the water, as a large part of the hog's reputation for enjoying dirty water is due to the fact that he was unable to get any other kind. Like all other animals, cleanliness is necessary and pays.

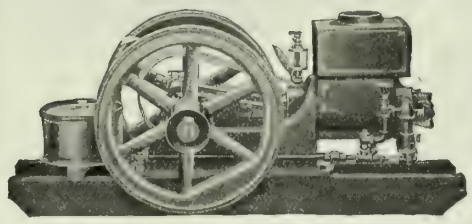
When first weaned the pigs should be fed four or five times a day if possible, as they are accustomed to feed much oftener than this when with their mother, and a sudden change in dietary habits will injure them. The frequency of feeding can be eliminated later, until they can be fed like the grown hogs.

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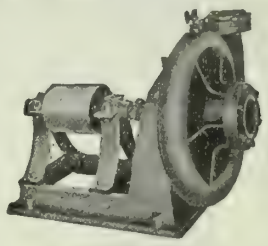
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THE IMPORTANT POINT.

In the Australian egg-laying competition noted in the PACIFIC RURAL PRESS, the result as to egg records and winning breeds, though interesting in itself, is not the important point brought out by the competition. The point of real value to poultry raisers is the fact that the fowls in the competition made a world's record in laying with "plain houses, plain yards, and plain feeding." There was no forcing for egg production. The object of the competition is not so much to show the possibilities of the hen as to show the possibilities of poultry-keeping in the hands of the farmer. As Prof. Thompson explains: "The whole of the tests have been carried out on plain, practical lines within the reach of the ordinary farmer."

Consider the simplicity of the bill of fare upon which the hens in the competion made their record: In the morning a mash consisting of middlings and bran, wet with cold water in summer and hot water in winter; and "twice per week only, both summer and winter, the mash is mixed up with minced bullock's liver (one pound of liver to each ten hens) and the boiling hot soup therefrom." In the evening grain feed, consisting of wheat and cracked corn; the former predominating in summer and the latter in winter, with green feed at all times and sea-shell grit.

Compare this with the many mixtures and formulas for poultry rations in our poultry literature, where the heavy concentrates, gluten meal, linseed meal, oil meal, beef scrap, blood meal, middlings, and bran are kept before the fowls as a dry mash, and occasionally touched up with "egg-makers" and other tonics and liver stimulants.

A COMPLICATED AFFAIR.

Poultry feeding has been made such a complicated and mysterious affair that the novice is prety sure to fall down at the start, and the result is seen in the increase of digestive and liver troubles. It cannot be too often repeated that the natural food of birds is seeds or grains, herbage with occasionally fruits, and insects together with mineral matter picked or scratched out of the soil; all of which we can supply in its natural state except insects, for which we must substitute meat. Meat being a more concentrated and stimulating food than insects, we must feed it with caution, and for the rest we should keep along the line of nature in our feed and feeding of poultry. This reduces poultry feeding to its simplest terms, as it were.

SIMPLICITY THE ACME OF ATTAINMENT.

At first glance simplicity might be considered as belonging to the crude beginnings, while in truth it is the acme of attainment in all undertakings. In the perfect working of wonderful machinery we are most impressed by its simplicity. In thoughts that live and books that are classics we again recognize that simplicity, and think: "How simple! a child could understand them; we might have written them ourselves—if we had just thought of it!" Yet that very simplicity is the mark of a master hand. It is the beginner whose work is complicated, whose writings are diffuse, and whose ideas are lost in long sentences and big words.

This simplicity is what we must work for in poultry culture, and those who have become practical and successful poultrymen have already attained it. Be doubtful of complex and complicated methods and systems. Have method and system, but be simple about it.

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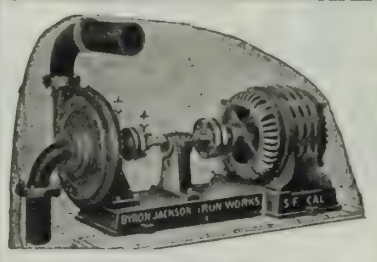
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Feeds for Poultry.

Professor Jaffa of the Agricultural College gives poultrymen some valuable points on the subject of poultry feeds:

Green food is a necessity in order to obtain the best results. The best green food is alfalfa where it can be grown even under difficulties, and it will more than repay the effort necessary. Alfalfa is rich in protein, the richest green food, and the more you have the less concentrated food will be required, 5 per cent of protein being contained in lean alfalfa, the amount in leaves being considerably more. Any other green food except peas contains less. Succulency is what makes the green food necessary. Kale, cabbage, and the various other green foods are good. Any dry hay is not as good as green. You must have the succulent food. Alfalfa meal will not take the place of green food.

There is no best grain or grain products. Experiments have proved that just as good results can be obtained from barley as from wheat, and equally good from corn. When a generous mash is fed, equally good results are obtained from either of the grains. This is of particular value just now because barley is cheap and will give just as good results because nearly alike. If fowls are accustomed to wheat they will not eat barley. It only shows they are creatures of habit, and as variety is the spice of life, a varied diet will give better results. Grain alone will not make a profitable food, and it is therefore necessary to feed a mash. There is no best mash, but you should know what the mash contains and be sure that none of the ingredients are injurious. Barley meal is one of the best ingredients. Ordinary barley meal has the hulls removed, and unless the husks are removed you will have crop-bound fowls. One of the best ingredients for the mash is bran. Experiments show organic phosphorus compounds are what make it especially valuable as food. Cornmeal contains a small amount of protein, but contains a great deal of phosphorus. Fowls need this phosphorus for bone and shell. Of the grains, corn is very rich in nitrogen, and if cheap enough, should be used, as it also contains 25 per cent protein. Cocoanut meal, when not rancid, forms an extremely desirable addition to the mash.

Animal protein has been proven necessary if good results are expected. The best form is fresh meat, but as it cannot always be obtained at reasonable cost, the best substitute is dry beef scrap. There are a good many samples of beef scrap on the market which had better not be used. Milk if granulated and powdered gives just as good results as meat, especially for young fowls. The next best think is skim milk. Cottage cheese is practically the same as fresh meat, and is a very excellent way to feed skim milk. A little salt will give good results, but only in the same proportion as for human food. Pepper the same; fowls like it. The same food is required in growing fowls as in egg production.

SWELLING ON THE DEWLAP.

To the Editor: I have a cow that has a large lump at the point of the breast-bone, the dewlap, I think you call it. This lump is as large as a cocoanut, and was caused, I think, by friction against a low manger in eating. What ought to be done? It has been two months since I took her away from the manger, but the lump remains. A. T. W.

Fresno.

REPLY BY DR. C. A. PYLE, PROFESSOR OF PATHOLOGY, SAN FRANCISCO VETERINARY COLLEGE.

The description of this trouble is too brief for a diagnosis. I would suggest that you get equal parts of tincture of iodine and soap liniment and rub onto the swelling twice daily for a week.

The new plant for the manufacture of dried milk of the Central Creameries at Ferndale, Humboldt county, was opened this week. Up to this time the milk has been manufactured in connection with the creamery. This is one of the only two plants in this country where dried milk is manufactured.

A lima bean day is to be celebrated in Ventura, July 1.

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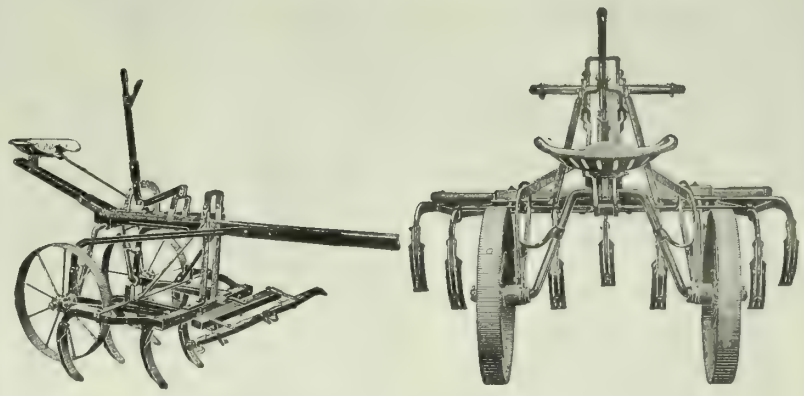
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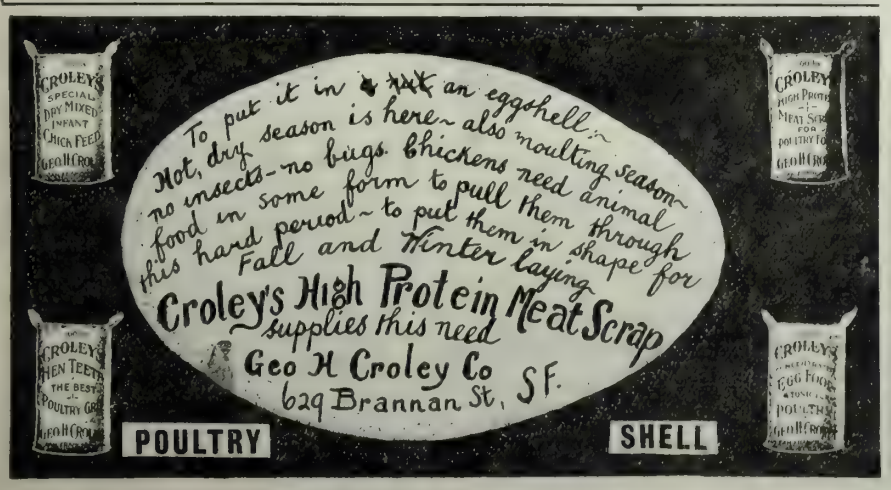
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There certainly will come a day,
As men become simple and wise,
When schools will put their books away
Till they train the hands and the eyes;
Then the school from its heart will say
In love of the winds and the skies:

I teach
The earth and soil
To them that toil,
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To common men
That live just here;

The plants that grow,
The winds that blow,
The streams that run
In rain and sun
Throughout the year;

The shop and mart,
The craft and art
The men today,
The part they play
In humble sphere;

And then I lead
Thro' wood and mead
By bench and rod
Out unto God
With love and cheer.
I teach.

—Prof. L. H. Bailey.

Kill the Flies.

The special bulletin of the American Civic Association contains much of value to rural homes, though it is printed primarily for the benefit of residents in small towns and cities. We believe that every one should realize the menace to life as well as the filthiness of the house-fly, and hence reproduce much of the bulletin:

Flies should be kept out of our houses, killed if they enter them, and prevented from hatching their eggs in stables, manure-heaps, swill pails, and other filthy places

Because Flies Are Filthy.—They are born in filth; they feed on filth; they walk on filth; and then, with filth sticking to their feet, legs and bodies, they feed and walk on the food which has been prepared for human beings to eat. It would disgust you, wouldn't it, if you saw a fly feeding on the filth of the street, the stable, the garbage can, or on something even worse, and then saw the same fly go through the open door or window of your dining-room and wipe his feet on the sugar, tangle his legs in the butter, or take a bath in the milk? If you should watch every fly that comes into the house, you would see that most of them had come from such filth to the food on your table.

Because Flies Are Dangerous.—Bad as filth is, it is not the worst thing that flies carry about. They swarm about open sewers, drains, and outhouses which receive millions of disease germs which have passed through the bodies of sick people. Flies in this way pick up and carry on their bodies, heads and legs (which are covered with fine hairs, just suited for catching and holding this sort of thing) the germs of typhoid fever, cholera infantum (or the summer diarrhea of children), tuberculosis, and several other diseases. Dr. L. O. Howard, Chief Entomologist of the U. S. Department of Agriculture, calls the common house-fly the Typhoid Fly, because so many cases of typhoid fever have been caused by his carrying the germs from one sick person to another. These germs are so small that you cannot see them without a microscope, but the fly that is eating from the same plate with you may be carrying a million of them.

Flies kill more people than wild beasts and poisonous snakes. Many of these beasts and snakes never get a chance to kill any human being; but any one of the millions of flies found in most of our towns and cities has a chance, if he comes into a house carrying typhoid germs, of killing a whole family.

You have been told why you should kill flies and prevent their breeding; this is

How to Do It.—Most house-flies are hatched from eggs which have been laid in horse manure. Some breed in other forms of filth, such as garbage cans, heaps of refuse in back yards, etc. The fly lays 120 or more eggs at a time. These, if they are not disturbed, become maggots in about 12 hours. In from 5 to 8 days more, the maggots enter the pupa state, as caterpillars do, and after from 5 to 7 days come out of the earth or manure in which they have buried themselves in the form of flies, ready in a few days to become the fathers and mothers of large families. They breed so rapidly that in one summer the children and grandchildren of one pair of flies may amount to thousands of millions. And remember that the germs they carry multiply much faster than the flies.

To Prevent Flies from Breeding.—Screen stables if possible.

Remove the manure at least twice a week.

Keep the manure, while it is in the stable, in a closed bin or pit.

Every time the stalls are cleaned, and the manure placed in the pit or bin, sprinkle it with dry plaster (powdered gypsum) or slaked lime.

Be sure that you sprinkle the cracks and crevices of the bin or pit, as well as the cracks between the planking of the stall floors.

If flies begin to breed in stored manure they may be killed by thoroughly spraying it with kerosene or paris green, and then pouring on enough water to wash the oil or poison well in.

The objection to the use of kerosene is that it ruins the manure for fertilizing purposes. A solution of iron sulphate (one pound to a gallon) applied at the rate of one gallon a day in a stable where one horse is kept, will kill all the maggots. It costs about $1 per hundred pounds, so that the cost of keeping flies from breeding in a one-horse stable is about one cent a day.

It is well to abolish old-fashioned outhouses where possible. Where this cannot be done a liberal amount of lime should be used, applied in small amounts daily. Chloride of lime is better than slaked lime, but slaked lime is better than none at all.

Garbage cans should be thoroughly cleaned after emptying, and the contents should be sprinkled with crude oil, lime, or kerosene oil.

Screens and Traps.—Keep garbage cans closely covered, unless you have a fly-trap attached to them. Such traps may be obtained at most hardware stores.

Screen the doors and windows of your home, especially those of the kitchen, dining-room, and pantry. If you cannot do this, at least screen the food itself, especially the milk, in which germs multiply with more than ordinary rapidity.

Screen sick-rooms, or at least the bed of the patient, and do not allow flies to have access to his excreta, which should be treated with chloride of lime or some other disinfectant.

Screens are especially needed in towns which have no sewer system, or in which the sewers drain into a stream, on the banks of which flies swarm, attracted by the filth from the sewers.

If flies do get into the house in spite of screens, they may be killed or trapped.

Sticky fly-paper and a variety of traps may be used, as well as poisoned fly-paper.

Fly Poisons.—A cheap and reliable fly poison which is not dangerous to human life, is bichromate of potash in solution. Dissolve one dram, which may be bought at any drug store, in two ounces of water; add a little sugar, and place about the house in shallow dishes.

To clear rooms of flies, use carbolic acid, heating a shovel and pouring on it 20 drops of the poison. The vapor will kill the flies. Another method: Burn pyrethrum powder in the room. The flies will fall to the floor stupefied and may be swept to the floor and burned. The powder should be moistened and molded into cones, and, after drying, each cone should be placed upon a dish and lighted at the top. It will burn slowly, and the odor is not disagreeable.

Flies pass the winter hidden in cracks and holes in attics and cellars. Many of these may be killed in the spring by the two methods just described.

Be sure that all drugs and chemicals used are fresh and pure, otherwise results may not be satisfactory.

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Conducted By M. Russell James

Poultry Courses for Young Folks.

DESCRIPTION OF BREEDS.

There has been much speculation as to the cause of the non-sitting tendency in certain breeds of fowls. Many hold to the theory that this natural trait has been bred out of those breeds by constantly preventing the exercise of the brood instinct. This would hardly be attempted or desired with the common stock of an entire country like Italy or Spain, where the non-sitting tendency is general among the common fowls of those countries. Would it not be more reasonable to ascribe it to an inherited trait from certain species of the jungle fowl? As it happens, there is such a species of the jungle fowl, the megapod (Megapodius tumulus) or mound-bird, which is remarkable for building mounds composed of earth, stones, decaying leaves, and the like, in which it lays its eggs and leaves them to be hatched by the heat from the fermenting mass of vegetation.

The Leghorns.—As before noted, this breed of fowl originated in Italy and were brought over as market fowls by the vessels trading in the Mediterranean ports. They are described in an old publication, "Saunder's Domestic Poultry," as follows: "Medium size, persistent as layers, being poor sitters or non-sitters, having fair fattening qualities and very good flesh. They are besides hardy, suffering from severe weather much less than the Spanish. With this breed they are evidently closely allied, all having single combs, large white earlobes, and in many cases partly white faces, and in the best specimens something of the style of that justly favorite breed. These birds are all colors except black, the light colors prevailing, and they have none of the marks of a pure breed."

Here we have a description of the Leghorns in the rough, when as the common fowls of Italy they were shipped for market purposes by trading vessels, that is, for table use on the voyage. Fanciers on the lookout for new breeds took note of these fowls about 1834 and began to import them for breeding. Their quick maturity and wonderful laying qualities were considered little short of marvelous and caused much comment at that time. Then we have no further account of them until in 1852, when a lot of them were shipped into Mystic River, Conn., direct from Italy. These unknown fowls soon gained a foothold on their merits, which this time they held. Their popularity and numbers have constantly increased since 1852, and today nearly all the large egg farms of the world are stocked with some variety of the Leghorns.

As we have learned, these original fowls were of no one established breed, but come in all colors, and had nothing in common with the beautiful Leghorn varieties of today except the general utility qualities, shape, and comb. So that the White and Brown varieties among the Leghorns may rightly be classed as American Leghorns. It was from America and not from Italy that England and other countries obtained their original stock in breeding White and Brown Leghorns.

The standard requirements of American Leghorns are "rather small size, yellow legs, white earlobes, and great activity and sprightliness; the males very alert and strikingly erect in carriage; the females non-sitters and especially valuable as egg producers. Short backs, short shanks, and low-set bodies are objectionable in Leghorns."

The Leghorn hen as an egg producer holds the same place among chickens that the Jersey cow as a milk and butter producer does among cattle. That is, she gives the largest returns on the smallest outlay. She is full of that nerve force which makes the "wheels go 'round" the world over. There is something doing wherever this little hen is located. Her quick-glancing eye discovers possibilities in the most hopeless conditions, and many are the odds against her when she turns up her energetic toes in defeat.

How to Train a Collie.

Every boy loves a dog, and a well-trained dog is a faithful companion and a valuable asset on the farm. The collies are the most valuable of all breeds for the farm because it is the nature of these dogs to take care of stock, and they may be trained to look out for the poultry as well as other stock. Being nervous and sensitive, the collie more than any other kind of dog, is ruined by ill-treatment or harshness.

In order to secure the best results with dogs as workers, says the American Sheep Breeder, they should be broken by the one who is to handle them. Never kick or strike a collie. Scold him or pull his ear for punishment. And never call him to you for this. Make him "down" where he is and go to him. If you call him to you for punishment, he is liable to suspect you and make a sulky dog. His first lesson should be "come here." Use it whenever you call to feed him, and he will get into the habit of coming when called. Next teach him to "down" by saying "down" and pressing with the hand. Be very thorough with this lesson, and make him keep his position while you go any distance from him, and stay any length of time. He should be taken among the stock from the first and learn to like them.

If you keep him constantly with you he will soon try to help you in whatever he sees you doing. By petting and encouraging him when he does right, and scolding when he does not, he will soon do as you bid him. But remember that "licking" spoils more collies than all other things combined. Never try to teach him but one thing at a time, and have that well learned before you try to make him learn another. Patience and perseverance will make a good work dog of any bright, well-bred dog.

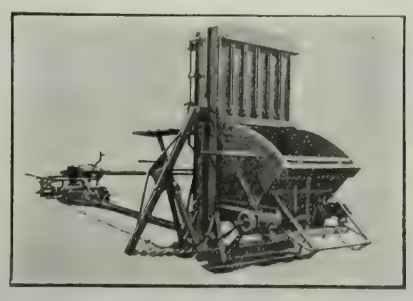
School of Girl Farmers.

Fifty-two of the fairest daughters of Kansas, up to date, are at the famous Manhattan School learning the art of feeding poultry and swine and pushing the plow. And many more fair students are assured next year.

They are learning fast, too, and have proved that they can farm just as well as the men, say the authorities at Manhattan, who explain the new school by saying it is simply in keeping with the progress of women.

Little beds of flowers,
Little coats of paint,
Make a pleasant cottage
Out of one that ain't.
—Exchange.

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Farming Tools

The use of good farming tools is becoming more and more a settled habit with American farmers.

The Keen Kutter trademark is known everywhere. It shows on the stableman's fork—on the laborer's shovel—and on the hoe, axe, scythe, garden fork, manure hook, potato hook, bush hook, ditch tool, or corn knife that the farmer takes with him to the field.

If you, Mr. Farmer, need hand farming tools—look for this mark. There is more hard wear and genuine satisfaction in a Keen Kutter tool than in one of any other make.

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St. Louis and New York
U. S. A.



Unexpected Guests

The farmer and his wife were about to sit down to a cold supper when they saw some old friends driving towards the house.

The good wife was equal to the occasion—thanks to her New Perfection Oil Cook-stove.

She had it lit in a moment, and her guests hardly were seated on the porch before a hearty hot meal was ready for the table—sausages and eggs and long rashers of streaky bacon, and rolls just crisped in the oven and fresh coffee—and the hostess herself as cool and neat as if she had not been near the kitchen.

She never could have managed it with an old-fashioned range. The New Perfection is the quickest, most convenient and best cooker on the market.

New Perfection
WICK BLUE FLAME
Oil Cook-stove

Made with 1, 2 and 3 burners, with long, turquoise blue enameled chimneys. Handsomely finished throughout. The 2- and 3-burner stoves can be had with or without a cabinet top, which is fitted with drop shelves, towel racks, etc.

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Largest dealers in all kinds of
SECOND HAND STANDARD PIPE AND SCREW CASING
We make a specialty of IRRIGATING PLANTS
Write for information and Prices. Mention this paper.

THE MARKETS.

San Francisco, June 21, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Prices stand as before on all descriptions. The market is in rather uninteresting condition at present, as the milling interests are not buying and there is no activity anywhere. The Northern market is firm, but there is an easier feeling locally.

California Club	$1.45 @1.50
Sonora	Nominal
White Australian	1.55 @1.65
Northern Club	1.52½@1.55
Northern Bluestem	1.65 @1.70
Northern Red	1.55 @1.65

BARLEY.

Brewing barley is steadily held at former prices, but the movement is small, supplies being well cleaned up. Feed grades continue rather easy, with another slight drop in prices. Local trading is very quiet, as the consuming trade seems to be well supplied, though there is a fair buying movement through the country.

Brewing and Shipping	$1.52½@1.55
Choice Feed, per ctl	1.25 @1.27½
Common Feed	1.22½

OATS.

Business is confined to narrow limits at present. Red oats are steady as last quoted. Black feed shows a wide range, choice lots being steadily held, while some stock is offered at lower prices.

Red Feed	$1.37½@1.42½
Gray	Nominal
White	Nominal
Black Feed	1.20 @1.50

CORN.

There is no business of any consequence here, both supply and demand being small. There is some movement of local stock at outside points at about the quoted figure.

Cal. Small Yellow	$1.75
Eastern Yellow	1.55
Eastern White	1.55

RYE.

The demand is very light, and supplies on hand are too small to be worth quoting.

Rye, per ctl	Nominal

BEANS.

The continued dullness leaves stocks in many lines larger than is desirable, and there is accordingly some weakening of prices. Bayos, which have been dropping for several weeks, are again lower, and a further decline is noted in both large and small whites. There are large offerings of Texas pinks at comparatively low figures, and the price of the local article has accordingly been reduced. Some of the San Francisco brokers are also quoting limas a little lower than for the last few weeks, but this does not indicate any real weakness in the lima bean market. There is still quite a lively demand, in proportion to the remaining supply, in other parts of the country, and prospects for prices on the new crop are as good as ever. The only doubtful feature is the effect of competition of imported beans. The acreage, both of limas and several other descriptions, will probably be larger than ever before.

Bayos, per ctl	$3.90 @4.00
Blackeyes	7.00 @7.25
Cranberry Beans	3.75 @4.00
Garvanzos	2.85 @3.25
Horse Beans	3.25 @3.50
Small Whites	3.25 @3.40
Large Whites	3.15 @3.25
Limas	6.25 @6.35
Pea	4.25
Pink	4.75 @5.00
Red Kidneys	6.25 @6.50

SEEDS.

Buying is on a very small scale on all descriptions, and prices are little more than nominal.

Alfalfa	Nominal
Broomcorn Seed, per ton	25.00
Brown Mustard, per lb	5½c
Canary	3½@ 4 c
Hemp	3½@ 4 c
Millet	3 @ 3½c
Timothy	Nominal
Yellow Mustard	5¾c
Dried Peas, per ctl	3.75@ 4.00

FLOUR.

The market is without special feature, prices being steadily held, with about the average demand.

Cal. Family Extras	$5.40 @5.80
Bakers' Extras	5.40 @5.80
Superfine	4.50 @4.70
Oregon and Washington	4.60 @4.80

Hay and Feedstuffs.

HAY.

Apparently dealers are having some difficulty in getting supplies in the country at the prices obtainable in the city trade, as the arrivals have been decreasing, and are much less than two weeks ago. The local situation seems rather discouraging, as the consuming demand is unusually light for this season, and even the present light arrivals are hard to dispose of as promptly as is desired. Dealers and consumers complain that prices in the country are too high, and say the crop has been above expectations, though reports of a short crop are still coming in from many points. There appears to be a fair demand through the country.

Choice Wheat	$13.00@14.00
Good Wheat Hay	11.00@12.50
Other Grade Wheat	8.00@1100
Wheat and Oats	8.00@11.50
Tame Oats	8.00@11.50
Wild Oats	6.50@10.00
Alfalfa	8.00@11.50
Stock Hay	5.50@ 6.50
Straw, per bale	35@ 50c

FEEDSTUFFS.

While there is a good general demand for all descriptions, increasing supplies have caused easier prices in some lines. Alfalfa meal, rolled barley, and rolled oats are quoted lower.

Alfalfa Meal, per ton	$17.00@19.00
Bran, per ton	28.00@29.00
Cocoanut Cake or Meal	26.50@27.00
Cracked Corn	34.00@37.00
Middlings	34.00@37.00
Mixed Feeds	29.00@32.00
Rolled Barley	26.00@28.00
Rolled Oats	29.00@31.00
Shorts	27.50@31.00

Garden Truck.

VEGETABLES.

Onions have been coming in more freely for the last week, and with ample supplies for all current needs, prices are lower. Garlic is steady at the new figures, with ample supplies of new stock and a fair demand. Miscellaneous vegetables are again coming in freely, and prices in general tend downward. Asparagus is easy, with larger supplies than the consuming market can absorb, and as the canners are taking less interest they can frequently get supplies as low as 50c. Rhubarb is steady as last quoted. Supplies of tomatoes and cucumbers are rather heavy, and prices are quite a bit lower. String beans and green peas are also lower. Eggplant is lower, and green corn is a little easier, though supplies are still rather scarce.

Onions: New Red, sack	$ 1.60@ 1.75
Yellow, sack	1.85@ 1.90
Garlic, per lb	3@ 4c
Green Peas, per cak	1.25@ 2.00
Tomatoes, per crate	65@ 85c
Cucumbers, per box	85c@ 1.00
Cabbage	1.25
Carrots, per sack	1.25
Rhubarb, per box	1.00@ 1.25
Cauliflower, per doz	50c
Asparagus, per box	75c@ 1.50
String Beans, per lb	3@ 5c
Summer Squash, per box	85c@ 1.00
Okra, per lb	10@ 12c
Green Corn, per sack	1.50@ 1.75
Egg Plant, per lb	7@ 9c
Green Peppers, per lb	10@ 20c

POTATOES.

Arrivals of new stock are little, if at all, in excess of the current demand, and the effects of a short crop along the river are becoming more apparent all the time, prices having taken another jump. Old stock is rapidly cleaning up under a strong demand, and is also held at an advance.

Oregon Burbanks	$ 2.85@ 3.00
New Potatoes, per ctl	2.60@ 3.00
Eastern, per ctl	2.25@ 2.50

Dairy Produce.

POULTRY.

The market is still in far from satisfactory shape. Arrivals continue liberal, and dealers complain that too much local stock of small and unsalable quality is being rushed to the city. They believe that if this were kept off the market for a while conditions would improve. Young roosters and extra hens are in fair demand, and occasionally bring a premium. All quotations stand as before.

Large Broilers	$ 3.00@ 3.50
Small Broilers	2.00@ 2.50
Fryers	5.00@ 6.00
Hens, extra	8.00@ 9.00
Hens, large	5.00@ 6.00
Small Hens	4.50@ 5.00
Old Roosters	4.00
Young Roosters	6.00@ 7.00
Young Roosters, full grown	8.00@ 9.00
Squabs	2.00@ 2.50
Geese, per pair	2.00@ 2.50
Ducks	5.00@ 7.00
Turkeys, live, per lb	Nominal

BUTTER.

Most grades stand the same as a week ago, though extras and prime firsts have been a little lower. Everything on the list is quoted firm, but arrivals are very heavy, and the demand for storage purposes is the only thing that sustains the market.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	21	21½	21½	21½	22	22
Prime Firsts	20½	20½	21	21	21	21
Firsts	20	20	20	20	20	20
Seconds	19	19	19	19	19	19
Packing Stock	17½	17½	17½	17½	17½	17½

EGGS.

The market is running in about the same way as for some time past, the principal buying being on the part of storage interests. Extras are a shade stronger than last week, but otherwise there is hardly a change.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	21½	21	21½	21½	21½	21½
Prime Firsts	20	19½	19½	19½	19½	19½
Firsts	19	19	19	19	19	19
Seconds	17	17	17	17	17	17
Selected Pullets	18	18	18	18	18	18½
Eastern	15	15	15	15	15	15

CHEESE.

New local stock is hardly as plentiful as last week, and with a fair demand, all descriptions quoted on the Exchange are higher. Storage flats are in good demand at 14c. Monterey cheese is firm, but unchanged.

Fancy California Flats, per lb	12 c
Storage	14 c
Firsts	11½c
New Young Americas, fancy	13½c
Monterey or Jack Cheese	12½@13½c

Deciduous Fruits.

FRESH FRUITS.

Local weather conditions have been unfavorable for the sale of summer fruits, but the demand has been more active than last week, and notwithstanding the larger arrivals, the market cleans up well at satisfactory prices. Occasional lots of watermelons are coming in, but find little sale so far, and are offered at lower prices. Cantaloupes are also lower, as they are coming in faster than they can be absorbed by this market, and some accumulation is expected. The berry market is in good condition, with an active demand for all descriptions. Raspberries are still bringing high prices, and strawberries are steady, while other lines are lower on account of increased supplies. Some descriptions of cherries are higher, as the demand is exceptionally strong and large arrivals are disposed of without difficulty. New apples show a wider range, but most offerings are unattractive and find little interest, while peaches and plums are also rather slow. Apricots are steady. A good many figs are appearing, but so far are not much of a feature in the market.

Melons—	
Watermelons, per lb	3c
Cantaloupe, standard crate	$ 1.10@ 1.40
Raspberries, chest	12.00@15.00
Loganberries, chest	3.50@ 5.50
Blackberries, chest	7.00@ 8.00
Strawberries, Banners, chest	7.00@ 8.00
Longworth, chest	6.00@ 9.00
Large varieties, chest	4.50@ 6.00
Cherries, Black, box	90c@ 1.10
White, lb	4@ 6c
Royal Anne, box	85c@ 1.00
Apples, New, box	1.25@ 2.00
Apricots, crate	1.00@ 1.25
Apricots, box	75c@ 1.00
Peaches, box	50c@ 1.00
Pears, box	1.00
Plums, box	75c@ 1.25
Currants, chest	7.00@ 9.00
Figs, box	1.25@ 1.50

Dried Fruits.

Prices on all descriptions stand as before, but everything is more or less nominal at the moment, and the amount of business done in the new crop so far is too small to establish values very definitely. In view of the general uncertainty, the market appears to be in a general condition of deadlock, which may last for some time. Growers are not anxious to sell anything at present, and the packers, though willing to take anything to be had at the present level, are not going out of their way to buy, and refuse to make any advance in their offers. They have apparently secured enough new contracts to fill their early orders and are now willing to await developments. Eastern buyers are taking a similar course, and while their stocks are said to be the smallest in several years at this season, they are unwilling to buy until actually compelled to do so. The prevailing impression among both packers and jobbers is that the views of growers will weaken as the crops are ready for market, though from a general view of the market, and of crop conditions, it would seem that this year's yield should be easily salable at the prices demanded by growers. The New York Journal of Commerce says:

"The situation in California prunes for shipment out of the 1911 crop is still complicated by the very wide range of prices put out by Coast packing interests, but late advices from California indicate that there is a prospect of an early clearing up of the unsettled conditions which have kept the trade all at sea for several weeks past. The depression of prices, according to these reports has been largely due to bearish influences exerted by certain packers who made large short sales to New York and Europe during May for September-October shipment on the basis of 4 3-8 and 4½c. f. o. b Coast for the four sizes. In the effort to cover these sales, the story goes, the three or four packers who made them have since been exerting their influence to bring the growers to the point of making prices for fruit in the orchards which would enable these packers to at least get out whole. So far they have met with little success in that direction. One of the most conservative packers offers nothing under a 5c. f. o. b. four-size bag basis, demanding half a cent premium on 40s and a cent on 30s.

There is an easier tone to the market for 1911 peaches, and some packers are naming lower prices than those quoted last week. The depression is mainly due to the continued lack of important demand from the Eastern distributing trade. Yellows in 50-lb. boxes can now be bought in some quarters at 8¾c. for standard, 9c. for choice, 9½c. for extra choice, and 10c. for fancy, f. o. b. Coast. There seems to be no buying interest in future apricots, and the demand for spot goods is of a retail character. The firm tone of the market for goods in both positions is maintained, however.

"Except in the seedless varieties, which are undoubtedly short, the market for California raisins is dull and the trend of prices seems to be in buyers' favor, temporarily at least, in the absence of demand from the Eastern distributing trade."

Evaporated Apples, per lb	10½@11 c
Apricots, new crop	14 c
Figs, black	4½@ 5 c
Figs, white	5 @ 7½c
Peaches, Spot	8 @ 8½c
New crop	9 @ 9½c
Prunes, 4-size basis	9½c
New crop contracts	3¾@4½
Pears	8½@12 c
New crop	9 @10 c
Raisins—	
Loose Muscatels, in sweatbox	4 @ 4½c
1911 Crop	4 @ 4½c
Thompson Seedless	4½@ 4¾c
Seedless Sultanas	4¼@ 4½c

Citrus Fruits.

Shipments of oranges and lemons are going from California at a good rate for this season, and the Eastern markets are absorbing them at good prices. Lemons are not as high as they were, owing to cooler weather, but still the prices are satisfactory, being around $4 per box at the Eastern auctions. Oranges range from about $2 for sweets to $2.25 for navels and $3.50 for valencias. At the Los Angeles auction market of Monday, on an f. o. b. California basis, valencias brought $2.22 down to $1.97; seedlings brought $1; lemons, $3.90 down to $3.40.

Conditions are unfavorable for any great activity in this market, and the situation remains quiet. The best navel oranges are lower, but valencias are steady as last quoted. Fancy lemons and Mexican limes are higher, other descriptions being unchanged.

Navel oranges—	
Extra choice	$ 2.00@ 2.50
Choice	1.50@ 2.00
Valencias, choice to fancy	2.25@ 3.00
Tangerines	Nominal

Choice Lemons	3.00@ 4.00
Fancy Lemons	4.00@ 5.50
Standard	2.00@ 2.50
Limes	6.00@ 6.50
Grapefruit	2.25@ 3.15

Nuts, Honey, Hops, Etc.

NUTS.

The amount of trading in future almonds is limited, and no general movement is expected until prices are named by the Association. All interests are assured, however, that prices will be high. There is nothing doing in future walnuts, and spot business in both walnuts and almonds is of a small jobbing nature. The quotations below are little more than nominal.

Almonds—	
Nonpareils	16½@17 c
I X L	15½@16 c
Ne Plus Ultra	15 @15½c
Drakes	12 @14½c
Languedoc	12 c
Hardshells	8 @ 8½c
Walnuts—Softshell, No. 1	15 c
Standard	14½c
Softshell, No. 2	11 c
Budded	17½c

HONEY.

A little more honey, both comb and extracted, is arriving in the local market, but prices are firmly held in view of the general shortage. Trading is not active here, but considerable business is being done in producing districts.

New Extracted, White, per lb.	8 @ 9 c
Comb, White	12 @14 c

BEESWAX.

The market is quiet, and offerings of good quality are light. Prices rule steady as before.

Light	28 @32 c
Dark	23 @26 c

HOPS.

Prices on old stock have taken quite a jump, owing to the general shortage and a strong demand. The amount obtainable, however, is very small at any price. Figures on new contracts stand as before, but growers who have not already sold are very firm in their ideas

Hops, 1910 crop	25 @30 c
1911 crop	22 @26 c

Live Stock.

DRESSED MEAT.

Steers	9 c
Cows	8 c
Heifers	8 c
Veal, large	10 c
Veal, small	11½c
Mutton: Wethers	9 c
Ewes	8 c
Lambs	10½c
Hogs, dressed	11 c

LIVE STOCK.

Prices on all descriptions of live stock remain the same as last week, and while there is a rather easy feeling in some lines, the demand is keeping fairly even with current supplies. Hogs remain dull, but supplies are light. In dressed meats, large veal and wethers are a little easier.

Gross weight:	
Steers: No. 1	5¼@ 5½c
No. 2	5 @ 5¼c
Cows and Heifers: No. 1	4½@ 4¾c
No. 2	4 @ 4¼c
Bulls and Stags	2½@ 3½c
Calves: Light	6½c
Medium	6 c
Hogs: Grain-fed, heavy	6 @ 6¼c
150 to 250	6¾c
100 to 150 lbs	6¾c
Small prime wethers	4½@ 4¾c
Large prime wethers	4½@ 4¾c
Ewes	3¾@ 4 c
Lambs	5 c

WOOL.

Prices show no further change for California wool, though some changes may be made in a day or two. Local buyers describe the market as steady, though from reports in other quarters it appears to be rather firm, the general demand being much more active than a month ago.

Spring Clip—	
Choice Southern, Year's staple	10 @12½c
7 months	8 @11 c
Lambs	5 @ 7 c
Northern, year's staple	14 @16 c

HIDES.

There is no further change in prices, but the market is in fairly firm condition, with a good demand throughout the country.

Heavy Steers, over 56 lbs.	11 c
Medium	10 c
Light Steers, under 48 lbs.	10 c
Heavy Cows, over 50 lbs.	10 c
Light Cows, 30 to 50 lbs.	10 c
Kip	12 c
Veal	14½@15½c
Calf	15½c
Dry—	
Dry Hides	17 @18 c
Dry Bulls	16 c
Dry Kip, 10 to 15	17 @18 c
Dry Veal, 5 to 10	20 c
Dry Calf, 7 down	23 c
Sheep Skins—	
Long Wools	$ .75@$1.00
Medium Wool, 6 to 9 mos.	50@ 75c
Short Wool, 3 to 6 mos.	25@ 40c
Lambs	15@ 35c

HORSES.

Recent offerings have been of rather mediocre quality, of the grades which have for some time found little demand. There has been more interest on the part of buyers than was expected, and prices are well maintained as last quoted. Stock of the more desirable descriptions has been very scarce, and full prices are obtained without difficulty. Quite a lot of horses and mules have recently been taken for shipment to the Hawaiian islands.

Desirable Drafters, 1700 lb. up.	$300@350
Light Drafters, 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	190@240
Wagon Horses, 1250 to 1350 lbs.	140@180
Delivery Horses, 1050 to 1250	100@125
Desirable Farm Mares	100@125
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

SPECIAL DECIDUOUS MARKET REPORT.

Sacramento, Cal, June 19, 1911.

The warm weather which has prevailed for the past week is bringing out the early varieties of peaches and plums very rapidly. We are advised that the shipments of apricots will decrease about the last of the week, as will also Alexanders and Clymans. Triumph peaches are moving in fairly liberal supplies from the Placer county districts. Tragedy plums are coloring up and will be ready for shipment either the last of the week or the first of next week. Bartlett pears will undoubtedly be ready for shipment about July 1. Grapes seem to be setting well, though an occasional mildew is noticeable in the valley districts.

The markets have responded fairly well on sound arrivals, but an occasional decline has been caused, not so much from lack of demand as from poor quality.

We are advised now that the Georgia shipments will not exceed a thousand cars, and already what have arrived in the East have had little or no effect upon California. There is hardly enough fruit in Texas to take care of home consumption, and the South is consuming large quantities of California fruit. Most of the shipping districts in California have adopted the standardization plan of pack, which will benefit the buyer as much as the shipper.

Royal Anns and Black Oregons from every district except Santa Clara will clean up this week. On the whole the season has started out well, and, as we have every reason to believe that the fruit will mature to good quality, we fully anticipate that the market will remain steady with good prices.

Below we give a list of the market averages for the week:

Chicago—Royal Anns averaged from 90 cents to $2.05; Rockports, 85 cents to $1.35; Centennial, 75 cents to $1.40; Governor Woods, 85 cents to $1.05; Black Oregon, 75 cents to $1.35; Black Republican, $1.25 to $1.55; Tartarians, 85 cents to $1.90; Biggerreau, 75 cents to $1.65; Elton, $1.15; Bings, $1.40 to $1.85; Burr Seedlings, $1 to $1.05; Alexander peaches, $1.55 to $1.95; Clyman plums, $1.90 to $2.35.

New York—Tartarians, 55 cents to $2.62; Royal Anns, 55 cents to $3.12; seedling cots, $1.30 to $2.62; Royal cots, $1.35 to $3.12; Pringle cots, $1.10 to $1.75; Newcastle cots, $1.10 to $2.37; Royal, $1.35 to $2.25; Centennial, 70 cents to $1.85; Rockport, 80 cents to $1.50; Bings, $1.05 to $3.25; Governor Woods, 75 cents.

Boston—Black Tartarinas, 80 cents to $2.25; Biggerreau, $1 to $1.55; Rockports, 90 cents to $2.35; Governor Woods, 85 cents; Royal Anns, $1.55 to $2.60; Pontiacs, $1.25; Centennial, $1.45 to $1.75; seedling cots, $1 to $2.25; Newcastle cots, $1.90.

Philadelphia—Royal Anns, $1.30 to $2.50; Black Tartarians, $1.30 to $2.55; Royal cots, $1.45 to $2.50; seedling cots, $1.15 to $1.95.

Minneapolis—Black Tartarians, $1.50 to $1.80; Biggerreau, $1.55 to $1.75; Rockports, $1.65; Governor Woods, $1.35 to $1.50.

Total shipments from the State up to June 19 were 207¼ cars, as against 839 cars to same date last year.

PUBLISHER'S DEPARTMENT.

A. H. Mitchell of Danville, in remitting for his subscription says: "Surely I am dee-lighted to send the $2. The RURAL PRESS is full of information, instruction and interesting news and comment." The money and the commendation were equally acceptable at this end of the line.

The Western Pipe & Steel Company has moved its main office from Los Angeles to San Francisco. The company will continue its factories at both Richmond and Los Angeles.

BIG PUMPS FOR IRRIGATION.

The Byron Jackson Iron Works of San Francisco has just completed a notable order for the Chicago-Rogue River Company for pumps to be used in their plant for raising water to the ditches of the Josephine Irrigation & Power Company of Oregon.

The contract called for one 10-inch horizontal belt-driven four-stage centrifugal pump to deliver 3500 gallons of water per minute under a head of 365 feet, and one 10-inch horizontal series two step belted centrifugal pump to deliver the same quantity of water under a head of 210 feet.

The order was placed on May 1 and shipment was made just two weeks later.

The designing of the pumps for duty of this kind calls for the highest type of engineering skill, and the layman who sees and admires the machinery in action little dreams of the problems that have to be solved in cases of this kind before the drawings are sent to the workshop.

The Byron Jackson Iron Works make a specialty of work of this kind, and their engineering force is fully capable of handling any kind of problem connected with the pumping of water.

OUR CORRESPONDENT'S TRIP ON THE YALE.

One of the New Fast Steamers Plying the Coast From San Francisco to San Diego.

To the tourist or business man who wishes to enjoy an invigorating ocean voyage on comparatively smooth waters, with all the modern conveniences at his command that could be found in any first-class hotel, I cannot advise better than to say, take the trip from San Francisco to San Diego aboard the Pacific Navigation Company's steamers Harvard and Yale, and you will not be disappointed. They provide a trip both delightful and luxurious. I cannot recall when I have experienced so much pleasure on any trip on either land or sea.

The voyage is both picturesque and remarkable. The coast line giving you an ever-changing panaroma of mountain scenery, smooth beaches, deep canyons, innumerable bays and islands—a combination of views to make glad the heart of any lover of nature. Occasionally we run into a school of Tuna that would make the true sportsman sit up and take notice. Again you could see the pretty flying fish skimming over the water as gracefully as a bird and finally settle in the blue waters of the sea.

Remarkable indeed was the voyage on account of the mastery of detail that marked the cruise from the moment we left San Diego bay until we entered Golden Gate harbor and were landed at Pacific wharf.

The confusion usually attending the departure and arrival of large ocean liners was entirely eliminated. I found the officers and crew courteous and ever ready to attend to the comfort of the passengers. The information gained from them on the many points of interest I found both interesting and instructive. The discipline on board ship was indeed first class.

If you should take the trip, you will agree with me, the Harvard and Yale to be a model or art and architecture; they certainly were constructed with a view to pleasing particular people. As I entered Harvard on the main deck, I came to the Social Hall, which was entirely finished in mahogany. Here is where the company's musicians render entertaining music for its patrons. Leading off from Social Hall is a spacious dining room, also finished in mahogany and elegantly fitted. The meals were served a la carte, therefore if the traveler does not feel like eating, he does not have to pay for something he does not get; that would simply be food for the fishes.

The menu included all the delicacies of the season. The service I found to be efficient and of high standard. Wine and liquors could also be had at moderate prices.

I do not believe a modern hotel can place at your disposal an apartment any better fitted for comfort than were the state rooms of the Harvard. They were large, well ventilated and luxuriously furnished, fitted with bath and toilet rooms, with hot and cold water.

Of the remainder of the ship, I can only say it must be seen to be appreciated, particularly the Grand Saloon, which is the show place of the vessel. The conveniences and accommodations throughout are such as to appeal to people of taste, culture and refinement.

The entire vovage was conducted with such care, skill and ability that the passengers with one accord, voted the Pacific Navigation Company in a class by itself. It can be truthfully said it has elevated ocean travel to an exalted plane and well deserves the patronage so liberally bestowed upon it. May it continue to prosper. Respectfully,

A. A. WENDELL.

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THE PACIFIC RURAL PRESS

Vol. LXXXII. No. 1. SAN FRANCISCO, SATURDAY, JULY 1, 1911. Forty-first Year.

Orchard Packing Fundamental in Standardization of Deciduous Fruits

Written for the PACIFIC RURAL PRESS by Mr. H. E. BUTLER, Manager of Penryn Fruit Company, Penryn.

Standardizing the pack, in the deciduous fruit shipping districts of the State, is now agitating growers and shippers. It is essential, and will be a great benefit to the fruit industry. At some of the most important shipping points, associations have been formed, supervisory boards chosen, and inspectors, paid by the association, are at work. Inspectors employed are fruit packing experts and work under rules of packing adopted by committees made up of men thoroughly competent and conversant with fruit conditions and trade requirements. This article deals with an important factor that must be considered in connection with this movement, viz: equipment and facilities in the packing houses.

Practically all the deciduous fruit shipped fresh from California is packed in the orchard under the supervision of the grower himself. Probably few buyers in Eastern markets know this, and they criticise the irregularity of the California pack. The enforcement of rules of standardization will correct this. It is impractical to pack fresh deciduous fruits in central packing houses at the railroad, owing to necessity for protecting this fragile product by proper packing before it is hauled to the shipping point.

In most of the deciduous fruit sections, equipment for packing the fruit is crude and inadequate, and wholly out of proportion to value of the product handled. It is next to impossible to grade and pack up to standards, with the equipment we have found in most of the orchards.

By far the most important part of standardization is grading, and packing in uniform sizes together; also packing of absolutely sound fruit only, eliminating all bruised and defective fruit. More difficulty is encountered by inspectors and buyers in these respects than all others. It is largely caused by lack of equipment in the orchard and orchard packing houses.

In most industries, equipment is provided, as complete, economical, and advantageous as it can be made by experts, to reduce the handling of the product to a science. Orange packing houses of California are examples of this. In the best deciduous shipping districts packing facilities are crude to a surprising degree. A fully equipped packing house is seldom seen. The deciduous packing season is five months long. We have seen the output of a fifteen-acre orchard handled in a "packing house" consisting of a piano box and an oak tree, and a great many profitable orchards, from ten to forty acres each, with buildings, trucks, etc., costing not to exceed one hundred dollars. The orchard packing house as a rule consists of some crude benches with some sort of roof for shade—nothing more.

The accompanying picture shows a "packing house" in a forty-acre orchard worth two thousand dollars per year net rental to the owner, and may be taken as typical of the packing facilities in its district, and this is one of the best shipping districts of the State. These packing houses are supposed to provide storage for box material out of the sun and weather, grading tables, packer's benches, box makers, unpacked fruit and the finished product.



Light Spring Wagon for Hauling Picked Fruit to Cars; Carrying 120 Peach Boxes or Plum Crates.



3-Deck, Elliptical Spring Orchard Truck, Carrying 48 Lug Boxes.



Fig. 1. Elevation of Receiving Side of Butler's Orchard Picking House

In the Grand valley fruit district in Colorado, we have seen many substantial, roomy and well equipped two-story packing houses in both small and large orchards.

In order to properly prepare deciduous fruit for Eastern shipment, it must be properly picked, carefully hauled from field to packing house, and there graded for size and ripeness with the least possible handling. This cannot be done in piano boxes nor 11x16 woodsheds. Many a grower is practicing expensive economy, for, by his crude methods, he is losing a considerable percentage in value of his fruit from bruising and poor grading, and a large part of the efficiency of his labor from poor equipment. Standard graded packs are desirable and necessary. The trade is demanding it.

There are a few excellent packing houses, scientifically equipped, in the deciduous orchards, that have been in use for a number of years without attracting the attention of any one, apparently. The most practical system we have seen is described below. It was designed and installed by the late P. W. Butler, in his orchard at Penryn, Placer county. The description includes the picking boxes and baskets, lug boxes, trucks for hauling from the field, the packing house itself, and wagons for hauling to the cars. In this orchard the ripe deciduous fruit is picked either in canvas bags, baskets, or directly into the lug boxes, which may or may not be provided with detachable wire handles. The lug boxes are 19¾ by 11 inches and are 5 inches deep; never, under any circumstances, larger, as deeper boxes result in bruising the fruit. The whole equipment of trucks and racks is built to accomodate this size box. The fruit is never dumped from these boxes, but is packed directly from them into the shipping boxes or crates. The shallowness of these boxes permits packers to grade the fruit by eye, as he uses it. It might be said right here that no machinery has yet been invented to grade the ripe shipping fruit without bruising it. Such a machine is a crying necessity.

Another picture shows the truck used for hauling the fruit from the orchard, which is provided with the best grade of buggy springs and a body of three decks built to accommodate 48 lug boxes as cut shows. This

(*Continued on Page 10.*)

Pacific Rural Press

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S. J. WICKSON - - - - - - - Editor
FRANK HONEYWELL - - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., June 27, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.07	31.84	46.02	66	46
Red Bluff	00	24.68	25.02	92	52
Sacramento	00	21.98	20.09	92	48
San Francisco	00	25.49	22.27	70	48
San Jose	00	22.63	15.05	86	46
Fresno	00	11.82	9.68	98	50
Independence	00	6.28	9.53	92	50
San Luis Obispo	00	34.42	20.51	94	46
Los Angeles	00	16.17	15.64	82	54
San Diego	00	11.99	10.01	72	54

The Week.

Now that our great and good friends, George and Mary, have gotten their crowns on straight and the barbaric potentates and American plutocrats have stepped off the tight little island, the world may prove less wobbly than during the last three weeks. It unsettles things a little to have such a concentration of weight and interest at one point on the earth's surface, but it is worth while when the event embodies such manifestation of the kinship of the nations as characterized the coronation, and if Britannia will be content to rule the waves through leadership in the promotion of such a sentiment, the world will surely be the better for it. We extend our congratulations to all ex-Britons in California, who have taken a natural interest in the event and in local celebrations of its occurrence. We have many thousands of British birth among our most enthusiastic and energetic Californians, and we are quite sure that the better Britons they were the better Californians they are. It is perfectly allowable to be a good Briton in June if you are all right on other matters by July Fourth—which comes next Chuesday, don't you know!

The Nurserymen's Convention.

We had a good time in San Jose last week with our other great and good friends, the Pacific Coast Nurserymen. We enjoyed their discussions, their hand-shakes, their excursions, and we sit here to declare that their lives and their works are most helpful and influential in building up the great horticultural interests of the Coast, and that they are just as conscientious, upright and lofty in their aspirations and purposes as any other class of citizens—and we make that assertion coldly because, while we were present at least, there was no banquetting or other warming-up proceedings going on. We counted it a good thing for California that something like 250 men and women, who are growing the plants upon which the commercial horticulture of the whole Pacific slope will proceed in its advancement, should assemble in one of our chief fruit valleys and see for themselves many features of California's policies and methods. Upon another page will be found the leading parts of the annual address of the president, Mr. Roeding, of Fresno, and those beyond the guild can get from it many interesting suggestions of the spirit and purposes of the nursery business as a collective commercial affair and its relations to general development and progress. We shall have many other interesting points from the convention during coming weeks.

California Land Owners Increasing.

All readers should give careful study to the first installment of national census statistics of California agriculture, which appears upon another page of this issue. There are many items in it which should occasion satisfaction. We have not only more farms with a less area, but we have fewer tenants and more owners. This is all toward the good. California has had about the worst system of land leasing which has prevailed in any civilized country—the worst because it left the land poorer, the tenant poorer and the landlord poorer; making for badness all around. We are glad that we are coming to have less and less of it. "The greatest agricultural evil of the present day is the tenant farmer," is the statement made by President Henry J. Waters of the Kansas State Agricultural College. "The tenant farmer," he declares, "is the highwayman of the soil; collectively, a vandal horde that has marched from Maine to the Missouri, laying waste an agricultural empire with the fire of its greed and the sword of its ignorance. Give him time and he will overwhelm the West as he has the East." President Waters is also credited with saying this:

The tenant farmer is the ruination of the country and the menace of the city. He has left in his wake impoverished land, abandoned farms and a train of economic evils that must soon be remedied or grave consequences will follow. The tenant farmer is the man who is chiefly responsible for the increased cost of living; he is the man who has caused American exports to fall off $200,000,000 in three years. He is the man who has reduced our farming area, forced the price of productive land to an abnormal height and sent droves of sturdy young farmers beyond our borders to the north.

This is the point of view of the Central West, whence the rush to Canada is now proceeding. We do not recognize all the features of the view as visible from California. Perhaps we have local phases of the evils of tenancy which are different. It has seemed to us that tenants had no inducement to improvements whatever, and being therefore shifty, the landlord did less than he otherwise might have done for the good of the land and for his own return from it. But though we might develop a better tenantry system, there can be no doubt that the working of the land by the owner is vastly superior to any system of leasing and absenteeism, and it is gratifying to know that we are moving rapidly in that direction.

Why We Have More Owners.

The reason we have more owners in California is because we have more people desiring and able to buy land. Where they come from may be learned from the statement that more than 600,000 people have been brought into California on single-way tickets during the past eight years by the Southern Pacific, according to statements made in an address before the Home Industry League of California by Mr. E. O. McCormick, vice-president and traffic manager of the Southern Pacific Railway. Of this number, Mr. McCormick said, all but a few stayed here. "They found," he declared, "that ten or twenty acres of California soil will produce as much as can be gotten from 160 acres in Eastern sections. The soil is better and the climatic conditions are such as to give the Californian 55 per cent additional energy." We cannot disprove this claim, nor have we any desire to do so. We would be inclined, however, to add something to any comparison of the soil and climatic conditions here and at the East. If such a difference can be shown—and we have no doubt that it can be in many instances——the difference is partly due to the difference in men. Ever since pioneer days the choice of the westward moving people came through to California. It is a long way, in spite of the speed and cheapness of modern travel, and it requires force and nerve to undertake long-distance removals. We believe that the average intelligence and energy of those who get through is greater than of those who do not start and of those who only go part of the way. Of the thousands, then, who have increased our agricultural population, most have superiority which can do better here than at the East, partly because of better producing conditions and partly because of the superiority itself. It is not new in the history of the world to have exceptionally fine producing conditions ineffective in human progress. The hundreds of thousands, of whom Mr. McCormick speaks, succeed not alone because the conditions are good, but because they are good people, or the best of the good people.

What Weather Is Worth.

The farmer has the traditional right to complain of the weather, which seems an idle undertaking, for another proverb is that "no one can farm against the weather." It is interesting to bear in mind that weather is recognized to be an agricultural product in this country, and that it is made by the national Department of Agriculture. Possibly that is the reason why complaints of the quality of it come chiefly from city people; and the kickers had a great joy when the bureau slipped a cog and brought down a blizzard on the inauguration, or something of that sort, when it promised to land a balmy day. It therefore devolves upon the farmer to support his own enterprise in weather-making, slam the city detractors thereof, and still reserve his own right of complaint while rigidly denying the right of others to complain. We are reminded of this philosophical attitude by the telegraphed report that Chief Moore of the Government Weather Bureau has filed with the House Committee on Expenditures in the Department of Agriculture a number of voluntary commendations of the weather service, which were sent to him by Western fruit growers. The commendations were based on a statement that Western fruit growers had filed charges that the service was of no value to them. Among the commendations is a letter from Grand Junction, Colo., certifying that $2,500,000, nearly double the annual appropriation for the Bureau, was saved last spring by orchardists taking advantage of a single timely Government warning. The Colorado fruit growers must be counted heroic in giving such a testimonial—not in the claim that they had so much fruit, but in the admission that they had so much frost.

California has had valuable frost warnings from the Weather Bureau and it is interesting that we are to have just the other thing. Secretary Wilson has announced that, for the benefit of the fruit growers of California, the weather service, after the beginning of the fiscal year, on July 1, will forecast the maximum as well as the minimum of temperature that may be expected in the fruit-growing sections. The orchardists would like to be advised when a hot spell is coming as well as when a cold snap may be expected.

Stories About Animals.

If we are not mistaken, there is something in print under the above title which is really held

to be "literature", not in the modern sense, for in that sense the term applies to the circulars of corn-extractors and other operators desiring publicity. If we can make literature by using a title acknowledged to cover such a product, what could be more commendable? Apart from that, however, we like stories about animals for their own sakes. Not long ago we chronicled the escape of a lot of goats from a New York laboratory after being shot full of germs of infantile diseases for experimental purposes, and the excitement lest the metropolitan children should take to playing with those loaded goats before the police captured them. We never heard what came of it, but now there comes the telegram, also from New York, that the entire police force of Manhattan, reinforced by an army of school children, is searching today for two germ-laden monkeys which escaped within the last eighteen hours from the Willard Parker hospital. The little animals are reeking with scarlet fever germs, with which they were inoculated for observation purposes. The police have been instructed to find and destroy the simians at any cost. It is feared that they have been adopted as pets by well-meaning persons who found them. It seems to us the experimenters at the hospital ought to be indicted for criminal carelessness, or else the reporter who is loading such stories on the wires should be suppressed.

But there is another story about animals which is less tragic and more economic. It is to the effect that Miss Crocker, at her dog ranch in San Mateo county, has decided to abandon meat for her stock and is to feed her 100 blueblooded Boston terriers and French bulldogs on eggs. Each dog is given at least two eggs daily; thus nearly two gross of eggs are used every 24 hours. This demand drained the local egg supply of the peninsula communities, and the suburbans are demanding that Miss Crocker go into the poultry business or move her kennel to Petaluma.

Queries and Replies.

Pruning Cherries.

To the Editor: Please inform me if it is proper to trim cherry trees in the growing season. I have a number of cherry trees in their third season which have been given the usual winter pruning. The trees are putting forth a great many more branches than are required, and naturally many of the branches are growing across the tree. In cutting these extra branches, I am informed that there is a way to trim them so that they will eventually form fruit spurs. I had an idea that in order to do this it would be well to cut about one inch from the main branch. Some one has told me that this would merely cause the little branch to sprout again. If you could enlighten me as to the proper time and manner of doing this work I should be greatly obliged.—Orchardist, Oakdale.

Cherry shoots which are not required or desired for branch forming can be transferred into fruit spurs, if the tree is of bearing age, by shortening them in. We would not, however, cut at an arbitrary distance of one inch from the starting point, but rather save one or two buds at whatever distance from the starting point these may be growing. If the tree is too young to bear, only growth shoots may appear from these buds, but they are likely to be short and will support fruit spurs later. This practice can be indulged in to a certain extent. If carried to excess you will have too many small shoots which will not get light enough to bear good fruit, even if fruit spurs should appear. A more important function which these small shoots and the foliage which they will carry perform is in the thickening of the larger branches to which they are attached and overcoming the tendency of the tree to become too tall and spindling. You can do this work at any time, even to the pinching of young, soft shoots as they appear, but it is getting too late now to be of any use for this season. It must be said, however, that in ordinary commercial fruit growing little attention is paid to these fine points, which are the great enjoyment of the European fruit-gardeners and are of questionable value in our standard orcharding.

Sour Sap Above and Below.

To the Editor: I lost a good many three-year-old apple trees this spring from what I am told around here is sour sap. They claim the tree starts and then a cold snap comes on, driving the sap into the roots, where it sours. However this may be, the trees died, and what little foliage is on them looks as if it was frosted. Can anything be done to prevent this?—Beginner, Sebastopol.

There is indeed sour sap in the root caused by standing water during the winter season. There is also sour sap in the top owing to low temperatures after the sap is in circulation. In the first instance the root tissue shows browning and a smell of fermentation on cutting; in the latter case the branches show this while the root may be in good condition. The remedy for sour sap in the root is drainage, so that surplus water during the current season may be disposed of. Sour sap in the top is not so easily escaped, because we cannot determine temperatures nor control them to any extent. When a tree is injured by sour sap in the top, the injured part should be removed as soon as possible and new shoots may appear if the diseased wood is removed soon enough to prevent the trouble from spreading downward. If these shoots come above the point of budding, good, serviceable but not very handsome trees can be secured. If sour sap occurs in the root, the top should be cut back to lessen the burden on the root while resuming normal functions. Whether this can be done depends upon how serious the injury is to the root, for some trees will die outright, others will die in the following summer having made frantic efforts to re-establish themselves. The appearance of the foliage which you mention may indicate injury either to the branch or to the root. The way to locate the injury is to cut into the branch and into the root in order to ascertain where the trouble really is.

Pollination of Fruits.

To the Editor: Do you find peaches, nectarines and apricots will set fruit with the pollen of one another, and are the various peaches, nectarines, and apricots self-sterile, or will most kinds set fruit with their own pollen? The Morello cherry is self-fertile; do you find many of the other kinds of cherry are self-sterile? We are babes in these matters in this country compared with the knowledge you people have observantly obtained. The whole subject is important and fascinating.—Reader, Wye, England.

You give us credit for too much definite knowledge concerning the behavior of different fruits in inter-pollination. We do not count upon pollination between different kinds of fruits. It is true that most fruits are self-fertile, else we could not attain the practical results we do, because it is only in the planting of almonds, cherries, pears, and apples that any regard is paid to the association of varieties for that cross-fertilization. We know by experience that some fruits are more apt to be self-fertile in this State than in other States where the growing conditions are not so favorable. For example, the Bartlett pear is put down as self-sterile by many authorities while we find the Bartlett pear, even when planted in blocks by itself, is self-productive. We have one variety of cherry, Napoleon Bigarreau, locally called the Royal Ann, which is much advantaged by association with other varieties, and some regard is paid to planting with that in view.

Cover Crop in Hop Yard.

To the Editor: Will you please give information concerning cow peas or the most suitable crop to sow in a hop field for winter growth, to be plowed under as a fertilizer in the spring? Also, would it injure the vines to be cut down before they die, so as to sow the mulch crop soon as possible after the hops are gathered?—Grower, Calistoga.

Cow peas would not do for the use which you propose, because they would be speedily killed by frost on low lands, usually chosen for hops, and would give you no growth during the frosty season. Probably there is nothing better than burr clover for such a winter growth.

Hop vines should be allowed to grow as long as they maintain the thrifty green color, because the growth of the leaves strengthens the root. But when they begin to become weakened and yellow they can be removed without injury. It is not necessary to wait for them to become fully dead.

Whitewash for Trees.

To the Editor: I am grafting some Picholine olive trees into Mission and would like a formula for whitewash to spray with that will remain on trees.—Planter, Paradise.

A good durable whitewash which is largely used for the purpose which you mention consists of thirty pounds of lime, four pounds of tallow, and five pounds of salt, adding the salt to the water used in slaking the lime, stirring in the tallow while the slaking is in progress and hot, and then adding water to thin the wash so that it will work well with pump or brush. Where there is danger of squirrels or rabbits being attracted to gnawing the bark by the salt, the salt may be omitted and the durability of the wash can be notably increased simply by the addition of tallow, and for the repelling of rabbits it is required that this grease be as rank and odorous as possible.

Green, Not Dry Stuff in the Silo.

To the Editor: I have commenced the building of two cement silos 20 by 40 feet. I have a large amount of first cutting alfalfa hay which is full of foxtail. This, I understand, makes good silage when put in green, but mine is cured. Can I use this cured hay for the purpose, or would it be better to mix it with fresh-cut hay which has not been cured? Or can I use the cured hay at all?—New Subscriber, Corcoran.

We have never heard of putting hay into a silo. Green alfalfa and foxtail can be successfully siloed, as you know. We would not think of mixing hay with green stuff for a silo, but would rather feed the hay in connection with the silage, and stock are so eager for dry roughage in connection with silage that they are likely to clean it up well.

Peach Mildew.

To the Editor: Will you please give me a method to cure warty peaches? Our peaches have large warts on them every year that hurt the sale of them. Will you please send me a cure for them?—Enquirer, Santee.

We are not quite sure what you mean by warts on peaches. There are, however, quite conspicuous blemishes which are caused by the peach mildew. There is no treatment which will cure these blemishes after they appear, but peach mildew can be very successfully prevented by spraying trees with lime-sulphur washes just before the blossom buds open. This same treatment will also largely prevent curl-leaf of the peach tree.

Problems and Prospects of Pacific Coast Nurserymen.

(From the Presidential Address of Mr. George C. Roeding at the San Jose Convention of the Pacific Coast Association of Nurserymen.)

The warm welcome that has been extended to our Association by the two most important civil and civic bodies of this delightful city of San Jose, so admirably situated in one of the greatest fruit centers of California, is appreciated, I am sure, not only by the members from the "Great Northwest", but also by those who have laid aside their cares, from distant points in California, and who have come here to lend their aid and by their good will assist in making this convention of the Pacific Coast Association of Nurserymen, one of the banner meetings of this organization.

I would be derelict in my duty if I did not express to you, the nurserymen of the "Great Northwest", my appreciation for the noble manner in which you have responded by your presence to make this meeting a success. On behalf of the members from California, I want to express to you my deep and heartfelt appreciation for your co-operation. I am voicing the sentiments of this Association, I am sure, when I say that we are highly honored by the ready response of the leading horticulturists of California to appear before us and present addresses for our edification.

Standing of the Association.—You have passed out of the period of swaddling clothes and are now on the highway leading to a stronger organization, which will ultimately count among its members not only the leading nurserymen of the Pacific Coast, but the recognized horticulturists who will assist in building up this great empire of ours, which altogether it stands today as the most important horticultural section of these great United States, is only in the infancy of its development. There is no institution that has not vicissitudes to pass through, and our Association has been no exception to the rule.

It is due to the allegiance and perseverance of the nurserymen of Oregon and Washington, that this organization has been held together at all hazards, that our membership has reached a point where our strength will make us impregnable factors in dealing with horticultural problems. I do not think I am misstating facts, when I say that we shall gather into our fold the nurserymen of Wyoming, Montana, Colorado, New Mexico, Idaho, Utah, Arizona, Nevada, Washington, Oregon, and California; and I think we should make every effort in that direction.

What Nurserymen Have Done.—All the great irrigation problems of the day are being solved in these States and Territories, and it is only natural to infer that the horticultural progress will follow along the lines of the least resistance. It is a well-known fact that the impounding of water from our great streams, fed by the inexhaustible supply of unfailing snows and glacial deposits of our vast mountain ranges, is largely responsible for the progress of horticulture in the Pacific Coast States. Who is the most influential factor in creating a change in the topography of the country and in finding its hidden resources, if it is not the nurseryman? Who pioneers the way for bettering the conditions of every rural community and frontier town, if it is not the nurseryman? What has brought about the remarkable changes in the great wheat fields, causing land which was only worth a few dollars per acre a decade ago, to rise in value to hundreds and even in many cases to thousands, if it was not the nurseryman, who through his experience gained in other sections where similar conditions existed, was in the position to make recommendation as to what to plant, to bring about these remarkable values? Who is it, if it is not the nurseryman, who is constantly by his association with other nurserymen, not only at home but abroad, trying to elevate our rural conditions, by introducing better varieties of fruits, a wider range of them, and also to make the homes of the farmer and fruit grower and the residences of the towns and cites more attractive, by introducing ornamental trees, shrubs and plants which would never be thought of were it not for his investigations, which make him a competent judge of what to recommend to brighten and make all of us appreciative of the beauties of nature.

No power on earth will prevent true nurserymen from continuing in this course; our field is a vast one and the difficulties we will have to contend with will increase as our horticultural development enlarges. I am a great believer that "In unity there is strength", but I am also impressed with another factor, and that is, each State will have its own problems confronting it, and on account of the vast territory to be covered, the States should have their individual Associations, which will affiliate with this Association. I trust you will give this matter your most careful consideration during this session.

Our Inspection Laws.—If there is any one thing which will arouse the ire of a nurseryman, it is the subject of inspection of the trees he grows. There is no denying the fact that the nurserymen, as a class, regard the horticultural commissioner with the same feeling of antipathy that the transgressor of human law has for the policeman. How are we to bring about a change in this state of affairs, is the problem that confronts us.

To begin with, I want to say that the inimical feeling that seems to exist between the nurseryman and commissioner must be eliminated at all hazards. It is to the nurseryman's interest to work harmoniously with the commissioners, simply because he is the first one to suffer from the introduction of a new pest. He may have expended thousands of dollars in developing a place, which is, in his opinion, admirably situated for his business, and may within a short period be compelled to move to another locality, because his trees on which he has expended so much care and money are either diseased or have become infested with a pest which makes them unsalable. Why is it that nurserymen are constantly seeking new localities to grow their nursery stock, and what impels them to select a place far distant from any horticultural development? The reply is simple; they are influenced by the fear of having their stock, on which they have devoted so much thought, time and money to make it satisfactory to the critical buyer, made unfit for the market by the introduction of a pest from some nearby orchard. Is it right to make the nurserymen suffer for the delinquencies of the fruit grower? I say most decidedly, NO! We will have able papers presented to us on this subject, so I will confine myself to a few brief recommendations for your consideration.

The Commissioner of Horticulture must be regarded as your friend, not your enemy.

Everything should be done to have this position filled by competent men.

Rigid inspection of nursery stock at the point of shipment and delivery should be encouraged and not discountenanced.

A closer relationship should exist between the nurserymen and commissioners, so that their combined influence will prevent the introduction of new pests, and to compel negligent orchardists to keep their places cleaned up.

Legislation.—This is one of our most important committees, and it is largely on account of the duties which rest on its shoulders and the problems which arise in each State, that I have recommended that each State have its distinctive association. New laws affecting horticultural problems will be enforced just as quickly as their interests increase in importance, and it should be the duty of this committee to confer with the legislators and prevent the passage of laws which absolutely throttle business. I am of the opinion that much of this adverse legislation could be prevented by such conferences.

Transportation.—This is a subject of the utmost importance to all of us. That many of the troubles we are now operating under could be corrected, by a unity of action on our part, must be apparent to the most skeptical, as to the benefits to be derived from organization.

The excessive desert rates charged by all railroad companies on the shipments of nursery stock to points where new horticultural enterprises are starting, are a serious obstacle to the development of such places in all cases. This narrow-minded policy of the railroad companies would be corrected if this matter was properly presented to the Traffic Association at one of its sessions.

The necessity of a uniform system of classifiation on interstate carload shipments of nursery stock, should be recommended, based on the cubic contents of the car. At the present time, California has its own classification which occasions endless trouble in shipments to other States where the Western Classification is in effect. The perishable nature of nursery stock and the necessity for its more rapid movement, particularly to those nurserymen who make delivered prices on stock and fix certain specific days for making deliveries, should have the attention of the Committee on Transportation.

I am of the opinion that much can be accomplished to correct so-called "extortions" if arguments are presented calling the attention of the railroads to these matters. After all, a railroad company is only a business organization, open to reasoning and ready to correct abuses if presented to them by a properly accredited committee.

Membership Committee.—There are many nurseryman who should enjoy the benefits to be derived from this Association, who are not members. We must all concede that the maintenance of this Association is dependent on its membership. The benefit which will accrue to individuals will be obtained only by the success of the Association as a whole, and the effectiveness of the work rests solely on the interest manifested by the members, who, if they desire to have their conditions improved, can only bring this about by the active personal interest of the individual. It is unreasonable, and in my opinion it should not be necsary for the president of this Association and its secretary to write numerous circular letters to the nurserymen of this and other States, soliciting them to become members.

To correct this difficulty, I would recommend that this committee endeavor to obtain the views of the members present to form State Associations in their respective States, such members agreeing to continue as active members of this Association.

Conservation.—The very nature of our occupation creates a love for the beautiful in nature. Who of us have not viewed with a sense of desolation the spectacle which presents itself after our beautiful and picturesque mountains have been denuded by the lumberman's axe? This is not intended as a denunciation of the lumbermen for cutting our trees, for the lumber which they furnish is absolutely necessary for our use. Why should not the nurserymen whose establishments are in these regions, not use their influence to induce the lumber companies, for their own preservation, to commence the reconstruction of these forests?

As an illustration, there is nothing to prevent the planting in the forest regions of Oregon and Washington such forest trees as the Sugar Pine (Pinus lambertiana), Yellow Pine (Pinus penderosa), California Big Tree (Sequoia gigantea), California Redwood (Sequoia sempervirens). The value of experimental plantings would within a few years appeal to the lumber companies and would create a demand for seedling timber trees which in itself would be a specialty to which, I am sure, certain nurserymen could devote their entire time and derive handsome and permanent returns annually.

Ethics of the Nursery Business.—What are, after all, the essentials to success? Briefly, as follows:

Trees must be true to name.
They must be well grown.
They must be free from pests.
They must be well packed to insure their safe arrival at destination.

Is this all? NO! A discriminating public must be called upon to buy the stock on which you have bestowed so much care and attention, either through catalogues and advertising, or

through agents. All of this means a vast expenditure of money. No one present here will deny that this is an actual statement of facts. Then why is it that the purchasers of nursery stock should have the general impression that it costs nothing to grow trees, and why should the nurseryman further promulgate this idea by the reprehensible practice of agreeing to replace stock, free of charge, that fails to grow? I hope that the members of this Association will continue to bear in mind that such practices not only cheapens them in the eyes of the public, but detracts from the general tone of the business. Never forget the fact in determining the prices of your product to the planter, that the prices are not regulated by the cost of production, but by whatever stocks are in demand. You all know that such trees as you fail to sell are valueless and serve no other purpose than so much brush for firewood.

Advertising.—No one will deny that this is a subject worthy of consideration by every business man, and the nursery business is no exception to the rule. No definite rule can be laid down as to what course to pursue. We must concede that if other lines of business derive profits from money expended in this direction to create a demand for their goods, there is certainly a field open to the nurseryman. Bear in mind, above all things, that your success in securing results from your advertising is dependent on your fulfillment of the statements you make in your advertisements.

A good catalogue giving the actual facts relative to what you have to offer and with attractive illustrations, has an important influence on the prospective purchaser's mind. The only possible way of determining what results you are securing from your advertising, is to have a check system to keep you in touch with the newspaper bringing in the best returns. Without some such plan as this, you might be devoting large sums of money to the very paper bringing you in the smallest number of inquiries. Regard your advertising just as you would any other business transaction; in other words, you are buying publicity for your business on the same principle that you would expend on any other class of merchandise. Do not be discouraged because the returns for your expenditures are not up to your expectations, for it is only by constant and persistent advertising, increasing the size of your advertisements as your business warrants, that you may expect to keep the name of your firm before the public. Whenever you have reached a period in your career that your buiness is so generally recognized by the purchasing public that you require no more publicity, retire before disaster overtakes you.

Reciprocity.—A matter of such vital interest to the Pacific Coast States should have our careful consideration, and I want to express the hope that this measure, now before Congress, will receive the endorsement of this Association. It means so much to the expansion of our horticultural sphere and also to us as nurserymen, that we cannot afford not to give proper recognition to this measure. Most of you are no doubt familiar with this matter, therefore I will confine myself to giving a few figures showing our present trade relations and will leave you to form your own conclusions as to what would result under reciprocity. The figures given are taken from a recent speech made by the Hon. J. C. Needham in the House of Representatives.

"The present foreign trade relations with the Dominion of Canada amount to $655,000,000, of which the imports are valued at $375,800,000, and of which the United States furnished $223,500,000, close to 60 per cent of the whole."

These remarkable trade relations have existed in spite of the preferential trade reductions amounting to 33⅓ per cent to the United Kingdom of Great Britain. What may be expected when the high tariff rates on our products are removed, I leave it to you to conjecture.

To the nurserymen of the Northwest I want to say further that they will derive more benefit directly by reciprocal trade relations on account of their close proximity to the Dominion of Canada. Under the present tariff, there is a duty of 2½c. per tree on all fruit trees (even on June Bud peaches) exported to Canada, making shipments of such stock almost prohibitory.

The Future.—Finally, I want to say to you, my friends, that I hope this ninth annual meeting of the Pacific Coast Association of Nurserymen will, when you return to your homes, leave an impression on your minds that your attendance here has not been in vain; that you have derived both profit and pleasure from your deliberations, and that you have formed new friendships which like a magnet will have the effect of bringing you into closer touch with one another, and will cement better business relations than have existed heretofore. If this much has been accomplished, we must concede that our trip has not been in vain.

California Agriculture and the Census of 1910.

We have been waiting with fond anticipation for the reports of the United States Census Office, to see how California has grown during the last decade. The first general statement in this line has just issued from the Government, as follows:

Agricultural Area.—Although the total acreage of farm land in the State has decreased 5 per cent in this period, owing to the fact that 19,000,000 acres of California land have been included in National Forest Reserves, the total value of farm lands and buildings, the average value per acre, and the expenditure for labor and fertilizers have all doubled in the last decennial period.

It is also nothworthy that the average size of farms in this State is 20 per cent less than it was in 1900, indicating the progress which is being made in cutting up the big ranches of the interior valley into smaller and more productive units.

Land Values.—The total value of all farm lands and buildings in the State is given as $1,448,560,000 in 1910, against $707,913,000 in 1900, or an increase of 105 per cent.

The total value of the farm lands alone has increased 109 per cent, while the total value of farm buildings has increased 71 per cent.

Size of Farms.—The average size of the farms in California is still large in comparison to the more popular small acreage holding. It is given as 318 acres in 1910, against 397 acres in 1900, a decrease of 79 acres, or 20 per cent. It is to be noted that nearly one-half the farms in the State are less than 50 acres in size.

Of the total number of farms, those of 19 acres and under formed 25% in 1910 and 21% in 1900; those of 20 to 49 acres, 23% in 1910, and 18% in 1900; those of 50 to 99 acres, 12% in 1910, and 11% in 1900; those of 100 to 174 acres, 14% in 1910, and 18% in 1900; those of 175 to 499 acres, 14% in 1910, and 18% in 1900; those of 500 to 999 acres, 6% in 1910, and 7% in 1900; and those of 1000 acres and over, 5% in 1910, and 7% in 1900.

The total number of farms in the State is given at 87,670, of which 66,265 are operated by owners, of which number 39,595 are reported to be free from mortgage.

Expenditures.—The reported value of farm implements and machinery was $36,393,000 in 1910, as against $21,312,000 in 1900, a gain of $15,081,000, or 71 per cent.

The expenditure for labor in 1910 reached the sum of $49,735,000, as compared with $25,845,000 in 1900, an increase of $23,890,000, or 92 per cent.

The expenditure for fertilizers amounted in 1910 to $2,132,000, while in 1900 it was $937,000, an increase of $1,195,000, or 128 per cent.

The average value per acre of farm land and buildings in 1910 is stated as $51.95, as against $24.56 in 1900, a rise of $27.39, or 112 per cent.

The average value per acre of farm land alone in 1910 was reported as $47.19, while in 1900 it was $21.87, the amount of gain being $25.32, or 116 per cent.

Comparative Statement.—The following comparative tabulation of California farm lands and values is given:

	1910.	1909.	Increase, 1909-10, %
All farms	87,670	72,542	21
Total acreage	27,883,000	28,829,000	*3
Improved acreage	11,380,000	11,959,000	*5
Average acres per farm	318	397	*20
Value of land and buildings	$1,448,560,000	$707,913,000	105
Value of land	$1,315,718,000	$630,445,000	109
Value of buildings	$132,842,000	$77,468,000	71
Value of implements and machinery	$36,393,000	$21,312,000	71
Average value an acre of land and buildings	$51.95	$24.56	112
Average value an acre of land alone	$47.19	$21.87	116
Expended for—			
Labor	$49,735,000	$25,845,000	92
Fertilizers	$2,132,000	$937,000	128

*Decrease.

Condition of Ownership.—The following is the tabulation of condition of ownership of California farms:

	1910.	1900.	Amount of Increase, 1900-10.
All farms by color of farmer	87,670	72,542	15,128
White farmers	84,692	70,935	13,757
Negro and other non-white farmers	2,978	1,607	1,371
All farms by tenure	87,670	72,542	15,128
All owners	66,265	52,529	13,736
Owners free	39,595	.....	.....
Owners mortgaged	26,670	.....	.....
All tenants	18,035	16,760	1,275
Managers	3,370	3,253	117
Distribution by acreage groups.	87,670	72,542	15,128
19 acres and under	22,235	15,082	7,153
20 to 49 acres	20,533	13,110	7,423
50 to 99 acres	10,637	8,067	2,570
100 to 174 acres	11,945	13,196	*1,251
175 to 499 acres	12,520	13,005	*485
500 to 999 acres	5,112	5,329	*217
1000 acres and over	4,688	4,753	*65

*Decrease.

Statements relative to acreage and yield of crops and the domestic animals of California will be issued by the Census Bureau as soon as the tabulation of this data has been completed.

STANDARDIZING DRIED FRUITS.

To the Editor: I wish to suggest that the PACIFIC RURAL PRESS advocate strongly the standardizing of dried fruits. The deciduous fruit men in several sections have accomplished the standardizing of deciduous fruits, to the great advantage of the honest grower. I trust the same may be accomplished for the producer of dried fruits. I presume this plan will receive strong opposition from certain quarters, not necessary to mention. Let me give you an axample: I green grade my prunes, which makes them clean before dipping and also uniform on trays after dipping. I dip in lye, then rinse before putting on trays. This is labor, not extra labor, but necessary labor in order to market first-class fruit. I cure rather than sun-dry. Now look and see the contrast: Another rancher hauls his fruit to the dipper, dumps it into the lye tank, dirt, leaves, etc., and from the lye tank onto the tray without rinsing, sun-dries it, and sells to the packer, and his fruit competes with mine.

This is the true status. Now advocate rinsing of prunes; advocate standardizing, and keep it before the people all of the time.

AMOS STEVENS.

Saratoga, Cal.

AGRICULTURAL REVIEW.

With the Fruit Men.

Reports from the Kansas State Horticultural Society estimate fruit crops of the State this year as follows, on the basis of 100: Apples 33, pears 27, peaches 10, plums 36, cherries 63, grapes 69. The figures are slightly below those of last year, except for cherries and grapes, which are a little higher.

The cool weather in Alameda county this summer has caused the black aphis to appear on the tomato plants in considerable numbers, although proper spraying has prevented damage. The aphis has also injured horse and string beans slightly.

At the meeting of the Pacific Coast Nurserymen's Association which was held in San Jose last week, the following officers were elected: President, P. A. Dix (Utah); vice presidents, C. F. Lansing (Oregon), C. H. Smith (Salt Lake City), J. Vallance (San Francisco), Ray Hartley (Idaho), A. W. McDonald (Washington), Charles Trotter (British Columbia), and D. I. Tighe (Montana); secretary-treasurer, C. F. Tonneson (Washington), re-elected; executive committee, M. D. Soles (Salt Lake City), A. McGill (Oregon), and Leonard Coates (Morgan Hill). It was decided to hold the next convention in Salt Lake City. It was decided by California nurserymen present to organize a State association, to be affiliated with the Pacific Coast Association, and officers for the local organization were chosen as follows: President, W. V. Eberley; vice-presidents, Messrs. Howard, Chisholm, Wheeler, and Wilson; secretary, H. W. Kruckeberg; executive committee, Messrs. Crow, Howard and Wrightman.

A bulletin dealing with several injurious insects from the Hawaiian Islands has been issued by the State Horticultural Commission. Special efforts are to be made to keep the insects out of this State.

Prices and Prospects of Fruit.

We had expected to print a late estimate of the California fruit crop in this issue, but as several of the heavy counties have not yet reported, we are holding the figures back till next week. However, from various sources we have gleaned the following items:

The Hanford canneries are paying $25 for clings and freestones, and $30 for Phillips cling peaches. They will not make a run on apricots this season.

Cantaloupes are going out of the Imperial valley very fast. The latest figures place the crop at 2200 cars.

J. F. Benton, of the Eel River Valley Apple Growers' Association, states that about 50,000 boxes of apples will be shipped from the Fortuna section this year.

It is reported that growers of almonds near Davis have sold their growing crop at 16½c. per pound.

Dried prunes are reported to have sold in the Alexander valley for $130 per ton and at Healdsburg for $135.

Sebastopol growers are receiving 8½c. for dried apples up to August 15, and 7½c. after that date.

The first crop of grapes will be light in Butte county.

The walnut crop will be heavy in Ventura county. Very little blight so far.

Prunes are reported as still dropping freely in Monterey county.

From Orange county we learn that walnuts will be a fine crop. Apricots also are showing very large and quality well above the average. The middle of the harvest will be from July 8 to 16.

The grape crop in Placer county will be larger than first reported as the vines have developed fruit from lower buds.

Early apples in Sonoma county will be light, but later apples will bring up the average.

Raisin grapes in Yolo county promise as follows: Muscats 75%, Sultanas 50 to 60%, Thompson's Seedless 75% of a full crop.

Walnuts have set well in Los Angeles county, but the blight is bad and will reduce the crop to about 75% of the usual amount. The first crop of grapes will be small, owing to the frost.

In El Dorado county pears have been dropping badly in certain districts dur ing the last month. Apples, which will not be very plentiful at the best, have also dropped a good deal.

A Merced county correspondent states that $30 per ton has been offered for Malaga grapes, although no sales have been made at that price, as the growers are holding out for $40.

Fruit of all varieties is looking well in Shasta county, and the cold weather is causing the quality to be exceptionally good. But few sales are reported at the prices that are being offered.

Crop conditions are very good in Alameda county, although a few apricots have been dropping lately. The grape crop will be one of the best for the past ten years. Contracts for apricot pits are being made at $40 per ton, and fresh cots at $70.

Offers of $37.50 per ton for Malagas are said to have been refused at Vinland, Fresno county, this week.

Prunes in Bosnia and Servia are said to be dropping badly. The Bosnian crop is estimated at 1500 and the Servian at 2500 carloads.

Apricot shipping has ended at Sanger, Fresno county, the growers getting $60 and $65 per ton for their fruit.

Four cents for dried figs has been offered in Fresno. Ripe figs are now on the market there. The fig crop will be smaller than usual, owing to spring frosts.

The cool weather has retarded some what the ripening and shipment of ber ries near Sebastopol, although much fruit is going out.

Reports from Redlands state that the best apricot orchards in the vicinity will net the owners nearly $200 per acre, owing to good prices and a fair crop.

P. D. Hasty, of Fowler, Fresno county, has sold his Tuscan clings for $50 per ton. Offers for Thompson's Seedless grapes are reported as high as $35, although $25 and $27 seem to be the average figures.

The first box of Bartlett pears sent East was produced on the ranch of E. A. Gammon of Walnut Grove, Sacramento county.

The California Date Co., on its farm near Heber, is setting out 15 acres to dates. Most are offshoots, though a few seedlings are being tried.

The vineyard of G. W. Ward, of Selma, has been attacked by an insect or disease which causes white spots to appear on the under side of the leaves and grow in size until they are killed.

A swarm of grasshoppers destroyed a large amount of nursery stock near Porterville last week.

The 520-acre ranch of A. Skinkle, near Porterville, is to be set out to oranges. Irrigation will be done by the pumping system, the water being lifted 119 feet to a reinforced concrete reservoir, and thence distributed.

The Southern Pacific has put on an extra car from Vacaville, upon which shipments of less than carload lots can be made to San Francisco—leaving at 4:30 p.m. and arriving in the city at 4 a.m.

The following gives number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, June 23, 1911, as reported by the California Fruit Distributors:

Cherries—46 cars. This week's report shows a gain of practically three cars over last week. The Santa Clara valley is the only section shipping at the present time.

Apricots—78¼ cars. The apricot movement shows a heavy gain this week. Fruit is coming from several different sections and is being widely distributed. Up to the present there has not been enough cars of this fruit to go around. No difficulty will be experienced in future, however, in supplying the demand.

Peaches—47¾ cars. Peach movement now consists very largely of the Triumph, of which variety straight cars are now available for quotation. Fruit is of fair size and good quality. Hales and St. Johns will follow.

Plums—39 cars. Shipments of Clyman plums are now nearly concluded. Tragedy, Burbank, and Climax are becoming more plentiful, but are still scarce, owing to poor ripening conditions.

Pears—A few early pears have already gone forward. More will be shipped this coming week. Bartletts are not expected to make their appearance until about the first of July, and there can be no considerable shipments of this variety until probably about the 10th. The crop is looking fine.

Total shipments to June 26, 427 cars, as against 1248 cars to same date last season.

General Agriculture.

The thrips have attacked the onion fields near Walnut Grove, Sacramento county, and did some damage. Deputy Horticultural Commissioner Dudley Moulton, who was applied to for a remedy, stated that the insect was the pear thrips and could be checked by spraying with tobacco and oil.

The asparagus canneries in the island district of the Sacramento have closed for the season. Asparagus is still finding a market in San Francisco, and is of as good quality as in any part of the season, although the market is usually closed to asparagus in quantity much earlier than this.

County Inspector Heron of San Bernardino is attempting to exterminate milkweed, which he claims is injuring the bees.

Sugar-beet shipments from Imperial county began last week, $4.50 per ton at Calexico being paid. The beets are shipped to Phoenix, Arizona.

A shipment of 1050 watermelons from the southern end of Lower California was received at San Diego last week. Besides melons, several cases of garlic, green peppers, cantaloupes, and eggplant were received at the same time.

J. E. Jenks, secretary of the Vetch Growers' Union of Tangent, Ore., is traveling in Tulare county, endeavoring to encourage the growing of vetch in orange orchards as a cover crop.

Contracts for hops have been made recently for 25 cents.

The Western Grain and Sugar Products Co. has renewed its lease on the Kerman alfalfa mill for two years.

On a small farm of four acres in Merced, S. Delfornia has made this year $775 per acre from onions, and has planted the land to celery, from which he ex-

Fertilize With Air



The nodules on these roots are colonies of bacteria that suck the nitrogen from the air and store it in the plant, which then becomes a valuable fertilizer. The bacteria were placed there by inoculating the seed with

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Science has thus brought the wonderful possibilities of bacteria fertilization to a thoroughly practical and simple method of application.

This places within reach of every grower an enormous increase in the tonnage and fertilizing value of

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THE ONLY PERFECT LUBRICANTS
Use only one-fourth of what you would use of any other.
WHITTIER COBURN CO.
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AGENTS WEATHERPROOF COMPO ROOFING
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pects within the twelve months from planting the onions to receive enough to make $1400 per acre.

The Cerritos Sugar Co. has been incorporated and will erect a factory at Anaheim. It is a branch of the Anaheim Sugar Company.

W. S. Kelley, of Dry Creek, Sonoma county, has sold 55,000 gallons of wine at more than 16c. per gallon.

At the experimental grounds of the Hanford High School some hulless barley has proven a great success.

The first sweet potatoes sold this year in Los Angeles came wrapped in tissue paper and sold at 15c. per pound.

Haying in Scott valley, Shasta county, is a month later than usual, owing to the cool spring. The meadow hay will be a good crop, but the first cutting of alfalfa will be light. A good grain crop is expected.

Senator Weed is buying a large acreage of land in Shasta county, his last purchase being 400 acres from C. H. Green of Greenview. The price was $100 per acre.

Miscellaneous.

T. A. Foster, of Atwater, is planning a poultry farm on which Rhode Island Reds will be produced.

The Modesto and Turlock irrigation districts are planning to bring suit to enjoin the La Grange Water & Power Co. from taking more than its allotment of water from the Tuolumne river.

Mass meetings are being held by farmers on the west side of the San Joaquin around Mendota, Firebaugh, Dos Palos, Newman, Crows Landing, and Los Banos in the interest of forming an irrigation district of 370,000 acres.

W. D. Donkin, of New South Wales, is inspecting irrigation systems of this State.

Waldo Rhonert has purchased 286 acres near Hollister, which, with 200 more, will be used as a seed farm.

The Balaklala Copper Co. will close its smelting plant at Coram, July 15, owing to the difficulty of controling sulphur fumes.

Bonds for $1,175,000 were sold by the Oakdale irrigation district. The advertising for construction work will be repeated, owing to the fact that the first bids were too high.

A sale of 4032 acres of land in Indian valley, Lake county, which will be used as a reservoir site by the Yolo irrigation interests, has been made.

A farmers' picnic that was largely attended by residents of Mendocino and Sonoma counties was held in Ukiah, last Saturday.

The Moulton Irrigated Land Co. has planted 75 acres to rice near Princeton.

O. E. Bremmer has been appointed chief deputy quarantine officer, with offices in the Ferry Building at San Francisco. This office was created by the last legislature in a law going into effect June 27. The work of the office will be practically the same as that carried on up to that date by Dudley Moulton, late deputy horticultural commissioner, who retired on the same date, owing to the position being abolished by the new law.

Hanbury Island, in Napa river, will be used by Coats & Williams as a "mule hospital" to keep horses and mules when not working. Much of the island will be planted next year to hay and grain.

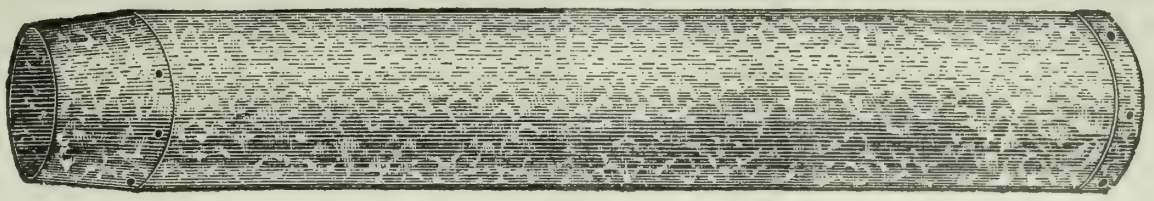
Some of the most serious damage ever done to vineyards in this State by the fleabeetle has been accomplished recently in several wine-grape vineyards near Woodland, Yolo county. This is the first appearance of the insect in great numbers in that vicinity, and Horticultural Commissioner Hecke has commenced active operations against it.

J. J. Smith, of San Lorenzo, Alameda county, is experimenting with irrigation by pumping and is setting out a number of acres with peas and other vegetables for a second crop to the year. The only other irrigation in the district has been done by the gravity system. Mr. Smith has also set out a considerable planting to raspberries, which have not been tried extensively in that district.

Drilling on the Brawley well has been abandoned at a depth of 2000 feet, no fresh water having been secured. The cost of the venture was nearly $10,000.

In the monthly report of Commissioner C. W. Beers of Santa Barbara it is stated that considerable progress is being made in checking the spread of the morning glory. Soil centipedes which have been discovered in the bean fields will be fought by the U. S. Department of Agriculture. The study of friendly parasites by the U. S. Bureau of Entomology will begin shortly with P. H. Timberlake of the Bureau in charge, with headquarters in Santa Barbara. Two carloads of scabby potatoes and a shipment of potatoes affected by a severe fungus were recently held up.

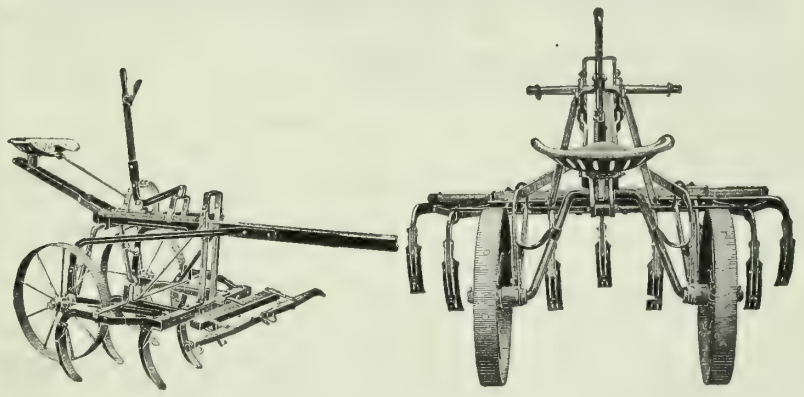
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These Illustrations Show the Frame Raised Out of the Ground.

Just note how the frame extends out beyond the wheels so that the driver can work up close to the trees, vines or vegetables.

Note that the frame is level in every position.

Note how well the various parts are bolted and braced so as to get the desired strength and rigidity and still be light in weight and draught.

The **BENICIA-ORR** is made in two sizes—seven and nine teeth—which cultivate a width of four and five feet respectively. By the loosening of six bolts it can be changed from one size to the other. Center tooth can be removed, if desired, for cultivating small vegetables, as beets, beans, etc.

Bear in mind that this implement was designed and is built by practical men who understand the need of agriculturists.

For **good, hard, thorough work in garden, orchard, vineyard or field, the BENICIA-ORR has the lead over any other cultivator on the market.**

If you want to use the latest, **up-to-date cultivator,** place your order for a **BENICIA-ORR.**

Code.	Size.	Width.	Net.	Weight. Gross, Cased.	Measurement. Cu. Ft., Cased.
Sevenor	7 teeth	4 feet	283 lbs.	365 lbs.	8
Nineor	9 teeth	5 feet	308 lbs.	390 lbs.	8
	Pole		32 lbs.	32 lbs.	1

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FACTORY BENICIA, CAL.

MR. DEALER: We are receiving many inquiries for Benicia-Orrs; have you secured the agency in your vicinity?

THE COLORADO POTATO BEETLE.

To the Editor: The Colorado potato bettle (Leptinotarsa decemlineata), notorious because of its injury to potato plants in the Middle Western and Eastern States, has not yet become established in California, but it has recently been arriving in carload shipments of potatoes from Texas. The Rocky Mountains have always been considered an impassable barrier, over which this as well as other insect pests could not naturally go, but the convenience of railroad transportation has now entirely eliminated the effectiveness of this barrier.

The potato beetle is supposed to be native to Colorado and adjoining States. It was first recognized as a pest in Colorado in 1865, and since then it has spread into practically all of the potato-growing regions of the Eastern and Southern States and Canada. The larvae and adult beetles are about equally destructive. They defoliate the vines and weaken the plants so materially by their feeding that the quality of the potatoes is affected; they become watery after cooking and are inferior for purposes of seed. The insect is held in check by numerous natural enemies, including many birds, and it is also easily controlled by spraying the vines with poison. For these reasons it is now not greatly feared as a pest by potato growers in the Eastern States.

Carload lots of old potatoes from various places in the East have been arriving in California for many years, but the beetles have never accompanied them because the potatoes were usually stored for a considerable period before being shipped. New potatoes are usually sacked in the field and shipped immediately. The old vines may be placed over the potatoes to protect them from sunburn, and under these conditions it is almost impossible not to get some beetles in the sacks. The most of these recent shipments of new potatoes from Texas came in refrigeraator cars and under ice, so that the beetles were more or less dormant. All were fumigated and thereafter all lots which had actually contained the beetles were sent out of the State. In this way the danger was reduced to a minimum. We must, however, recognize the fact that these several carloads traveled more than half the length of the State with the living beetles in them before they were intercepted and treated.

DUDLEY MOULTON.

San Francisco.

They Believe They Can Clean Out Bermuda.

Director R. H. Forbes and Mr. E. L. Crane of the University of Arizona Agricultural Experiment Station, believe they can clean out Bermuda grass, and all who have the plant where they do not desire to have it will be greatly interested in their "Timely Hints" which tell how they do it.

BERMUDA GRASS.—Bermuda grass, which is named after the Atlantic islands of that name, is now widely disseminated, especially throughout semi-arid, subtropical regions where winter frosts are not sufficiently severe to kill its roots and stolons. This plant is perennial and spreads by means of its long and many-jointed rootstocks or stolons, by its aerial runners, and its seed. The small, light seeds, easily transported by winds and flowing water; in admixture with hay, merchandise, or other seeds; or in the manure of animals, soon inevitably find their way into any region where this grass will grow. In humid climates, such as that of the Southern States, the seed produced is not fertile; but in arid climates, as that of Australia or our own Southwest, the seed is fertile and is the chief means by which the grass is spread.

CONDITIONS OF GROWTH.—Bermuda grass is remarkably hardy to Southwestern conditions of climate and soil. It thrives during the hottest part of the year, growing fastest during the usually more humid weather of August. When once established it will live for weeks and months without water, and is one of the most resistant plants to soluble salts in the soil known. It will live under water for a long time; some well-known patches of Bermuda grass near Mecca, California, though submerged in Salton Sea for over two years, were still alive and making new growth from the roots when that body of water finally evaporated to a lower level. It will also come up through a heavy coating of mud under which it may be buried during irrigation. But Bermuda grass does not thrive in densely shaded places; nor will it endure exposure of its roots and stolons either to frosts or to the direct heat of the summer sun.

ECONOMIC VALUE.—Bermuda grass makes good pasture for horses, cows, and sheep, but gives only a scanty yield of inferior hay. It makes a durable lawn of somewhat harsh texture, and when once established will withstand neglect and hard usage. In some situations it is used to hold banks of ponds and rivers against the action of water, the levees of the lower Mississippi being to some extent thus protected.

AS A WEED.—Bermuda grass is chiefly known, however, as one of the worst weeds of our semi-arid, subtropical Southwest. It is very aggressive, and if not kept under control will compete successfully with most irrigated crops. It is probably at its worst along the lower Colorado river, where the long, hot season, slightly more humid climate, and rich irrigated soil greatly favor its growth. It is less aggressive in Salt River valley; and in Graham county, at 3000 feet altitude, with colder winters and shorter summer seasons, is comparatively easily controlled.

METHODS OF CONTROL.—As with other evils, prevention is cheaper than cure in dealing with Bermuda grass. In cultivated crops the grass may be destroyed by cutting or pulling the plants free from the soil, so that they will dry out entirely. If plowed or cultivated under, however, Bermuda only roots more deeply and is then more difficult to destroy. Clean land may be easily kept clean, even under ditches and in the vicinity of fields or roadsides matted with this grass. At Yuma, where this is most difficult, the Station Date Orchard has been kept free from Bermuda grass for six years, and accurate account kept of the cost of so doing, with different crops. Winter-growing crops, such as onions, cabbages, beets, barley, and wheat, are of course little affected by Bermuda grass. Summer row-crops, requiring cultivation, may be easily kept clean until laid by. To this class belong asparagus, beans, cotton, cantaloupes, peanuts, and tomatoes. Such crops, when they densely shade the ground, as sweet potatoes, cantaloupes, and peanuts, are safe from Bermuda grass until harvested. But crops which admit light and air to the soil beneath, as corn, cotton, and particularly watermelons, will develop Bermuda grass between laying by and harvest to an extent requiring considerable outlay if the land is to be kept clean.

IN ALFALFA.—Broadcast summer-growing crops which cannot be thoroughly cultivated are the hardest to handle with reference to Bermuda grass. Alfalfa is the chief of these, and Bermuda probably does its main damage in connection with this important crop. Notwithstanding its dense and vigorous growth, alfalfa, unassisted, will gradually yield to Bermuda grass wherever the latter withstands the winter. The grass, brought upon the land usually by irrigation water, gains foothold at the edges of the field, upon exposed borders, and upon bare spots. When the alfalfa is cut the Bermuda increases its lead while the ground remains bare; and in August, when alfalfa grows least, Bermuda grows most vigorously and firmly establishes its grip on the field. Pasturing further encourages the grass to the detriment of alfalfa, so that, oftentimes, three or four years of neglect and mismanagement are sufficient to reduce a thrifty field of alfalfa to an unprofitable condition, at least for hay-making purposes. It is true, however, that some of the best crops of alfalfa seed come from fields partly occupied by Bermuda, which by reducing the alfalfa to a thin stand secures light and stocky growth for individual plants favorable to seed production. To prevent the inroads of Bermuda upon alfalfa all that is necessary is vigilance—and a sharp straight shovel. After each cutting of alfalfa and especially in August and September, the field should be gone over with the shovel and all Bermuda cut and turned roots up to the sun. If consistently followed up, this work well repays its cost; but if neglected the grass will finally gain such headway that the land can only be reclaimed by putting it in a cultivated crop. The cost, at Yuma, with labor at $1.50 to $2.50 a day, was from $2.50 an acre a year on new, clean land, to $9.90 an acre, annually, on ground surrounded with Bermuda infested lands and roadways. This corresponds to a reasonable cost of cultivating for other crops of similar value and is more than repaid by the maintenance of the field in full productiveness. Cultivated row-crops are less costly than alfalfa to keep clean. At Yuma the results with row crops for two years were as follows:

	Area.	Total Cost.	Cost per Acre.
1909 ...	5.7 acres.	$14.04	$2.46
1910 ...	5.37 acres.	22.64	4.21

The cost of keeping a large lateral canal free from Bermuda grass, for the same time, was: 1909, per 100 feet, $0.90; 1910, per 100 feet, $2.04.

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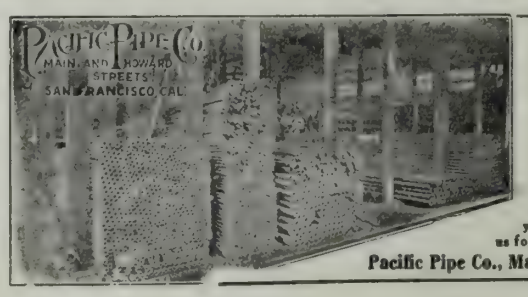
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In this connection, the price of neglect is also interesting. In 1907, 8 acres in row crops belonging to a neighbor and kept clean until August, was allowed to take care of itself while the owner went to the seacoast. On his return, seven weeks later, an expenditure of $85.71, or $10.71 per acre in wages, was necessary to eradicate the Bermuda which had grown in his absence.

KILLING OUT BERMUDA FIELDS.—When solidly matted growths of Bermuda grass are to be destroyed, wholesale methods must be employed. Bermuda sod may be killed by turning it dry in the fall with a turning plow, such as the Moline rod plow, thus exposing the roots to killing winter frosts. The following spring the ground may be sown to cultivated crops followed by a winter crop of grain, and in about two years the grass should be under control.

Likewise, in summer Bermuda sod may be turned dry and the roots exposed for several weeks to the full heat of the sun, with occasional spring tooth-harrowing to further expose and disturb the roots and stolons. In November and December the ground may be sown to grain or planted to winter vegetables such as beets or onions. Another summer fallowing may further reduce the Bermuda, which should thus in time be brought under control.

Following the practice outlined above, we have ceased to dread Bermuda at Yuma, finding it not only possible but practicable to keep it in subjection.

FARMERS' MUTUAL INSURANCE OF CALIFORNIA.

To the Editor: As farmers, we have always been looking forward to the day when there would be more and truer co-operation among the farmers. That day is surely at hand, and the numerous co operative lumber companies, water companies, fruit companies, and packing companies, and last but not least, the co-operative insurance companies of this State show that co-operation amongst the producers "is making good" and is here to stay.

In 1897, the California Legislature passed a bill by which a certain number of farmers, or persons owning farm property might have the right to organize a mutual insurance company for mutual protection, and under the control and supervision of the State laws, the same as the old-line companies.

This form of insurance company has been in successful operation in other States for the past forty years.

The first county to take advantage of this law was Sonoma, where The Sonoma County Farmers Mutual Fire Insurance Co. was organized January 26, 1898. Since that time there have been various companies formed in the different counties until there are now seventeen county mutuals in the State, representing in round numbers something over $25,000,000 worth of policies. While this amount may seem comparatively small as compared with old-line companies, still, when we consider that there has been to every policyholder in these companies a saving of nearly 80 per cent of what he was in the habit of paying, it makes the benefits of co-operation loom up considerably. That this form of insurance is the only insurance for a farmer, and of the success of the business, there is not the shadow of doubt.

The report of our State Secretary, G. F. Cromer, of Los Angeles county, show that the average cost to the farmers represented by the seventeen different organizations was but 21 cents per $100 per year. Anyone can, by comparison with what they are paying, form an idea of the immense benefits derived by the members.

Here in San Joaquin county we started April 20, 1907, with 47 members and $70,000 worth of insurance. We now have about 800 members and are nearing the million-dollar mark in policies. We have a sure, steady growth, and number among our policyholders a large percentage of most successful and influential farmers in our county. As has been the history of all these companies in the State, we believe we are going to "make good." C. A. STOWE.

Stockton, June 12, 1911.

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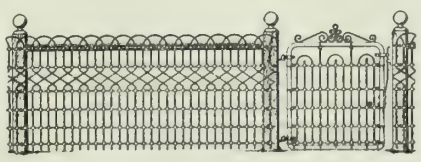


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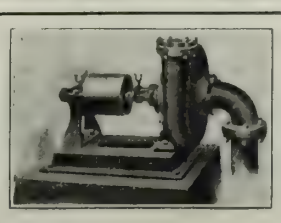
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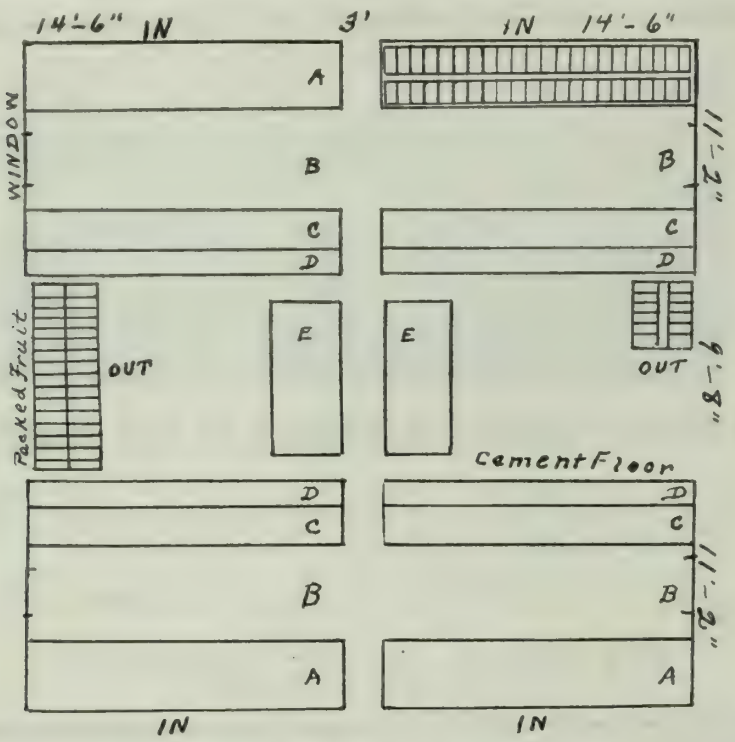
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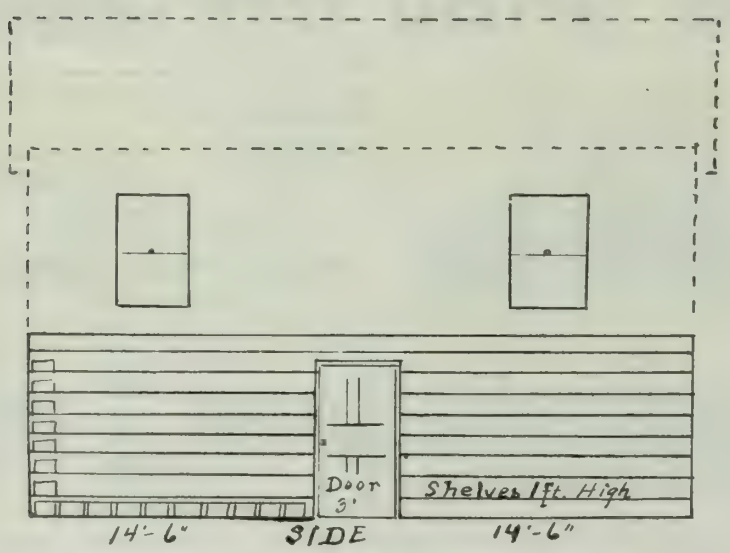
(Continued From Page 1.)

is a one-horse truck. It can be built much larger for two horses if desirable.

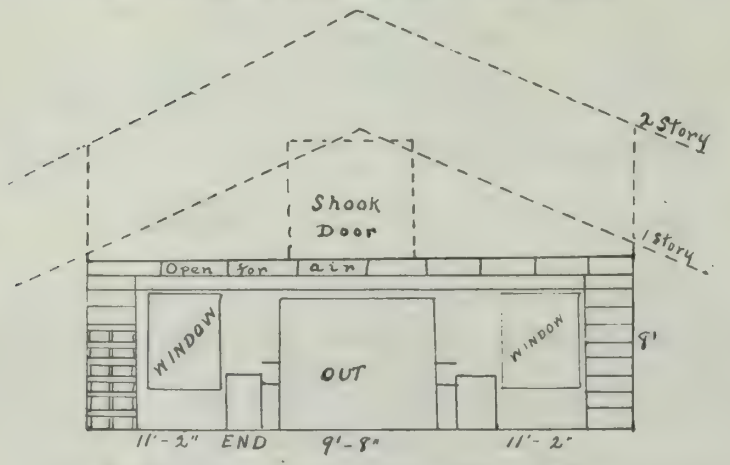
GROUND FLOOR PLAN OF PACKING HOUSE.—This house, as shown in the drawing, is 32 by 32 ft., and the various measurements are shown. Two sides are equipped



Ground Floor of Butler's Orchard Packing House.



Receiving Side of Butler's Orchard Packing House.



Out-Going Ends of Butler's Orchard Packing House.

for receiving the fruit as it comes in from the orchard, the trucks driving up to these to unload. The other two sides provide for handling of the finished product in its outward movement.

(A) is a rack with shelves 10 inches or a foot apart, wide enough to accommodate two lug boxes end to end. One of these racks in this packing house will hold 224 lug boxes of fruit. There are two racks on each side of the house, hence capacity, for full lug boxes, is 896. The lower shelves only, however, are usually used for the fruit, while the upper shelves are used for empty lug boxes which are to be taken back to the field.

(B) is the space for packers. This size house will accommodate twelve packers, or sixteen in an emergency.

(C) is a packing bench 2 feet wide, flat and slatted so that fruit cannot be poured out on it. Each packer has two lug boxes of fruit (peaches, plums, pears, as the case may be) at one side of the box he is packing into, and his wrapping paper at the other side. He may have three lug boxes of fruit to pack from if desirable. The expert packer will pack from the lugs (which are all within his reach) first, a box of one uniform sized fruit, then a box of another uniform size. When his box is packed, it is pushed forward up onto the shelf in front of him (D), whence it is taken by the nailer to nailing bench (E). The packer may also place on this shelf partially emptied lug boxes, if he requires another lug of fruit to complete the sizes he is packing. Some growers may prefer to pour the fruit onto the benches before packing, especially plums, which can easily be arranged; but in this packing house the fruit is always packed direct from the lug box, to avoid one handling and the "pawing over" on the benches.

The shelf (D) may be any desired width, but should be built 8 or 10 inches above the packing bench, and other shelves may be built above it to hold packed boxes ready for the nailer. Below the level of the packing table is another shelf. Along this shelf are placed lug boxes, lengthwise, into which is thrown the waste and imperfect fruit, to be taken away by a man on the nailing bench side.

The finished packages are stacked in the open spaces on each end of the building, to which the wagons drive for loading out. In this building these spaces have an extreme capacity, without crowding nailers, of 2000 boxes if stacked 12 high. The fruit, however, is usually hauled to the cars as fast as ready.

One of the photographs shows a side elevation of the packing house and the receiving racks. As is shown by the drawing of the end elevation, the building may be one or two stories; in the latter case the upper floor is used for box making and storing. A modification of this building may be built by taking half of it, cut crosswise.

[The packing house which Mr. H. E. Butler so clearly describes and illustrates for the benefit of our readers was designed and used by his father, the late P. W. Butler, with whom this writer had most inspiring and profitable acquaintance for twenty years or more. We always regarded Mr. Butler as one of the most progressive and capable men in our fruit industry. He was great in planning and organizing, but never failed to regulate his power of origination and invention by rigid requirements of practicability and workability. His influence in building up the foothill fruit industry was great and valuable, and his activities were also widely extended over the State. His children and grandchildren are adding to the public indebtedness to their ancestors.—EDITOR.]

BEET FARMERS' INSTITUTE AND PICNIC.

To the Editor: June 9 was surely sugar-beet day. Beets of all kinds held sway with the sugar beet the main topic of discussion, for all the beet farmers and their families for fifty miles around had gathered in response to the invitation issued by the Spreckels Sugar Company to set apart that day for a big picnic and farmers' institute.

Beautiful Alisal park, six miles from Salinas, was the scene of the picnic, free transportation being furnished to the park from Spreckels, Salinas and Watsonville. A thousand people accepted the invitation and gave the day over to getting better acquainted, talking over farming problems, and enjoying the natural beauties of the park.

The forenoon was devoted to a farmers' institute, the following addresses being delivered:

Opening Address, R. H. Moore, general manager.

Remarks, Judge C. F. Lacey.

"Humus for Beet Soils," Professor G. W. Shaw, University of California.

"Irrigation, Its Need and How to Secure It," C. L. Pioda, company engineer.

"Insects of the Beet Crop," G. T. Scott, Spreckels Experiment Station.

"The Labor Problem," A. Miles, outside beet man.

"Irrigation from the Agricultural Standpoint," Professor Shaw.

"Why We Advocate Beets," R. L. Adams in charge of Spreckels Experiment Station.

At noon a big barbecue was held, two beeves being donated for the occasion. These were supplemented with basket lunches brought by the ladies.

Dancing and children's games occupied the afternoon, the Spreckels orchestra furnishing the music.

The "get-together" spirit is being recognized more and more as a necessary element of successful business, and un-

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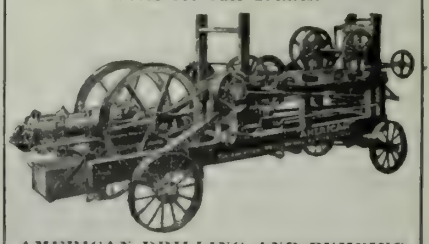
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der the cool green of the live oaks and the full bloom of the buckeye, the officials of the Spreckels Sugar Company and their beet farmers could not help but come into close harmony one with another, thus paving the way for the friendliest of business relations in the future.

Salinas. OBSERVER.

Agricultural Engineer.

LOST HEAT.

Written for the PACIFIC RURAL PRESS
By Mr. C. R. SESSIONS.

A man who runs a gas-engine does not always realize how much heat is being carried away in the warm water from the cooling-jacket and in the hot exhaust gases. The engine may become overheated, or he may burn his hands on the hot exhaust-pipe, but when this heat does not annoy him, he turns his mind to other things.

Of all the energy contained in the gasoline, only about one-fifth is actually converted into useful work by the gas-engine. The remainder appears as heat and is lost by radiation and in the cooling water and in the exhaust gases. The loss in the cooling water alone is about one-third of the total energy in the fuel. This one loss is greater than the useful work.

Now when hot water is useful or necessary, this lost heat can be greatly reduced. The cooling-water loss can be entirely recovered and a large part of the loss in the exhaust gases can be saved. Under ordinary conditions, about one-half of the total energy of the fuel can be recovered by simply piping the cooling water from the jacket through a heater on the exhaust pipe. Such a heater is very simple and can be built up of pipe and pipe-fittings. It can be very often home-made.

When this arrangement is applied to an ordinary 10-horsepower gas-engine, about sixty gallons of water can be heated to the boiling point in an hour. Under the common boiler it would be necessary to use about twelve pounds of coal to heat the same amount of water to a like temperature. In the first instance the water is heated for nothing, and in the second instance the expense is the cost of twelve pounds of coal, or an equal quantity of wood.

Hot water is a very useful thing around a dairy. Cans, buckets, and bottles must be washed. The cream separator must be cleaned and the floor of the separator-room must be washed down. Cold water will not do the work, because hot water is necessary to cut the fat and grease left by the milk. While a gas-engine is running to pump water, to operate an ice machine, electric generator, cream separator, or run a washing machine, plenty of good hot water can be stored up in a hot-water tank and used later when needed.

Now that a successful governor pulley has been devised, there is no longer any danger of damage to the cream separator when operated with a gas-engine. The separator is started without shock and is run at an absolutely uniform speed, no matter how poor the regulation of the speed of the engine may be.

The temperature of the exhaust gases as they leave the engine is somthing more than 500° Fahrenheit, so that very hot water and even steam can be got by the use of an exhaust heater. The hotter the water the less the quantity that is heated. When steam is to be got, a feed pump must be used to force the water into the heater, and it is to be remembered that only a relatively small quantity can be obtained. The temperature of pasteurizing (about 160° F.) is well within the range of such a heater.

How To Get Good Cows.

A little review of some of the principles of arithmetic as applied to dairying would bring in a nice little increase of revenue these days to many of the dairymen who are not raising their calves.

Cows are freshened every year and calves are knocked on the head and put under ground right away, or else kept until they can be sold to the butcher, many times under the age provided by law. The price obtained for them cuts no great figure as a moneymaking proposition, and it is quite safe to say that with many persons the cows would usually not be freshened at all if they would do as well without producing a calf.

It is true that with many of the bulls that head the herds, and with the many "boarders" that are kept in the ordinary dairy and only give enough milk to pay for their feed, the calves had better be sold as veal, but if a man has a bull that is worth anything beyond his power of freshening his cows, and if the cows are worthy of respect for their milking qualities, the calves are far too valuable to be sold to kill. If they are not worth good money, the man who owns dairy stock would be better off if he would go into some other business, or reform. In other words, if a man does not raise his calves now he should sit down for a quiet think and ask the reason why.

The best dairy cows are worth now at least from $80 to $100, and the cow that won't bring $60 had better go to the butcher. These prices might not have been possible a year ago, but with the growth of the business now they hold good, and bid fair to for some time yet. If the dairymen can be induced to expel "boarders" by using the scales and the Babcock test and clean out their tuberculosis cows even these prices will be too low for several years to come.

As an example of the problems a man might set himself to figure out in his spare time, we give the following:

1. A calf will reach maturity in, or at least produce her first calf, at from 15 to 24 months, and not consume the food that a cow will during that time. What profit per year if she sells at even $50?

2. You know what income your cows bring to you, or if you don't you ought to. What would be the profit after subtracting cost of feed and handling from each cow? Which would bring in the most, and how much more, the calf or the cow?

3. What sort of business is it to keep a bull that is not of a top?notch milking strain, when his calves will be worth nothing for beef and less for milk? And, lastly, what sort of business is it to keep for the same running expense a bull that will sire calves maturing into $90 cows, when many bulls are good only to freshen cows, and furnish a poor grade of veal or a good grade of fertilizer?

A. F. Gervanoni, a Crow's Landing dairyman, recently purchased 100 head of dairy cattle around Salinas.

M. H. Diepenbrock, who owns a large dairy nine miles south of Sacramento, has contracted to supply 300 gallons of milk per day to San Francisco.

The United States Government has filed suits in Carson, Nevada, against five cattle companies on the charge of fencing in Government lands.

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Dairy Development in Humboldt County.

Although the interior valley county, Stanislaus, has, as recently stated in our columns, wrested the first place in butter production from the grand old coast dairy county, Humboldt, that does not mean that Humboldt is declining. Things are being done there in dairying which other counties do not undertake, and in other ways. Humboldt yields no dairy palms to the interior valley. In a recent issue of Hoard's Dairyman, Leta M. Nevens gives interesting notes of dairy development in Humboldt, which will be acceptable to our readers.—EDITOR.]

It is wonderful to note the progress that dairying and the production of dairy products have made in this section in the past few years. About twenty years ago saw the first creamery erected in Humboldt county. Up to this time there have been numerous dairies, for dairying began almost as soon as the first cow was driven over the trail from the adjoining counties when Humboldt was first settled by the whites. Twenty years ago almost every dairy ranch in the valley had a dairy house where the milk was set, skimmed and churned by hand, a few of the more enterprising dairymen using the old-fashioned horse power for turning the churn, thus saving time and labor.

A few of the dairy houses of olden times still remain in the valley, but most of them have been razed or remodeled into dwelling houses or bunkhouses for the milkers and hired help; some are used for store houses and wood sheds.

CENTRALIZATION.—In the onward march of progress the creameries supplanted the dairies, they in turn to be swallowed up by the larger creamery corporations, who came along and paid a higher price for butter-fat than the small concerns could afford to pay. Some of the creameries still run as skimming stations in different sections, the cream being hauled to the large creamery for churning once a day in the winter and twice a day during the summer months. The Central, Libby, McNeil & Libby and the Swift Company own practically all the creameries in the Eel River valley section, although several creameries are still owned and run very successfully by the shareholders, mostly the dairymen of the section in which they are located. These creameries are in a very flourishing condition and pay as high for butter-fat each month as the larger concerns.

SPECIAL DAIRY PRODUCTS.—The condensed milk put up by the Libby, McNeil & Libby Co. at Loleta and the dried milk —3C brand—put up by the Central Creamery Co. in Ferndale find a ready sale in Mexico as well as in California and the Eastern States. It is claimed by many in the southern part of California and Mexico that the Humboldt county condensed milk is especially adapted to being kept in a warm climate owing to the feed and climatic conditions of this county as well as the purity of the water used in its manufacture, for no place in Humboldt county is the water purer and clearer than that coming from the springs that furnish the town of Ferndale with the city water supply.

Some cheese is made in Humboldt, but cheese-making cannot be mentioned as being a principal industry of this section. Casein is manufactured in large quantities by three creameries of this section as well as in the Loleta and Arcata sections.

Hog raising on the skimmed milk from the creameries is almost a thing of the past, as the manufacture of casein is a better paying industry, with less labor and less chance of loss attached thereto. As a result of the manufacture of cesein the price of hogs has advanced so rapidly in the last few years, the only hogs to be found in the county now coming from the hill sections where they run on the ranges eating mast and acorns in the winter.

IMPROVED COWS.—It is only during the last seven or eight years that the dairymen of Humboldt have realized the fact to any great extent that it costs no more to feed a fine milk and butter producer than it does to feed a poor scrub of a cow. Since the Ferndale Cow Testing Association has been in existence the men have carefully noted results and have begun to cull their herds and have imported blooded cows and sires from the best stock farms in the West.

As a result of the monthly testing the standard of dairy cattle has gone higher, and none but the best graded and full-blood cows and sires are to be found in the valley sections. Even in the hills much attention is being paid to the graded cattle being raised for dairying purposes as well as for beef. Jerseys, Durhams and Holsteins are the favorites in Humboldt, in the order named, but the number of Holsteins seems to be growing steadily less, thus showing that they do not stand up to the monthly test as well as the Jerseys and Durhams. A few Guernseys are seen among the herds, but they do not seem to be so popular, from the reason, perhaps, that they are not so well known as the Jerseys.

A SATISFYING BUSINESS.—There is no other branch of industry represented in Humboldt county where the average profit is greater than in the dairy business, and, while the business is well developed in this county, there is still room for new ideas and lines along which further development can be made. Newcomers from other sections of the State and other States are made welcome and shown every courtesy in Humboldt county, and when once they decide to locate here they seldom leave.

A VIRGIN MILKER.

Samuel Jacks of Napa has a heifer a little over two years old which has never been bred, never had a salf, and is now giving milk. The young cow was a pet, was brought up by hand, and a little over two months ago it was noticed that her bag was swollen. A veterinarian was called in, but could find no cause; the bag continued to enlarge, and nearly two months ago the owner commenced milking her and has since been getting about a quart of milk each morning and evening.

R. E. Wood, of St. Helena, vouches for the facts. The cow belongs to his niece, and he being tnere for a term on the grand jury knows of the event.

A FLY REPELLANT.

To the Editor: The following might be found useful to readers as a spray to keep away flies:

Fish oil, 2 quarts.
Kerosene, 1 quart.
Crude carbolic acid, 1 pint.
Oil of pennyroyal, 1 ounce.
Oil of tar, 10 ounces.

Mix thoroughly and apply in a fine spray.

I have never had occasion to test the above, but it is a formula from one of the Eastern experiment stations and has been found good. F. K.

Woodlake, Cal.

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J. J. GIBSON, Foreman.

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The Clean Dairy Movement in Tulare Connty.

To the Editor: On June 19, 1911, the date of the special session of the Board of Supervisors of Tulare County, at Visalia, to consider and adopt the ordinance for tuberculin testing and sanitary inspection of the dairies of the county, there was a large attendance of dairymen, creamerymen, and others interested in the measure. Dr. Keane, under whose supervision the ordinance was drafted, read the same, section by section, explaining its operation. The sanitary requirements were identical with the new State dairy law to which was added a rigid quarantine of all dairy cattle brought into the county, and testing for tuberculosis, licensing all dairies, and licenses to be issued only to such dairies tested for tuberculosis; all reacting animals to be segregated from the herd, and such animals (of those segregated) reacting upon applying the second test to be disposed of. No milk from reacting animals shall at any time be offered for sale, nor can the products of any dairy be sold unless the cows are tuberculin tested. There was a $12,000 appropriation for carrying out the provisions of the ordinance.

This ordinance brought forth so much diversity of opinion and heated discussion, that the supervisors postponed the adoption of the ordinance until July 6, 1911, suggesting to the dairymen that, in the meantime, they meet and prepare an ordinance acceptable to them. Pursuant to this suggestion, a meeting was called for Saturday, June 24, 1911, at Visalia.

THE MEETING OF THE DAIRYMEN.—Saturday morning, June 24, between 175 and 225 dairy and creamery men from all over the county met at Steuben's hall and organized by electing Mr. Guy Clark chairman, and Mr. Charles McFarland secretary. By request, the ordinance proposed by Dr. Keane was read in full, so that all dairymen present be familiar with its provisions. This brought out an animated discussion, some favorable, but mostly adverse.

The following committee was appointed to draft an ordinance and present to the meeting at its afternoon session: C. F. Brown, E. T. Hart, S. O. Walker, Joe La Marche, and Ed Pattee.

At the afternoon session the committee recommended: "That the supervisors provide that the State sanitary dairy law be enforced in every particular," and this was unanimously adopted as the sentiment of the dairymen.

The dairymen then proceeded to form a permanent organization, to be known as the "Tulare County Dairymen's Association", with the following officers:

S. C. Walker, president, Tulare;
E. T. Hart, vice-president, Farmersville;
W. E. Higdon, secretary, Tulare;
Joe La Marche, treasurer, Tulare.

Five directors were provided for, one in each supervisorial district, as follows:

District No. 1—To be selected later.
District No. 2—A. J. Dameron.
District No. 3—J. H. Butler.
District No. 4—J. J. Smith.
District No. 5—C. C. Ridgeway.

A roster of membership was provided, and before leaving the hall over 110 signed and deposited 50 cents as a membership fee.

The directors of the permanent organization were instructed to meet the supervisors and enter the protest of the association against the passage of the ordinance presented by Dr. Keane. The officers and directors of the Association will meet in Tulare, Wednesday, the 28th, to draft a constitution and by-laws, to be presented for adoption at a meeting of the Association called for Saturday, July 1. The object of the Association is the mutual improvement of the dairies of Tulare in every particular, and the protection of the interests of the dairymen of the county.

Tulare is a great dairy county, with large investments in lands devoted to the industry and dairy cattle, and but few of the dairymen fail to realize the necessity of better health and sanitary conditions, and are willing to aid in attaining this; but they believe that too large financial interests are at stake to adopt a quick-acting, drastic measure that would place all the loss of condemned stock upon the dairymen.

WEANING THE PIG.

To the Editor: Preparation for weaning the pig should begin by the time the pig is 20 or 25 days old. At this age the pig should be taught to eat. This can easily be done by placing food in a shallow trough where he can put his nose in easily.

The best feed to induce the youngster to take hold is warm sweet milk and a little wheat middling. If this dish is sweetened somewhat it is all the better. The best thing that we have ever tried to sweeten the slop with to induce the pig to take hold is honey. A pig is like a bear so far as his appetite for honey goes, and when he once gets a taste, he is always ready for his honey feed.

Nothing surpasses wheat middling for growing pigs. Mr. Gentry says that he developed "Longfellow" on nothing but milk and wheat middlings, and "Longfellow" was king of his breed in his day.

When the pig once gets to eating he will grow rapidly, and by the time he is 12 or 14 weeks old will almost wean himself. By this time the sow will begin to dry up, and the pig will scarcely miss the mother when taken away.

If we have no milk at hand we substitute about 10 per cent meat meal to the middlings which makes the slop about as good as if mixed with milk.

After the sow has been taken away, the feed should not be changed except to gradually increase the quantity as the growth of the pig demands. By the time the pig is six weeks old he should have some grain to crack. This will the better prepare his system to meet the change that comes at weaning time. If the pig has had the run of green pasture he will wean out all right at 10 or 12 weeks and will scarcely miss the mother when taken away. CHAS. GOODMAN.

Williams, Cal.

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ALFALFA BLOAT.

Dr. I. E. Newsom of the Colorado Agricultural College, gives some timely hints: Now that alfalfa and other green feed is coming on, bloat, or tympany, of the rumen, will begin to deplete the herds. In spite of the accurate knowledge possessed by most cattle owners in regard to this subject, there are still those who will turn hungry cattle from dry feed into a field of young alfalfa, and they wonder why they die so quickly.

A good rule, followed by most men, when a green pasture is to be used for the first time, is to let the cattle fill up on dry hay first, and then, after the dew is off, turn the animals into the pasture for a short time, better not more than a half hour the first day.

During the first few days it is good policy to watch them closely. A trocar near at hand at this time will be found to be worth more than a hundred stored away in some veterinarian's case. If any animal bloats seriously, do not hesitate to tap, as usually time is only wasted in giving medicine. The other animals must be removed immediately.

No farmer should be without a trocar in this case, because even though he be within reach of a veterinarian, time will ordinarily not permit him to be of any use, as the animal will likely die before the veterinarian can reach the place.

A great variety of drugs has been used to stop the bloating, with more or less success, but usually in these acute cases from green feed the trocar is the only remedy that can be depended upon.

The location for tapping is not nearly so difficult to find as some suppose. Most anywhere between the hip-bone and the last rib on the left side will do, as it is well to keep in mind that the organ you are trying to tap ordinarily holds from 40 to 60 gallons. About half way between these two points is preferable.

DAIRY NOTES.

Dairying near Napa seems to be on the increase. The Phillipina ranch is now sending to the San Francisco market butter from 320 cows, for which a price of 2½ cents per pound over quotations is received. On the Stanley ranch 80 cows are being milked, the annual output amounting to 15,000 pounds of butter. There is a total of 100 cows on the place, mostly Durhams, the herd being headed by three registered Durham bulls. The butter, which is sold in San Francisco, brings 2½ and 3 cents over quotation.

Opposition to the proposed tuberculosis ordinance for Tulare county, which was suggested by the State Veterinarian for the purpose of eradicating tuberculosis among dairy animals in the county, has developed among some of the dairymen. Official action on the subject has been postponed until July 6. At a meeting of dairymen in Visalia the desire was expressed, in case such an ordinance should be passed, to have it apply to beef cattle as well as dairy stock.

Dr. G. E. Tucker, health officer for Riverside, recently made a tour of inspection of the Imperial county dairies supplying milk to his county. The chief fault was found with those dairies run on leased property, where the proprietors could not afford to invest in the equipment possible if they owned land and all.

E. Powers of Manteca is installing an elaborate irrigating system on his dairy farm. The water is to be pumped from wells on the place and distributed from a reservoir.

The city of Los Angeles has decided to have dairy inspectors in every county from which milk is sent in large quantity for direct consumption. C. J. Bevin has been appointed for Tulare county.

Work has been commenced on the new cheese factory of Thompson Bros. of Red Hill, Sonoma county.

LIVE STOCK NOTES.

The export tax on cattle in Mexico of 2½ cents per head has been removed, but owing to the poor condition of the stock, very little is being sent to the United States at this time.

Dr. Outhier, of Salinas, has returned from Chihuahua and Sonora, Mexico, where he spayed 60,000 head of cattle. and as soon as the country settles down he expects to return and operate upon 40,000 more.

Twelve horses and mules were recently poisoned and had to be killed through eating clover upon which a mold had formed at the Parrott ranch, near Chico. The mold was found close to the green, fresh heads of the clover, and seemed to paralyze the throats of the horses. Around Bieber, Lassen county, a similar trouble has been present for several years, the mold forming in mangers or old damp food.

R. J. Johann, who recently arrived in Turlock from Iowa, has received a shipment of registered stock from his former home, including a Percheron stallion, a trotting stallion, and a number of hogs.

The largest cattle shipment of the year from Porterville, comprising 500 head, valued at more than $30,000, was sent out May 31.

HORSES AND CATTLE.

N. H. LOCKE CO., Lockeford, Cal., are offering registered Jersey bulls and bull calves of the choicest Island and American breeding, from prize winners and big producers; also a carload of unregistered Jersey cows, and a car of Jersey heifers, unregistered.

JOHN LYNCH, breeder of Registered Short-horns; milk strain. High class stock. First-class dairy breeding. Smooth cattle. Best pedigree. P. O. Box 321, Petaluma, Cal.

PURE-BRED SHORT-HORNS, Poland-China hogs, and Shropshire sheep. Roselawn Stock Farm, Woodland, Cal.

STEVENSON & WAGNER, Newman, Cal.—Holstein-Fresian bulls, heifers for sale.

HENRY WHEATLEY, Napa, Cal.—Breeder and importer of Shires and Percherons.

THOROUGHBRED SHROPSHIRE SHEEP, both sexes. S. H. Fountain, importer and breeder, Dixon, Cal.

SWINE

For QUICK Sale.—Six registered Berkshire sows and one boar, too good for the butcher even though the papers are lost. Also their Spring litters and 15 sows of the Fall litter. These must move, as June 1st I enter into a milk contract instead of selling cream. M. H. Diepenbrock, Sacramento.

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POULTRY DEPARTMENT.

Conducted By M. RUSSELL JAMES.

QUESTIONS AND ANSWERS.

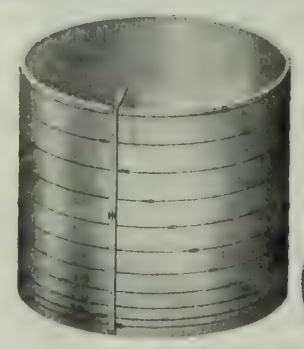
LIMBERNECK.

A very peculiar disease is taking off the fowls from one of my pens, and I would be very much obliged to you if you can tell me what it is; cause and cure, if any. The head of the fowl bends down to the breast and fowl looks like dead; there is also a slight discharge from the mouth. The head and tail droop and if the fowl could stand up they would almost touch. We opened one this morning, found whitish liver, intestines much inflamed, considerable fat around intestines. The trouble began with a hen that had finished a three-weeks setting. Two days after taken from the nest we found her dying, and now six White Leghorns from that pen are dead. We have given water disinfected, also disinfected the pen and house. C. O. B.

Lodi, Cal.

When a fowl loses partial or entire control of the muscles of the neck the common name of the affection is limberneck. In medical science limberneck is regarded as a symptom rather than a disease, and may be due to a number of causes, such as derangement of the digestive organs, intestinal worms, and ptomaine poisoning. The most common cause is ptomaine poisoning through the eating of decayed animal matter, though soured and decaying vegetable matter may produce the same effect. Great care should be exercised, especially in warm weather, that no waste food such as bones, mashes, fruit, cabbage leaves, and the like are allowed to lay around and decay or sour where fowls can get at them; that all meat should be cooked and salted before feeding it, and that all moist mashes should be fed as soon as mixed. The usual cause of an outbreak of limberneck is some fowl or animal which has died and may be concealed in the bushes, and the first thing the poultryman should do in such a case is to search for some such cause where his fowls range.

TREATMENT.—The affected fowls should be given immediately a full tablespoon of fresh melted lard or sweet oil, to which has been added a scant teaspoonful of coal oil. In an hour repeat the dose. For a few days the fowls should be fed on some light food such as shorts scalded with sweet milk in which has been dissolved a level teaspoonful of baking soda to every pint of milk, and also allowed plenty of crisp, tender lettuce or similar greens. A little Epsom salts should be added to the drinking water for a few days. This treatment, if resorted to at the start, will be effectual, but if the poison has had its course long nothing will save the bird.



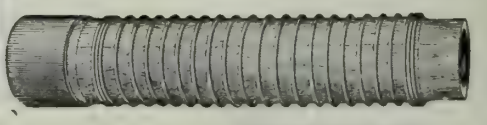
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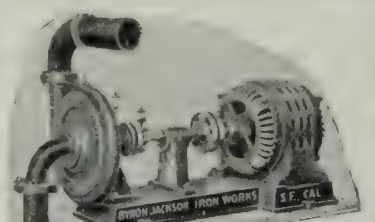
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We would remind our readers that in all cases which present symptoms of poisoning, it is always in order to administer copious doses of either pure lard or sweet oil, and this applies alike to persons, birds or beasts. Pure lard used both internally and externally has proved an infallible remedy for even the deadly rattlesnake bite when administered at once. Another advantage of this remedy is that some kind of palatable oil is always at hand while with other remedies the poison is apt to do its deadly work before they can be obtained.

A Colorado poultry farmer who is looking Coastward, sends in the following questions:

"Are there any conditions in southern California (say near Los Angeles) as to climate and situation that are unfavorable to poultry raising? I have read that the coast fogs are conducive to colds. Would the ——— system work there?

"What is the status of poultry supply and demand?"

The conditions in the coast sections of southern California are much the same as those in the coast sections of the northern part of the State. The difference which may act unfavorably on poultry raising comes under the head of lack of water—less rainfall and more difficulty in obtaining water for irrigation. We have also had it from those who have been engaged in poultry raising in both sections of the State, that roup is more prevalent in southern California, owing to the greater difference in the temperature of day and night.

However, the difficulty arising from damp fogs and chill trade-winds may be overcome in either section by proper housing and shelter. As a personal instance, I can say that it has been years since I have had even a case of colds among my fowls, and yet I am in one of the most exposed and undesirable locations for poultry keeping on the coast, where the winds sweep in through the Golden Gate and the ground is undrained adobe. When I recall my experience with roup among my poultry even in a much more favorable locality upon first tackling the poultry proposition in California, I realize the importance of proper housing of poultry in this State, and how valuable that knowledge would have been to me at the start.

As to the intensely intensive system which our inquirer asks about, I will say that it will not work anywhere except, perhaps, in a small yard where a person wants something to play with and to kill time. In fact, a permanent and successful poultry business cannot be built upon any intensive system. As the editor of Farm Poultry, who has seen many intensive plants go by the board, tersely expresses it: "It is hard on the land, hard on the poultry, and hard on the poultryman."

As to the status of supply and demand in the Los Angeles section, the figures in the case show that there are many carloads of poultry products shipped in to that city from the East and also heavy shipments of eggs from the northern part of the State. Owing to the great shortage in local production and the demand for first-class poultry products to feed the wealthy tourists who flock to that section, the market for such products rules higher than in the bay cities.

DISINFECTANTS, ETC.—C. O. B., of Lodi, who had an outbreak of limberneck in one of his pens, writes further: "I wish to thank you for your advice concerning my sick fowls. We treated them (those left) to light diet, medicated water and green stuff. The sick ones died, six in all, but we were afraid to try doctoring them I think the ptomaine came from some egg shells left from a setting of eggs that did not hatch. The pen was cleaned out, but some scraps must have been left, and those six hens the ones to eat them. They are getting along nicely in the pen now, only not laying. Does disinfected water stop the egg production? Will lack of green stuff for one week cause a great reduction? I gave all the pens water in which I put a bit of creolin. Would that stop egg production?"

Doctoring the hens' drinking water tends indirectly, if not directly, to check egg production. The egg is largely made up of water and it naturally follows that anything which checks the hen's drinking, as does a distasteful substance in the water, also checks egg production. Use such antiseptics in the water only in extreme cases, and discontinue their use as soon as possible. An abundance of drinking water, pure, cool, kept in a clean, brimming vessel, is a great egg producer as well as a great health producer in the poultry yard.

The lack of green feed for a week would most certainly greatly reduce the egg output. Like pure water, fresh green feed is one of the most important things in both health and egg production; also, the quality of the egg depends largely upon green feed. It gives the rich color to the yolk and the firm consistency to the white. The pale yolk and watery white in the egg are prima facie evidence of errors in feeding and especially of a lack of fresh, crisp green stuff.

We think our inquirer should have made an effort to save his hens that died. In our first experience with limberneck the fowl was so far gone that she could not swallow. We made a swab of soft white muslin and swabbed her throat well with coal oil; as soon as she could swallow we followed this up with melted lard and coal oil in hourly doses until relieved. She came through all right.

New Books of Interest for Poultrymen.

Under the title "Poultry Diseases and Their Treatment" there has been issued by the Maine Agricultural Experiment Station, in the form of a circular (No. 398) in its regular series, a book of over 200 pages dealing with the general subject indicated by the title. This book is essentially a critical compilation of the material which exists in the literature at the present time on this subject. The aim in writing it was to bring together from every source available the best in the way of advice and experience to help the farmer or poultryman to recognize and either prevent of treat any of the common ailments of poultry. On account of its large size and cost of production it is necessary that a price to cover cost of printing, etc., be charged to persons not residents of Maine. The book will be sent to anyone on receipt of 25 cents in coin or money order. Postage stamps not accepted. Send orders to Director Chas. D. Woods, Experiment Station, Orono, Maine.

The Indian Runner Duck Book. Price 50 cents. F. H. Valentine, Ridgewood, N. J. This is a timely work upon the duck which is very much to the fore these days, and is said to be the only authoritative American book upon the Indian Runners. The author is Mrs. C. S. Valentine, one of the most prominent staff contributors of the agricultural press in the East. Her articles in the Reliable Poultry Journal, under the pen name of Myra V. Norys, are notable for a charm and finish of style as well as for practical worth and the championship of the woman's end of the poultry business.

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S. C. B. MINORCA EGGS for hatching at $6 per 100; can fill large orders; 12 yards large beautiful hens, excellent layers; a few young roosters left at $3 each. Black Beauty Poultry Yards, Dixon, Cal.

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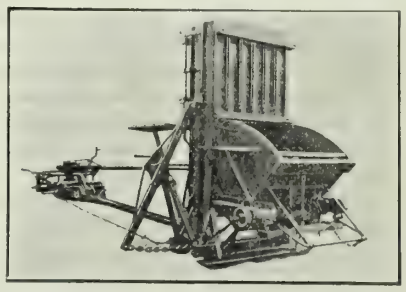
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Upon all the earth encloses
Falls some sparkle of the sun.
Every thorn-tree has its roses,
Day comes when the night is done.

For the meadow, grass unfurling;
For the field, the ripening grain;
For the air, the eagles whirling;
Nests, God sheltered from the rain.

For each tree, green leaves upgrowing;
Flowers and honey for the bee;
Murmurs for the waves outflowing;
Tombs for clay when souls are free.

In the world, all things inclining
Toward that which for all is best,
Gave the flower to branches pining,
Friends to ease the heart's unrest.
—Translated from the French of Eugene de Loulay.

Courtesy in the Home.

A certain article in one of the papers lately attracted my attention. It drew a lesson from the very pronounced success which a young lady had made of a bureau of information.

She was attractive in appearance; she was well educated, which, of course, made it easier for her to fulfill the duties of that office, but the article did not attribute her success primarily to either of these causes. The courtesy and charm of manner which showed itself under the most trying circumstances was rated even above her ability, and next to that as a source of success was placed the cheerful willingness with which she made the most painstaking effort to find information needed.

The article set me to thinking. What would be the effect, I thought, if the self-control which this young lady found possible should be exercised by the members of the family, especially the father and mother?

The mother is a good deal like an absolute monarch in her home. If she is cross and irritable to the children she doesn't lose her job. There is no one to look at her with a warning eye or to speak the harsh commanding word. Her warning could be found in the effect upon the children, but if she were wise enough to understand that probably she would already be wise enough not to be cross and irritable. If she chooses to become that dreadful plague, a nagging wife, there is no power on earth except death and herself that can prevent it. Death surely will; she can, if she will.

Such women think they cannot help such conditions. They may even say that they can't make themselves over; they were born that way. If they were forced into the business world to feed and clothe their children, they would find many things possible which they had supposed impossible. They would find that the impatient word and look had to be held back and they would do it.

Most women recognize no limit in their devotion to husband, children and home. They will work and economize without measure; there is nothing they will not deny themselves, but many, oh many, of us fail to exercise that self-control that would make the home a place of peace and calm, instead of one of turmoil and unrest.

It must be that we do not realize how much this courtesy in the home can mean, for the women is rare indeed, who once convinced of the possibility of a certain blessing to her family will not strive to accomplish it. Yet consider the home where this exists and one where it does not. Is there any doubt of its wonderful influence?

It means as much there as it did in the management of the bureau of information, and the success of a family is vastly more important.

It rests with the mother; there is no one to compel her; she must fight the fight out within herself; it is harder than work with the hands but the reward is great.—Ex.

Kerosene as a Cleaner.

The soot that coats a frying pan can easily be taken off by sopping it with kerosene and scraping it off shortly afterward with a pot chain.

To cut the grease on the kitchen range kerosene is indispensable, but the stove should be perfectly cold before applying.

First dampen a rag with the oil and rub over the stove and follow this with a thorough rubbing with old newspapers, after which go over it with a rag dampened with a little benzine to evaporate the oil.

Do not build fire in the stove until this is evaporated, which will generally be a few hours.

Then wipe off nice and clean, after which give a coat of varnish. You will be surprised how little it will need blacking after the stove has been varnished.

The top is about the only part that becomes soiled, and which will need to be attended with brush and blacking; the rest will need nothing more than wiping off with a soft rag.

Putting kerosene and ammonia in water when washing glass ornaments will give them a brightened appearance.

Washing the window panes with kerosene will keep them from frosting in cold weather, while at the same time giving a brighter light within the rooms.

Tender Feet.

It is vastly wiser and more comfortable for those affected with tender feet to deal with preventions rather than cures for when the trouble has developed into corns and bunions even the chiropodist may find it a tedious work to entirely cure them.

A supply of antiseptic cotton is a source of help. Pull off a piece and put over the tender place that hurts. The stocking will have to be put on with care, so as not to displace the cotton.

Soaking the feet in warm water and while they are still moist rubbing white vaseline into the skin softens the flesh and makes the feet more supple. Talcum powder is refreshing.

The cotton corn plasters relieve the pressure from the sore place. Sometimes the hole in them must be made larger.

Witch hazel put on with a perfumery spray is most soothing, and for a fevered joint a piece of cotton wet with this remedy will almost always bring relief. The cotton should be changed as it gets heated.

Dangerous Drugs.

In every household where they are kept there should be a safe and separate place for drugs. They should be labeled, and under no circumstances whatever should they be placed elsewhere or mixed up with other bottles or packages. Whenever empty bottles are used again for drugs, the old labels should be taken off and new labels put on. No one should trust to memory in a matter of such vital importance.

The Boy.

The education of the boy has vastly more in it than mere book learning. During the period of development and awakening, between the ages of 13 and 20, the boy learns something from everything with which he comes in contact. The secret of successful education which will give to the world a manly man is to bring the boy in contact with good things only; to fill his time with wholesome employment. The school for your son is the school which fills the days with honest religion, preserving study, sane social life, and vigorous, sportsmanlike athletics in their due proportion.—Chicago Tribune.



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To know which way to go, boys;
With choice so vexed
When man's perplexed,
And many a doubt has tried him,
It is not long
He'll wander wrong,
With an honest heart to guide him.
—Lover.

Poultry Courses for Young Folks.

DESCRIPTION OF BREEDS.

Characteristics of Leghorns.—There are seven varieties of Leghorns, which, except in the two Rose Comb varieties, differ only in color. As the standard gives no weight clause for this breed, there exists some uncertainty about the correct weight for Leghorns, but from 5 to 6½ pounds for cock, and 3 pounds for pullet to 5 pounds for mature hen, are fair approximate weights for standard bred Leghorns. The large and brilliant red combs of this breed make the head points of great importance to the fancier, and they are also important from a utility standard.

The Single Comb.—On the male bird the comb should be smooth, straight, and firm, with five deeply-cut points standing upright and the lobe or back end of the comb straight on top and nicely rounded over the neck, but not following the curve of the neck, the comb where it leaves the head standing up from the neck. A coarse, rough comb, or one with side sprigs, or with the lobe turned to one side or the points lopped, is not only ugly, but it shows poor breeding in the stock.

The comb of the female should have five clear-cut points and be firm and smooth, the front part and first point standing erect and the rest of the comb turning over gracefully to one side but not lopping over the eye or against the head. Though five is the most desirable number of points for the Leghorn comb, one less or even two points more do not disqualify a Leghorn in the show-room or indicate (as some think) that the bird is not pure bred.

The earlobe is another distinctive point in the Leghorn, and the most difficult to breed to standard requirements. The great poultry artist, Sewell, says that the earlobe is the surest index as to the care and breeding of the Leghorn. Exposure to rough treatment or weather, or the slightest sore or injury will mar its beauty beyond repair, especially with the male bird, and even with the best breeding and care the cock's earlobes become somewhat discolored and roughened by age.

The Leghorn earlobe should be smooth, thin, and white, and set close to the head, almond shape and having the appearance of a bit of clean white kid glove. Such lobes are not general in a flock of Leghorns, as it requires the skill and care of the fancier to produce and preserve them, and, fortunately, they are not essential to utility purposes. The creamy, roughened earlobe is more common on the ordinary sturdy males that are exposed to the weather and the rough-and-tumble of the poultry ward.

Red covering more than one-half of the earlobe of a Leghorn cockerel or pullet disqualifies the bird in the show-room.

It costs more to maintain a vice than a family.

A Welcome to the Newcomers.

So many new subscribers have come to the Pacific Rural Press in the past few weeks that it is in order to explain to the newcomers among the young folks that this department belongs to them, too, and that we want them to take an interest in it—to ask questions, tell us things, and to feel right at home in this little corner of the Rural Press.

Also, that two illustrated books on animals and flowers will be awarded at the end of the year as prizes to the two young folks who, in the meantime, do most to make this department more interesting by writing bright letters that tell something. One prize for those over twelve years, and the other to children under that age.

Furthermore, the Pacific Rural Press has a Young Folks' Poultry and Pet Stock Club of which all our young folks under eighteen years of age may become members; the only requirement being that they are interested in poultry, birds, pet stock or other animals. Later, the manager of the Rural Press will have some membership cards printed, which will be mailed to each one sending in an application for membership.

This club will be an advantage to our young folks in several ways. Each member may write to this department about the particular pet he or she is interested in, whether it be a chicken, duck, goose, bird, rabbit, dog, cat or whatnot, and we shall be glad to give hints as to the proper care and breeding of the especial pet, so that, if desired, it may be entered in the poultry and pet stock show, that is held in the owner's neighborhood, with a chance of winning a ribbon or other prize. Also, if our young folks evince the proper spirit and ambition by piling up a large membership for the club, we may be able to secure them advantages in the way of special prizes and trophies at the poultry shows. It is great fun to win at any game, but the striving to win is worth more than the winning, and thus the shows may become fine educators for our young folks.

Again, every normal child likes and wants pets—something of its very own to care for. It is a natural craving, because in this great world all created things are related, and the proper development of the child mind demands that this sympathetic tie shall not be broken. It is therefore an important branch of education that young folks become interested in and learn the proper care of "our poor relation." Dr. Brigham, the head of the South Dakota School of Agriculture, says: "Deliver me from the human who 'just hates a hen'. I tell you the truth when I say that the beautiful birds have been the salvation of many a man. I believe there is or ought to be becomes interested in keeping chickens." becomes interested in keeping chickns."

Hens' Teeth.

"Your composition, as a whole," said the professor of literature, "deserves a great deal of praise, but I must object to the expression, 'as fine as hens' teeth'; it is not only uncouth, but also suggestive of nature faking, for it is common knowledge that hens' teeth do not exist."

"I do not see why they don't exist," muttered the composer. "Don t combs have teeth, and don't hens have combs?" —Chicago News.

PATENTS

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THE MARKETS.

San Francisco, June 28, 1911.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Prices on most lines are little more than nominal, as there is very little trading. Prices are too high for export business, and few local buyers care to pay the current quotations, though so far nothing has been offered at any reduction.

California Club	$1.45	@1.50
Sonora	Nominal	
White Australian	1.55	@1.65
Northern Club	1.52½	@1.55
Northern Bluestem	1.65	@1.70
Northern Red	1.55	@1.65

BARLEY.

Brewing and shipping is largely nominal, with very small offerings. Choice feed is a little stronger. Trading is not active here, but considerable new grain is moving in the country.

Brewing and Shipping	$1.52½	@1.55
Choice Feed, per ctl	1.27½	@1.30
Common Feed	1.22½	

OATS.

This grain receives little attention at present. Offerings are not heavy, however, and prices are steadily maintained. Choice black is firmly held, and a little white has been offered at about $1.60.

Red Feed	$1.37½	@1.42½
Gray	Nominal	
White	Nominal	
Black Feed	1.20	@1.50

CORN.

Remains quiet and featureless, values remaining steady as last quoted. Arrivals of Eastern stock are very moderate, and the local demand is light.

Cal. Small Yellow	$1.75
Eastern Yellow	1.55
Eastern White	1.55

RYE.

The little stock on the market is hardly worth quoting. There is hardly any buying locally at present.

Rye, per ctl	Nominal

BEANS.

White beans have recovered from the decline of a week ago, and are firmly held at the advance. The increasing strength in this line is due to a sharp increase in the demand, some large orders having been placed within the last few days. Prices on all other descriptions remain as before. The demand is very light for everything but white beans, and there is still a rather easy feeling in prices. Local dealers report some weakness in limas, but, though there is no very heavy movement anywhere at present, the situation throughout the country continues favorable to the maintenance of about the present level of prices. Regarding the outlook for limas, the Eastern representative of a local house says: "The crop conditions at this time are most favorable. The acreage planted to limas is the largest in the history of the business. Up to the present time weather conditions have been perfect, and, barring accident during the harvest, the output should be large. The crop is not so far along as at this season last year. Consequently, we believe that September deliveries will be very light, and that the main bulk of the crop will not come on the market before October or November, anywhere from two to three weeks behind last season. A very strong effort is being made by certain people to bear the growers' views. They use the argument that consumption is being curtailed, that the heavy importation of foreign limas is encouraged. The growers' argument is that 1910 produced the largest crop up to that period and that the crop went out in spite of foreign importations and in spite of high prices, showing that the consuming power of the country is increasing materially. There are only about 100,000 bags of lima beans left in southern California, with practically four months to get rid of them. Of course, there is a point to which any article can go that will curtail consumption very materially. Whether we have reached that point is yet to be determined, but we feel certain that the grower is not going to be receptive for any price under 5c. in the field."

Bayos, per ctl	$3.90	@4.00
Blackeyes	7.00	@7.25
Cranberry Beans	3.75	@4.00
Garvanzos	2.85	@3.25
Horse Beans	3.25	@3.50
Small Whites	3.40	@3.50
Large Whites	3.25	@3.40
Limas	6.25	@6.35
Pea		4.25
Pink	4.75	@5.00
Red Kidneys	6.25	@6.50

SEEDS.

All lines are extremely dull, with no demand of any importance. Prices stand nominally as before.

Alfalfa	Nominal
Broomcorn Seed, per ton	$25.00
Brown Mustard, per lb	5½c
Canary	3½@ 4 c
Hemp	3½@ 4 c
Millet	3 @ 3½c
Timothy	Nominal
Yellow Mustard	5¾c
Dried Peas, per ctl	3.75@ 4.00

FLOUR.

Remains steady at last quotations. The local movement is about as usual, with only a limited demand for export from this market.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.60	@4.80

Hay and Feedstuffs.

HAY.

Arrivals have increased again, and with very little demand locally there is considerable accumulation in dealers' warehouses. This market is accordingly weak, and dealers say there is little immediate prospect of improvement. They are quoting lower prices than for some time past. Considerable new hay is arriving, and while the quality is good, it finds little demand here. Prices in the country are pretty well maintained, and are now considerably above the local basis. Dealers have been predicting a decline in country prices for some time, but so far growers are holding firmly, and appear in no hurry to sell.

Choice Wheat	$12.50	@13.50
Good Wheat Hay	10.50	@11.50
Other Grade Wheat	8.00	@10.50
Wheat and Oats	8.00	@11.50
Tame Oats	8.00	@11.50
Wild Oats	6.50	@ 9.00
Alfalfa	8.00	@11.00
Stock Hay	5.50	@ 6.50
Straw, per bale	35	@ 50c

FEEDSTUFFS.

The only change is a slight advance in rolled barley, corresponding to the firmness in the raw grain. The general demand continues active.

Alfalfa Meal, per ton	$17.00	@19.00
Bran, per ton	28.00	@29.00
Cocoanut Cake or Meal	26.50	@27.00
Cracked Corn	34.00	@37.00
Middlings	34.00	@37.00
Mixed Feeds	29.00	@32.00
Rolled Barley	27.00	@29.00
Rolled Oats	29.00	@31.00
Shorts	27.50	@31.00

Garden Truck.

VEGETABLES.

Onions continue to decline, with arrivals larger than the current demand and accumulating supplies. In miscellaneous vegetables prices also show a downward tendency, supplies in general being liberal, though the demand is keeping up extremely well. Tomatoes are arriving from many points, and crated stock is lower, while some in lug boxes have been sold at $3. Cucumbers are lower, and hard to clean up at the present figures. Rhubarb is steady as before, while asparagus is still dropping, the canners having about all they want. String beans and green corn are firm, the latter being higher, though supplies are now fairly large. Green peas are unchanged. Summer squash is plentiful, and has dropped sharply, while some decline is noted in okra, eggplant, and green peppers. Cabbage is lower and carrots higher than last week.

Onions: New Red, sack	$ .90	@ 1.00
Yellow, ctl	1.40	@ 1.65
Garlic, per lb	3	@ 4c
Green Peas, per cak	1.25	@ 2.00
Tomatoes, per crate	60	@ 75c
Cucumbers, per box	65	@ 80c
Cabbage		1.00
Carrots, per sack		1.50
Rhubarb, per box	1.00	@ 1.25
Cauliflower, per doz		50c
Asparagus, per box	60c	@ 1.25
String Beans, per lb	3	@ 6c
Summer Squash, per box	50	@ 65c
Okra, per lb	8	@ 10c
Green Corn, per sack	1.75	@ 2.50
Eggplant, per lb	7	@ 10c
Green Peppers, per lb	10	@ 15c

POTATOES.

Oregon stock is practically out of the market. Some new whites have been arriving from Los Angeles, and sell at higher prices than river stock, which is a little lower than last week. There is an active demand, and as offerings have so far been moderate, the market is very firm.

River Whites, per ctl	$ 2.40	@ 2.60
Southern	2.75	@ 2.80
Early Rose	2.25	@ 2.50

Dairy Produce.

POULTRY.

The market continues in very poor condition, prices being practically the same as last week. Eastern arrivals are about up to the average, while shipments from nearby points are above normal, and all but the most attractive offerings are slow of sale.

Large Broilers	$ 3.00	@ 3.50
Small Broilers	2.00	@ 2.50
Fryers	4.50	@ 5.50
Hens, extra	8.00	@ 9.00
Hens, large	5.00	@ 6.00
Small Hens	4.50	@ 5.00
Old Roosters		4.00
Young Roosters	6.00	@ 7.00
Young Roosters, full grown	8.00	@ 9.00
Squabs	2.00	@ 2.50
Geese, per pair	2.00	@ 2.50
Ducks	5.00	@ 7.00
Turkeys, live, per lb	Nominal	

BUTTER.

There is little feature to the market, the movement into storage serving to keep up the price of extras, which are still arriving quite freely. The lower grades have shown no change through the week.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	.22	21½	21½	21½	21½	21½
Prime Firsts	.21	21	21	21	21	21
Firsts	.20	20	20	20	20	20
Seconds	.19	19	19	19	19	19
Packing Stock	.17½	17½	17½	17½	17½	17½

EGGS.

Extras, prime firsts and selected pullet eggs stand a little higher than a week ago, though the latter are only steady and are expected to drop back to the former level. The advance is due to a demand for shipment. Production is still in excess of current needs in this market, but is beginning to decrease, and an advancing market is expected before long.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	.21½	21½	21	21½	22	22
Prime Firsts	.19½	19½	19½	20	20	20
Firsts	.19	19	19	19	19	19
Seconds	.17	17	17	17	17	17
Selected Pullets	.18½	18½	17½	18	19	19
Eastern	.15	15	15	15	15	15

CHEESE.

New local flats are higher, under a strong demand, though storage flats and Y. A.s are unchanged. Monterey cheese is rather weak, with liberal arrivals and a moderate demand.

Fancy California Flats, per lb	13 c
Storage	14 c
Firsts	12 c
New Young Americas, fancy	13½c
Monterey or Jack Cheese	12½@13½c

Deciduous Fruits.

FRESH FRUITS.

The general movement is active, but with liberal arrivals in most lines, prices still tend downward. The decline in some descriptions is due to the unattractive condition of offerings. Longworth strawberries are firm, but Banners are lower, while a general decline is noted in other berries, many of which are arriving in poor condition. Watermelons have dropped again, and supplies are rapidly increasing. Cantaloupes, however, are higher. Most cherries are now selling in bulk, and are cleaning up well. Apples are lower, but attractive lots find a ready demand. Apricots are steady, and good stock moves off without difficulty, though green fruit is neglected. Peaches are in strong demand, though prices are a little lower. Figs are lower, with large arrivals, but move off rapidly at present prices.

Watermelons, per lb	2	@ 2½c
Cantaloupes, standard crate	$ 1.50	@ 1.85
Raspberries, chest	5.00	@10.00
Loganberries, chest	3.00	@ 4.50
Blackberries, chest	5.00	@ 6.00
Strawberries, Banners, chest	5.00	@ 6.00
Longworth, chest	6.00	@10.00
Large varieties, chest	4.50	@ 6.00
Cherries, Black, lb	6	@ 9c
White, lb	3½	@ 5c
Royal Anne, lb	6½	@ 8c
Apples, New, box	1.00	@ 1.75
Apricots, crate	1.00	@ 1.25
Apricots, box	65	@ 85c
Peaches, box	50	@ 85c
Plums, box	75c	@ 1.25
Currants, chest	7.00	@ 9.00
Figs, box, double layer	1.00	@ 1.50

Dried Fruits.

Little change is noted in the general situation, the market on all new crop goods being quiet both here and in the East. Old stock, aside from raisins, is pretty well cleaned up, and, with prospects of a rather late marketing of new raisins, there should be little difficulty in moving what still remains. Local packers now quote 4¼c. as about their best offer for either new or old raisins, but only a very limited amount can be obtained at this figure. Seedless raisins are especially strong, and find more demand than anything else in the East. Prices are announced for new crop evaporated apples, and are considerably below the recent quotation for old stock, which is now off the market. Apricots are extremely firm, with some demand for export, but the offers for dried apricots are below parity with the figures on canning and shipping fruit. Some tentative offers have been made for new figs, about 4c. being reported, but so far no business is reported at this figure. The situation in prunes, as well as raisins, is so uncertain that growers, packers, and jobbers are all inclined to wait until the size of the crop is better known. It is generally reported that early requirements have been pretty well provided for, and if so, some time may elapse before there is any active movement. The New York Journal of Commerce says:

"There is some indication of a change for the better in future California prunes. The market is a little stronger, but the improvement is confined to the large sizes, which are now the subject of export demand. It is not reported that these inquiries from foreign buyers have resulted in any great amount of business, but as it is well known that Europe is in need of the larger fruit, the fact that inquiries are coming from that quarter has stiffened the views of sellers. Local jobbers still hold off.

"The market for new crop apricots is still irregular, but without further quotable change. There is no demand to speak of from Eastern trade.

"Peaches for forward shipment from the Coast out of the 1911 crop are dull, and the tone of the Coast market appears to be easy. Owing to the satisfactory results following the usually large purchases for export last year, when peaches were by far the cheapest goods on the list, an increasing European consumption of this fruit is said to be assured, provided the packers are able to make prices that will be attractive to the foreign buyers.

"The process of concentrating available stocks of Thompson's Seedless raisins continues, but makes little progress owing to the small supply. The market has a strong tone. Seedless Sultanas are firm but quiet. California seeded raisins are dull, with prices on futures somewhat nominal."

Evap. Apples, per lb., 1911	8½	@ 9 c
Apricots, new crop		14 c
Figs, black	4½	@ 5 c
Figs, white	5	@ 7½c
Peaches, Spot	8	@ 8½c
New crop	9	@ 9½c
Prunes, 4-size basis		9½c
New crop contracts	4	@ 4½c
Pears, new crop	8½	@10 c
Raisins—		
Loose Muscatels, in sweatbox	4	@ 4¼c
1911 crop	4	@ 4¼c
Thompson Seedless	4½	@ 4¾c
Seedless Sultanas	4¼	@ 4½c

Citrus Fruits.

The Eastern auction markets are holding their own on citrus fruits. Oranges are a little stronger, and lemons a shade lower, though prices are good. In New York on Monday, June 26, navel oranges averaged from $2.85 to $3.15 per box, valencias brought from $2.95 to $4, and lemons sold for $3.90 to $4.60. On the same day in the Cincinnati market, oranges sold for a little lower average, while lemons sold up to $5 per box. Orange shipments from California are more than 100 cars per day, and the total shipments to June 26 were 32,299 cars, against 22,245 to the same date last year. Lemon shipments to the same date were 4996 cars, and last year were 3325 cars. From Redlands it is stated that the total shipments from there this season will reach the

5000 car mark, which will be about 1200 cars more than were shipped last season.

With heavy arrivals in the San Francisco deciduous fruit market, citrus fruits are not receiving much attention. Navel oranges are about out of the market at present, while valencias find a fair demand at former quotations. Mexican limes are unchanged, while both lemons and grapefruit are higher.

Navel Oranges—	
Tangerines	Nominal
Choice Lemons	3.50@ 4.50
Valencias, choice to fancy	2.25@ 3.00
Fancy Lemons	4.50@ 6.00
Standard	2.50@ 3.00
Limes	6.00@ 6.50
Grapefruit	2.50@ 3.50

Nuts, Honey, Hops, Etc.

NUTS.

So far there has been no business of any consequence in future nuts of any description, and until almond prices are opened by the Association next month, quotations can be little more than nominal. Supplies on the spot are closely cleaned up, and there is no business except in a jobbing way.

Almonds—	
Nonpareils	16½@17 c
I X L	15½@16 c
Ne Plus Ultra	15 @15½c
Drakes	12 @14½c
Languedoc	12 c
Hardshells	8 @ 8½c
Walnuts—Softshell, No. 1	15 c
Standard	14½c
Softshell, No. 2	11 c
Budded	17½c

HONEY.

Arrivals are increasing in this market, and while there is no quotable decline in prices, a weaker feeling prevails. Buying for shipment is progressing on a large scale in the principal producing districts, and while the crop is said to be above expectations at some points, prices are pretty well maintained.

New Extracted, White, per lb.	8 @ 9 c
Comb, White	12 @14 c

BEESWAX.

There is no great demand, but with moderate supplies values rule firm for desirable stock.

Light	28 @32 c
Dark	23 @26 c

HOPS.

Quite a heavy tonnage of new hops has recently been contracted at the top quotation. Old stock is very scarce, and the general situation is extremely favorable to sellers.

Hops, 1910 crop	25 @30 c
1911 crop	22 @25 c

Live Stock.

Few changes are noted in local prices. Cows are a little easier, while heavy hogs and lambs are stronger. Markets in the Middle West are attracting considerable stock from California, which will assist in maintaing prices here. Dressed veal and ewes are lower.

Gross weight:	
Steers: No. 1	5¼@ 5½c
No. 2	5 @ 5¼c
Cows and Heifers: No. 1	4½c
No. 2	4 @ 4¼c
Bulls and Stags	2½@ 3½c
Calves: Light	6½c
Medium	6 c
Hogs: Grain-fed, heavy	6¼@ 6½c
150 to 250	6¾c
100 to 150 lbs	6¾c
Small prime wethers	4½@ 4¾c
Large prime wethers	4½@ 4¾c
Ewes	3¾@ 4 c
Lambs	5 @ 5¼c

DRESSED MEAT.

Steers	9 c
Cows	8 c
Heifers	8 c
Veal, large	9½c
Veal, small	11 c
Mutton: Wethers	9 c
Ewes	7½c
Lambs	10½c
Hogs, dressed	11 c

WOOL.

The Mendocino wool sales last week were called off, the offers of 14 to 15c. being unsatisfactory to growers. The market is rather quiet all around, and the present outlook is rather uncertain.

Spring Clip—	
Choice Southern, Year's staple	10 @12½c
7 months	8 @11 c
Lambs	5 @ 7 c
Northern, year's staple	14 @16 c

HIDES.

Hides are in stronger demand than for some time past, and all descriptions are firm, with an advance in many grades.

Heavy Steers, over 56 lbs.	11 @11½c
Medium	10 @10½c
Light Steers, under 48 lbs.	10 c
Heavy Cows, over 50 lbs.	10 c
Light Cows, 30 to 50 lbs.	10 c
Kip	12 @12½c
Veal	16 @16½c
Calf	16½c
Dry—	
Dry Hides	18 @19 c
Dry Bulls	16 c
Dry Kip, 10 to 15	18 @19 c
Dry Veal, 5 to 10	20 c
Dry Calf, 7 down	23 @24 c
Sheep Skins—	
Long Wools	$ 1.00@ 1.25
Medium Wool, 6 to 9 mos.	75@ 90c
Short Wool, 3 to 6 mos.	40@ 65c
Lambs	35@ 60c

HORSES.

The prices obtained in recent sales in this market have been about in line with those last quoted, and conditions stand about as before. All good drafters, over 1400 lbs., and having the necessary qualities for city work, are in very strong demand, and the light offerings of this description are quickly taken up at full prices. Other classes of horses are almost entirely neglected, ordinary stock being dull and weak.

Desirable Drafters, 1700 lb. up.	$300@350
Light Drafters, 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	190@240
Wagon Horses, 1250 to 1350 lbs.	140@180
Delivery Horses, 1050 to 1250	100@125
Desirable Farm Mares	100@125
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

An irrigation system covering 240 acres of land began operation this week on the ranch of Charles Buswell near Porterville. Water is secured by pumping, and the plant is said to be the largest private one in the State.

The J. H. Menke Dairy Co. has been organized at Salinas. The company has leased a large dairy ranch near Bakersfield.

FAIR AND SHOW FIXTURES.

Salinas, Cal.—Monterey County Agricultural Association Fair. Aug. 2 to 5.

Sebastopol, Cal.—Gravenstein Apple Show. Aug. 14 to 18.

Sacramento, Cal.—California State Fair. Aug. 26 to Sept. 2.

Hanford, Cal.—Kings County Fair. Sept. 25 to 28.

Fresno, Cal.—Fresno County Fair. Oct. 3 to 7.

San Jose, Cal.—Santa Clara Valley Poultry Show. Oct. 6 to 9.

Watsonville, Cal.—Annual State Apple Show. Oct. 9 to 14.

Stockton, Cal.—San Joaquin Poultry Association Poultry Show. Nov. 7 to 11.

Oakland, Cal.—Alameda County Poultry Association. Nov. 21 to 27.

Petaluma, Cal.—Petaluma Poultry Association. Dec. 6 to 9.

The next meeting of the Society for Horticultural Science will be held in Washington, D. C., Friday, December 29, 1911, in connection with the meetings of the American Association for the Advancement of Science. C. P. Close, Sec.-Treas., College Park, Md.

No Time Wasted.

Olaf Larson, working in a warehouse, backed into an elevator shaft and fell down five stories with a load of boxes. Horror stricken, the other employees rushed down the stairs, only to find him picking himself unharmed out of the rubbish.

"Ess de boss mad?" he whispered, cautiously. "Tal' 'em Ay had to come down for nails anyway."—Success Magazine.

Quick Action.

A Southern farmer was trying to sell a mule to a negro who two years before had been kicked on the head by the animal.

"Of course," said the farmer, "this mule kicks, but——"

"I doan' wan' him," objected the colored man emphatically.

"Just because he kicks?" asked the farmer, with an air of contempt.

"Hump!" grunted the negro. "Dat mule doan' kick. He shoots."—Popular Magazine.

TO BAR HAWAIIAN FRUITS.

A quarantine order has been issued by the State Horticultural Commission against all Hawaiian fruits and vegetables (except bananas, pineapples and root crops) for the purpose of keeping out the Mediterranean fruit fly, which recently became established in the islands. The hand baggage of all passengers from the islands will be searched before landing here, and any fruit or vegetables found will be destroyed.

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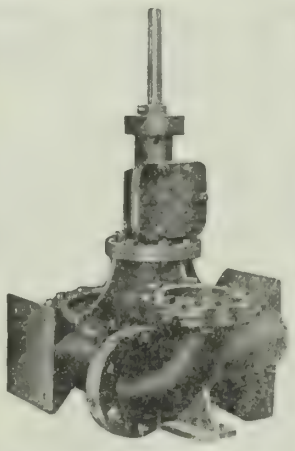
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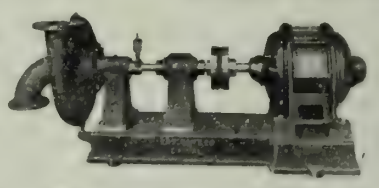
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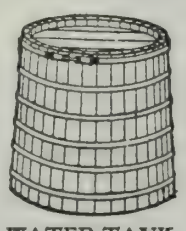
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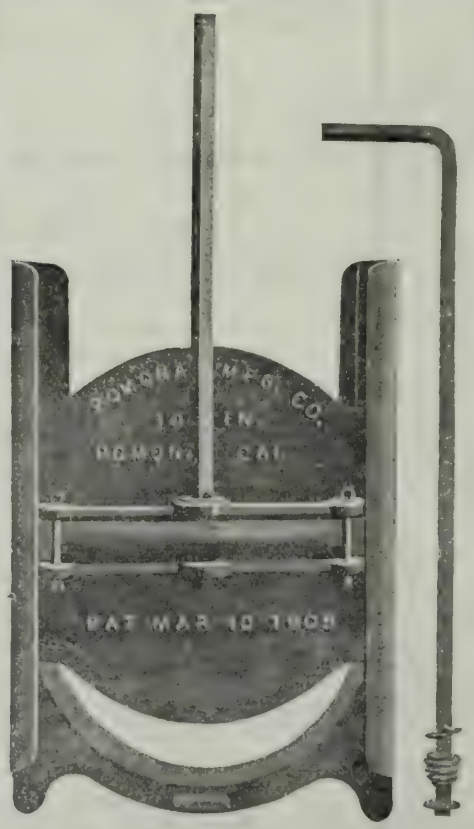
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CALIFORNIA STATE

THE PACIFIC RURAL PRESS

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The Ornamentation of Country Highways.

By A. L. BANCROFT, of Oakland: Specially Revised for Publication in the PACIFIC RURAL PRESS.

Now that the State of California is entering upon an era of building State-aid roads to extend for hundreds of miles in various directions throughout the State at a cost of millions of dollars, it is timely and fitting that the ornamenting of these roads along the very best lines should be most carefully considered.

That the roads will be well located and constructed so as to meet their useful requirements can be questioned by no one. They will serve not only for hauling crops, products and freight between the farms, mines and mills and the shipping points, but will open up avenues of modern methods of back-land travel. There are multitudes of our own people and visitors from all parts of the world who love nature in her untouched forms in out of the way places. These roads will enable them to become acquainted and keep in touch with the attractive landscapes, natural conditions, resorts and varied interests throughout the extent of the State, and it is the making of them attractive to this class of people, who will carry business and profit to the people who live on and in proximity to them, that should be given the best attention from the very outset.

The broadest lines and results for the distant as well as the near future should be the guide in the preliminary and preparatory work as well as of the construction work itself. The artistic and scenic attractions should be kept constantly in mind at all times and in all places in order to secure the best attainable. The views from the roads and also the landscape taking in the lines of the roads and the scheme of their ornamentation from effective points are important items, and for these reasons it is well worth while to locate the roads a little higher up on the sides of the ridges overlooking the valleys and to take in the most attractive points available along their entire lengths.

Even though the roads be long and are back from the railroads, there will be points near the larger places where it would be justifiable to give the ornamentation a parklike appearance and features with artistic seats, lamp-posts, tanks, fountains, watering troughs, culverts and bridges and guide-boards at all desirable points. Such features must be naturally worked out by a competent landscape architect.

Wide Roadways Needed.—In order to carry out such a general plan effectively a greater width of roadway would be needed in places and attractive natural features like the banks of a creek, a grove of forest trees and bold, rocky headlands, should be included. But this ornamentation would add to the attractions and values of the land fronting on the roads and the owners doubtless would, if approached in the right spirit, gladly grant to the public legal and permanent use of the necessary land on one or both sides of the road for such uses and make it secure by legal papers. Proper attention given to these details in advance would, with scarcely a question, secure all of the width of roadway needed without the necessity of outright purchase and the aid and co-operation of the landowners in the setting out and care of the road trees and plants, as well.

The cuts and fills along the roads could be treated with but little, if any, additional expense by rounding off the rough, jagged lines so as to make them pleasing landscape features, with tree, shrub and vine ornamentation, in place of leaving them crude, rough and unsightly objects.



A Suggestion of the Ornamentation of Country Highways by Clump Plan of Planting Trees and Shrubs.

Even curving the side line of the roadway so as to take in one or two choice old trees, would insure their preservation and add much to the effectiveness of the general scheme.

From the expression "scenic highway," one would naturally expect to find the road skirting and, in order to obtain the proper grade, winding in and out around the spurs and ridges of the foothills with high rolling or steep land back of it and at an elevation sufficient to command a broad view of lower land lying in the opposite direction. The attractions of such a road would be the view from it and, if the ornamentation is effective, the view of the roadline from the country lying below.

Roadside Planting.—These conditions afford opportunities for effective wayside tree ornamentation which do not exist to the same extent on straight roads running through a flat country.

But along all kinds of highways better results can be secured where the ornamental trees are not set in stiff rows with the trees, at least in the outset before some of them have been allowed to die, at a uniform distance apart.

Should it be desired to utilize the wayside trees for growing crops of fruit or nuts of economic value as is done in Germany and some other European countries, it makes quite a different matter of it. There, in many cases, prune trees are grown in the roadways for the crop as well as ornamentation, and when the crop is far enough advanced to show what it is likely to be, it is sold at auction for the benefit of the road fund.

(*Continued on Page 30.*)

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., July 3, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.16	00	.02	60	50
Red Bluff	00	00	00	98	60
Sacramento	00	00	00	92	54
San Francisco	00	00	00	84	50
San Jose	00	00	00	92	44
Fresno	00	00	00	102	56
Independence	00	00	00	94	50
San Luis Obispo	00	00	00	90	44
Los Angeles	00	00	00	76	58
San Diego	00	00	00	68	60

The Week.

We awakened on the morning of July Fourth in the midst of a community in which a "sane celebration" of the national birthday is enforced by city ordinance. As a result, although there were not less than a hundred boys of firecracker age within easy gunshot of our downy couch, not a firecracker nor a toy cannon nor a bomb announced its joy of living, and our delicious morning nap drew its sweet length along until it encountered the whiz and whir of the alarm clock—the ancient and honored enemy of the sluggard's repose. Nothing convinces us so thoroughly that we are living in an age of reforms than this sudden prescription of this traditional delight of the American boy. We know that for years it has been agitated in press and pulpit, not only for the comfort of the elders, but for the bodily integrity of the boy. Appalling lists of maimed and mangled youth have been annually compiled, and, since engraving has become a household necessity, the lists of casualties have been adorned with views of dismembered urchins, flower-laden biers and weeping parents. This campaign of reason, continued for years, has won at last, and earnestly as we have desired it we are forced to acknowledged to ourselves that the triumphs of sanity would have been indefinitely postponed if the majesty of the American policeman had not been successfully invoked. The American boy would still be shooting his anatomical attachments off in defiance of parental commands and community sentiment, but the policeman—hush, that is another matter. And so the Fourth of July dawns in depressing silence in the municipality—law and ordinance as embodied in a nickeled shield and ponderous tread have in a twinkle of an eye subjugated the urchin who would have endlessly defied the slipper, the birch rod and the domestic dungeon and shoot his explosives, with undiminished enthusiasm, whenever freedom and powers of locomotion returned to him. Not so when the policeman intervenes. "Cut it out," is his command to his associates, and the boy is the neighborhood hero who excises it soonest and most completely, because it makes him the prime minister of the policeman who patrols the district. We are led to these Fourth of July reflections because we remember that some one has said that men are only boys grown up and because it so apparent now that the way to regulate man is not by invoking high moral forces and human justice in the abstract, but by getting the twist of the policeman upon their wrists. Current experience is that the way to get the greedy enemies of the public welfare is to seize them with the arm of the law as embodied in the courts and their officers of justice. Great law-and-man-defying corporations, which blanched not under any popular indictment, tremble and grow pale when a grand jury makes a specific indictment and the court officers get a hold upon their collars. Uncle Sam seems to have learned this lesson this year: peace for the nations and policemen for domestic malefactors—which may be interpreted: moral suasion abroad and force at home. Of course, it takes much agitation to create the public sentiment which orders the policeman to do his duty—but that is another story.

Celebrations and Coronations.

Thus we refuse to exhume the great moral principle buried in the preceding paragraph; if the reader needs it let him dig for it. We prefer superficial considerations. One reflection is that when the cities decide upon a sane celebration for the National Birthday, their action settles the matter for the whole country. The country, as a rule, has always been sane on this matter. We never saw a country boy who cared much for firecrackers and toy cannon, unless he was coaxed to the city by a cousin and taught municipal Fourth of July methods. Firecrackers are not a wickedness which a boy goes away by himself to commit. Witness mamma's darling who is shut up in a high-fenced back yard and given a whole armful of "lady firecrackers" to shoot off by himself; how gladly he hails the head of the neighborhood's bad boy which cautiously rises above the fence, and how gladly he trades his whole outfit of ladies for one piece of dynamite, the which, by its off-going, convinces mamma that the kitchen range has exploded—meanwhile what is left of the boy rejoices that the chap out in the street knows that he dared to fire it. Insane celebrations are products of gregarity: there are two cures for them. One is isolation; the other the policeman, as aforesaid. The conclusion is therefore, in the country there were never insane celebrations and in the city there never will be more. The issue is dead, the boy is alive: the lists of casualties and the gruesome pictures may be saved to serve some other reform. But what shall be the form of the sane celebration for the future? On the spur of the moment we suggest grand allegorical pageants with Uncle Sam and Columbia as the central figures. What a field for writers of spectacular literature; what an opening for manufacture of expensive non-explosive materials. Our suggestion comes, of course, from the recent coronation, about which we read in government reports, and not in the yellow journals, to the effect that "the coronation ceremonies and the attendant festivities have given a considerable impetus to the textile industries, among other trades, and owing to the royal preference being strongly shown for domestic productions. The velvet for the draping interior of Westminster Abbey on the occasion of the coronation has been woven in Bradford. It is a skillful reproduction of a sixteenth century fabric, the ground being fawn and silver tinsel, with a bold design in a rich, heavy pile of a dark blue color. The cloth of gold for the King and Queen's coronation robes has been woven at Braintree. Into the silk fabric are woven threads of pure gold; it is said to be more valuable than its weight in gold. Tinsel, gold and silver yarns have been in great demand for coronation purposes, and new developments in the method of their manufacture are reported." How we would joy to see Uncle Samuel in such raiment, but we doubt if a boy would care a squib for it.

Guarding the Unwary.

At a recent meeting of the Country Life Committee (a body called into existence by those who attended Farmers' Week at the University Farm last year) there was a proposition made to do something to protect unwary purchasers against misrepresentation by those selling agricultural lands. Mr. Francis Cuttle of Riverside (a member of Governor Johnson's Conservation Commission) is credited with saying: "A great deal of the reverses encountered by many farmers and fruit growers is due to the practice of real estate dealers in selling persons unable to judge the value of land, tracts on which it is practically impossible to make a living. The State should see to it that the unsophisticated 'back to the farm' enthusiasts are not sold worthless land, just as the State prohibits the sale of impure drugs and foods." We quite agree with Mr. Cuttle that something ought to be done to lessen the hardship and disappointment which will follow current sales of bad land. Penalties for misrepresentation are just as reasonable as they are in the case of false guarantees in a horse trade. But selling either a bad horse or a bad farm is not like selling impure drugs and foods. In the former cases the purchaser can find out the badness if he knows enough to buy either a horse or a farm: in the case of drug or food adulteration he cannot find it out without employing an analyst. If a man sells a horse "as is" he does no wrong, because the principle "let the buyer beware," protects him. The same principle would protect a land-seller if he makes no specific misrepresentation. He can make a beautiful map; cover his folder with pictures of crops grown on other land; glorify the climate of California; print pages of statistics of the products of the State; ornament them with views of automobiles, aeroplanes, steamships and railway trains carrying volumes of produce to market; show pumping plants pouring out torrents and irrigation ditches flowing bankful, and say "this land can be had at so many dollars per acre, which is cheaper than land which will produce such products as our pamphlet shows can be had elsewhere in the State." He can do all these things and many more like them and not be guilty of misrepresentation which the law can detect or punish. The reason why many people have been sold poor land, and many others will be, is not to be sought alone in misrepresentations of conscienceless dealers, although there are plenty of them, but in the ignorance and folly of the unwary and too enthusiastic buyers. If the "back to the farm enthusiasts" would only use as much sense in buying land as they do in buying other things, few of them would be deceived.

People Like to Be Fooled.

We are not sure of the truth of this old declaration of some unregistered philosopher, but we are sure that this amendment is true, viz: people are apt to become angry if you try to prevent them from deceiving themselves. Our experience teaches us that, almost daily. In spite of our frequent declaration that we do not desire to stand sponsor for investments by those who do not know land nor how to use it, we can hardly escape being wired into such consultations; in fact we can hardly eat a meal of victuals without being asked to give an opinion upon a piece of land which we never saw and being scolded for declining to do so. Sometimes our interviewers get almost angry because we cannot approve the

plans for investment and improvements which they have determined upon, and then assume the rôle of advocates of the dealers, who have impressed the scheme upon them, against us. We have about concluded that it is as thankless to try to set a land-buyer right with an agent as it is dangerous to interfere when a man is beating his wife—you are apt to have both parties on your back. Such experiences convince us that it is quite as important to begin a campaign of education to teach people to buy land wisely as it is to endeavor to compel other people to sell land honestly. Just as every man is apt to believe that he can farm better than the farmer, he is apt to think also that he can buy a farm better than anyone else, and is therefore an enthusiastic devotee of the agent who flatters his conceit in that line. He seeks advice to support his conclusions, not to question it. This being the case, we can hardly see what you can do in an organized way to protect those who are determined upon deceiving themselves—or at least determined upon having their own way, for they may pull through sometimes much better than you could dream. It is, however, surprising that buyers neglect to apply the testimony of their own senses in determining the quality of land; that they pay more attention to what the agent says than to what they can see; that they disregard the general signs of poor land in the growth of trees, shrubs and weeds; that they are so ready to blame the absence of good crops in previous years upon the slackness of the old owner and not upon the land; that the absence of decent fences or buildings is due to shiftlessness of tenants and not to the hard producing conditions; that the land may be cheap because no hard-headed farmer will buy it, preferring to leave it to the soft-hearted amateur to have and to hold until death or the tax collector do them part. Therefore we do conclude that though there are cases of gross misrepresentation on the part of professional dealers and many people are deceived thereby, there is also a great field in teaching people how to buy and what to buy and helping them to be too wise to deceive themselves.

Land With Bad Repute and Good Capability.

But having glibly set down a few things which can be easily seen and are worth considering, we must confess that sometimes land very good for certain purposes gets into ill repute in a district, and such land might be covered with danger-signs if the scheme of warning people against bad land should be worked out. We were talking some years ago with a very wise editor of a California country journal, who gave this interesting experience: "There was a colony enterprise started in our county and widespread advertising undertaken to induce people in all parts of the country to buy colony tracts in a section which was generally believed to be incapable of growing anything. We had a county editorial association and we talked long and earnestly about the harm it would do the county to bring in a lot of people who would lose their money and become destitute and desperate. We came very near adopting resolutions denouncing the scheme and doing what we could to warn people against it—but something interfered before it was done and the matter was allowed to drift along. I happened to be down in the colony some time afterward and I was surprised to see what products the thrifty people were getting out of the bad land by good cultivation and plenty of water. I believe now if there was a showdown of products, the people on those bad lands would beat the county."

During another year and in a part of the State three hundred miles distant from the above, we had another experience. A man called upon us at the hotel and said he had been told we were interested in farming and he would like to show us something. Having passed through Missouri several times and being of a confiding disposition also, we jumped on his buckboard and started away across the desert. Pretty soon we came to plenty of water in a ditch and soon afterward a patch of alfalfa surrounding a cabin which stood in the shadow of a few young cottonwoods. Nearer view showed many kinds of garden plants growing luxuriantly in the blazing heat with water flowing in all directions in shallow furrows. "Well," said we; what of it?" "Hell," said he, "one of your scientific chaps said if I put crops in on this section I wouldn't get my seed back."

And so we say: you cannot always tell. Men make a difference; water makes a difference; cultivation makes a difference. If you had your agricultural block-signal service working over a decade ago, every train of progress which tried to go out on these lands would have been derailed and the horned toad would still be panting in the shade of the salt bush.

Why will people not understand that agriculture is not easy; that there is more in it than they dream of in their little philosophies; that there is more to lead a man toward than to warn him against; that to make a good farmer you must first make a bright man. He may not be bright in a coronation sense, but if he cannot see straight and learn by seeing, he will get under the land faster than you can chase him onto it or away from it.

Queries and Replies.

Sea-Weed Tea and Morning Glory.

To the Editor: Can you inform me as to a practicable way of killing wild morning glory in old vineyard? I have a small patch, confined to a space of 30 by 30 feet square. It seems impossible to dig out all the roots and runners without cutting all the grapevine roots. A Japanese laborer tells me that this pest is killed in Japan by pouring on water in which seaweed has been boiled. Do you know about this? If so, what kind of seaweed should be used?—Vineyardist, Fresno.

Whatever virtue there may be in boiling seaweed for killing morning glory is found in the salt which it contains. It has been demonstrated by ample trial in this State that if one applies salt enough to kill morning glory, he renders the land sterile for other plants unless the salt is washed out by rain or irrigation water. To apply salt, then, to kill morning glory in a vineyard would probably result in killing the vines also. The only practicable way to subdue morning glory now known is by constantly cutting under the surface with a horizontal weed knife, or with a flat-toothed cultivator, with the teeth kept sharp and set so as to underrun the whole surface. Continually pulling the shoots or cutting at the surface with a hoe or cultivator does not accomplish this result, because the success of the method described above consists in never allowing a shoot to come to the light; consequently never to become green, nor to add to the strength of its root by the action of the air upon the foliage. If, then, the shoots are continually cut below the surface and never have a chance to reach the light, the plant is smothered. This under-cutting must be done at regular intervals, say once a week, without any show of color on the surface, ore else it will fail. This is, of course, an expensive process, because it has to be pursued, say, once a week all through one season and perhaps longer, but the reduction of the plant under this treatment soon becomes evident, and the success of it is witnessed by the fact that it is almost universally adopted by those who have nerve enough to undertake the reduction of this plant. Working among vines is of course very difficult and expensive. You will have to decide for yourself whether a morning-gloried vineyard is worth having. The easiest way to subdue a patch would be to pull out the vines and put the whole surface under the above treatment.

Trees and Tap-Roots.

To the Editor: As I am contemplating planting walnuts and am in doubt whether it is best to plant the nut or to plant a grafted root, I ask your opinion in the matter, also whether it would be best to allow the tap-root to remain or not in event of planting a grafted root.—Planter, San Francisco.

There is no demonstration of the superiority of either the walnut seedling grown in place or the walnut grown in the nursery and transplanted. There are plenty of opinions both ways but no demonstration upon strict comparative experiments. Our own opinion is that it does not matter at all whether the tree has its original tap root or not. All tap roots are more or less destroyed in transplanting and the fact that not one per cent of the walnut trees now bearing crops in California consist of trees grown from the nut itself planted in place, is sufficient demonstration to us that it is perfectly practicable to proceed with transplanting the trees. It is a great deal more important that the tree should have the right sort of soil and the right degree of moisture to grow in than that it should retain the root from which the seedling started. The removal of the tap root does not prevent the tree from sending out another, and, in fact, in most cases several deep running roots which will penetrate as deeply as the soil and moisture conditions favor. This is true not only of the walnut but of other fruit trees.

Loss of Top Growth of Apple Trees.

To the Editor: I am sending, under separate cover, a twig from an apple tree, with a request to know what the disease is.—Farmer, Chico.

The irregular growth of apple and other trees throughout the valley during this spring and early summer has received considerable attention. It is usually due to two different causes, either of which would occasion the trouble: one, the accumulation of water in the soil during the excessive rains of mid-winter; second, the occurrence of low temperatures, including frosts, after the sap has risen. Which of these causes operate in a certain case depends, of course, upon whether the soil was heavy and inclined to retain standing water too long, or whether there were such frosts at about the time when the leaves should start. Sometimes, of course, both of these conditions worked in the same place; sometimes one and sometimes the other, but certainly both of them are capable of causing the trouble both in the Sacramento and San Joaquin valleys during the last few months. There seems to be no specific disease which caused the trouble. It is rather a matter of unfavorable conditions for growth.

Red Spider on Beets.

To the Editor: Enclosed please find a specimen of beet leaves on which there is a small insect that gathers on these leaves; also on other garden truck. They seem to suck the life out of the plant in a short while. We have tried every kind of remedy known to us, but have had no success; anything strong enough to kill the insect will kill the plant. I hope you can furnish us with information through your paper.—G. W. G., Paskenta.

It is red spider, for which the remedy is fine, dry sulphur thrown or blown through the leaves. The killing is done by the sulphur vapor which is set free by sun heat.

Our Old Issue With the Sicilian Lemon.

[Now that the Republican party in Congress has allowed itself to fall into such disintegration over the protective tariff for which it has contended so valiantly and successfully for so many years, it becomes more necessary than ever to set forth the facts about the necessity of protection to our fruit industries with an authority which ought to be respected even by those who have been long endeavoring to make political capital by the advocacy of free trade. For this reason we desire to aid in giving the widest possible publicity to a statement about the heroic struggle of the California lemon against foreign importations, by ex-United States Senator Cornelius Cole, who has always been a Democrat and a resident for many years in the citrus fruit district of southern California. —Editor.]

The Needs of the Lemon.—The island of Sicily and the coast of southern California are the only places in the world where lemons are raised for the market. No other fruit is so limited in the area of its production.

The growth of the lemon depends, not upon a particular kind of soil, but rather upon climatic conditions. In another respect the lemon differs from other fruits—it has no definite season. It is perennially green, and, in a climate of uniform temperature, like that of southern California, it grows as well one month as another, the year through. Blossoms and ripe fruit appear on the tree at the same time, and fruit in all stages of growth.

Lemons may be gathered at any season of the year. As with the fruit, so likewise is it with the tree (or bush, as perhaps it may more properly be called)—its development is continuous and uniform, save when stimulated by fertilizing or cultivation.

The Lemon in California.—For unnumbered ages Sicily alone supplied the world with lemons. It was supposed to be the only place suitable for producing them, but a little over a score of years ago the discovery was made, or the fact became known, that good lemons could be grown successfully in southern California. Lemons were then, as they had always been, very high in price, and this consideration it was that induced many farmers in southern California to plant orchards.

It requires at least half a dozen years for a lemon tree to come into bearing, and California has been on the market with lemons for only about fifteen years, at furthest.

Lemon culture in this country was a novel undertaking, and to "cure" and prepare the fruit for market was thought to be an intricate and difficult process. Darkened houses with double walls were constructed in which to keep them for a season, and the first shipment of lemons from the Pacific Coast brought exceedingly satisfactory returns.

How the Foreigners Attacked It.—But an unexpected thing now happened. The Sicilian importers had found their best market in the United States, and had sent their fruit even so far West as California, and now, when they ascertained that competition in their business was springing up they put the price of lemons down below the cost of production in this country, with a view to drive their competitors out of the market.

Prices Manipulated.—When they had the trade all in their own hands they charged for lemons as much as they chose. If a duty was put upon the fruit, that was easily added to the selling price, and the consumers would, of course, pay it. The writer remembers a time when lemons were prescribed for fever patients and when a "shilling" apiece was a common price for them, and even more was often charged. From the appearance of the California fruit upon the market, and ever since, lemons have been supplied to the American consumers for a mere fraction of their former cost.

Thus it is seen that what was at first thought to be a most promising enterprise in California, proved to be, and ever since has been, in the truest sense, a "struggling industry."

When the slump in the price of lemons came, the American growers had their costly trees on hand. Much time and money had been expended in bringing them into bearing, and no alternative was left them but to make the most of their unfortunate investment. But few, if any, new trees were planted, but those already planted grew and bore abundantly. This, together with producing a better quality of fruit than the imported, and the circumstances of a tariff "for revenue only", kept the California industry from dying out entirely. Except at the very start, lemon culture in California has not until recently been remunerative, and those engaged in it have often, very often, been discouraged by actual losses on their shipments.

The Sicilian importers have never for a moment forgotten the advantage they once enjoyed, nor have they been without hope of again obtaining the enormous prices which an absolute monopoly of this very peculiar foreign fruit affords. Hence, they have been unremitting in their exertions to obtain a remission, or at least a reduction, of the duty on their importations.

How the Home Product Affects American Trade.—So great is the difference in the cost of growing lemons in this country and Sicily that a reduction in the tariff tends to paralyze the industry here. Knowing this full well, most extraordinary efforts have been put forth to bring about that result. Contributions are levied by the importers on every shipment, thus raising an enormous campaign fund for lobbying purposes and to influence the public mind through the press and otherwise. Every box of their lemons has not only been heavily taxed to raise a fund for their use, but has been stencil-marked with maledictions against the tariff and against the American product.

The bold misstatement has been freely indulged and widely promulgated that lemons would be rendered cheaper to the consumer by the removal or a reduction of the tariff, and this statement is made in face of the fact that single lemons cost more, when these Italian importers had the market to themselves, than a dozen have brought since.

A year ago Congress listened to the importunity of the California lemon growers and increased the duty on lemons, putting them approximately, though not entirely, on an equal footing with the Sicilians. This very considerate action of Congress so raised the hopes of the growers that a few of them ventured to replant trees where some had perished, but many of the orchards still remain in an incomplete condition. The increase in size of the trees and their consequent more abundant yield has sometimes given a delusive impression of prosperity to the business.

Our Only Chance Against Cheap Labor.—But the cheap labor employed in the production of lemons abroad can only be balanced by a duty on the product. And most certainly two most desirable results must follow such action.

First, a large revenue to the Government, and second, a very much lower cost of lemons to the American consumer.

A moment's thought must dispel the shallow pretense that the Italian importers of Sicily lemons in New York are raising and expending large sums of money in fighting the tariff on lemons in order that the people of these United States may be furnished with cheap lemons.

Why the Lemon Is Indispensable.—No other fruit can take the place of the lemon nor be substituted for it. It contains a certain acid of great medicinal value, and its use is practically indispensable, no matter what the cost.

The little coterie of Italian importers in New York fully realize this, and are extremely anxious to regain the complete monopoly of the trade, with its enormous profits, formerly enjoyed by them.

Under present conditions, due to the good, honest competition of the California growers, only the best of the Sicilian lemons are brought to the American market. The inferior fruit and "dishonest pack" of former years is no longer accepted here.

The Government gets a good revenue, the people in all parts of the country are able to purchase good, clean, juicy, well-cured lemons at a reasonable price, and everybody is satisfied except the little bunch of Italian importers in New York. They alone want a change. They want a restoration of the "good old times" so that they may again unload upon the American consumer inferior grades of fruit at fancy prices. Their sole purpose is to make money for themselves. They have not the slightest interest in furnishing cheaper and better lemons to the American consumer.

What It Means to Americans.—The magnitude of the stake these importers are playing for is not generally realized. For many years previous to the time of the California competition, these Italians sold annually in the United States about 3,000,000 boxes of lemons at prices that are unheard of today. Ten dollars a box was a common price in those days, and much of this fruit was so inferior in quality and so "dishonest" in pack that it would not sell at all today. Their annual profits were many millions of dollars.

It was a "tax upon the American consumer" levied by a few foreigners, that was certainly for "revenue only", and a revenue that was many times greater than that derived by the Government today from that source.

It will be an unfortunate day for the American consumer if these Sicilian importers again get control of the lemon market.

LONDON PREFERS THE CALIFORNIA ORANGE.

The United Kingdom imports more oranges than any other fruit, according to a consular report of John M. Carson, a commercial agent of the United States.

The value of the oranges imported amounts to $11,035,796, while the apple imports are valued at $10,654,272. Bananas come third, valued at $8,266,023, followed by grapes at $3,308,816, pears at $2,569,623, lemons at 2,200,218 and plums at $2,112,076.

California, however, supplies only a comparatively small portion of the oranges Great Britain eats, although it is said the California navel is the favorite and commands the highest price. Mr. Carson's report says:

"This fruit sells freely all the year, but is in greatest demand in December and January, when prices are higher than during other months. A large portion of the oranges shipped into England is used in the manufacture of jams, but the fruit thus consumed is inferior in quality, comes mostly from Spain and points on the Mediterranean, and does not compete with oranges for table purposes. The latter are imported from the Mediterranean, the West Indies and the United States, and sell at retail from 4 to 10 cents each, choice fruit commanding higher prices. The superiority of American oranges is recognized and made apparent in the higher prices paid for them. The California seedless or navel orange is the favorite, and sells freely at 9 to 12 cents each in England and on the continent. The California growers could promote the sale of their oranges by arranging through the local organizations for exploitation, as is done in the case of Canadian apples, and for direct shipments. Indeed, this course of procedure may be safely commended to growers and shippers to Europe of all orchard products.

"Pears are in good demand, retail prices being about the same as for apples. The finer qualities comes from the Pacific States. As in oranges, the export of American pears could be materially promoted by systematic effort on the part of shippers.

"Peaches, like pineapples, are a luxury in Europe. Being more tender and perishable than apples or pears, greater risk and expense attach to over-sea shipments of peaches, but it would seem that, with the facilities offered by speedy transportation and refrigeration, shipments of this fruit from the United States might be extended, especially in the years when crops are abundant. Peaches received in Europe are wrapped separately in cotton."

WHERE IS THE ORANGE SWEETEST?

To the Editor: How many growers and eaters of oranges are aware of the fact that the blossom end of the fruit is sweeter and of a better flavor than the stem end? Such is the fact.

The way that I made the discovery is this: To get the most satisfaction in eating an orange is to place a newspaper on the floor; with a sharp knife divide the fruit about half way between the two ends and place the cut pieces on the paper. Then, as eaten, slice off a wedge-shaped piece and straighten out the curve of the back of the slice. This separates the cut sections of the sacks holding the juice and enables them to be easily taken into the mouth, and the juice is released more quickly and pleasurably than in eating the orange in any other way. But the juice-sacks being divided by the cutting in this way, release the juice, which runs out so freely as to make sloppy work of the eating, which should really be done in seclusion rather than make a social function of it. But by leaning well over the paper on the floor the clothing is safeguarded and you can have the time of your life in orange eating. Try it.

It was when cutting up and eating oranges in this way that I discovered the difference between the flavor of the two ends. Test it for yourself and note the difference.

As to the cause: This is theoretical, only. The juice sacks of the orange extend from the stem end to the blossom end. The fruit hangs pendent from the stem. When the saccharine matter develops in the juice it becomes thicker and heavier than the lighter, more liquid, acid part of the juice, and the heavier, richer, better juice settles down to the bottom as the fruit hangs by the stem.

A. L. Bancroft.

565 24th St., Oakland.

Pedigreed Stock: Does It Pay?

(By Mr. Leonard Coates, of Morgan Hill, at the Nurserymen's Convention in San Jose.)

Nurserymen understand what is meant by "pedigreed stock." They may believe in it or they may not.

There has been a good deal of discussion as to the correctness of the term "pedigreed" as applied to plants. A "pedigreed" animal infers known parentage on both sides. With fruit trees, and other plants the female parent is often known, but not the male, and many of our best fruits are what is known as chance seedlings, both parents being involved in obscurity. Moreover, a flower, or a fruit (using the term "fruit" commercially, and not scientifically) may be pedigreed in the most literal and scientific sense, being bred by artificial methods, and still be worthless so far as any economic or commercial value may be considered.

The term "pedigreed," however, implies exceptional and fixed quality, and that is what we desire; no other name has been proposed, except "selected," which is meaningless. Pedigreed stock is simply the propagation of selected plants, whether bud variants, mutants, or by whatever name they may be known by scientists.

I will not enter into a discussion of bud variation, or Mendel's theory of mutation, but merely call your attention to the writings of Mendel, Hugo de Vries, L. H. Bailey, and others.

There is, at present in southern California a systematic work being carried on under the direction of an expert sent out by the Bureau of Plant Industry of the Department of Agriculture, to segregate certain individual citrus trees which have made a record as to quality of fruit, good bearing habits, and general vigor, and to use these trees from which alone to propagate. The leading citrus growers believe in bud variation, and its propagation, or perpetuation by budding or grafting, and are working to the end that their orchards may be improved by breeding up. Some growers already are budding over their bearing trees from these individual specimens. Such trees will surely be "pedigreed."

An increasing number of fruit growers all over California believe in pedigreed trees, the theory and practice of selecting individuals from which to propagate being warmly upheld by Prof. F. T. Bioletti, of the University of California, Mrs. M. E. Sherman, of Minnewawa, and others. Occasionally most distinct bud variations are met with, or sports, which are entitled to the classification of a new variety.

My attention was first called to this variation, or individuality, in 1882, when studying particularly what we call "French prune." I have a water-color sketch, made at that time, showing the different types of the French prune, but all propagated as one. These "types," or variations are just as fixed now as twenty-five years ago, and no one has endeavored to segregate them until I commenced this work in 1905 by propagating only from marked individuals.

But the question arises, "Does it Pay?" And this question is paramount with the business man Few of us can afford to be reformers or philanthropists. It pays, in theory, to sell good goods rather than poor ones. It pays, ethically, to do right rather than wrong. It pays, to some extent, by being advertised as progressive, or, which is generally the case, as a crank. I admit that this is its best feature, commercially. It does not pay when the majority of planters, encouraged by the facetious and skeptical attitude of some leading horticultural journals, regard it as a dose of nurserymen's buncombe, or species of humbuggery.

It does not pay when the majority of planters take little or no interest in plant breeding, and even decline permission to examine and mark trees for buds.

It does not pay whenever the planter who professes faith in pedigreed stock, refuses absolutely to pay one cent more for such trees, although that would not compensate for the great added expense of procuring buds from trees entitled to be called "pedigreed."

It might be made to pay handsomely, both nurseryman and planter, if the two would work in unison in the effort to improve the standard of our fruits.

There are growers, of course, who would do this, as there are also nurserymen who would seize the opportunity to advertise their stock by using the term "pedigreed," without the shadow of reason for doing so, justly. The work, at best, could be but very gradual, although I have already seen a nursery firm advertising "pedigreed" apple trees for sale by the million. Personally, I believe the work can only be done practically in a small way, by individual orchardists co-operating with some neighboring nurseryman, and thus actually propagating some known and fixed bud variation.

WALNUT DROPPING.

To the Editor: We note in a recent issue of the Pacific Rural Press, where a party at Freeport has trouble about the walnuts dropping from his young walnut trees. From our observation of the walnut this is simply a lack of pollination, the walnut being very erratic in this respect. We have done much experimenting in this line and find that very often the French varieties, as well as many others, fail to produce the catkins, or staminate blossoms till the trees are six to eight years old, and then they sometimes produce but few, which are not produced at the right time to pollinate the nut, or pistillate blossom. By selecting scions from trees that are known to produce an abundance of staminate flowers at the right time this is overcome, or by planting other varieties that mature at the proper time to pollinate the pistillate flowers. If one is grafting their own trees the first is the only way, while if the trees are bought from the nurseries, the latter is the only way to be sure of getting walnuts.

Where an occurrence such as this party has, it is easy to get walnuts by gathering the catkins at the right time, from other trees that bloom at the time the pistils have a greasy appearance, or even when they have just opened and are still of a red appearance on the upper side of the flower, they are receptive at this time and continue so for from five to six days. When we have new varieties which we wish to have fruit, and where they do not produce the catkins, we gather a bunch of the catkins and hang in the tree. To tell when the catkins are right for use, it will be noted that the flowers are open and on the slightest touch they discharge a yellow powder. They should be gathered just as the first flowers open; those not opened will mature and pollinate the flowers.

We have a splendid example of walnut pollination, in a very large "English" walnut tree, this year. The catkins fell a month before the nut flowers were receptive, so we had cause to pollinate some trees that were growing to one side of the old tree, and the young trees were not over five feet high. We hung the catkins on these, and a limb of the old tree that is within a few feet of these young trees, is loaded till it is bent to the ground with nuts, while there is hardly a nut on any other part of the tree.

Catkins of any kind of walnut may be used, as they pollinate very freely. The black can be used with as much success as the French, Persian or English.

A dozen male flowers placed around in a good sized walnut tree will catch nearly all the nuts, but sometimes the nut blooms extend over quite a period, when it is necessary to use the catkins or tie them in the tree two or three different times.

Elk Grove. Tribble Bros.

[This is very interesting. We have been puzzled about pollination of the walnut for many years. In our garden we have a Properturiens tree which has made little growth, for it is in a bad, dry place, but it has borne regularly and out of proportion to its size. So far as we know there is not another walnut tree within a quarter of a mile. The catkins come and practically disappear before the pistillate bloom appears. They probably hang on in dry, shriveled form. We have watched them, and could not see how they could carry effective pollen, and yet the nuts come all right. We have been disposed to believe that walnut pollen is effective longer than any theory allows for.—Editor.]

APPLES IN HONGKONG.

Commercial Agent Lovett M. Wood writes as follows: The excellence of the Oregon and Washington apples is well known in Hongkong and other parts of southern China. This is to a considerable extent due to the holiday gifts started by James J. Hill, Mauritz Thomsen and others who have important commercial connections here. Apple growers must not, however, get a wrong impression. Much as the fine fruit is appreciated here, the price, at such a distance from the shipper, places the apple beyond the purse of the Chinese people, and 100 boxes of Spitzenbergs would glut the Hongkong market and the appetites of the Europeans here able to pay the price that good, fresh, well-kept fruit commands. Australia sends some apples here, but those I have tasted are lacking in the fruit bouquet found in the apples grown in the United States.

[If the writer has in mind some of the prices which the newer apple growers of the Northwest calculate upon receiving, we do not wonder that he thinks the Chinese cannot buy them. Fortunately it is not necessary in California to get such prices to net a good profit.—Editor.]

THE WILDER PEAR.

A Sacramento dispatch says: "The largest first shipment of pears ever sent from California in the history of the fruit industry was that which started East from Vacaville yesterday. These pears were grown on the V. P. Pena ranch at Vacaville and were shipped through Pinkham & McKevitt and the Californit Fruit Distributers. The pears were of the Wilder variety, an early pear of California, and were grown on some of the oldest trees in the State. The shipment consisted of 51 regulation boxes."

[This dispatch is apt to confuse the pomological reader. The pear referred to is undoubtedly Wilder Early, which originated in Chautauqua county, New York, and was planted to some extent in California 25 or more years ago. The Wilder pear which originated in California is Col. Wilder, a seedling, by the late B. S. Fox—an excellent winter variety, which is not, however, much grown.—Editor.]

AGRICULTURAL REVIEW.

With the Fruit Men.

The Interstate Commerce Commission has issued orders suspending until October 28 the proposed tariff of transcontinental railroads changing the regulations and practices with regard to precooling and pre-icing citrus fruits shipped from this State to Eastern destinations.

E. B. Jackson, of Yuba City, has contracted to furnish over 200,000 Thompson Seedless grape roots to Sutter county ranchers this winter. Of these, 140,000 will go to Messrs. Eater and Miller, and to Miss Elane Wilbur, who will plant out 200 acres.

Owing to the late season, Florida and Georgia peaches have been put on the Eastern markets before the California fruit this summer.

The Armsby Preserving Co. has contracted for 2400 tons of cling peaches for its Yuba City plant and will run until late in October.

The berry season at Gridley has been completed, most of the fruit going to Northern markets. A good crop was secured.

In Happy valley, Shasta county, the peach and prune crops will be almost a failure, while grapes, almonds, olives, and hay are in very good shape.

Fifty cars of oranges will go from the house of the Strathmore association this year, as against 38 last season.

W. H. Volck, entomologist for Santa Cruz county, states that Bellflower apples will make a very large crop and Newtown pippins lighter than last year, making the average for apples as a whole about the same as in 1910.

During the past week many apricots in the Santa Clara valley have dropped, in some instances as many being on the ground as on the trees.

In the Roeding vineyard this season, 80 acres of Thompson Seedless grapes were saved from injury by frost by the use of smudge pots. The tract will make an average crop, while other vineyards nearby which were not protected will have not more than 25% of a crop.

Grapes on the Kearney estate suffered less loss from frost than many points in Fresno county. Thompson Seedless and Malagas will make nearly a full crop, and Muscats 65% of a normal crop. An exceptionally good crop of hay and grain has been harvested, alfalfa being very fine, though the growth has been retarded by cool weather.

A disease which caused small spots to develop on the leaves of grapevines near Selma has been found to be caused by the sting of a small insect, which can be driven away by sulphuring.

The Redlands orange growers are to co-operate in a campaign to eradicate the yellow scale and other citrus pests.

Horticultural Commissioner R. P. Cundiff, of Riverside, and Inspector Ed Tuthill, of Corona, have completed a detailed examination of the work of a beneficial parasite attacking the red spider of orange trees, and report that the insect has done very efficient work where well established in the citrus orchards of the county. The parasite is a small beetle, the Scymins Vagans, and was imported from Australia.

Peaches and grapes in San Joaquin county, although not uniform, look very fine and will in most orchards give a 100 per cent crop.

In Contra Costa county Wickson plums will make 75 per cent and Burbanks 100 per cent of a full crop.

A. R. Meserve, Horticultural Commissioner of Los Angeles county, has announced, after considerable work by inspectors in the county, that brown rot and withertip, which have been inflicting some injury upon orchards in the vicinity of Covina, can be controlled easily by spraying with the bordeaux mixture. One orchard of several thousand trees was sprayed with the mixture, with decidedly beneficial effects. James R. Hodges, who has done much of the investigating, claims that the diseases are caused by a fungus.

The Megginson brothers of Riverside have prepared their 220-acre ranch for walnut planting. A well furnishing 70 inches of water has been sunk and 5000 feet of 14-inch pipe will be laid, more than one-half of which is already in.

A heavy orange drop has taken place near Porterville recently, reducing the prospects of the crop to its normal level.

Contracts for dried apricots in Orange county have been made for 13½ and 14 cents per pound.

A. R. Pearson of Del Rey, Fresno county, has been experimenting with the Sour Turanji, a citrus fruit to be used as a substitute for citron, and has submitted samples of the cured product to the Fresno Chamber of Commerce. The product is claimed to be superior in appearance and flavor to citron.

Deciduous Fruit Shipments.

Sacramento, Cal., July 1, 1911.

The following gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, June 30, 1911, as reported by the California Fruit Distributors.

Cherries (30¼ cars)—This shows a considerable decline from last week's shipments, which amounted to 46 cars. Shipments will dwindle rapidly from this time on, as there are but few more cars to move.

Apricots (67½ cars)—Not as much fruit of this variety was shipped this week as last, the difference amounting to practically 10 cars. The heavy movement is now over and shipments will decline rapidly. There will be a few more cars available during the coming week.

Peaches (56 cars)—A slight increase in the shipment of peaches is noticed, but it does not amount to a great deal. Triumphs are now nearly all shipped. There will be no considerable quantity of them to come in after this week, although one or two localities will have a few. St. Johns and Hales have made their appearance, but there will be very few of them available during the next seven days. After that the movement should be liberal.

Plums (71½ cars)—This variety of fruit is now moving in liberal quantities and comprises many of the best known varieties, such as Climax, Burbanks, Abundance, Shiro, Red Junes, Tragedy and Simoni. Shipments are probably as liberal now as they will be at any time during the season. The crop is good and the quality is better than usual.

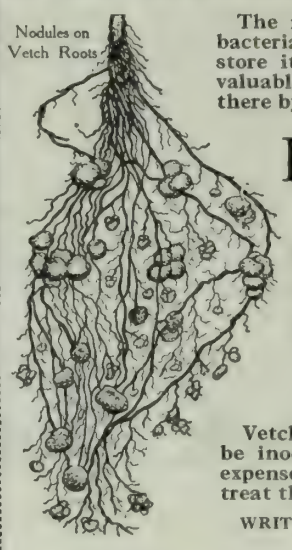
Pears (4¾ cars)—There are some Bartletts going forward, but the movement is not heavy yet. It will increase from day to day and by the 12th of the month the volume of shipments should be enough to meet all requirements. Fruit is clean and of good size.

The grape crop continues to look very well. No mildew or other trouble has appeared to injure the prospects, which are unusually good.

Weather is now settled into the regular article common to California summers—warm, pleasant and in every way desirable to perfect maturing of fruit.

Total shipments to July 3 were 712 cars, as against 1569 cars to same date last year.

Fertilize With Air



The nodules on these roots are colonies of bacteria that suck the nitrogen from the air and store it in the plant, which then becomes a valuable fertilizer. The bacteria were placed there by inoculating the seed with

FARMOGERM

(High Bred Nitrogen Gathering Bacteria)

Science has thus brought the wonderful possibilities of bacteria fertilization to a thoroughly practical and simple method of application.

This places within reach of every grower an enormous increase in the tonnage and fertilizing value of

COVER CROPS

Vetch, clover, fenugreek and all legumes can be inoculated with Farmogerm at a nominal expense and by a simple operation, or we will treat the seed for our customers if preferred.

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it has no equal. Day or night the power is ready at a moment's notice, the water is under perfect control of the irrigator, and the cost is within reach of any land owner.

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mounted on a truck. The wires can be easily carried to all parts of your place. It is an easy matter to haul the truck from feed cutter to hay baler, wood saw or other work. One minute is long enough to connect the wires, put on the belt and start running. Once this plan is tried it is never abandoned.

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brings running water by an automatic pump, cools the hottest day by fans, and removes the discomforts of wash day and ironing day. Once tried, your wife will find it a constant source of comfort.

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Talk it over with our nearest district manager or write us direct. We will gladly give you information and assist you in any way.

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GROUND SQUIRRELS, GOPHERS, also BORERS, ROOT APHIS, etc., on Fruit Trees

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Is the only effective remedy.
For sale by dealers and manufacturers.
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PRUNE GRADER
FOR SALE
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General Agriculture.

More than 1000 acres are to be planted to alfalfa this fall in Merced Colony No. 2, which lies north of Atwater. The management of the company colonizing this land claims that the demand for alfalfa land in the vicinity is greater than for other property and surpasses that of previous years. In the past three weeks ten sales of 20 acres up have been made in the colony.

Large shipments of potatoes are being made from California to Texas, Oklahoma and surrounding States, owing to the failure of the early potato crop in these places. The shipments are expected to continue until the Colorado potato ripens in September.

The Anaheim Fruit Association has just imported 15 tons of vetch seed from Germany for the use of the members, at a cost of a little more than half the regular market price.

The first carload of watermelons to leave the San Joaquin valley this summer went out from Dinuba July 1.

Hop prices of Wheatland are said to have reached the 25 cent figure.

The yield of potatoes around Monrovia, Los Angeles county, is estimated at between 500 and 600 carloads. Prices there are now $2.75 per hundred weight f. o. b. in carload lots.

Corn experiments at the United States plant introduction station at Chico show that the California yellow flint corn is the best variety, generally speaking, for this State.

The volunteer cotton crop of Imperial county will be ready for picking August 1. Cooler weather than usual has retarded the newer planted cotton. Some of the volunteer crop is already ripe.

Miscellaneous.

Apairies near Kearney Park, Fresno county, report heavy losses from foul brood this season, in some instances as many as 75 per cent of the stands being affected.

In order to succeed better in the campaign against squirrels, the Santa Clara authorities have designated each Friday as "squirrel day," when poison is to be put out and other work carried on against the rodents.

A tract of 1900 acres of land near Elsinore, Riverside county, has been purchased by the Superior Land and Water Company for development. The land will be settled by a number of Canadians who expect to esctablish a colony there.

About $9000 is expected to be spent on the Apple Annual at Watsonville this year.

Active work in stamping out foul brood in the apairies near Dinuba is being taken, and many new queens imported.

The Covina Irragiting Company has voted to issue bonds for $300,000 to carry on improvements in the Baldwin Park district and to cover the present indebtedness.

An icing plant is being constructed at Healdsburg for fresh fruit shipment.

The teaching of agriculture is to be adopted in the Modesto high school when a new building is completed.

A fire Sunday destroyed 400 acres of wheat and barley near Blacks, Yolo county.

The Pajaro Valley Poultry Association will hold a meeting next Monday, at which a banquet will be enjoyed and a large amount of important business transacted.

"CALIFORNIA RESOURCES AND POSSIBILITIES."

This is the title of the twenty-first annual report of the California Development Board, giving the growth and development of California by population, by manufactures, by agricultural industries, and by trade.

The book opens with a statement of the past results and future undertakings of the California Development Board from the pen of the president of the board, Hon. Jas. N. Gillett. Then follows the official report of the vice-president and manager, Robert Newton Lynch.

The real subject of the book "California Resources and Possibilities" is told in statistical articles under subheads covering the broad range of California's industries and productions.

At the conclusion of this section of the book is found an admirable summary of the values of all products of the soil, compiled from data gathered from transportation companies and other reliable sources, and showing a grand total of $495,288,466, yield of the soil for 1910.

This book has a first edition of 25,000 copies and will doubtless be followed by a second edition, as the demand for it is ever increasing, due to the fact that it is reliable and is distributed to interested parties without charge.

According to the new dairy law which went into effect June 20, all packages of butter are to be correctly labeled regarding their net weight. The inspectors of the State Bureau have been making an examination of butter in city stores since the law became effective, and find an extremely large part of the packages from one to two ounces short. For some time only a notice of illegal conditions will be given, in order to permit the proper changes in the packing to be made, after wnich prosecutions will follow. The fine for selling underweight butter is from $10 to $200. The new law is also more stringent than the old law regarding butter adulteration.

Samuel E. Watson has been appointed an inspector of the Bureau, and has been working around the bay cities since his appointment, weighing butter packages. H. Rodgers has also been appointed Dairy Inspector, vice E. H. Sherman, resigned. Inspector Rodgers will make his headquarters in Imperial county.

$90,000 Daily

Now Spent for No-Rim-Cut Tires

Over 600,000 already sold—enough to equip 150,000 cars. All because they cut tire bills in two.

The sale of Goodyear tires has multiplied six times over in the past two years. Last year they jumped to $8,500,000. They are now running double last year.

Sixty-four leading motor car makers have contracted with us for these tires. To supply them and tire dealers we are running our factories twenty-four hours per day.

The reason lies in a patented tire—the No-Rim-Cut tire—10 per cent oversize. Men have found that this tire saves one-half on their tire bills. And the tire has become the sensation of motordom.



The No-Rim-Cut Tire

Here is the Goodyear No-Rim-Cut tire as it fits any standard rim. When you adopt this tire you simply reverse the removable rim flanges so they curve outward. They curve inward with old-style tires. This change can be made in ten seconds.

The rounded edge of the flange then comes next to the tire, and rim-cutting is made impossible.

No Hooks on This Tire

The ordinary tire—the clincher tire—has hooks on the base to hook into the rim flange. That is how the tire is held on. See the next picture.

When you use this type the removable rim flanges are set to curve inward. Note how they dig in when the tire is deflated. That is why the common tire will rim-cut if you run it flat.

Ordinary Clincher Tire

The No-Rim-Cut tire has no hooks on the base. It is held to the rim by flat tape, made of 126 braided wires, vulcanized into the tire base. These make the tire base unstretchable.

The tire can't come off because the base can't stretch. Nothing can force it over the rim. But, when you unlock and remove the rim flange, the tire comes off like any quick-detachable tire except that it won't stick.



The Ordinary Clincher Tire

This braided wire feature is controlled by our patents. And there is no other way known to make a safe tire which will stay on without hooks.

10% Oversize

These No-Rim-Cut tires, where the rim flanges flare outward, can be made 10 per cent over the rated size and still fit the rim. And we give you that oversize without extra cost.

That means 10 per cent more air—10 per cent greater carrying capacity. And that, with the average car, means 25 per cent more mileage per tire.

These two features together—No-Rim-Cut and oversize—will double the service one gets from a tire under average conditions. Yet Goodyear No-Rim-Cut tires cost no more than other standard tires.

Our latest Tire Book, based on twelve years spent in tire making, contains many facts which motorists should know. Please ask us to mail it to you.

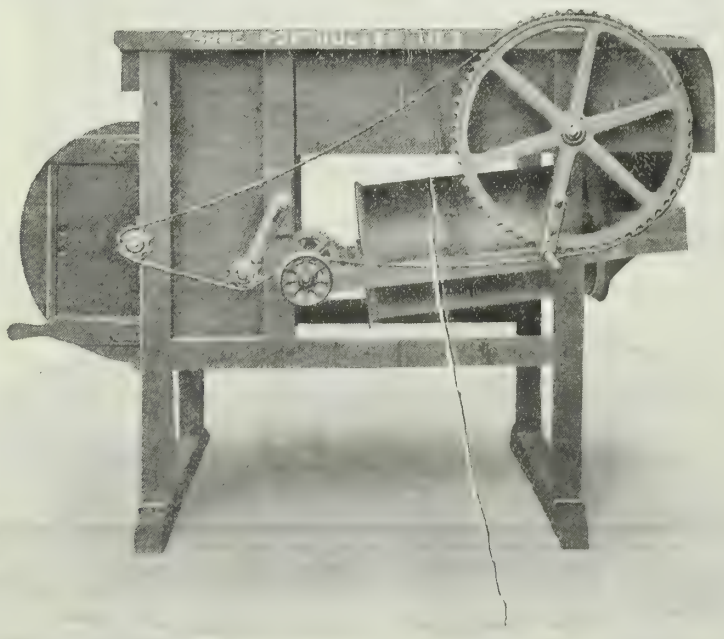
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How to Use the Spiny Cactus.

We have given accounts of this before, but so many readers are applying to us for forage plants to grow under conditions which do not hold out much hope for any plant but a cactus that we take another burn at the subject in the words of a writer for the Farm Progress of Texas:

SMOOTH CACTUS.—Requires to be sown in inclosed land, and with cultivation, and is therefore not adapted for range lands. The greatest resource of the stock grower is not in the smooth species, but in the far more robust and repellantly thorny cactus. This, it has been found, will thrive many degrees farther north than the former, and although, when adapted to economic purposes, requires planting in regular fields, is self-protecting, even from the small rodents that are so overwhelmingly numerous in these regions that they threaten to nullify all the advantages of irrigation. The only requisite in preparing these plants for stock food is to get rid of their thorny armor.

And this need has been met by the invention of a peculiar long-handled blast torch, the fierce heat of which, as the flame is applied to each branch and stem, takes off every vestige of the woody spines, and the juicy globes are seized and munched with avidity by all stock whose rations have previously consisted of dry hay and grains.

The nutritive value of the cactus leaf stems is not very high, although analysis has found this to vary considerably in plants of different ages, and even different portions of the same plant. The cuticle is tough, but as digestible as sorghum hay, while the pulp affords protein, albumen and sugar in small proportions.

It is the large water content which in arid climes makes this food so peculiarly grateful and wholesome to stock of all kinds. The practice is to burn off every day just as many plants of the various kinds as stock admitted to this sort of pasture can be afforded for a single feed.

To grow these plants the field is plowed into furrows six feet apart, and in these single "leaves," or sections of stem, are placed three feet or more apart, and in an upright position, or leaning against the side of the furrow. Another furrow is run close alongside, partially covering them, although they will take root if merely placed on the surface.

The planting can be done at any time of the year, and at such intervals as will keep an abundance of stock feed on hand; but in beginning cactus culture none of the plants should be scorched and eaten off until two years old. Those that are eaten, even by hogs, quite far down into the roots, will immediately send up a vigorous new growth. Cultivation around these, as well as newly started plants, greatly stimulates their growth and value.

An enthusiastic observer of cactus growing and feeding thus describes its advantages:

"The farmer of the Southwest may as well throw away his pitchfork, sell his mowing machine and burn down his barn—he will have no further use for them. The trade of the manufacturer of harvesting machinery is to be revolutionized; for the forage crop of the future is to be farmed with no more orthodox a thing than a lighted torch, and he should turn to the making of these with a long handle and a strong blow. Furthermore, there will be no need of fences, as their absence will in no way endanger the productiveness of the crops. Nor will there need be any housing, as the crop is eaten in the field."

QUALITY
IN
FUMIGATION CYANIDE
IS THE IMPORTANT CONSIDERATION

The best authorities unanimously agree that for the effectual generation of Hydrocyanic acid gas a Cyanide should not contain in excess of 1 per cent of Chloride of Sodium (common salt). A higher percentage of this ingredient materially reduces the available amount of gas by the process of decomposition.

It is well worth your while to verify this statement, and when in doubt as to the Sodium Chloride content of a Cyanide, have a reputable chemist furnish you an analysis. It may prove a good investment.

The Roessler & Hasslacher Chemical Co.'s Special Fumigating Cyanide of Potassium 98-99 per cent and Cyanide of Sodium 128-130 per cent is manufactured expressly for fumigating. Contains no excess of chloride of sodium. It generates quickly. Reliable, Efficient, Economical.

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BECAUSE you can easily and cheaply convert your perishable fruits and vegetables into staples.

LIKFRESHED products are superior in every way—less loss of weight and food contents—less sulphur required. Superior flavor and keeping qualities—"Just Like Fresh." Cost of installing plant is nominal. Expense of operating is less than sun drying. For other reasons and full particulars, write or call. *Be sure to look into this matter this season, as it will prove a money maker for you.*

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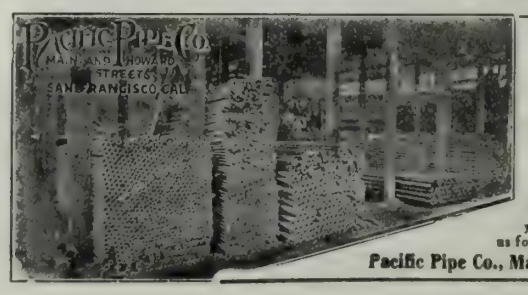
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Pacific Pipe Co., Main and Howard Sts., San Francisco

The Home Garden in July.

The gardening schedule for July shows less planting than in almost any other part of the year. With few exceptions, everything which frost would be likely to injure should be planted in May and June, and July is almost too late. Where frosts will not come until late, some things like squash, cucumbers and corn may still be planted. The same is true for tomatoes, which should be transplanted, not put out from seed, if desired at all this late.

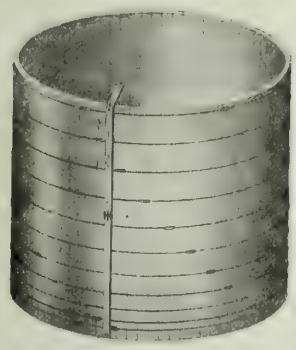
One class of seeds which can be put in the ground at this time to advantage are the hardy perennials, which need a season's growth before they send out flowers. It is a little too late to plant the tender perennials at this time to get the best results. The hardy perennials, however, will make a good growth before winter and will be in much better condition for blooming in spring than those which are planted after the fall rains come. By proper cutting back of the flower stalks after blooming has begun the flowering season can also be prolonged to as late as the later planted ones.

With vegetables, aside from those mentioned in the beginning, wax and pole beans can be planted so as to bear well long before the frosts come. In fact some varieties of beans can be planted well into August and still give good satisfaction. In the hot interior valley cabbage, cauliflower, kale and related vegetables can be planted for a winter crop, when an earlier planting would have brought failure. This is due to the fact that in these places the cool weather is needed to make a good head. These seeds would be better if planted rather late in July rather than in the beginning.

Cabbages and similar vegetables might also be planted in any place where they would be desirable as green poultry food, and nothing else in this line is easily available. All seeds, it must be understood, which are to be planted in the summer, should be put in moist, rich ground and given better treatment than if plentiful rains were to supply them with the moisture they would have obtained in the spring.

An exception to this with plants, not seeds, is the spineless cactus, which should be planted in ground that is rather dry, and not irrigated plentifully until well started. The summer is the correct time to put out these plants, of which there is quite a variety, even of the spineless kinds, both for fruit and forage.

In the flower garden all bulbs that are dormant ought to be taken up, provided there is to be any irrigation near them, as moisture after the plants have ceased growing and died down, will either cause the bulbs to rot or will cause them to sprout again and injure them. If the plants are still green they should not be disturbed, as their leaves, while green, supply the roots with needed strength for the next season's growth.



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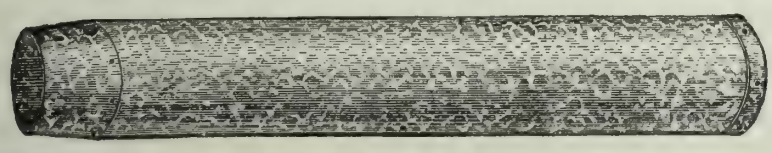
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It is much cheaper to build wagons with kiln-dried lumber. But such wagons could never live up to the I H C standard of excellence. That is why all the lumber used in the construction of I H C wagons is air-dried in enormous sheds for at least two years—and most of it for three years.

Weber New Bettendorf Steel King

—are I H C wagons that make you sure of getting the most for your money in the style of wagon you want.

Weber has stood for all that's best in wagon construction for the past 66 years and still maintains its leadership. Farmers who know Weber quality need no further argument.

New Bettendorf has the only satisfactory tubular steel axle ever put on a wagon. It is the only wagon with an extension reach box—no extra reach is needed to lengthen the gear. Removable malleable sleeves protect the axle and can be replaced when worn.

Steel King has the only perfect adjustable stake; hollow steel axles and bolsters made to resemble the old wood type; skeins are cast and can easily be replaced; wheels are "A" grade; wagon boxes of best quality and construction.

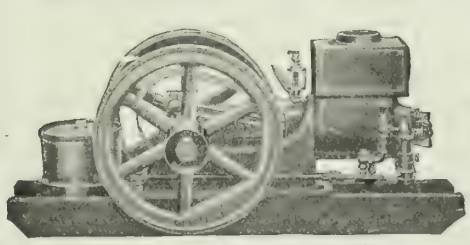
See the I H C local dealer. Get literature and any further information from him, or, write to nearest branch house.

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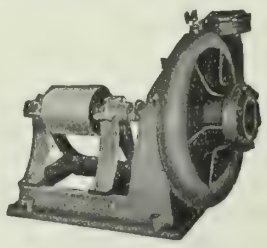
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The Bureau is a center where the best ways of doing things on the farm, and data relating to its development, are collected and distributed free to every one interested in agriculture. Every available source of information will be used in answering questions on all farm subjects. If the questions are sent to the I H C Service Bureau, they will receive prompt attention.



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THE ORNAMENTATION OF COUNTY HIGHWAYS.

(Continued From Page 21.)

The purchasers of the crop use small tents and camp by the side of and safe guard their property. Where the trees are utilized for their crops they should naturally be set, pruned and cared for as are orchard trees, but it takes them out of the class of ornamental trees, for in orchard rows we are looking for a crop rather than artistic effect. When the foreign element that is flocking in upon us so fills up this country that we require every foot of land for economic uses we may come to the same treatment of our roadways, but we have not as yet reached that point.

THE CLUMP PLAN.—In the place of an unbroken row, set the trees in clumps of varying sizes in numbers from three to twenty together, each clump having as a rule but a single variety, set as nature is given to do it, the clumps being at varying distances apart, the intervening space varying according to the lay of the land, the kind and depth of the soil, moisture and the growth habit of the trees. In general the space between clumps should be from about sixty feet to five times that.

The planning of a highway tree scheme should be the work of an intelligent landscape architect, with perhaps a committee of local people co-operating with him.

Until they get firmly established, wayside trees should have even better attention than orchard trees, and it is well known that crops cannot be expected from the orchard unless the trees are properly cared for, as the land for a considerable distance about the clumps will not be plowed and cultivated to conserve the moisture in the ground; the holes for the trees should be much larger and deeper than those dug in the orchard; the matter of fertilization should be given attention. For about three years after setting out, the young trees should be watered several times during each summer, and the day following the surface ground should be worked up fine in order to prevent its cracking and drying out.

In some of the cities of the Middle West one or two lengths of tiling are placed, almost perpendicularly, so as to let the water well down even below the roots of the trees.

After some three seasons of this treatment the roots of the new trees should be down so far that they would be in moist earth continually, and a vigorous growth thereafter be constant. The tree would require but little if any pruning, but an occasional limb. headed in the wrong direction, would be better if cut back. But all such work should be done by a tree expert and once a year would probably be often enough for him to go over them for this purpose.

The distance apart for the trees in a clump would depend entirely upon their growth-habit and the size that the mature trees attain.

While they should not be in stiff, set rows, they should approximate to rows, following the trend of the road with other trees, breaking into and partly filling the spaces between, making the whole as natural and graceful as possible.

Where the conditions admit, the trees could encroach upon the roadway two or three deep, and, by permission of the adjoining land owner an occasional clump even larger than the others could break into the fields on both sides of the road and extend for a few hundred feet along the road. The tops of the trees arching overhead would be like the shade and atmosphere from the woods wafted out onto the hot, open, sunburned plains. By planning for it a charming picnic, and Fourth of July celebration and camp-meeting grove could be developed from such a clump. In a large clump of this kind more than a single variety of trees could be used effectively.

ROADSIDE TREES NEED CARE.—Wayside trees, while they are becoming established, should be under the constant care and supervision of a tree expert who should inspect his whole line often enough to keep in touch with them, and direct as to the attention that should be given them. The land holders might be willing to undertake to dig the holes for the trees, help set them out and attend to the watering and tilling of those along their own frontages, under the direction of the expert, and each vie with the others to show the best results for their work. But in order to get results the trees must be properly looked after and attended to. To merely set them in the ground and leave them to their fate would never make good trees, or, probably, even trees of any kind, and poor trees would be more objectionable than no trees, as they would continually advertise the failure of the undertaking.

BLOCKING THE ROADS.—Road-blocking in its latest and best form should promptly be applied to these and all country roads. It most strongly appeals to every person who clearly understands it; its cost is but a trifle compared with its worth; is as durable as the roads themselves, and is too good, useful and valuable to remain unused. Road-blocking is applied to the roads of an entire county. The roads as a whole are studied and aligned, or arranged into the fewest and longest lengths suitable for naming and blocking; they are then named along the same lines that city streets are named; the third step is to block them, which is to measure them on the ground, thus giving the traveled distance, and divide each mile of road length into ten equal parts or imaginary blocks of 528 feet each; the blocks are numbered, commencing at the county seat or at the end nearest thereto and working outward; the block numbers are used for house numbers.

All houses in a block take the number of their block and in addition an identifying letter is used; if the house is on the left as one course of the road is faced, a capital letter goes to the left of the number, and if on the right a small letter goes to the right of the number, like B621 and 621b. House left, letter left: house right, letter right is the rule. The final step is to mark the roads with block or entrance numbers at all entrances and all road contact points. Extended and far-reaching printed guide-board information, with a road map in pocket form, gives much better guide-board service than is possible on the arms of the country guide-boards. This being a decimal system, every block number shows the distance of the house or block, in blocks, from the commencement of the road, and by reading in a decimal point before the last figure of the number, the distance in miles is known; block 621 is 62.1 miles.

In the case of the State boulevards and avenues it might be well to make an exception and block them from the capital of the State, or the end nearest to it, and run the block numbers continually to the State line in all directions. The block numbers on all roads touching the capital would indicate the distance from the State House.

CHOOSING TREES FOR PARTICULAR EFFECTS.—No one but an expert familiar with local conditions would be capable of developing an effective, practical, working plan and setting of the stakes for each clump and each tree of each clump.

There are some of the Eastern hardwood forest trees that do not do well in the dry summer climate of California; but we have a goodly number that we know should do well if they have proper care. The eucalyptus family is one of the best, if not the very best. A clump of a dozen blue gums, after they have attained the growth of a half score of years, will begin to show a presence that will soon be a commanding feature of the landscape, and the longer they grow the more impressive would they be. Near them a clump of moderately tall growing poplar; then a few madrones, if they would grow as well as in the Santa Cruz mountains; then a straight string of five or six Lombardy poplars with plenty of space between the string and the clumps on each side. The sycamore is a beautiful tree and does well in most places about the bay of San Francisco. The California bay tree is attractive where it grows well. Would it do as well along the waysides as it does in the gullies and near the winter streams of the Contra Costa hills? One of our most beautiful clumps of trees is the chestnut oak, or tan-bark oak, as the trees grow among the Santa Cruz forests, with their star-like bunches of leaves which show up well for quite a distance. The redwood would do well in places, and the Monterey cypress and Monterey pine everywhere, but they should not be heavily pruned; and the native California walnut should not be overlooked. The pepper tree, with its spreading feathery top, is effective, but it will not stand much freezing weather when small. Some seedling fruit trees and olives which are not grafted or cut back for fruit would be effective, perhaps, also in some few places, an occasional clump of semi-tropical palms. The oaks are beautiful but slow growing, but by locating clumps of them near other trees which grow more rapidly the oaks could be given time to make a showing of their own. And there are others that a local expert would know about.

IS NATURE'S WAY.—This way of handling wayside ornamentation is more nearly nature's way than to go by the straight-edge and tape line. No one ever detected Dame Nature at work with these appliances, and her ways in such matters are more attractive and better worth following than man's. For myself, the variation of the scant but varied vegetation of the desert, where it attains a growth in places of ten or fifteen feet, is vastly more attractive than the dark and doleful, somber monotony of the famous magnolia avenue leading out of Riverside. The dense vegetation on either side affords about the same view of the distant landscape that could be had from the windows of a subway car. A few miles of that would answer for a lifetime. The suggestion that was made not a great while ago that the Camino Real be bordered on both sides with a hedge of roses extending all the way from San Diego to Fort Ross, was enough to give some people the nightmare. The thought of the monotony of such a road is depressing, and the dilapidated condition that would soon result unless a good many thousands were spent upon it each season, would add to the desolation. It would take a good cash payment to tempt me to travel many miles of such a road. Mention has also been made of rows of trees of a single variety for the wayside extending for a mile and substitute a different variety for each mile. That would be as beautiful as a pair of checker-board trousers. Surely nature is a better guide.

WHAT WOULD BE GAINED BY IT.—The advantages of handling the wayside ornamentation in the way here outlined are that in addition to its not being set and rigid and vastly more pleasing, it would afford the people traveling the road a very much better opportunity of seeing and enjoying the views from the road on both sides, than if the view were interrupted every few seconds by trees. Then the view of the trees on the wayside from the flat or sloping land below would add greatly to the attractions of the landscape which an unbroken double row of trees as far as could be seen would not do. The open spaces between the clumps would admit the sun and would keep the road track dry and serviceable longer and with less expense than it could be in the dampness of the winter shade. These bunches of trees, all of the same varieties, would partake of the nature of an arboritum and would make landmarks easily found and recognized, which would oftimes be a convenience in locating other objects. Even with good care trees sometimes die; when set according to this clump plan, the space from which this dead tree has been removed would hardly be noticed, whereas by the equal-distance plan a blank would be noticeable.



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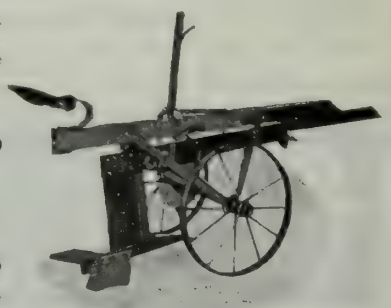
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The California Deciduous Fruit Crop.

Herewith we give the estimates made by our corps of correspondents on the several varieties of deciduous fruits as the conditions presented themselves on June 26. If this table is compared with the one printed a month ago, it will be noticed that but very few changes have been made as a whole. While some estimates have gone up, others have gone down, practically evening up matters.

We have left out the column pertaining to cherries and have added a column for table grapes. In our next report we expect also to include wine and raisin grapes.

In connection with the crop estimate, may be given the following figures which are said to be those paid by various dried fruit buyers at San Francisco on Wednesday, July 5: Peaches, 9 cents; new Muscatel raisins in sweatbox, 4½c.; prunes on 4½c. basis; apricots, 14c., and pears, 10 cents.

The buyer for one house states that his men are authorized to pay the following: Prunes 4 to 4¼c.; peaches, 8 to 8½c.; pears, 9 to 11c.; raisins, 4 to 4¼c.; apricots, 13½ to 14c.; and almonds: Nonpareil 16c., IXL 15c., Ne Plus Ultra 14c., and Langudoc 10½c. per pound.

Regarding the prune situation in Santa Clara county, there seems to be great variation of opinion, and we have been to some pains to get as clear a statement as possible. From various sources we have secured estimates, and the one given here perhaps sums up the situation as nearly right as possible. The gentleman writing it is a grower, also a man of affairs, and has given time to secure the very best information he could. His report states:

"It is a hard proposition to guess accurately at the fruit crop this year. But the gap is very wide between what the buying interests give out and what is estimated by conservative growers who have been around through the different districts.

"Two different buyers, who are inclined to be fair and are as competent, perhaps, as any, have told me their estimate of the prune crop of the valley was 60,000,000 to 70,000,000 pounds, dry. While the manager for one of our leading packing-houses in San Jose gave his estimate as 100,000,000 pounds. The latter party told me of a district where the prune crop was heavy. I knew the district averaged very large trees capable of a large tonnage. I investigated myself, and found a very light crop, with the exception of one orchard which had altogether too much on.

"To the unpracticed eye, in passing along the road and seeing the branches hanging down, one would think there must be a heavy crop. But on examining, one would find very few prunes. The branches were bent by former heavy crops, but for the past several years the trees have not been pruned as formerly and are drooping with the weight of foliage and surplus wood.

"Hundreds of acres of prune orchards have been taken out and put to other uses, as vegetable gardens and other fruits, etc., and hundreds of acres are in a debilitated condition from ravages of thrips, careless handling (largely on account of lack of crop of late years discouraging expenditure, etc.). Altogether, I am of opinion that the reports of the buying interests cannot possibly be true. With cling peaches, for instance—where I had 90 tons last year, I may have 10 tons this year, and the orchard is in fine condition. Apricots range from light to nearly nothing, with Moorparks and Hemskirks out of it altogether.

"I understand a certain firm, accredited with advising Eastern jobbing interests that they will be able to buy prunes on a 3½c. basis later, is now offering a 4½c. basis to growers."

WHAT THE FARMERS' UNION THINKS.

To the Editor: At the meeting of our Farmers' Union held Saturday, June 24, the article in your paper of June 17, "A Breeze Through the Prune Trees," by Mr. W. H. Schrader, was, at the suggestion of our president, read to the Union. The members were so much pleased with the story, and with the editor and manager for having it published, that they passed a vote of thanks for this your service to the orchardists at what they consider a critical time. The secretary was instructed to let you know of their act of collective thanks.

What specially appealed to their gratitude is that you took pains to try to get at the real truth of a confused situation, and to give the farmers a report that they could depend upon as being unbiased. They have a feeling that as papers have special facilities and training to thus sort out the truth, or highest probability, from contradictory news and rumors, that publishers ought in duty to so serve the farmers; but that the duty is often shirked or carelessly neglected. Therefore, when they see you do it well, the farmers applaud. The Union hopes that their expressed gratitude will encourage you to continue doing good work in that line.

WM. MCNAUGHT,
Morgan Hill. Secretary-Treasurer.

FRUIT CROP SHORTAGE IN SOUTHERN FRANCE.

Consul General A. Gaulin writes from Marseille, under date of May 29, as follows:

Reports from reliable sources indicate that, as a consequence of heavy spring frosts, the fruit crop this year in southern France will probably be one of the smallest recorded during the last decade. It is estimated that the apricot production of the own of Roquevaire, near Marseille, will not exceed 150 tons, as compared with a normal yield of 1500 tons. Similar reports come from the Chateaurenard, Etang de Berre and Aramon districts. It is also stated that the peach and almond crops have been almost entirely destroyed. The prune crop prospects, on the other hand, are fairly promising. It is too early to estimate the damage done to the olive trees.

The present situation favors the importation of American dried apricots, provided prices are suitable. A leading Marseille firm writes:

"We purchased from the United States during the last season 400 cases of dried apricots and 500 cases of prunes. Peaches are not imported, owing chiefly to the fact that they cannot reach this market at the proper time. As regards prunes, we would suggest that they be more carefully dried, because those of the 1909-10 crop deteriorated rapidly and were unsalable in the spring when the trade would have been most active."

Another importer submits that deliveries in France should not be made later than November. This dealer further states that prunes from Servia, owing to low prices, have lately been sold extensively in this market, which may eventually mean keen competition with the American product.

The direct imports of American fruit in Marseille during the calendar year 1910 were as follows: Prunes, 175 metric tons; other fruit (almost exclusively dried apricots), 44 metric tons. A large percentage went to points in the interior. There is practically no local importation of green fruit from the United States, but there is a growing though still unimportant demand in this district for California preserved fruit.

COUNTIES	Apricot Trees in Bearing	% of Full Crop	Pear Trees in Bearing	% of Full Crop	Peach Trees in Bearing	% of Full Crop	Prune Trees in Bearing	% of Full Crop	Apple Trees in Bearing	% of Full Crop	Acres in Table Grapes	% of Full Crop
Alameda	115,000	50	58,000	75	84,000	75	154,600	75	55,200	60	2,300	
Butte	7,545	30	13,199	70	133,638	90	84,405	95	12,137	80	25	65
Colusa	17,000		7,000		13,000		92,500		6,500		300	
Contra Costa	53,100	15	73,500	60	28,200	40	54,220	60	8,000	60	1,105	100
El Dorado	400		70,000	65	110,000	80	124,000	25	32,000	60	200	80
Fresno	145,600	50	.....	75	3,270,000	50	83,000	75	20,000	75	2,340	75
Kern	25,000	25	1,500	50	50,000	50	4,100	25	12,000	50	.....	
Kings	79,600	50	.....	90	386,200	75	6,860	50	500	100	.....	75
Lake	1,975		24,850		5,829		29,622		9,872		48	
Los Angeles	200,300	50	75,000		218,720	50	61,710		135,150		81	
Madera	10,000		.....		70,000		.....		11,000		135	
Mendocino	500		10,000	100	10,000	50	20,000	25	2,000	100	250	100
Merced	8,250	20	4,250		148,401	50	1,525		4,500		475	50
Monterey	25,000	100	6,200	70	9,500	100	3,350	50	70,000	65	150	90
Napa	17,000		69,120		107,880		91,180		45,000		.....	
Nevada	170	10	36,270	30	12,760	20	5,800	50	12,270	50	210	100
Orange	167,240	75	.....	60	38,350	90	17,320	80	12,795	30	.....	80
Placer	7,485		104,600	60	994,250	60	20,465	50	19,480		1,765	85
Riverside	66,317	80	12,151	50	45,293	80	22,138	60	5,087	75	311	85
Sacramento	20,000		220,000	65	65,000	85	100,000	90	16,000	75	6,500	100
San Benito	35,000		6,000		15,000		125,000		17,000		25	
San Bernardino	26,200	60	18,500	75	8,250	77	2,800	10	22,680	60	749	
San Diego	9,140		2,318		8,760		3,240		20,200		1,500	95
San Joaquin	70,540	50	25,425	100	235,130	50	47,815	50	20,500	30	.....	
Santa Barbara	21,450	75	1,215	90	6,325	60	1,250	60	9,450	100	8,526	80
Santa Clara	544,000	20	126,200		592,500	30	5,257,900	45	17,200		417	
Santa Cruz	56,440	95	14,286	75	10,594	80	99,096		590,878	75	249	75
Shasta	650		27,700	10	44,000	50	87,500	20	15,000	50	100	50
Solano	237,800	50	203,000	60	490,600	60	465,000	40	3,450	80	495	90
Sonoma	22,540	75	81,270	100	28,670	95	588,040	100	229,120		650	80
Stanislaus	9,050	75	3,620	100	50,410	40	7,190	100	4,372	75	162	
Sutter	4,804		11,309		130,854		39,922		4,700		130	100
Tehama	64,410		63,050	85	679,400	27	115,700	60	18,650	20	100	90
Tulare	32,075	25	3,287	60	348,170	40	137,935	50	13,320	75	5,825	50
Ventura	26,000	90	.....		7,800	100	19,000	100	8,100	70	.....	
Yolo	80,000	20	12,000		11,000	75	130,000	60	800		200	90
Yuba	18,750		14,450		69,555		5,055		7,250		.....	

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Making Butter in City Creameries.

Written for PACIFIC RURAL PRESS
By Mr. DUDLEY J. WHITNEY.

Coincident with the growth of the business of supplying milk to city customers, as was described in the PACIFIC RURAL PRESS of June 10, there has come another phase of the dairy and creamery business; the sending of cream from dairy to city on a large scale for manufacture into butter.

The business of running a creamery is divided into three parts: the gathering of the cream, the manufacture of the butter, and the selling of the manufactured product. Different creameries may have an advantage in one or more of these divisions, but lose in the third. The city creameries operated solely for butter-making probably have the advantage over many country creameries in the making and marketing of the butter on account of the large amount they handle and their nearness to the district of the greatest consumption. The probability is, however, that there is room for both city and country creameries and that neither will affect the business of the other to a great degree.

Creameries have two different methods of securing cream. The first and oldest method is to have the dairymen bring the cream to the creamery, the second is to send out a wagon or automobile and collect it at regular intervals. It is a singular thing that the two largest San Francisco creameries, The Western Creamery Company and the Central Creamery Company, which together make the far largest part of the butter manufactured in the city, employ these conflicting methods to secure their cream.

The Central Creamery receives cream from the dairyman direct, the dairyman doing the shipping from dairy to cars to city, paralleling the old method of having the dairyman deliver his own cream. The Western Creamery, on the other hand, employs receiving stations which collect cream and send it to the main point of the manufacture at Benicia. These stations extend from Point Reyes to Half Moon bay on the coast and from Woodland to Newman in the interior. The region drawn upon by the Central Creamery is of about equal extent. It is generally calculated that eight hours travel on the train is the limit from which cream can be profitably shipped.

When the receiving station is employed, the receiving station bears exactly the same relation to the individual dairyman as would a local creamery. A local creamery, however, often has difficulty in compelling a patron to furnish cream of sufficiently good quality, and cannot afford to lose any opportunity to buy cream. The management of a receiving station, however, can refuse to take poor cream, knowing that any loss of a customer in one place can be made up at another station and the cream supply kept constant. The disadvantage of this system is that the cream cannot be churned until sent to the central station, while a local creamery can make butter from it at once, which is a big advantage, especially in hot weather.

In making contracts for cream with individual shippers the Central Creamery agrees to pay a bonus for the best quality of cream, which is graded into three classes. Cream which is sweet and pure and under a slight definite degree of acidity is paid for at 2 cents above the contract price. Good sour cream is paid for at the contract price, and cream which is sour and not good is paid for like the class above, except that a complaint is sent to the shipper, and unless an improvement is made the contract is cancelled. This system seems to work well when cream is sent by large shippers from many places, although it has been tried in individual localities many times by different creameries without giving satisfaction.

By the system of receiving cream from so large a territory it is possible to keep the creameries running to near their capacity, as customers can be secured in any number, while creameries drawing from only a limited territory are unable to increase the amount of cream received to a very great extent.

This ability to secure large amounts of cream enables the expense of manufacture to be kept down more than when only small amounts are handled, the Western Creamery at the Isleton factory at Benicia making about 20,000 to 24,000 pounds of butter per day. The same economy of manufacture, of course, could be accomplished in any creamery that could obtain sufficient cream.

The buttermilk, being made in or near the city, has to be disposed of in a different method than would be the case in the country. In the creamery at Benicia the casein is extracted and sold and the whey used as hog feed. In the Central Creamery in San Francisco the demand for buttermilk for human consumption is large enough to take the whole output from the creamery at a good price.

In both creameries all transfer of cream from one point to another from the time it is emptied is done through pipes. The Central Creameries pasteurize all cream before churning, and use a starter for ripening, while the Isleton Creamery churns the cream as soon as it is reduced to the proper temperature, without pasteurizing, using a starter only when the weather is so cool that it is necessary. To remove the cream that sticks to the sides of the cans with the addition of a minimum amount of water the Central Creameries inverts the cans over steam, which condenses and removes practically all the cream, wasting none, an improvement over the usual method of rinsing into the cream vat.

The third and last part of the business, the marketing of the finished product, is where the city has the advantage over the country creamery, or the smaller ones, at least. Both concerns make, as do most creameries, regular brands of butter, for which there is usually sufficient demand at all times of the year to take the whole output, leaving little to be put into storage or sold on the open market. On account of being so close to the market and having such a large output, both concerns can act as their own wholesalers, saving expenses and giving more attention to the markets than would be done usually by an agent. The same system could, of course, be used with any creamery with a large enough output by having a branch office in the city. This is practically what is done by the Central Creamery, which has only one of eight factories in San Francisco, although the larger part of the butter is distributed from the central station.

Not all of the butter manufactured in the city is produced under the conditions described in this account, as a number of small creameries are in operation in San Francisco and around the bay. These are usually selling rather than manufacturing concerns. They sell a large amount of milk, cream and butter, making much of the butter from surplus cream which is not sold to customers, or simply finding it to their advantage to manufacture all the butter they sell at retail rather than purchasing it.

The Western Meat Company has also entered the business of manufacturing butter from cream shipped in from a distance, but as yet has not built up the business that can be expected later on.

The T. C. Creamery Company has purchased the interests of R. W. Davis in the Imperial Valley Creamery Company, a concern that controls several creameries in Imperial county.

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A Local Call for More Horses.

A warning is being sounded by a number of horsemen familiar with both the market and ranch conditions against the too small production of horses in this State in comparison with the large number of mules raised. The claim is made that unless the present system of things is changed California ranchers will soon find that they have a lot of old worn-out mares and a lot of mules on their hands, and but very few young mares from which they can rear either mules or horses.

Conditions regarding horses have changed very rapidly in the past few years, more rapidly than a person not in touch with all phases of the subject would appreciate, and if steps are not taken to remedy present tendencies in breeding, an ill effect will soon make itself felt.

One of the greatest forces affecting horse raising is the breaking up of the large public ranges, the other is the growth of small farming. Up to a few years ago one of the main sources of supply for the horse and mule market was the open range. The increased territory taken by the forest preserves has, however, decreased the range area, and much more of this land has been given over to cultivation, or sheep raising. This has been especially true with the better quality of land, and as a result the range horses put on the market are fewer and often of poor quality. The greatest production of mules was also from the ranges, or from large ranches which are now being cut up into small farms, and the mules are coming more and more from the smaller farm upon which formerly mostly horses were raised. With this greater production of mules on the small farms, the number of horses bred has naturally been correspondingly reduced.

As a result of these conditions two things should especially be considered: first, will the profit in raising mules justify their production on a large scale; and second, what will be the result of this breeding in future years?

The answer to these questions is that signs point to a fall in the price of mules and to such a decrease in the number of horses, or at least mares, that farmers may soon be compelled to import their stock at a high enough figure to hurt, or take scrub stock that is of little value.

While the prices of mules, as seen from the market reports in this issue of the Pacific Rural Press, is higher than that of horses of equal weight, all dealers report that the market has been dull for the past six months, while the demand for good horses has been exceptionally good. Good horses, too, will always be in demand, while mules may not be to the extent that they have been.

The market for mules is different than that for horses. For city use horses alone, except in rare instances, are wanted, and on the moderate sized ranch the horse is the animal desired. This leaves the mule for heavy gang work, mostly in the country, or for grading and traction work, and it is claimed that the great increase in the use of traction engines has crowded the mules in many places out of the running. The production of mules is keeping up with the production of the engines, but when the competition is felt strongly the mule and not the engine will get the worst of it. It is possible that mules will be as much in demand as ever, but present tendencies seem to point to the fact that the combination of traction engine and small farm will cause a fall in price that will bring the horse to a better relative price again.

On the other hand, horses do not feel this competition to any great extent, the only horse which has suffered from motor propelled vehicles being the cab and light driving horse, good specimens of which are worth more than they ever were before. The traction engine does not compete with the horse, and as the small farms increase in number there will be more good horses needed than ever before, and there will be good profit in having some to sell.

When a man has ten mares and breeds five to a jack and the others to a stallion he will have fillies enough to keep up his stock and have some to sell. If he breeds all to the jack, as there seems to be too great a tendency now, he will soon have only a lot of mules and some broken-down mares on his hands, neither of which are any good for the purposes of reproduction. If his neighbor is in the same fix, the only thing to do will be to import stock at a price that will make him wish that he had kept out of the mule business in the first place, and this is the danger that is facing the California rancher.

Enough stock should always be kept for the raising of horses to keep the number up, and this should always be of the best quality so that the standard breeding will improve, and the necessary mules bred from the other animals. If a mare is worth breeding to a firstclass mule, she should be of still more value for the production of a colt so that her blood would not be lost.

In regard to the kind of horses that will be in most demand in the future, dealers claim that they will be of two kinds: first, the heavy draft horse, and second the general purpose weighing 1200 to 1400 pounds. The far larger part of fine quality draft horses of 1800 pounds and over are imported from other States, although the California climate is unsurpassed for stock raising, and the prices for the extra few hundred pounds are much more than for any increase at lower weights. The demand is such that a sale is made almost immediately after arrival in the city, while there may be a delay in selling other grades. The use of auto-trucks may limit the demand somewhat, but not for a long time yet will they bring it below the supply.

The 1200 to 1400-pound horse should be of such a build that he can pull a good load and yet cover the ground rapidly. The city use is for delivery wagons, where there are many stops to be made. This weight will be in good demand on the farm, although the stronger and heavier the horse, as long as he is not too slow, the better the price.

Except for a good quality of driving horse the light-weight animal is not wanted to the extent that he was years ago. Pulling power is required more, and rather than keep a number of horses that can be used both to pull a plow and to drive in a buggy the farmer wants several large animals that can pull double the load of the old-time farm horse, and a buggy horse or an automobile that can cover the ground to town in half the time or less.

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J. J. GIBSON, Foreman.

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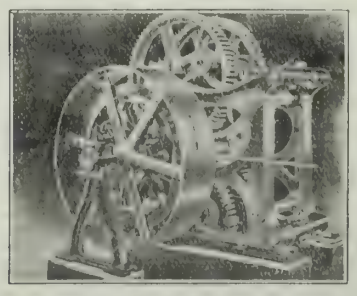
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VISALIA CO-OPERATIVE CREAMERY ASSOCIATION.

To the Editor: The Visalia Co-operative Creamery Association, Nels Beck, manager, is meeting with continued success and has the hearty support of the dairymen in the vicinity. They are making daily an average of 2500 pounds of butter, of which about 1500 pounds is sold in Visalia and local valley towns. About 1000 pounds of ice is manufactured daily, and used in the creamery and by its patrons. At present they have about 210 patrons, of whom 112 are members of the association.

For April cream the association paid patrons 23½ cents and members 24½ cents; for May cream they paid patrons 25½ cents and members 26½ cents per pound for butter-fat. Butter quotations in Los Angeles were 21 and 23 cents for April and May respectively. Mr. Beck is very appreciative of the benefits derived from the inspection of dairies carried on under the State Dairy Bureau. He says since J. H. Canham, State Inspector, has done systematic work in and around Visalia, the quality of cream received at the creamery has improved at least 25 per cent. The creamery building is modern and the equipment the latest and best, so arranged as to economically handle the large output. The association own and operate their own teams for gathering the cream daily, and have recently put on an autotruck that is proving a great success in every way.

Visalia. VISITOR.

DAIRY NOTES.

The Corcoran Creamery, operated by the Tulare Co-operative Creamery Association, paid good prices to patrons for the month of May—sweet cream 27 cents per pound, churning cream 25 cents per pound. Patrons delivering sweet milk for the condenser were paid 27 cents per is the local manager. They have an expound for butter-fat, with a bonus of 25 per cwt. for the skimmilk. D. M. Herrin cellent trade in pasteurized sweet cream and condensed milk; the churning cream is shipped to the central plant at Tulare and manufactured into butter. About 6000 pounds whole milk is delivered at the creamery daily.

Thirty-five dairymen and others responded to the call to complete the organization of a co-operative creamery at Corcoran. After lunch, served by the townspeople, the meeting was addressed by J. P. Murphy of Tulare, Nels Beck of Visalia and C. A. Starkweather, lately of Riverdale, upon the results of co-operation of the dairymen in the respective territories. Others spoke on the proposition pro and con. At the close of the public meeting members of the association met and elected a full board of directors and appointed the local bank as treasurer.

The management of the Golden Nugget Creamery of Crows Landing has announced that plans are being made for the opening of a butter-making plant at the Landing in place of pasteurizing the cream and shipping it away.

LIVE STOCK NOTES.

George Dixon, a cattle buyer of Portland, has bought and sent off from Merced and vicinity about 1500 cattle this season.

Fourteen carloads of cattle were sent to the San Francisco markets in one shipment from Porterville late last week, by Will Gill, John Hewey and several other stock raisers.

Callaghan & Moran of Livermore shipped 1500 spring lambs to the Western Meat Company one day last week. Other stockmen have also made heavy shipments recently.

Cattlemen for 30 miles around were the guests of John Waibel on his ranch on the Santa Ysabel, five miles east of Lick Observatory on the Fourth of July, at a barbecue. A similar celebration of the Fourth was held two years ago.

The annual roundup on the Mojave river has been completed, and the cattlemen report a very small loss of stock.

According to Leroy Anderson of the State Farm at Davis, fully 85 per cent of the money appropriated in 1909 for the purchase of stock was spent in this State. None of the $6000 appropriated for this purpose for 1911 has yet been spent.

The annual drive of cattle from the river bottoms along the San Joaquin to the Sierras began last week, and in many places is about completed. The drive began three weeks later than usual.

Horse Owners! Use
GOMBAULT'S
Caustic Balsam



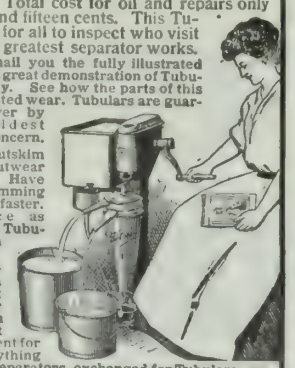
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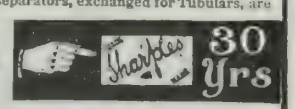
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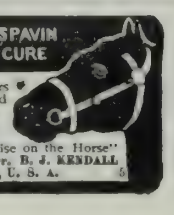
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DESIRABLE YOUNG HOLSTEIN COWS, cheap, for immediate sale; pedigreed Guernsey cows, heifers and a fine young bull, all of the Yeksa strain. Office, Bellavista Stock Ranch, 503 First National Bank Bldg., Berkeley, Cal.

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POULTRY DEPARTMENT.

Conducted By M. RUSSELL JAMES.

THE MIDSUMMER MONTH.

The special poultry work for July is keeping the young stock growing and the old stock in good condition. In California the dry season is now on, as the grasses and other unirrigated forage have become tough and dry. With the decreasing supply of green food the poultry raiser is met by an increasing demand for it among his fowls. On this important class of food depend the health and growth of the young stock and the health and egg-production of the hens. Fortunate is the poultry raiser who has provided himself with a poultry garden, and can now begin to use the outer leaves of the chard, stock beets, and kale for his poultry.

In our yards the stock beets of last season, after being regularly clipped of their foliage last summer and fall, put out a luxuriant growth of leaves this spring, which has furnished luscious green food for the fowls while the new planting was coming on. These old beets are large and crisp, and, with the green stalks and the small leaves still left on them, are fine for the yarded fowls. One or two of them fastened up on nails in each of the yards daily furnishes a supply of healthful food and employment for the fowls.

THE BREEDING PENS.

Next month is the proper time to set eggs for fall chicks, and now is the time to get the breeding stock in condition to furnish good hatching eggs. Cull the mated pens carefully and remove any bird therefrom that is not in condition. Be especially careful as to the condition of the male bird. If the breeders are active and have clear red combs, strong-germed eggs may be relied upon for the fall hatching. In the general care of the flock keep the quarters clean and free of all kinds of vermin, give the fowls an abundance of crisp green feed and pure, cool water, with plenty of hard grain and some cooked lean meat and the ever-necessary grit, shells and charcoal, also comfortable shade in the yards and damp, mellow soil to dust in, and the general egg supply will be plentiful and of good quality for at least two months yet.

THE YOUNG STOCK.

All the cockerels not intended as possible breeders should be marketed at from ten to twelve weeks old, but long before that age the sexes should be separated. There is no surer way of ruining the pullets and rendering them small, abortive hens than by letting them run with a lot of cockerels. Do not force the young stock. Feed generously, but let the food consist principally of hard grain and green stuff after the chicks are some eight weeks old. Pullets that are forced with stimulating foods will begin to lay early in the fall, and after laying a few eggs will go into a molt and be unproductive until January or February when eggs are on the decline. Let the pullets, and also cockerels intended for breeders, develop normally and first grow a strong frame and muscular body as a foundation for future permanent usefulness.

CHILL WINDS AND DRAFTS.

This is the season when the coast poultry keeper must be especially careful to have his fowls, both old and young, protected from chill winds and drafts in their roosting quarters. The germs of roup are started among unprotected young stock at this season, and often take on a chronic form of the disease which becomes fixed in the flock, and though not directly fatal to the fowls, it is fatal to any real profit from that flock.

Colds among fowls may be quickly and easily cured if taken in hand at their inception, which if left to take their course may develop into the worst form of roup. In feeding fowls and chicks, notice if the nostrils are dark. This condition is caused by the dust settling on the mucus incident to a slight cold. At that stage, to simply cleanse the nostrils and inject a drop of coal-oil in each, will be all that is necessary. At night go into the roosting quarters and litsen for any choking or hard breathing among the fowls. Cleansing the nostrils and administering a spoonful of oil—two-thirds sweet oil and one-third coal-oil—will very likely be all the doctoring the affected fowl requires. Where there is a tendency to colds in the flock, it is well to add a few drops of coal-oil to each bucket of drinking water. Be sure not to drop in too much. The faintest film over the surface of the water is all that is required, and not enough to make it at all distasteful to the fowls.

BEST DAILY RATION.

Prof. Wheeler, of the New York State Experiment Station, suggests a daily ration made as follows: Cracked corn, 1 lb.; wheat, ¾ lb.; cornmeal, ¾ lb.; wheat ½ lb.; fresh bone, ⅔ lb., and young green alfalfa, ¾ lb. This forms a ration containing 1 lb. of protein, 3¾ lbs. of carbohydrates, and ⅓ lb. of fat, and having a nutritive ratio of 1 to 4.6—that is, 1 lb. of flesh-forming food to an equivalent of 4.6 lbs. of heat and fat forming food. This daily ration should be sufficient for 100 lbs. live weight; that is, it would feed twenty 5-lb. hens or thirty-three 3-lb hens.

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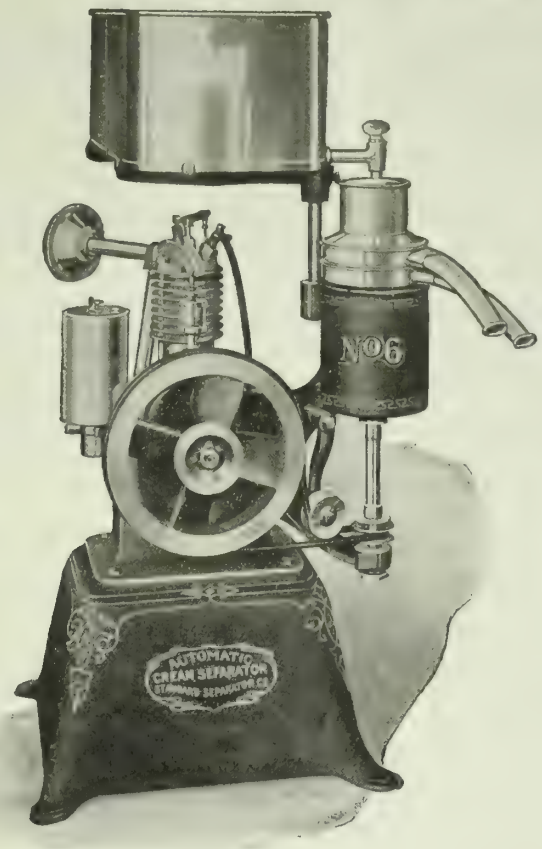
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For the half year ending June 30, 1911, a dividend has been declared at the rate of four (4) per cent per annum on all deposits, free of taxes, payable on and after Saturday, July 1, 1911. Dividends not called for are added to the deposit account and earn dividends from July 1, 1911.

GEORGE TOURNY, Manager.

The Home Circle.

A Mother's Face.

From ancient leather frame her eyes
Meet mine—eyes full of kindly light,
Just as of yore they stilled my cries
Of childish sorrow and affright.

The passing years have left no trace
Upon the dear face pictured there;
And, as I gaze, the same rare grace
Of smile her features seem to wear.

I sit again upon her knee,
And feel her hand in fond caress;
All that her presence was to me
Returns to make life's burden less.

I have grown old, but she remains,
Within the frame's encircling rim,
My Childhood's oracle, and gains
Each year a luster naught can dim.

When last I saw here there were lines
About her eyes, her cheeks were wan;
But memory's casket now enshrines
The pictured face I gaze upon.

And when my woman's heart doth yearn
To see again my mother's face,
From other pictured ones I turn
To this in ancient leather case.

—Helen M. Richardson.

The Life Prisoner.

The murderer was sitting in a dark cell in the deepest cellar of the great prison. Three times he had attacked the wardens. For the two first offenses he had been whipped, after the third he was placed in chains, and from that day he grew more sullen and desperate than ever.

Then the old director of the prison died and a new man came to take his place. The news of this spread among the prisoners and hope and fear took possession of their minds.

One day footsteps were heard outside the murderer's cell, the door was opened, the warden remained outside while another man entered. He was blinded by the darkness and at first he saw nothing, but the murderer saw him plainy enough. He stood up and glared at the intruder, a young pale man with almost transparent features. His eyes were blue and dreamy his hair blonde, as was also his curly beard. "The director," the rough voice of the warden outside announced. The murderer straightened himself a little more and the director stepped closer. His eyes had now adjusted themselves to the darkness and it was easily seen that the surroundings made an unpleasant impression upon him, but his voice was calm and gentle.

"You are convict number seven?"

"Yes, sir."

"You have been whipped twice for a very serious offense."

"Yes," the prisoner replied sullenly.

"You have been put in chains?"

The prisoner did not reply, but rattled his chains defiantly.

"I am the new director. You must not consider me your enemy, but rather your teacher."

"Teacher!" the prisoner repeated with a scornful laugh.

"Yes, teacher."

An impatient movement was heard outside.

"I want to treat you with kindness if possible. I consider that treatment more useful than whippings."

"Yes, sir;" replied the prisoner mechanically without understanding the director's words.

"Today is the first of October. I shall return on New Year's Day. If you have behaved well during the three months, I will give you something no prisoner has ever had before. Now try to improve."

The director placed his small white hand on the prisoner's shoulder and the unfamiliar touch of a kind hand made the prisoner's knees tremble.

The director left, the door was locked, the sound of his steps died away in the hall.

The prisoner's first thought was a touch of emotion, the second of hatred, because here was a man he felt would prove stronger than himself, the third and last was the question: "What did the director mean when he said he would give me something no prisoner ever had before."

He tried to find an answer to this question for days, weeks and months. He thought of all the things not to be found in prison. A looking glass? He had not seen his own image for years, but prison life had made him lose every trace of vanity.

A flower? There had been a time when his highest wish had been to get a flower in a pot that he might take care of it and watch it growing—but now he no longer cared for such a thing.

At last he thought that there was nothing in particular that he was longing for, and he was from now on only curious to see what the director might give him.

With his fingernail he scratched a mark on his bench for every day that passed and one day he discovered that it was New Year's Day. He had been as quiet as possible since the first of October and his mind had been entirely occupied with speculations as to what he was to get.

He trembled at the thought that there might be something to be said against him, that he should never know what the director had planned to give him.

At noon he heard steps on the stairs, and steps were as words to him, so acute had his sense of hearing become. He plainly recognized the steps of the warden and the director, but there was another sound he did not understand, a kind of light tripping which filled his heart with strange forebodings. Long before the steps reached his door he was already standing at attention. The blood was hammering at his temples and his heart beat violently.

No, they stopped outside. The door slowly opened screechingly on its hinges and the director entered.

"Have you behaved well during the three months since I was here last?" he asked.

"Yes," he answered in a voice that trembled a little.

"You remember I promised you a reward?"

He had barely strength to answer. If he remembered? He who had thought of nothing else for three months.

"Now you are to have it."

The murderer trembled all over. The director whistled and a small black poodle came in, slowly, cautiously as if it feared a trap.

"That is for you," the director said.

The murderer looked at the director and there was a gleam of suspicion in his eyes as he asked. "How long am I to keep it?"

"As long as you treat it well and behave well."

The director saw the light of a great joy in the convict's eyes, but he said nothing.

The door was barred again and the prisoner was alone with his new comrade.

For a long time they stared at each other. He was afraid to call the dog because he had a feeling it would not obey him, but at last he tried. The poodle came slowly and at last stood quite close to him. He got courage to pat its head. It placed its front paws on his knees. He nearly tumbled over from the shock, but he recovered and patted the dog with both hands. The dog jumped on his lap and licked his forehead and eyes until the murderer burst out crying.

From that day there were no more complaints about convict number seven, though he sat in the cell for six years longer.

When he died the dog was set free, but it cared for nobody. It laid down on the murderer's grave and refused to eat and drink. It died rather than live without the only friend it had known since it was a small puppy.—Wellington Hope.

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Out of the eyes of a hundred flowers.
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DESCRIPTION OF BREEDS.

The White Leghorn—It is estimated that 90% of the egg farms of the country are stocked with this breed. Though the egg average is about the same as with the other varieties of Leghorns, there are certain points wherein the White Leghorn excels in commercial egg-production.

First, it is a pure breed. Poultry authorities affirm that so far as known no foreign blood or crosses have been used in the production of the Single Comb White Leghorn. For this reason it is much easier to keep this breed to true type and to retain its desirable characteristics in the careless breeding more or less common on large commercial lines. Though, perhaps, the point of greatest importance in egg farming is the fact that the egg of the S. C. White Leghorn is a chalky white in color and runs more uniform in size and color than that of any other breed. This is due to purity of origin. Of course, if the egg farmer allows mix-ups and crosses in his flock, this uniformity so desirable in first-class market eggs will not prevail.

That the White Leghorn is the best market fowl among the Leghorns with the exception of the Buff Leghorn, which is equally good, is another point of excellence in this variety. As a squab broiler the White Leghorn is rated among the first, and some of the Kansas City packers say that where a small carcass is required the White Leghorn hen is the equal of any fowl.

The general standard Leghorn points apply to this variety, while the plumage must be pure white throughout, including quills. The disqualifications for show purposes are "red covering more than one-half the earlobes in cockerels and pullets; feathers other than white in any part of the plumage; shanks other than yellow."

The Rose Comb White Leghorn differs from the Single Comb only in having a low thick comb covered with small round points and ending at the back in a straight spike. This variety was produced by crossing the Single Comb White Leghorns on White Hamburgs.

Mark Twain's Blue Jay.

When I first begun to understand jay language correctly there was a little incident happened here. Seven years ago the last man in this region but me moved away. There stands his house—been empty ever since, a log house with a plank roof, just one bog room and no more; no ceiling, nothing between the rafters and the floor.

Well, one Sunday morning I was sitting out here in front of my cabin with my cat taking the sun and looking at the blue hills and listening to the leaves rustling so lonely in the trees and thinking of the home way yonder in the States, that I hadn't heard from in thirteen years, when a blue jay lit on that house and says, "Hello, I reckon I've struck something."

When he spoke the acorn dropped out of his mouth and rolled down the roof, of course, but he didn't care; his mind was all on the thing he had struck. It was a knothole in the roof. He cocked his head to one side, shut one eye and put the other to the hole, like a 'possum looking down a jug; then he glanced up with his bright eyes, gave a wink or two with his wings—which signifys gratification, you understand—and says, "It looks like a hole, it's located like a hole, and blamed if I don't believe it *is* a hole."

Then he cocked his head down and took another look; he glanced up perfectly joyful this time; winks his wings and his tail and says, "Oh, no, this ain't no fat thing, I reckon! If I ain't in luck—why it's a perfectly elegant hole!"

Then he flew down and got that acorn and fetched it up and dropped it in, and was just tilting his head back with the heavenliest smile on his face, when all of a sudden he was paralyzed into a listening attitude, and that smile faded out of his countenance like breath off'n a razor, and the queerest look of surprise took its place. Then he says, "Why, I didn't hear it fall!"

He cocked his eye at the hole again and took a long look; raised up and shook his head; stepped around to the other side of the hole and took another look from that side; shook his head again. He studied awhile, then he went into the details—walked round and round the hole and spied it from every point of the compass. No use. Now he took a thinking attitude on the comb of the roof and scratched the back of his head with his right foot a minute, and finally says, "Well, it's too many for *me*, that's certain; must be a mighty long hole. However, I ain't got no time to fool around here, got to 'tend to business. Reckon it's all right—chance it anyway." So he flew off and fetched another acorn and dropped it in and tried to flirt his eye to the hole quick enough to see what became of it, but he was too late. He held his eye there as much as a minute, then he raised up and signed and says, "Confound it, I don't seem to understand this thing no way; however, I'll tackle her again."

He fetched another acorn and done his level best to see what become of it, but couldn't. Then he began to get mad. He held in for a spell, walking up and down the comb of the roof and muttering to himself and shaking his head; but his feelings got the upper hand of him presently and he broke loose and cussed himself black in the face. I never saw a bird take on so about a little thing. When he got through he walks to the hole and looks in again for half a minute, then he says, "Well, you're a long hole and a deep hole and a mighty queer hole altogether, but I've started in to fill you, and I'm a duffer if I don't fill you."

(Concluded Next Week.)

Curious Trees.

Among the curiosities of tree life is the "sofar" or whistling tree of Nubia. When the wind blows over this tree it gives out flutelike sounds, playing away to the wilderness, for hours at a time, strange, weird melodies. It is the spirits of the dead, the natives say, but the scientific white man says that the sounds are due to a myriad of small holes which an insect bores in the spines of the branches.

The weeping tree of the Canary Islands is another arboreal freak. This tree in the driest weather will rain down showers from its leaves, forming a pool at the foot of the trunk. The natives gather up the water and find it pure and fresh. The tree exudes the water from innumerable pores at the base of the leaves.

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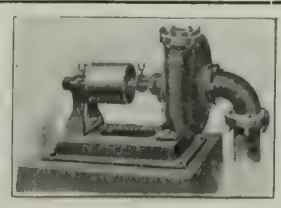
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Mention Rural Press.

THE MARKETS.

San Francisco, July 5, 1911.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

All grain prices are more or less nominal at the moment, as the city markets were closed from Saturday to Wednesday. All grades of wheat remain steady at the former figures, and there is no very active demand in any quarter. A price of $1.35 to $1.40 is quoted at some outside points.

California Club	$1.45 @1.50
Sonora	Nominal
White Australian	1.55 @1.65
Northern Club	1.52½@1.55
Northern Bluestem	1.65 @1.70
Northern Red	1.55 @1.65

BARLEY.

New barley is coming forward more freely, and while brewing barley is still quite firm, feed is a little easier. So far no export shipments have been made from the new crop, but there is a fair movement in this market.

Brewing and Shipping	$1.52½@1.55
Choice Feed, per ctl	1.25 @1.27½
Common Feed	1.22½

OATS.

There has been no trading of any consequence for the last week and there is no great demand locally. Some new stock is coming out, and a price of $1.25 is obtained at Sacramento valley points. Local prices show no change.

Red Feed	$1.37½@1.42½
Gray	Nominal
White	Nominal
Black Feed	1.20 @1.50

CORN.

Corn remains dull as formerly quoted with very little interest on the part of buyers.

Cal. Small Yellow	$1.75
Eastern Yellow	1.55
Eastern White	1.55

RYE.

This grain is dull and nominal, with small offerings and limited demand.

Rye, per ctl	Nominal

BEANS.

Prices on all descriptions stand at the same level as a week ago. The tone of the market, however, is better than it has been for some time past. Local dealers report a material increase in the demand for most varieties during the last week, and there is more firmness on everything but limas, on which dealers apparently are taking a bearish attitude. The demand for limas at present is naturally limited, but the supply has been greatly reduced even within the last month, and will no doubt be entirely exhausted before the new crop can be shipped. Opening prices will be named for this year's crop within the next week and an active movement of futures is expected. The larger part of the lima acreage is controlled by the Association and the new crop has been estimated at about 1,200,000 bags. Local dealers who have visited the bean district in the interior of the State say the growing crop is in splendid condition.

Bayos, per ctl	$3.90 @4.00
Blackeyes	7.00 @7.25
Cranberry Beans	3.75 @4.00
Garvanzos	2.85 @3.25
Horse Beans	3.25 @3.50
Small Whites	3.40 @3.50
Large Whites	3.25 @3.40
Limas	6.25 @6.35
Pea	4.25
Pink	4.75 @5.00
Red Kidneys	6.25 @6.50

SEEDS.

The dullness continues, little attention being given to any description. Prices show no change.

Alfalfa	Nominal
Broomcorn Seed, per ton	$25.00
Brown Mustard, per lb	5½c
Canary	3½@ 4 c
Hemp	3½@ 4 c
Millet	3 @ 3½c
Timothy	Nominal
Yellow Mustard	5¾c
Dried Peas, per ctl	3.75@ 4.00

FLOUR.

Prices remain as before. This market shows little feature, the general demand being well sustained.

Cal. Family Extras	$5.40 @5.80
Bakers' Extras	5.40 @5.80
Superfine	4.50 @4.70
Oregon and Washington	4.60 @4.80

Hay and Feedstuffs.

HAY.

The local market has been very dull owing to the holidays, but a little more interest is expected from buyers from now on. Arrivals have been about the same as last week. A few more cars of new hay are coming in every day, but dealers are not satisfied with the prices obtained, claiming that local values are still below those in the country. Trading in the country is said to be mostly on fancy lots, and prices are not yet very definitely established, though the growers are pretty firm in their ideas, and seem in no hurry to sell. In quality the new hay is better than the average of last year. Alfalfa is quiet, both sales and arrivals being small.

Choice Wheat	$13.50@14.50
Good Wheat Hay	10.50@12.00
Other Grade Wheat	8.00@10.50
Wheat and Oats	8.00@11.50
Tame Oats	8.00@11.50
Wild Oats	6.50@ 9.00
Alfalfa	8.00@11.00
Stock Hay	5.50@ 6.50
Straw, per bale	35@ 50c

FEEDSTUFFS.

A few descriptions have been marked down a little, owing to increased offerings. Most lines, however, are steady as before, with a good demand, and bran, shorts and middlings are firm.

Alfalfa Meal, per ton	$16.00@18.00
Bran, per ton	28.00@29.00
Cocoanut Cake or Meal	26.50@27.00
Cracked Corn	34.00@37.00
Middlings	34.00@37.00
Mixed Feeds	29.00@32.00
Rolled Barley	26.50@27.50
Rolled Oats	28.00@30.00
Shorts	27.50@31.00

Garden Truck.

VEGETABLES.

Very few changes have occurred in the market this week. Onions stand about as before, but supplies have been accumulating more or less and the market easier. Trading in miscellaneous vegetables has been of a holiday character, and while most lines have been cleaned up well enough to maintain prices, a few varieties have accumulated and are hard to move even at liberal concessions. The shipping demand has aided the market materially. The canners are taking no further interest in asparagus, which is offered as low as 30 cents per box, with comparatively little demand. String beans are a drug on the market, being hard to sell at 1 cent per pound. Green peppers are lower and green corn from outside districts is plentiful and easy, though bay stock brings a premium. Tomatoes are offered in larger quantities, but with a good demand prices are well maintained.

Onions: New Red, sack	$ .75@ 1.00
Yellow, ctl.	1.40@ 1.60
Garlic, per lb	3@ 4c
Green Peas, per sak	1.25@ 2.00
Tomatoes, per crate	60@ 75c
Cucumbers, per box	65@ 80c
Cabbage	1.00
Carrots, per sack	1.50
Rhubarb, per box	1.00@ 1.25
Cauliflower, per doz	50c
Asparagus, per box	30@ 1.00
String Beans, per lb	1@ 3c
Summer Squash, per box	50@ 65c
Okra, per lb	8@ 10c
Green Corn, per sack	1.75@ 2.50
Eggplant, per lb	7@ 10c
Green Peppers, per lb	6@ 10c

POTATOES.

A few sweet potatoes have arrived this week from southern California, and brought fancy prices. The potato market at present is supplied with river stock almost exclusively. There has been a good demand for shipment, and so far supplies have been rather light, but prices are a little easier, only fancy boxed stock being held at the former level.

River Whites, per ctl	$ 2.25@2.60
Early Rose	2.15@ 2.40
Sweet Potatoes, per lb	6@ 7c

Dairy Produce.

POULTRY.

Prices show no improvement this week. Four cars of Eastern have arrived, and one was held over from last week. There was little if any extra buying for the holiday, and while local stock is not arriving in as large quantity as before the market shows little improvement.

Large Broilers	$ 3.00@ 3.50
Small Broilers	2.00@ 2.50
Fryers	4.50@ 5.50
Hens, extra	8.00@ 9.00
Hens, large	5.00@ 6.00
Small Hens	4.50@ 5.00
Old Roosters	4.00
Young Roosters	6.00@ 7.00
Young Roosters, full grown	8.00@ 9.00
Squabs	2.00@ 2.50
Geese, per pair	2.00@ 2.50
Ducks	5.00@ 7.00
Turkeys, live, per lb	Nominal

BUTTER.

Extras have ruled a little stronger this week than last, though lower grades are unchanged and conditions remain about as before. A large amount of the arrivals is being shipped out or stored, keeping the market steady to firm.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	.22	22	22	..	..	22
Prime Firsts	.21	21	21	..	..	21
Firsts	.20	20	20	..	..	20
Seconds	.19	19	19	..	..	19
Packing Stock	.17½	17½	17½	..	..	17½

EGGS.

Extras have taken quite a jump, and some advance is noted in firsts and selected pullets. Prices are advancing all over the country, marking the end of the movement into storage. While this market is dull and arrivals are above requirements, heavy shipments to Los Angeles have taken up the surplus.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	.23	23½	23½	..	..	24½
Prime Firsts	.21	22	22	..	..	22
Firsts	.20	20	20	..	..	20
Seconds	.17	17	17	..	..	17
Selected Pullets	.19½	19	19	..	..	19½
Eastern	.15	15	15	..	..	15

CHEESE.

New local flats and Monterey cheese are both lower, with liberal offerings and a quiet demand. New Y. A.'s are a little stronger.

Fancy California Flats, per lb	12½c
Storage	14 c
Firsts	12 c
New Young Americas, fancy	14 c
Monterey or Jack Cheese	12@12½c

Deciduous Fruits.

FRESH FRUITS.

Local trading has been of a quiet holiday character, though there is a little more demand since the Fourth. The shipping demand, however, has been quite a feature and has prevented any excessive accumulation. Watermelons show some reduction, though the demand so far has about kept up with arrivals. Large shipments of cantaloupes have come in of late and lower prices are expected. Strawberries are steady, but other descriptions are offered very freely and prices show considerable reduction. Cherries are rather easy, but not quotably lower, while apricots are lower, with larger supplies. Ripe stock, however, finds a very good demand. Plums are lower, while peaches are steadily held. Figs are in good demand at former prices.

Watermelons, per lb	2c
Cantaloupes, standard crate	$ 1.50@ 1.75
Raspberries, chest	5.00@ 6.00
Loganberries, chest	2.00@ 3.00
Blackberries, chest	3.00@ 4.00
Strawberries, Banners, chest	5.00@ 6.00
Longworth, chest	6.00@10.00
Large varieties, chest	4.50@ 6.00
Cherries, Black, lb	6@ 9c
White, lb	3½@ 5c
Royal Anne, lb	6½@ 8c
Apples, New, box	1.00@ 1.75
Apricots, crate	85@ 1.00
Apricots, box	60@ 75c
Peaches, box	50@ 85c
Plums, box	75@ 1.00
Currants, chest	7.00@ 9.00
Figs, box, double layer	1.00@ 1.50

Dried Fruits.

The movement around the country continues quiet, though a little more trading is being done than last week, as some packers are offering somewhat better prices for certain varieties. In the consuming markets there is a rather stronger feeling, as buyers are beginning to appreciate the shortage, though there is still some disposition to wait until the fruit is actually needed. There is also a material increase in the inquiry for export stock, especially for prunes. Old prunes are no longer quoted, as stocks in first hands are entirely cleaned up, and there is a somewhat stronger feeling on futures. Peaches are also firmer, with a slight advance in the offers made for both old and new stock. The old crop seems to be about cleaned up. Evaporated apples are also a fraction higher. Old raisins are moving off slowly and there seems to be considerable difference of opinion as to the amount left in growers hands. Outside buyers are paying little attention to old stock, and nobody is buying new muscatels to any extent, owing to the uncertainty of the outlook. Growers show no anxiety to sell, holding firmly at more than packers will pay at present. Seedless raisins are in strong demand, but no great amount of business is reported. The New York Journal of Commerse says:

"The market for future prunes has taken on a firmer tone of late, which is attributed to the renewal of demand from Europe for the large sizes, of which it is believed the foreign consuming markets stand much in need. Europe is also reported to be seeking the large sizes in Oregon Italian prunes and offering better prices than the home trade is disposed to pay. Very few packers are in the market with offerings and they are asking 5 cents f. o. b. Coast bag basis for October and 4¾ cent basis for November shipment.

"There is an easy market for future peaches and apricots, due to lack of demand. Raisins are also neglected and the market for fancy seeded for October shipment out of the 1911 crop is in buyers' favor, though nothing is offered so far as can be learned below 7½ cents f. o. b. Coast for 16-ounce cartons. A number of packers are still holding for 8 cents f. o. b. Coast."

Evap. Apples, per lb., 1911	8¾@ 9½c
Apricots, new crop	14 c
Apricots, new crop	14 c
Figs, white	5 @ 7½c
Peaches, Spot	8 @ 8½c
New crop	9¼@ 9¾c
Prunes, 4-size basis, new crop contracts	4¼@ 4½c
Pears, new crop	8½@10 c
Raisins—	
Loose Muscatels, in sweatbox	4 @ 4¼c
1911 crop	4 @ 4¼c
Thompson Seedless	4½@ 4¾c
Seedless Sultanas	4¼@ 4½c

Citrus Fruits.

The Eastern auction markets on oranges and lemons have been lower the past week, but the intense hot wave the first of this week will doubtless make prices on lemons soar. On Monday, July 3, at New York 33 cars of Valencias were sold, and prices averaged from $2.30 to $4.20 per box. Sweets averaged about $2 per box and seedlings brought the same prices. Lemons sold for from $2.50 to $4.50.

The same day at Boston valencias sold for $2.85 to $3.35, lemons $2.15 to $4.15. At Philadelphia auctions valencias brought $2.65 to $3.20, lemons from $2.90 to $3.15.

The Pacific Coast Fruit Auction Company states that their last sale for the season was held at Los Angeles on June 30. They expect to open again next November.

Total fruit shipments for the season to July 2 were 32,675 cars of oranges and 5142 of lemons, as against 22,549 cars of oranges and 3546 cars of lemons to same date last year.

The citrus fruit market is quiet and uninteresting at present, trading being of a small routine character and more or less inturrepted this week by the holiday. Valencia oranges are quite plentiful, but prices are steadily maintained and lemons and grapefruit are firm at the recent advance.

Tangerines	Nominal
Choice Lemons	3.50@ 4.50
Valencias, choice to fancy	2.25@ 3.00
Fancy Lemons	4.50@ 6.00
Standard	2.50@ 3.00
Limes	6.00@ 6.50
Grapefruit	2.50@ 3.50

Nuts, Honey, Hops, Etc.

NUTS.

The prices quoted are entirely nominal, as there is no old stock left in first hands, and the only movement of spot goods is in a very small jobbing way. So far, no prices have been established on futures, but almonds are certain to be extremely high, as the crop is short all over the world. The southern walnut crop so far looks very good, and conditions are favorable for fairly high prices, the market being closely cleaned up at present.

Almonds—	
Nonpareils	16½@17 c
I X L	15½@16 c
Ne Plus Ultra	15 @15½c
Drakes	12 @14½c
Languedoc	12 c

Hardshells	8	@	8½c
Walnuts—Softshell, No. 1			15 c
Standard			14½c
Softshell, No. 2			11 c
Budded			17½c

HONEY.

Supplies in this market are not very heavy and the movement is slow, though large shipments have been made from producing districts to the East. Water-white comb is bringing about 15 cents locally. No low-grade stock has been offered here so far.

New Extracted, White, per lb.	8	@	9 c
Comb, White	12	@	15 c

BEESWAX.

The demand is very moderate, but supplies also are light and prices are steadily held as last quoted.

Light	28	@	32 c
Dark	23	@	26 c

HOPS.

Prices show no further change, but the market is still very firm, and some growers are waiting for a further advance. Foreign crop reports are poor, and there is little old stock anywhere. That in this State is very closely cleaned up, and the quotation is little more than nominal.

Hops, 1910 crop	25	@	30 c
1911 crop	22	@	25 c

Live Stock.

The only change in price is a slight advance in hogs, both live and dressed. The firmness is due rather to small arrivals than to any great demand here. Beef stock is coming in from various parts of the State, but prices are well maintained.

Gross weight:			
Steers: No. 1	5¼	@	5½c
No. 2	5	@	5¼c
Cows and Heifers: No. 1			4½c
No. 2	4	@	4¼c
Bulls and Stags	2½	@	3½c
Calves: Light			6½c
Medium			6 c
Hogs: Grain-fed, heavy			6½c
150 to 250	6¾	@	7 c
100 to 150 lbs			6¾c
Small prime wethers	4½	@	4¾c
Large prime wethers	4½	@	4¾c
Ewes	3¾	@	4 c
Lambs	5	@	5¼c

DRESSED MEAT.

Steers			9 c
Cows			8 c
Heifers			8 c
Veal, large			9½c
Veal, small			11 c
Mutton: Wethers			9 c
Ewes			7½c
Lambs			10½c
Hogs, dressed	10½	@	11½c

WOOL.

The situation is still very uncertain and local buyers are inclined to hold off a little longer before entering the market. There has accordingly been very little trading of late, and prices remain nominally as before.

Spring Clip—			
Choice Southern, Year's staple	10	@	12½c
7 months	8	@	11 c
Lambs	5	@	7 c
Northern, year's staple	14	@	16 c

HIDES.

There has been an unusually good demand for several weeks past, and a further advance is noted this week in several discriptions.

Heavy Steers, over 56 lbs			12½c
Medium			11½c
Light Steers, under 48 lbs			11 c
Heavy Cows, over 50 lbs			11 c
Light Cows, 30 to 50 lbs			10 c
Kip			13 c
Veal	16	@	16½c
Calf			16½c
Dry—			
Dry Hides	18	@	19 c
Dry Bulls			16 c
Dry Kip, 10 to 15	18	@	19 c
Dry Veal, 5 to 10			20 c
Dry Calf, 7 down	23	@	24 c
Sheep Skins—			
Long Wools	$ 1.00	@	1.25
Medium Wool, 6 to 9 mos	75	@	90c
Short Wool, 3 to 6 mos	40	@	65c
Lambs	35	@	60c

HORSES.

Prices show no particular change, and the market is running about the same as for some time past. Drafters for city use are not very plentiful and there is a ready market at full quotations for all that are offered, while lighter horses and defective stock are hard to dispose of in this market.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	190@240
Wagon Horses, 1250 to 1350 lbs.	140@180
Delivery Horses, 1050 to 1250	100@125
Desirable Farm Mares	100@125
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

WINTER FEED FOR COWS.

Some of our readers, especially those in the northern counties, may take a hint for winter forage from the experience of an Oregon dairyman as reported by him in the Rural New Yorker. He says:

I have grown rye and vetches and have been disgusted with it on account of stock refusing to touch the rye after it had been headed out. The past year, on the advice of a friend, I left it until the rye was ripe and cut it for hay, with the result that stock ate it up clean.

For soiling I am well pleased with hulless barley instead of rye to sow with the vetches, in both cases using Winter oats in the mixture. The first cutting which I make very early will contain little of the oats which have made too small a growth to be touched by the mowing, while the second mowing will be largely vetches and oats. I have sometimes thought that the rye and barley were injured by frosts when the freshly cut stems were exposed to it. My own practice is to sow land plaster on the ground as fast as the grass is taken off, which greatly increases the second cutting. Those who sow vetch should remember that land plaster will greatly increase the crop on ordinary land. I have had no experience on poor land. Last fall I sowed quite a sprinkling of rape in my vetches and rye, as a plot of it used the past year was so satisfactory. I was surprised to see how greedily the cows ate the leavings from a lot of rape straw that I had thrashed the seed from. It was cut with a mower early in the day and immediately bunched in small bunches to prevent the horses from tramping out the seed on the next round. The seed was beaten out by hand on a sheet, and the straw piled up again. The cows, although having a full feed of vetches and oats, would eat this rape straw all but the very coarsest stalks.

FEEDING CHICKS.

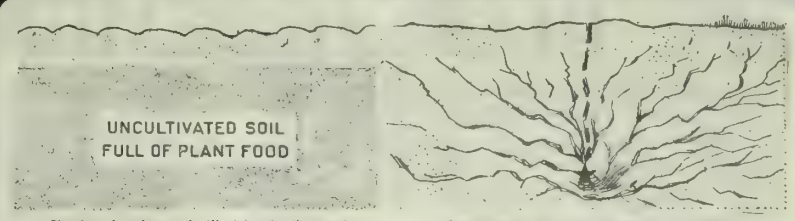
A series of brooder feeding experiments in case of incubator chicks, conducted at the Rhode Island Experiment Station, gave the following results:

A flock of 46 chicks fed on egg, liver and green food, reached a death rate of 63.7%, of which 85.8% per cent showed bowel trouble.

A flock of 58 ducks, fed on grain exclusively, showed a death rate of 32.7%, of which 76.5% had digestive troubles.

A flock of 63 chicks, fed on grain and green food, all animal food being withheld, showed a death rate of 9.4%, of which 75% had digestive disorders.

A flock of 52 chicks, fed a complete and balanced ration, including "infertile" eggs, liver, cracked corn, wheat, and barley and green food in the form of oat sprouts and chopped onions, had a death rate of 3.9%, and not one chick showed digestive disorder.



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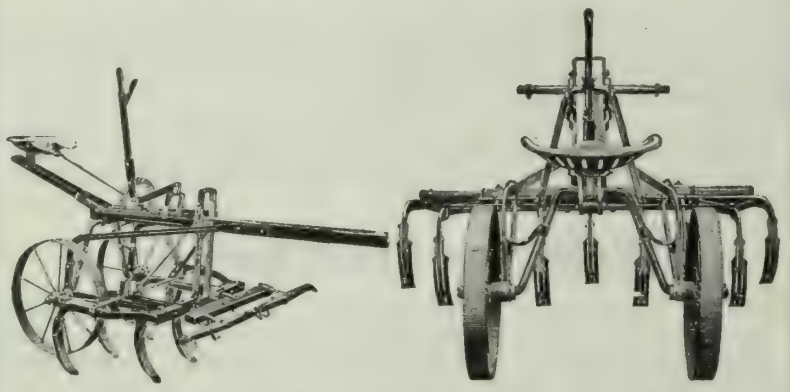
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Nineor	9 teeth	5 feet	308 lbs.	390 lbs.	8
	Pole		32 lbs.	32 lbs.	1

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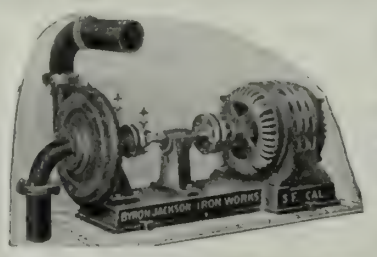


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THE PACIFIC RURAL PRESS

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Inspection of Dairies for City Milk.

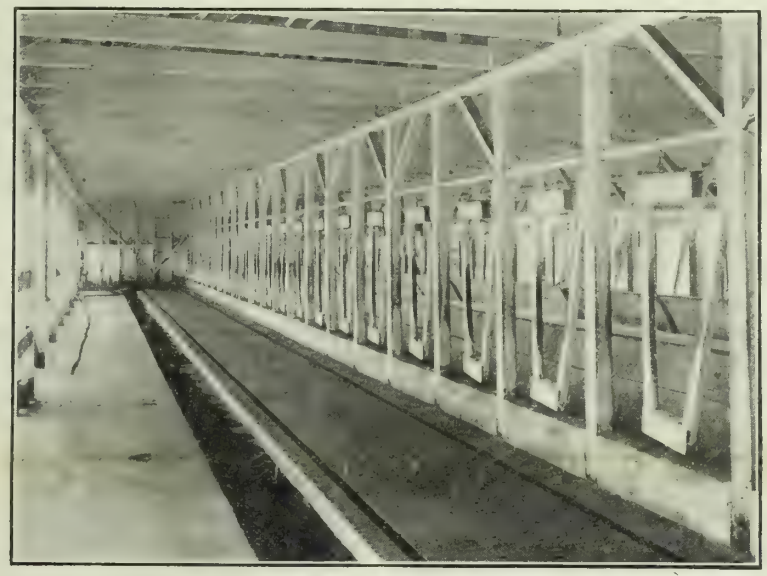
Written for the PACIFIC RURAL PRESS by Mr. DUDLEY J. WHITNEY.

In the construction of the dairy barn and milk room, when milk is produced for direct consumption or for butter, two main ideas should always be kept in mind convenience and comfort for dairymen and cows, and purity of milk. It is this proper construction of barn and milk-house and the proper equipment and management of the same that calls for the inspection of dairies supplying milk for direct consumption.

WHAT MAKES MILK BAD.—The value of milk, aside from the amount of butter-fat it contains, depends entirely upon its freedom from contamination. Milk, more than any other food, will absorb odors and gather in bacteria. The bacteria will increase with great rapidity when once introduced, injuring the flavor and palatability of the milk, and often making it unwholesome and unfit to use. This is especially true for infants and young children, whose digestion is more easily upset than that of adults.

The bacteria that may gain access to the milk are of two different classes. The first are lactic acid germs, which cause souring. These are found floating in the air and in practically all places and some will always be present, even with the best of care. They are not ordinarily injurious to the health, but cause the milk to sour rapidly if present in too large quantity and prevent a ready sale. No one wants to drink sour milk, or have it sour right after buying, and their introduction should be prevented as much as possible. Their presence in large quantity also gives evidence of careless handling and the possibility of worse germs being present.

The second class of bacteria which may gain easy access to milk are those which cause decomposition and decay. They come mainly from hay dust, stable manure, and dust and dirt of all kinds, while lactic acid bacteria may come from harmless sources. Usually these bacteria do not cause the milk to sour, but give it a slightly bitter, unpleasant taste and make it unwholesome. Their presence is very injurious and is objected to by health boards, butter and cheese-makers, and everyone else. A butter-maker, for instance, can make good butter from sour cream, but he cannot from cream in which this class of germs is present in large quantity. These germs cannot be removed after dirt has obtained access to milk, although the removal of the lumps of dirt may help a good deal and better the appearance of the product.



Open Sanitary Barn Suitable for Warmer, Drier Parts of California.



Clean Cows and Clean Milkers the Basis of Clean Milk.

BARNS.—The suggestions for barns and milk-houses given here are those recommended or required in the systems of inspection of San Francisco, Oakland, Berkeley and practically every other city that requires a strict supervision of dairies from which milk is sent for direct consumption. Other requirements in these systems are also touched upon.

It can be said in the beginning that a milking barn is nearly always required when there is supervision of any kind of dairies supplying cities with milk, as the dust and dirt that will blow into the milk or otherwise get into it in yard-milking is too great in amount to be permitted. In summer it is dried manure and dust that will fly up at the slightest provocation, and in winter it is mud that is knee deep and the rain washing dirt down the sides of the cow into the bucket that are to be avoided. Milk has also to be handled away from the milking stable, or at least in an entirely separate part of the building.

Credit to dairies is given on the following basis in the Berkeley system, which may be considered typical of the best kind of inspection, from the consumer's standpoint at least. Equipment counts for 40 points in 100 and method for 60. Perfect stables and stable equipment are valued at 16 points and a perfect milk-room 4 points. In methods a perfect score for the stables is 16 points, and perfect for the milkroom, 3.

For the remainder of the scoring, the cows, for health, for comfort, food and water, may receive a credit of 12, and utensils 8. In handling, the cleanliness of cows counts 8, cleanliness of utensils and milking 17, and proper methods of handling the milk 16. Under the San Francisco system, cows, stables and yards, milkhouse and storage, and the milking and handling of milk, each count for 25 points.

It must be understood, however, that 100 is absolutely perfect in every way, and that from 97 to 99 is quite good for even a certified dairy with elaborate methods of handling and a perfect equipment. A score of 60 for a dairy supplying milk at the usual market price is quite satisfactory, and 75 or 80 per cent extremely high, as some of the methods by which credit may be obtained are not at all essential, though making the danger of producing impure milk somewhat more remote. The 127 dairies, for instance, inspected under the San Francisco system, under approximately the Berkeley system, are divided almost equally between those scoring above 60 and those scoring below. With the standard used, any dairy scoring above 50 is considered to be satisfactory for general milk production, as any bad conditions are penalized so heavily that it is impossible to reach even this figure.

The stable, in the first place, should be located where the drainage is good, as the accumulation of mud in the winter is an injury to the cows and rots the foundation of the building, and makes cleanliness in other ways more difficult. Hogpens, cess-pools, and similar contaminating influences should always be removed at least 100 feet away, and more if necessary, from the building, and, if possible, be at a lower level. In the Berkeley system, 2 points are given for a good location.

The first requirement mentioned on the score-cards for the milking stable itself is a tight floor. The San Francisco system, for instance, allows 2 points for a concrete floor, and only 1 for the best quality of wooden floor. This is due partly to the fact that manure and urine will soak into any wood and have a tendency to keep it wet, slippery, sour, and dirty, even with the best of care, while hosing or quickly going over with water and a broom will keep smooth cement in perfect condition. It is advised to have wooden floors raised at last 18 inches off the ground, to allow ventilation and prevent the accumulation of dirt below. Concrete, on the other hand, permits no dirt to fall through, and has to be laid, to give the best results, on the ground itself, which is first graded to a suitable level.

(*Continued on Page 51.*)

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., July 11, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	00	00	.07	60	46
Red Bluff	00	00	00	102	50
Sacramento	00	00	00	94	56
San Francisco	00	00	00	70	50
San Jose	00	00	00	88	50
Fresno	00	00	00	104	62
Independence	00	00	00	96	50
San Luis Obispo	00	00	.01	76	50
Los Angeles	00	00	00	78	58
San Diego	.04	.04	00	70	58

The Week.

Those who have been blessed to dwell during the last two weeks in the Coast region of California, in which summer heat is never high, or in the interior valleys of the State, where the dry heat never melts collars or courage, must be full of sympathy for the people east of the Rocky mountains, who day after day have been losing comfort, crops and commerce by a series of hot spells so slightly separated that it seemed a continuous bake, boil and sizzle. It is almost impossible for Californians to realize the suffering, sadness and losses which temperatures, rising almost to southern desert extremes, cause when attended by humidity; and we have no desire to realize them except as a basis for appreciative sympathy with those who are called upon to endure the afflictions. Hundreds of human lives have been abruptly ended. All the industries have experienced troubles. Agricultural products have been unsettled in value and harvest expectations considerably decreased no doubt. Settlers on new lands undertaking dry farming have in many cases seen their plants actually blasted in the heat. In the older districts there have been all kinds of losses of field crops, pasture growth and live stock. Thousands of horses have been killed in the great cities. The fearful visitation will not be forgotten by this generation.

Dairy Development.

We give prominent place in this issue to country milk from a city point of view. Frequently during the last few years we have presented various phases of the same problem, viz: to secure the purest milk for those who are willing to pay the extra price which purity rightly commands, because it actually costs much more to be constantly careful and persistently pure than it does to be otherwise. The cleanliness and wholesomeness of the city's milk supply is not a new question. It has been worked for for half a century to our personal knowledge. At the beginning it was largely a matter of noble sentiment—dirt was disagreeable, disgraceful and distasteful; later it was doubtful in its relations to health; it is now demonstrated to be dangerous to human life, and law and ordinance proscribe it. The people are eager to pay high price for that which is safe; to take chances of disease and death in milk they will not do. For this reason the commercial side of milk-making for the city is more assured and established than it was when dirty was simply disagreeable and the pure-milk advocate was only a preacher of esthetics. We remember the difficulty of making a sharp issue under those conditions. The late D. O. Mills, R. B. Sneath and others who established country dairies forty years ago to sell better milk in San Francisco and to get the profit which they were sure there ought to be in it, had a very difficult time in their effort to make the esthetic argument stick for an extra cent a quart. They could contrast fragrant country pastures with malodorous cow-feeding corrals in the outskirts of the city; they could paint gorgeous rural sunrises and sunsets on the black pall of the city's glue factory smoke; they could appeal to reason that a cow cropping flowers in a meadow would yield a more delicious milk than a cow filling herself with brewers' grains or distillery slops in a sand lot or in a reeking shed in the city—and yet the city person would measure the value of the country milk by the price of cut-rate fluid from the city dairyman's cart or the corner grocery. People really paid less attention to the make of their milk than they did to the brew of their beer. If this situation still held there would be no particular gain in our printing the requirements to secure good milk for city use. But this situation does not hold; it has all changed. It is not only unlawful to sell bad milk, but the people are educated to such an extent that most of them would not buy bad milk if they could, and will pay the higher price which properly protected milk merits. As these things occur to us we can but sigh for the people who made the hard and losing fight for better milk because no one realized how bad milk might be and why.

The California Butter Product.

We refer to this matter of country milk for the city, however, for none of the reasons mentioned in the foregoing paragraph. It is important to consider the chance for selling high-grade country milk in the city in its relation to the butter product because the California butter product seems to be getting too large for its visible outlets. There is a great development of alfalfa lands for creamery products and these have been very profitable and warranted the efforts and investments which have been made. We desire this development to go on, for it is peopling our great valleys and spreading prosperity everywhere. It is evident, of course, that all milk that can be sold in other forms than as butter will increase the chances for extension of butter making. The growth of the bay cities, the prosperity of the city people which enables them to buy much cream in all its forms and the use of pure milk as a beverage for adults make it possible to market milk from regions ten times as far from the city as the old-time supply-regions were. We have to sympathize with some creamery owners sometimes because the cities buy the milk and cream away from them, but we cannot help thinking that every gallon thus taken away from a near-by creamery helps the chance for a gallon's worth of butter made at some more distant point—and helps general dairy development in that way. And so we hold that we are rendering service in that development by printing as we do carefully prepared articles on how to make acceptable milk for the city, because it will help our nearer dairy readers to look into that line of business, and every one which is successfully helped into the city supply at a profit is a contribution from us to other readers in an outer circle who may be drawn to the supply of local creameries. Of course city milk supply is not the only protection against an oversupply of butter. California has always been relatively too small in cheese, and that should be looked into. We have always used too much imported cheese for a State which has such distinguished dairy quality. And there are the new milk products which the Humboldt county creamery owners are outputting; all of them help more of less in averting butter-fat from the butter-roll.

Export Butter.

Twenty years ago all assemblies of dairymen gave stated time to the chance of exporting considerable quantities of butter. At that time there was too much butter made for the consuming population then resident. There were very enterprising efforts made to sell fresh winter butter at the East in competition with the cold-storage Eastern product. Sometimes it was quite profitable; sometimes otherwise. Urgent effort was made to open Asiatic markets, and something was done, and much more export has been secured later through political changes on the eastern coast of Asia and development in the Alaska region. During the last decade, however, this movement has not felt the spur because we have had such an increase of the local demand through California's increase in population. We have had such good selling at home that little has been possible in export at the ruling values. Now, as there are signs of available surplus for distant trade in the lower prices prevailing and in the figures of greatly increased production, it is very desirable that the old question of outlet markets should be taken up anew and that organization to effect it be entered upon. More can be done now than fifteen or twenty years ago. We have more people interested and more of them have had experience in advanced business enterprises. There is no reason why the export of butter should not be taken up as energetically and pushed as far as some of our long-shipment fruit enterprises have been. It is true, of course, that more of the earth's surface can make good butter than can grow California fruits, but no one can tell at all what can be done in extension of our dairy markets until it is sharply looked into.

Temperatures and the Chicken Supply.

We have an expert to do our poultry writing, as our readers well know, but no self-respecting editor hesitates a moment to break into any corral of expertness where he thinks he can cut a caper—and so we try a chicken paragraph. We were led to it, we presume, by the foregoing reference to heat and the dairy business, for eggs lie next thereto in all categories. The Eastern heat seems to have affected the telegraph wires, for something like this comes over them from Chicago. No spring chickens were coming into the Chicago market last week, and the reason is stated to be the explosion of a powder mill at Pleasant Prairie, Wis., last December, which wrecked buildings for twenty miles in every direction, and was felt as far east as Cleveland, O., and as far south as St. Louis. Hundreds of thousands of hens, through a radius of fifty miles in every direction, left their nests in terror and wandered about in distress for several hours. They finally went back to their hatching, but the vibrations had destroyed the vitality of the eggs. Not only were the eggs in the process of being hatched destroyed, but other eggs, later placed under the hens for second and third consignments for the market, turned out just as badly. Such is the story. We do not know what such a powder explosion would do with an egg, but we do know that there were no

hundreds of thousands of hens, nor any other considerable number, hatching eggs in the Northwest in December. They were probably dancing around pretty lively all that month to keep their toes from freezing off. But perhaps we ought not to object to the story too much. In the heat they had in Chicago last week even a cold lie might be refreshing.

Crowds and Climate.

The fact that there was a sharp rain in San Diego this week, quite an unusual thing in July, may be taken as an indication that that delightful town is not yet becoming too populous. Apropos of the recent heat at the east, Mr. R. P. Bolton, president of the American Society of Heating and Ventilating Engineers, in his opening address at a convention, said, observations covering a period of many years in New York city have proved that the climate has become both warmer and drier with the growth of the city. Zero temperatures have been infrequent in New York city for many years, and since 1904 have been unknown. At the same time the rainfall has decreased from an average of 45 inches per year to 40 inches, and the number of cloudless days has increased from 96 to 114. All this means that people who are developing towns or multiplying pocket handkerchief farms on the basis of the salubrity of the local climate should have a care that they do not destroy the basis of their prosperity by overdoing it.

Significant Figures.

We have no hard feelings for the Atlantic coast; only a friendly rivalry, as they say, but really the Atlantic coast seems to be sliding out of view. Figures of the Bureau of Statistics of the Department of Commerce and Labor show a fall of $61,000,000 in imports into the Atlantic customs district in the eleven months ending with May, 1911, when compared with the corresponding period of the preceding year, while the Gulf coast districts show an increase of $12,000,000, the Pacific coast districts an increase of $11,000,000 and the northern border districts an increase of $8,000,000. In exports the Atlantic coast districts show an increase of $143,000,000, a gain of about 15 per cent over the corresponding months of the preceding year, the Gulf coast districts an increase of $87,000,000, a gain of about 22 per cent; the Pacific coast districts an increase of about $20,000,000, a gain of about 29 per cent, and the northern border districts an increase of $39,000,000, a gain of about 19 per cent. Which, of course, shows that the Panama Pacific Exposition should be in San Francisco or New Orleans—which?

Queries and Replies.

Reducing Size of Cherry Trees.

To the Editor: We have a small cherry orchard set out diamond shape, the trees being set about 16 feet apart. Owing to the diamond shape we cannot take out every other tree and have any order, so we ask you if it would be possible to cut the trees back and keep them pruned down to a smaller size. The trees are about twenty years old and are dying back quite badly. They are mostly Royal Anns and Black Republicans.—Subscriber, Napa.

You seem to have only one choice, if you decide that the trees are worth keeping at all, and that it to cut them back. Fortunately that is perfectly feasible, for the cherry tree takes very kindly to cutting back and will give you a good lot of new fruit bearing shoots if the roots are in good condition. It is desirable to remove surplus branches entirely rather than to cut back everything to a definite height, the branches to be removed being those which show disposition to die back and these which are running out too far so as to reduce the space between the trees or to interfere with branches from other trees. Branches which are failing above of course, can in some cases be cut back to a strong thrifty lateral branch below. Shortening-in branches high up is less desirable because it forces out too much new growth in the top of the tree and carries the fruit so high that picking would be expensive. This pruning can be done late in the fall before the winter rains make it disagreeable. All cuts of any size should be painted to prevent the wood from checking.

Wait and Decide for Yourself.

To the Editor: I have purchased a small piece of land in Orange county. The soil is adapted to oranges, and it is my intention to have two acres set out to these oranges. I do not want the balance of the ground (three acres) to lie idle until I can afford to set it out to oranges, but my idea is to move to California in the fall and make a living off of the three acres, as well as the ground between the orange trees, for a couple of years, at which time I hope to be able to have the whole five acres set out to oranges; and I would ask what, in your opinion, would be the best thing to plant for quick and profitable returns. Some parties have advised me to plant barley, others alfalfa, others garden truck, etc., and I am in a quandary as to which would be best, taking into consideration the outlay for the plants, the amount of care necessary, and the profits derived therefrom.—Owner, St. Louis.

So far as we know, there is nothing that you can do with the land at this time of the year which would be likely to bring you back the cost of cultivation, planting, etc. If you were on the ground you might find something which would be worth while, but as you intend to move to California in the fall, and at that time to prepare the whole tract for oranges, we should let the ground lie until then. Then a green crop of barley, or preferably of some leguminous plant like peas or vetches, might be grown during the winter as a preparation for orange planting in the spring.

Fruiting of the English Holly.

To the Editor: Of the English holly tree (Ilex) must there be two trees standing closely together for bearing heavily the much-appreciated red berries? Are male and female flowers both on one tree? Why do holly trees so very often not bear if planted singly?—Enquirer, San Leandro.

The English holly, Ilex aquifolium, is dioecious, and in order to secure a good bearing of the desirable fruit it is necessary to have staminate and pistillate plants associated as you suggest. It is, of course, desirable to have the most of the trees pistillate, as one staminate tree will fertilize a large number of pistillate. In order to see just what your problem is, the blossoms should be examined when they appear, and on the basis of that examination the nature of your difficulty will be plain, although it is true that the shrub will grow very well in many places where it will not fruit satisfactorily, even if the proper association of blossoms is provided.

Had He Better Sell the Land?

To the Editor: In the settlement of a business transaction I had to accept a ranch in trade. I do not know anything of farming, and therefore would like to know what to do with the land. At present it is being worked with wheat and barley by a tenant from whom I am to receive the fourth part of the crop. This, however, has only for the last five years averaged about $140, and therefore pays only a small proportion of the interest on the investment of $9600. What would you advise me to do? I can put several hundred dollars in the farm for a start, and am able to put from $75 to $100 monthly into improvements or wages, but this is about all I can afford to do.—Owner, San Francisco.

We regret that the only advice which we can give you is to sell the land and use the proceeds for profit in some undertaking which you understand. If you could give your personal attention to the matter sufficiently to master the details of farming, we have no doubt you could soon use the land to good advantage, but our observation is that people who undertake farming without knowledge and merely upon the basis of such advice as they can obtain from others are generally disappointed and distressed.

Root Rot in Young Trees.

To the Editor: Some of the trees around our place and in the neighborhood are dead and dying from a disease probably induced by too much water or packing the soil up around the roots, causing a white mildew and a rank odor. Is it possible for me to save the remaining trees, and how? The trees are red eucalyptus and umbrella. —Planter, Red Bluff.

You are right as to the cause of your tree roots getting into such a bad condition. Too much water with soil unsuited to the growth of new roots induces fermentation and decay in the roots from which new tendrils should start. Whether the trees will recover or not depends entirely upon how far the injury has gone. The removal of surplus water by drainage and keeping the soil just in the right condition of moisture for growth are the only things that can be done. Care has to be taken not to allow the soil to go to the other extreme, that is, to become too dry, because that would certainly prevent recovery. Keep the soil in the best condition for growth. and if the tree can restore itself it will soon give manifestation of it. When trees do lose the root action, the chance of recovery can be increased by pruning back the top so as to reduce the amount of evaporation.

Artichoke Growing.

To the Editor: Can you give me any information in regard to the artichoke? Is it a profitable crop to raise commercially? I am informed that near Pescadero a company has been formed to raise the artichoke for Eastern shipment and that it is a very profitable crop to raise. I am also informed that certain varieties are worthless. Can you advise me as to which variety is the best for commercial purposes and does it come true from seed?—Constant Reader, Fairfield.

Details of globe artichoke growing are given in our book on "California Vegetables". This vegetable is profitable commercially. Considerable quantities are grown in southern California for Eastern shipment, and the plant does just as well in other parts of the State. There is a limit to the amount which can be profitably shipped, because people generally, at the East, do not know the globe artichoke and how to eat it, but more of them are learning the desirability of it every year. You can get seeds or plants of the good varieties from the seedsmen. There are, however, species which are only ornamental, and in the case of the "cardoon" is apt to run wild as it has already done in the country around Benicia, where you can see it invading the fields adjacent to the railway for a long distance.

Horse Beans.

To the Editor: Please advise me through the columns of your paper if "horse beans" are a leguminous crop and their relative feeding value for hogs compared to cow peas and Canadian field peas.—H., San Francisco.

They surely are legumes, and they resemble so closely in composition the other legumes which you mention that their feeding value would be practically the same.

The Brown Rot of the Navel Orange

(By Prof. J. Eliot Coit, University of California Laboratory, Whittier, in the Proceedings of the Society for Horticultural Science for 1910.)

There are a large number of spots, scars, and other blemishes which tend to reduce the quality and grade of oranges or cause them to be thrown on the cull heap. The writer has undertaken a study of all blemishes of California oranges and has now under investigation thirty separate and distinct kinds, any one of which may be responsible for lowering the grade with a consequent reduction in the money returns. The relative importance of these varies widely in the different packing-houses and in different years. Averaging the results from counts in a number of houses this year, we find that the most important of these are splits, brown spot, callouses caused by the wind moving the fruit which is hanging low enough to touch the ground, thorn punctures, sun burns, thrips scars, and worm holes caused by Tortrix citrana. At the present time there are ten out of thirty kinds of blemishes, the causes of which are not understood, the two chief ones being brown spot and splits.

How Spots May Come.—On December 5, 1909, a car of navel oranges was packed in the vicinity of Riverside. This car was billed to Chicago. On its arrival the agent there reported the fruit in good condition, but with a slow market he was bid only $2.60 per box. The car was therefore diverted to Boston, and on its arrival there, three weeks after date of picking, the fruit was reported so badly spotted that the agent was able to secure only $1.80 per box. In this case, which is typical of a great many, sufficient brown spots developed while the car was going from Chicago to Boston to entail a loss of $307.20. It is impossible to estimate, with any degree of accuracy, the total loss caused by brown spot, for the agents on the Eastern markets fail in most cases to differentiate between the many kinds of spots. Then again, when a market is slow an agent will often report fruit as slightly spotted, whereas had the market been brisk, buyers would not have been so critical and spot would not have been mentioned.

What Is Brown Spot?—The brown spot of the navel orange may be described as occurring irregularly over the surface of the orange. From one to fifty or more spots may develop on a single fruit. The spots vary in size from a mere point to one inch in diameter, averaging about one-fourth inch. In outline they seem to follow no rule and may be quite irregular, although the circular spot is most common. The color of the spot varies in different localities from a pale brown, which attracts little notice, to almost a black, in which case the good appearance of the fruit is ruined. The eating qualities of spotted oranges are not injured in the least. The color of the spot seems to be lighter near the coast and darker in the interior valleys. Losses from brown spot have been heaviest from the upper San Gabriel and Santa Ana valleys because in these regions the spotting is more common and the color changes to a darker brown. On the other hand, the fruit from many of the packing-houses near the coast shows brown spots of such a pale tint as to attract no notice on the market. The spots are darker on early picked fruit, and it seems to be true that if the fruit is left on the trees until very late it will not spot at all. The spots are slightly sunken on account of the fact that the surface cells have collapsed. The dead and collapsed tissue extends from the surface to about one-fourth the thickness of the rind. In 1909-10 no spots were visible while the fruit was on the trees, and as a rule the spots are not noticeable till from 15 to 25 days after picking. On this account it is not possible to grade against this spot in the packing-houses, unless storage houses of sufficient capacity are built to hold the picking of three or four weeks. This year, however, I have found a very few specimens of fairly typical brown spot on the fruit of the trees.

The brown spot has been observed so far only on the Washington navel variety of orange. Spotting is also uniformly worse on fancy smooth, thin-skinned fruit. The fruit which grades highest as it comes from the orchard always spots much more than the rough fruit, which often remains exempt. Examination of the spots with a hand lens fails to show any abrasion or opening in the epidermis.

Orange packers have been complaining of the brown spot for only four or five years, but it is probable that it has existed, though varying in severity, as long as the navel orange has been cultivated in California.

The Cause of Brown Spot.—It may be stated at the outset that nothing has been found so far which would seem to indicate that the brown spot is caused by parasites such as fungi or bacteria. It appears to be purely a physiological disease. The writer has not been able to find in scientific literature a description of any disease strictly comparable to the brown spot, and we have been thrown entirely on our own resources in searching for a cause. The nearest approach to a parallel case seems to be the "Bitter Pit of the Apple," as described by I. B. Pole Evans, of South Africa; D. McAlpine, of Australia, and various investigators in this country. The bitter pit, however, differs markedly in that the pits occur to a large extent before the fruit is picked from the trees.

Unpublished manuscripts of Prof. Ralph E. Smith indicate that the normal rind of a green orange functions as a leaf and manufactures starch in abundance. With the disappearance of the chlorophyl at maturity the remnant of starch is changed to sugars, the fully mature orange containing no starch in the rind. It was found, however, that the brown spots gave a distinct reaction to iodine, showing that in these diseased cells the diastatic action was in some way inhibited.

Prof. Smith also found that freshly picked fruit upon which the spots had not yet become visible, when decolorized and treated with iodine would show blue spots, indicating the presence of starch at those places which would have turned brown later. This seems to indicate that the trouble originates while the fruit is on the tree and suggests the presence of some enzyme which inhibits diastatic action during the time the fruit is coloring. Prof. Smith also observed that the coloring of the fruit was more rapid and the starch normally disappeared from the rind more quickly in those localities where the brown spot was more severe.

Investigations have been carried on along many different lines of inquiry and while the results are so far all negative, they are presented here on account of the possible value of such negative results in narrowing down the investigation and because of various interesting by-products.

Not Due to Position on the Tree.—In experiment No. 1 it was found that the position occupied by the fruit on the tree seemed to have no appreciable effect on the liability of the fruit to spot. Several trees were selected in one orchard, the fruit from which had spotted badly. On February 4 a number of sound oranges were picked from the north, east, south, and west sides and also from the inside of the trees. The fruit was stored in the packing-house and when examined three weeks later was found to be 53 per cent spotted, the spots occurring about equally in each of the different lots. Experiment No. 1 was conducted by H. J. Ramsey at the instance of Prof. R. E. Smith, who later turned the work over to the writer.

In experiment No. 2 it was shown that if the oranges were picked before October 1 or before they had begun to color, that as they gradually turned yellow in storage, spots would appear which would remain green instead of turning brown. Such green spots are usually from three to five times larger than typical brown spots.

Not Due to Soil or Location.—An impression was prevalent among the growers that the spotting was worse on fruit grown at the higher elevations along the slopes of the foothills. Accordingly, in experiment No. 3, fruit was picked from different orchards in order to test this point and to bring into contrast other conditions. Fruit from orchards on the foothills was contrasted with that from the low level land. Fruit from heavy red soil was stored beside that from light sandy soil. In all, many boxes of fruit were collected and stored from each of eleven different localities in southern California. After the fruit was examined three weeks later and all the figures tabulated, it was found that the spot varied from 8 to 89 per cent in the different localities, but a careful study of the figures failed to show any correlation between soil type and brown spot. In one locality the foothill land or the heavy land would show the most spot, while in another locality just the opposite would obtain. In general, it was found that near the coast a longer time elapsed between picking the fruit and the appearance of the spot, and the spots averaged a lighter brown and were less objectionable than in the interior valleys where the soil contains less humus and much higher temperatures prevail in summer.

Not Preventable by Wrapping.—Experiment No. 4 was planned to determine what effect the retardation of the loss of water by evaporation from the fruit would have on the development of the spot. It was thought that if the brown spot could be controlled by checking evaporation, the substitution of heavily waxed paper for the ordinary tissue wrapping paper would constitute an easy and thoroughly practical remedy. * * * Different lots of fruit in packing-houses were wrapped in each of three kinds of paper, using wax paper, a parchmyne paper imported from Germany, and ordinary orange wrapping paper. This work was carried on in twelve different localities, including four counties, during January, February, and March, 1910. When the figures were all brought together, and tabulated and averaged, it was found that the following per cent of spot occurred under the different papers: Waxed, 42 per cent; parchmyne, 53 per cent, and common wrappers, 50 per cent. The results were decidedly disappointing, especially in view of the fact that the results were not at all uniform. In some cases the waxed paper showed the least spot, while in others the opposite was the case.

Trying to Make Spots.—In experiment No. 5 an attempt was made to artificially produce the brown spot and many other forms of blemishes by cutting, bruising, scratching, and kneading the green, half-grown fruit, and also by spraying or dropping on the green fruit various acids and other caustic substances calculated to cause injury. The results of this work gave us hints as to the causes of a number of common blemishes as ordinarily met with in the packing-house, but no brown spots rewarded our efforts. Even where the fruit was gently kneaded between the balls of the fingers without in any way injuring the surface, the fruit after picking failed to develop spots which would correspond with the points where pressure had been applied.

Not Due to Organisms.—While it seemed fairly certain that the brown spot was not caused by parasites, it was thought best to leave no stone unturned, and in experiment No. 6 the fruit was soaked in disinfectants. Lot A was soaked one minute in copper sulphate solution (1 pound to 1000 gallons) and later developed 36 per cent of spot; lot B was soaked one minute in permanganate of potash solution (½ pound to 1000 gallons) and later showed 16 per cent spot; while lot C, which was left untreated, developed only 8 per cent of spot. These results showed that disinfectants at least did not reduce the amount of spot, and the experiment as a whole was devoid of any interesting results.

Experiment No. 8 carried us into the field of entomology, for we could not ignore the possibility, however improbable, that brown spot might be an after-effect of some insect injury. Accordingly, every kind of sucking insect at all common around the orchard was placed under suspicion and watched. In some cases cages of glass and cloth were made and a half-grown orange enclosed with several individuals of one kind of insect. So far no positive results have been secured, although these experiments are still in

progress and a final report cannot be given at this time.

Not Due to Frosts nor Fumigation.—Oranges were found to spot badly before any frosts had occurred and it can be said with certainty that the spot cannot be due to the effects of frost.

Fruit was also put up from fumigated and non-fumigated orchards and the results showed that the spot developed without respect to fumigation. Fumigation burns, moreover, are easily recognized and form a distinct class of blemishes.

Not Caused by Injections.—Experiment No. 9 consisted in a series of experiments which were made in the effort to produce the brown spot by injecting into the rind, with a hypodermic needle various substances calculated to affece it injuriously. Some of the substances tried in various strengths were alcohol, ethyl nitrite, formic acid, distilled water, air, oxydase extracted from brown spot tissue, and enzyme extracted from green persimmons.

Side Lights on the Subject.—None of these attempts to produce the brown spot were successful, although some very interesting observations were made. It was found that an injection of distilled water caused the rind to increase in thickness from 75 to 100 per cent at that point, resulting in a small circular protuberance about ½ inch in diameter of hard, dense tissue with thicker walled cells. The oxydase injected seemed to produce very little effect worthy of extended description. The most important observation afforded by this experiment may be described as follows: Whenever a chemical such as alcohol or acid was used the tissue was immediately killed in a symmetrical circular area, the diameter of which varied with the amount of chemical injected. These dead spots at once lost water, becoming dry and hard. After two or three weeks a ring about one-sixteenth of an inch wide immediately surrounding the dead tissue appeared to collapse and present an appearance exactly similar to brown spot. The width of this brown spot ring was seen to increase slightly for several weeks after the orange was picked. This observation suggested that oxydizing enzymes, which may have been set free by the death of the chemically-killed cells transfused into the adjoining living cells, and since these cells were no longer receiving food solutions or manufacturing starch (the epidermal cells having lost their chlorophyl and turned yellow), they were unable to resist the effects of the encroaching ferment.

The Fruit Mourns the Loss of the Tree.—These observations lead me to conclude that the direct cause of brown spot is the oxydation of the protoplasm by enzymes which occur in the protoplasm itself, but which are prevented from acting as long as the orange is joined to the tree and receiving water and certain nutritive substances from the tree. Thus the resistance of the protoplasm to enzyme encroachments gradually grows less from the time the orange is picked.

Thus while I may attribute brown spot to a premature death of certain groups of cells lying at and near the surface, this only takes the real question one step further back, for the practical citrus men will, of course, wish to know the primary causes which bring about such premature death and an economic method of preventing it.

Meanwhile the investigations are being continued in an attempt to answer this perplexing riddle, and any suggestions from others who may be working on similar problems in other parts of the country will be considered with appreciation.

Quarantine Laws and Their Execution

(By John S. Armstrong of Ontario, Cal., at the Pacific Coast Nurserymen's Association in San Jose.)

Organized effort, to be effective, depends on individual effort. The United States Senate is a collective body composed of units which work as a whole in the solving of momentous questions of Government; so also is this Association a collective body composed of individuals, all of whom must work as a cohesive whole if work of merit is to be accomplished. And this thought brings forcibly to mind the fact that the nursery business has been a laggard in fostering and promoting its own interests. In the matter of Federal, State, and county quarantine legislation it has been a follower rather than a leader. We have given no attention to quarantine laws until their operation has been felt in the prosecution of our business. Not until Mr. George C. Roeding, of this organization, gave personal attention to legislative matters during the last session of the California legislature, has there been a single instance to my knowledge where the nursery business has been represented and received consideration.

National Quarantine Approved.—But it is not my purpose to dilate on local affairs, only in so far as they are of general application. The growing and handling of plants is indeed a big industry representing large aggregate capital, which in its ramifications spans the continent and also enters the sphere of international transactions. Thus we have county and State trade conditions, interstate shipments, and exports and imports. Obviously, all these cannot be regulated by mutual agreements. Intelligent county and State quarantine legislation will do much in local transactions, but interstate and internatioal business can only be regulated by Federal authority, which, it seems to me, is what we must recognize and take the initiative to secure, if we are to win the fight against plant diseases and injurious insects. But legislation of itself will not afford immunity—far from it. Insect life and the causes of plant diseases are as much a part of vegetable life as the air we breathe, but Federal quarantine legislation will do much to keep out dangerous ailments of plant life and also any obnoxious insects which are as yet unknown to us. It goes without saying that with a national quarantine we might have escaped the blight of the gypsy and brown-tailed moths, the San Jose scale, the Argentine ant, the codlin moth, the cotton-boll weevil, the bark louse of the chestnut trees in New York and surrounding States, besides many others that need not here be mentioned. Mr. Charles L. Marlatt, of the Division of Entomology, in a recent publication shows that 60 per cent of the important injurious insect pests in this country are of foreign origin and have been brought in directly on nursery and ornamental stock which might have been kept out if an efficient quarantine had been in operation, such as Austria, Germany, France, Holland, Switzerland, Turkey, etc., operate against us. The United States, however, enjoys no such protection, with the result that we have become the dumping-ground for refuse stock denied elsewhere. According to Mr. Marlatt, efforts have been made to secure such protective legislation for the past fourteen years, but it has thus far been effectually blocked by a small body of nurserymen who, careless of consequences to the country at large, fear some slight check on the freedom of their operations. The value of such imported stock is said to be about $350,000 annually, while the codlin moth or apple worm costs us sixteen millions, and the cotton-boll weevil 25 millions a year, not to mention several other bugs adding 100 millions more, all of them imported.

In view of these facts, I am in favor of absolute prohibition of entry of stock into the United States, excepting under the careful supervision of experts of the Federal Agricultural Department, and even then it might be limited to new or little-known fruits and plants, thus stimulating the production of all stock to American soil. This would certainly remove a great danger.

Bill No. 8611 in the national House of Representatives, is finally passed, is to regulate the importation and interstate transportation of nursery stock; to enable the Secretary of Agriculture to establish and maintain quarantine districts for plant diseases and insect pests; to permit and regulate the movement of fruits, plants, and vegetables therefrom, and for other purposes. I understand that this bill is now in the hands of the Committee on Agriculture, which is willing and anxious to give the trade a hearing as to its provisions and operation if passed into law, and I suggest that our president appoint a strong committee to take up its consideration. Surely we all want clean stock, because it means more and better business. This committee might also consider quarantine regulations with a view to securing harmony throughout the several States.

California Quarantine.—California is possibly the only State that maintains an international quarantine (at San Francisco and other seaports), which is certainly a good precautionary measure, which has done much to save us from the invasion of bugs, microbes, and bacteria that cause nurserymen and growers to sit up and take notice. We also quarantine against other States, which goes against the grain of the itinerant tree peddler, but in no way alarms the intelligent nurseryman who grows his own stuff on his own land to sell his own trade.

But it is not so much the law and its quarantine provisions that bothers and impedes business; it is rather its execution, and the political apointments as horticultural commissioners and deputy inspectors that give us that tired feeling for which the medical advertisements prescribe pink pills. Honest inspection by really competent authority is to be encouraged, but when it is otherwise, it becomes a menace, not only to the nursery business, but the entire range of horticulture. For it goes without saying that no one is looking for infected plants and trees—least of all the nurseryman who has his capital so invested. I will admit that the intelligent inspection of plants is fraught with difficulties requiring a thorough knowledge of economic entomology and vegetable pathology, and long experience in the field. Stock so passed on should be allowed to "go through" without unnecessary delays. How many such inspectors have you or I met? How many such are there really in the field? A competent inspector is much like a good lawyer whose business is quite as much to keep people out of the law as in; so also, good inspection service will inspire confidence and respect, and the wise nurseryman will be more apt to co-operate with the authorities than to oppose them. If weak men are appointed, see to it that they are "fired", and competent ones put in their places. Don't wait to be haled into court; take the initiative in the formation of sane legislation, and see to it that the execution of the law is properly carried out. A little work in this direction will do much to expedite our business and avoid friction. Honest and competent inspection is what we should all work for.

Uniformity Requisite.—As has already been said, uniformity of quarantine laws and the manner of their execution is certainly a work this Association should take up. If the laws are reasonably uniform in all the States, interstate shipments can be handled to greater advantage, and we shall all be in a position to know what is required, and how to meet conditions intelligently as well as economically. This once secured, and also a provision regulating the importation and exportation of nursery stock, the fellow with clean plants and trees has ample protection and an opportunity to get a square deal. But the other fellow with infected stock—well, he'd better clean up or get out of the game.

BEARING OF THE MAYNARD PLUM.

To the Editor: I have sixty trees of the Maynard plum variety, which are at once a delight and a despair. They are on the best of land, in the pink of condition, fine large trees, six years old. They bloom very full, and bees a-plenty are among them. Last spring they were cut back sharply. The only thing the matter with them is that they do not bear—merely three or four boxes of splendid, large fruit on the whole sixty trees. Can any plum grower, or any reader hereof, offer any suggestion by which they can be made to produce? G. B.

Fresno county.

[What is the experience of other readers with this variety?—EDITOR.]

AGRICULTURAL REVIEW.

With the Fruit Men.

The Rialto Fruit Co. has paid to the citrus growers in the Homosassa pool, $1.33 per box net. An extra refund of over 5 cents per box will be paid later.

The first carload shipments of grapes from Imperial county will begin the coming week. Early grapes are about gone and heavy shipments will be made of late varieties, which are of fine quality. Vine hoppers, which threatened to do much damage in several vineyards, have been checked.

Nearly 100,000 trees and 27,540 vines were shipped into Kings county for planting this year. Several hundred thousand home-grown trees were also put out.

Reports from southern France indicate that the fruit crop is to be very short.

The annual pilgrimage from the various orphanages to the berry fields of Sebastopol has taken place. From the San Mateo orphanage 145 children went up last week for the season.

The distribution of Capri figs containing the wasps that fertilize Smyrna figs is going on from the Government station at Loomis.

More than 100 different experiments for checking the apple mildew are being made by W. H. Volck, entomologist for Santa Cruz county. Commissioner Volck reports that the woolly aphis and green aphis are prevalent in some orchards.

Considerable experimentation regarding parasites for scale insects is being carried on in Santa Barbara county by Horticultural Commissioner C. W. Beers, P. H. Timberlake of the U. S. Department of Agriculture, and other entomologists.

The Farmers' Union at Gridley, Butte county, is making arrangements to form a pool of the grape crop in that vicinity.

Cherry shipments from San Jose have amounted to a few more than 110 carloads, against 140 a year ago. The average price per car was about $3200, or $1000 more than in 1910.

According to estimates of railroad officials, green fruit shipments will be about one-fourth short. The first fruit train of the Santa Fe will leave Fresno July 17.

At the Saturday meeting of the San Jose Grange it was stated that canners were offering $60 per ton for apricots, and driers 17c. for dried and $65 for green 'cots. Around Campbell the growers have agreed not to sell for less than $80 per ton. From $40 to $50 was said to be offered for clings and $30 to $40 for freestone peaches.

Commissioner Sharp of Kings county reports that the vine hopper is not as numerous as usual in the county, although the black peach aphis is more plentiful. There are now in the county 51,554 acres in fruit and vineyard. Russian thistle, Johnson and Bermuda grasses, and morning glory are increasing. Commissioner Eccles states that a great decrease in squirrels is noted.

On account of heavy spring rains and cold weather, less irrigation than usual is being required in Fresno and Tulare county orange orchards.

On the O'Hara ranch of 16 acres at Oakley, Contra Costa county, 60 tons of apricots were secured selling at $60 per ton.

Apple crop prospects in the Pacific Northwest have been forecasted as follows: Hood river, 50 to 60% of 1910; Rogue River, 40 to 50% of 1910; Milton Freewater, 35 to 50% of 1910; Wenatchee, same as 1910; Yakima, 35 to 50% of 1910; southwestern Idaho, heavier than 1910.

Steamers from the Hawaiian Islands going direct to Crockett, Contra Costa county, are in the future to be boarded at quarantine by a State horticultural inspector who will accompany the vessels to the dock, carrying on the inspection en route. An extra inspector for Crockett may also be appointed.

The California Almond Growers' Exchange reports the formation of the Colusa County Almond Growers' Association, which will market its almonds through the Exchange this season. This makes the third new association for 1911 business and a total of 14 associations now affiliated with the Exchange. On July 14 the delegates from the various associations met in Sacramento to determine the price that will be asked for almonds this season.

A remarkable record for diversity in the production of fruit and other crops was made last year by Sebastopol, Sonoma county, and vicinity, as shown by the following figures: Cherries, 8000 tons; pears, 400 tons; grapes, 12,000 tons; blackberries, 980 tons; Mammoth Blackberries, 225 tons; loganberries, 370 tons; strawberries, 80 tons; raspberries, 20 tons; peaches, 965 tons; dried prunes, 650 tons; green apples, 215,000 boxes; dried apples, 1400 tons; hops, 2217 bales; eggs, 38,865 cases or 1,399,140 dozen, valued at $326,605; value of poultry shipped, $67,000.

Deciduous Fruit Shipments.

Sacramento, Cal., July 8, 1911.

The following gives number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, July 7, 1911, as reported by the California Fruit Distributors:

Cherries—17 cars. This fruit is now nearly done. There may possibly be a few cars to report next week.

Apricots—37½ cars. A little more than half as many cars were shipped this last week as during the preceding one. Scattering shipments will continue to go forward for the next few days. Movement last year was 290 cars. It is doubtful if it will reach a total of 225 cars for the present season.

Peaches—63 cars. Again this week a slight increase in shipment is noticed. It probably will be considerably greater during the coming seven days, when a movement of approximately 100 cars is expected. St. Johns and Hales now constitute the bulk of the movement, and will be followed by Imperial and Early Crawford.

Plums—141¾ cars. The plum movement is now in full swing and comprises Climax, Burbank, Tragedy, Simoni, Abundance, Red June, with small shipments of Santa Rosa, Wickson and Ogons. All plums being shipped now are of fine quality and many of them grade as fancy. The crop of plums in the river district and in Placer county will not be as heavy as expected earlier in the season.

Pears—12¾ cars. A few Bartletts are now going forward, but the fruit is still too immature in most cases to be attractive. Shipments will materially increase during the coming week, and the quality will improve from day to day.

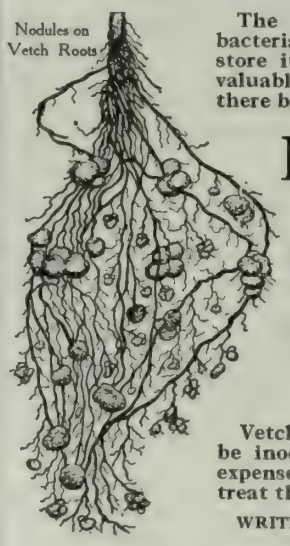
There is no change in the grape situation, which continues generally very fine. A little mildew is being reported in the irrigated districts, but, having been quickly cared for, will probably not affect the output. Thompson Seedless grapes are expected to move out of the Imperial district next week.

Total shipments to July 10 were 991 cars, as against 2087 cars to the same date last year.

Buyers' Price for Fruit.

To accompany the news items regard-

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ing prices given for fruit in various parts of the State, we give here standard offers for dried fruits as furnished by San Francisco houses on Wednesday, July 12: Peaches, 9 to 10c; new crop Muscatels on 4 to 4½c. basis, Sultanas 4½ to 4¾c., Thompson's Seedless 4¾ to 5c.; prunes, 4 to 4¾c. basis; apricots, 14c.; apples, 9c.; pears, 10 to 11c. The buyers state that growers as a whole are holding for higher prices and that but few sales at the above figures are being made.

A prominent canner gives the following prices for canning fruit: Freestone peaches $35, cling $40 to $50 and $55, with some contracts at $60; apricots, $60, a few sales having been made at $70; pears, $45 to $55.

The hot weather in the East is said to have made a greater demand and lessened the prospects for a full crop there.

General Agriculture.

A melon blight that is killing many vines is reported from Dinuba. Sulphur is being used to check the disease.

Although the acreage of cotton in Imperial county is less than last year, the crop is expected to be greater than usual. The Department of Agriculture gives the valley a prospect of 100 per cent, which is greater than in any other section of the country.

The high prices being received from potatoes are expected to keep up for several weeks, until Eastern potatoes come in.

The onion crop of Oregon is showing excellent growth, although the acreage is less than last year.

H. Newell, of Porterville, has taken from a measured acre planted to strawberries fruit to the value of $1150, and expects to raise the figure to $1500 before the year is out. Newell has been in the State only a year, coming here from Maine.

Miscellaneous.

The Escondido Valley Land and Planting Co. is constructing four miles of wire fence around its vineyard near Escondido, for the purpose of keeping out rabbits.

County Bee Inspector W. F. Wagner of Imperial states that a large honey crop is looked for. This is due partly to a scarcity of the alfalfa butterflies, which leaves more alfalfa honey for the bees.

W. S. Morris of Woodland has improved his irrigating system so that he is able to irrigate 80 acres of land from two wells. A new 10-inch centrifugal pump is giving 3000 gallons of water per minute.

Plans have been completed for the reclaiming of 4600 acres of tule land south of Suisun. Deeds from former owners to the Government have been accepted and the engineers will soon begin work on the project.

The Lima Bean Growers' Association, at a meeting at Oxnard on Tuesday, decided to accept no beans for the season's pool after August. The Association will purchase no beans this year, handling only beans pooled with them.

The honey crop of Santa Barbara is said to be good in spite of many colonies dying during the winter.

The poultry raisers of Imperial county are organizing an association.

Stephen Strong, formerly horticultural deputy in Los Angeles county, has been appointed deputy State quarantine officer. William Wood has been appointed to the place vacated by Mr. Strong.

A first annual melon carnival is to be held in Turlock on August 24 and 25.

Heavy shipments of bees from the San Bernardino valley to the mountains where the honey is more abundant are being made.

H. H. Carr, of Chicago, president of the National Farmers' Association, is visiting many parts of this State, inspecting agricultural conditions.

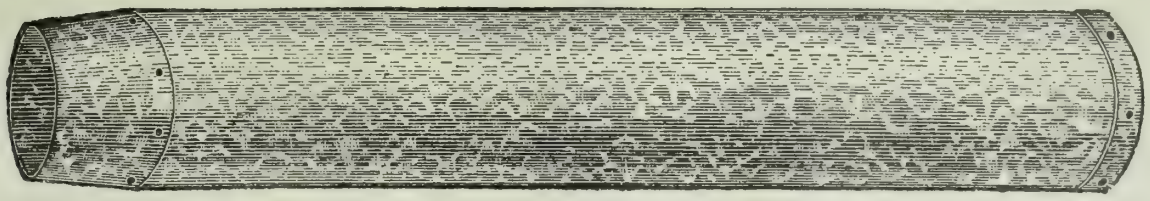
Alfred Raiz, of the department of agriculture of Peru, is making a study of viticultural condition in California. He will later visit France and other grape-growing sections of the world.

Active work against weeds is being made in many counties of the State by horticultural commissioners and inspectors. In Santa Barbara, as well as most of the other counties in southern California, more assistance from the general public has been received than ever before, and more progress made in checking their spread. In Yolo county Commissioner Hecke reports that Johnson grass and thistles have been practically exterminated. In Butte county similar success against weeds is reported by Commissioner Earl Mills. In Alameda county the work has been mainly against the bull thistle, few other weeds being troublesome, and this is under fairly good control in the country, although in the cities and towns more difficulty is found in getting land cleaned up. A. R. Galloway, of Sonoma county, is also taking active steps looking toward the eradication of weeds.

SUBDIVIDING LANDS NEAR THE STATE FARM.

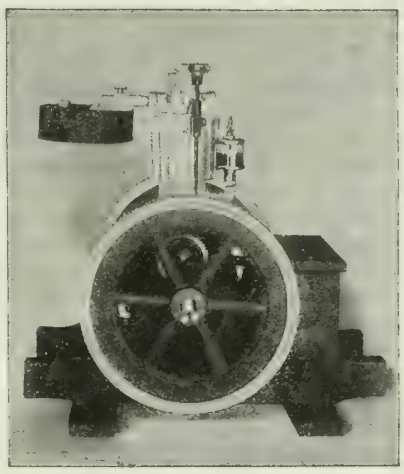
The Briggs tract of several thousand acres just south of Davis, on the banks of Putale creek, has been purchased by James Marshall and T. G. Schmeiser for subdivision purposes and will be improved for sale toward the end of the year. The land is planted out to grapes and is very productive, almost any kind of crop growing to a high state of excellence on it. The property is but a short distance from the State farm and owes no small part of its value to this fact. Only a few days ago $300 per acre was refused for the Cecil ranch, adjoining this.

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Coloring Flowers as They Grow.

In answer to readers who have enquired of us about this interesting phase of freak gardening, we give the comments which two experts made in the Rural New Yorker upon this question: "Why will a white flower absorb red ink enough through the stem to color it a deep pink, while it will not absorb black ink at all?"

ANSWER.—The coloring matter of commercial red writing inks is usually carmine, from the cochineal insect, or more rarely an aniline dye or even extract of logwood. These substances are all highly diffusible through the tissues of living plants without immediate injury to the protoplasm or vital substance of the plant cells. Thus a sufficient quantity is usually absorbed to color perceptibly petals of soft-stemmed white flowers when cut and placed in these inks. The same be said of the green dye used to produce green chrysanthemums, St. Patrick's day carnations, and other artificially colored floral freaks. Black writing inks, however, depend for their color on a combination of gallic acid, usually from nutgalls, and a salt of iron. The iron is precipitated, and to a considerable extent decolorized, by the proteids in the flower stem, and is thus unable to ascend and darken the flowers. Black drawing inks frequently have as their coloring base pure carbon in a very finely divided form. This element in its uncombined state will not diffuse through plant tissues, and is consequently useless for coloring flowers by absorption. Blue ink, if based on aniline or indigo dyes, may be used for coloring light flowers by stem absorption, but when based on soluble prussian blue, a compound salt of iron and potassium, is for reasons above given, also not adapted for the purpose.

ANOTHER COMMENT.—The subject of absorbing coloring matter by plants is full of interest and still obscure. The physicists call it, as you know, a matter of "osmotic power", and probably each substance has its range of capacity for penetrating films of tissue, cell walls, etc. Thus the colloids or gums have a low osmotic equivalent, while crystalline substances are very penetrating. Even among the salts, like saltpetre and common salt, there is a great difference in the ability of passing through membranes. Some theorists are willing to account for this by maintaining that the size of the molecule determines the penetrative power, and when the molecule (as in the case of ink?) is larger than the mesh of the membrane, it cannot enter; while eosin, on the other hand, has a small (?) molecule and enters easily. Then there is possibly a selective power upon the part of the protoplasm that denies entrance of some substances, and, so to say, invites others. Some tissues are stained by one colored fluid and others by other liquids, giving double-staining, etc. A methyl-green is a good stain for floral parts, and this may serve the purpose of black ink in the work of photography.

FRUIT WASTES IN GERMANY.

There has been some talk and perhaps transactions also in sending canned and dry yard wastes from this State to Germany for resurrectionary processes which would yield jams, etc. We do not know just what has been done, but in case any of our fruit handlers may like to figure on it, data as to what the stuff is worth abroad may be helpful. Consul General Robert P. Skinner, Hamburg, reports to the State Department as follows: Fruit waste, particularly apple and pear peeling and cores, are imported into Germany on a considerable scale, notwithstanding that the duty of 4 marks per 100 kilos (95 cents per 220 pounds) is the same as the duty on sound fruit.

The total importations amounted to 3117 tons in 1910, as against 2219 tons in 1909, of which the United States furnished 2979 tons in 1910, as against 2201 in 1909. No part of these importations reached Hamburg, although it is not impossible that Hamburg importers might succeed in securing a portion of the business.

The principal and probably the only users of evaporated peelings and cores are the syndicated jelly manufacturers, who buy their raw materials through their own managing director. These manufacturers are able to use not only apple and pear waste, but also apricot and plum waste, all of which must be properly dried, the apple and pear waste being shipped in casks and sacks and the other waste in pressed bales and sacks, package to weigh at least 110 pounds gross.

The prices paid vary with each fruit crop, and were particularly high this season, especially as to apple peelings and skins. Under normal circumstances these goods should cost German buyers $3.33 to $3.80 per 220 pounds (100 kilos) c. i. f. port of arrival in Germany or Holland. Apricot pulp in pressed bales should cost here, in ordinary times, about $12.30 per 220 pounds for first-class clear fruit.

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From Shasta's Valleys.

Written for the PACIFIC RURAL PRESS
By Mr. D. L. SCHRADER.

When the Southern or Central Californian thinks of Siskiyou, he is apt to associate it with rocky gulches and dense timber. It came, therefore, as a pleasant surprise to find numerous fertile and highly cultivated valleys. There is no grander sight than a view of mighty, snow-capped Shasta from beautiful Strawberry valley near Sisson; but I take it that a few words on the doings in the fertile valleys will be of more interest to you than would columns on the grandeur of mountain scenery.

In Strawberry valley are many meadows from which an average of over a ton of fine hay to the acre is cut every season, besides affording fine pasturage for cattle and horses until the snow falls in December. The animals are then housed and fed on the hay cut in the summer. Many varieties of fruit are successfully raised, but this year, owing to the late frosts in May, the fruit crop will be light, and hay cutting about a month late. Poultry raising is very successfully carried on in this valley.

In the Shasta valley very little fruit is being planted, the chief industries being grain, hay, cattle and horses; but a considerable quantity of alfalfa is produced, as the water supply is abundant, most of the ranchers owning water rights. They cut two and three good crops each season, besides leaving good pasturage until the snow falls. Having an average lower elevation by about a thousand feet than Strawberry valley, the snowfall is not so heavy. One of the finest ranches in the valley, the Jackson place, of about 400 acres, was sold last week for $35,000.

Then there is Scott's valley. The main industries here are live stock, dairying, hay and grain. Over 20,000 head of fat cattle were shipped out last year, and some 10,000 hogs killed. The greater part of the valley is being irrigated and large quantities of alfalfa raised—two good crops being cut each season. With transportation facilities there would be a splendid opening for growing many varieties of fruit and vegetables. Large quantities of potatoes are raised now, and E. A. Hayden has proved to his own satisfaction, at least, that strawberries do well here by selling $1000 worth from one acre. The climate of Scott's valley is almost ideal. The summer days are cool, and one can sleep under blankets the year round. But the water! I declare it to be the finest in the State: while malaria and mosquitoes are unknown.

I appreciated the opportunity of a ride with Mr. Jos. F. Wetzel, the energetic Horticultural Commissioner for Siskiyou county. He never seems to tire and is always doing his utmost to convince the farmers of the value of cultivating, pruning and spraying their orchards. Thanks to his efforts, many of them are beginning to realize the advantages, pecuniary and otherwise, of adopting these methods, and also to notice the difference in the appearance of their orchards as well as the increased crops of good fruit. I found this particularly true on the old Forest House ranch, now owned by Frederick Burton. When he took the place two years ago it had been without care for five years, the 1500 apple, 500 pear and a number of plum trees being in a deplorable condition; but with systematic cultivation, pruning, and spraying, Mr. Burton has excellent prospects of a good crop this year, for which he will find a ready market in Yreka, Fort Jones, and Etna Mills.

NOTES FROM SISKIYOU.

To the Editor: The Chamber of Commerce of Yreka is planning an immense irrigation project for Siskiyou county, and help from the Federal Government has been promised. There will be a canal that will tap the Klamath river about 20 miles above Shasta valley and will supply water enough to irrigate 60,000 acres of land. The other project will be the damming of Shasta river about 15 miles north of Edgewood. The dam will be about 160 feet through at the bottom and 150 feet at the top. This dam will back the Shasta up for a distance of four miles and will form a lake over two miles wide. This reservoir will supply enough water to irrigate 40,000 acres. It is estimated that the two projects will cost about $30 per acre.

The hay and grain crops in the lower end of Big Shasta and also in Little Shasta are very good. George F. Dexter, of Mantague, has a piece of alfalfa that has not had a bit of irrigation, that averages a little better than four tons to the acre.

Stephen Daleshal is showing the farmers of Little Shasta what can be produced from a small section of land properly cultivated. Last year he rented 25 acres of land and paid $200 per year for it. He put it out to potatoes and garden truck and cleared a little over $3000. He expects to do even better this year. He has 15 acres of the finest potatoes that I ever saw. D. L. SCHRADER.



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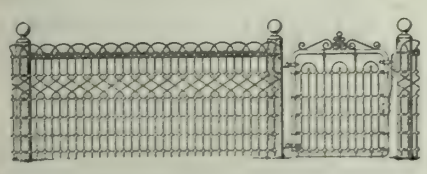


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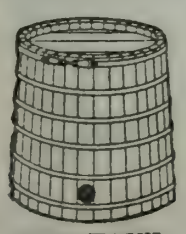


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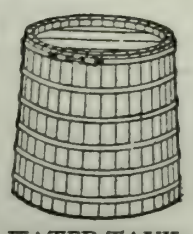
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Pre-Warming Irrigation Water.

Written for the PACIFIC RURAL PRESS
By Dr. R. R. SNOWDEN of Los Angeles.

To the Editor: I wish to call attention to what seems to be a real asset of the southern California fruit grower, which, now neglected to his detriment, might evidently be used to his profit.

It is well known that a warm soil possesses distinct advantages to growing plants over colder ones, and a potent means of warming the soil would be through the medium of the irrigation water.

Dr. Hilgard says: "Since the capacity of water for heat is approximately five times greater than that of the average soil, equal weights being considered, it follows that the temperature of the soil water must exert a controlling influence over that of the soil. * * * It is not surprising, then, that the occurrence of cold or warm rains, or the use of cold or warm irrigation water at critical periods may largely determine the success or failure of a crop." ("Soils", pages 301-2.)

In order to determine, if possible, whether the relatively high efficiency in heat-absorbing capacity of black surfaces might be made use of for warming the irrigation water, and through this the soil, the writer has made a series of experiments as follows:

EXPERIMENT No. 1.

Fifty ounces of water in each of two pans alike in every respect, and under like conditions excepting that the inside of one was painted white and the other black, was exposed in the sunshine, the results being shown in the table below.

Temperatures noted (degrees F.):

	Whitened Pan.		Blackened Pan.		
	Observed.....	Greatest gain...	Observed.....	Greatest gain...	Difference.....
9:40 a.m..	75.2	...	75.2	...	0.0
10:45 a.m..	80.6	5.4	85.1	...	4.5
12:00 m...	80.6	...	86.0	10.8	5.4

It is noted that a gain of 5.4° in the black pan over the temperature in the white one is wholly attributable to the difference in color of the containers. Yet this does not nearly represent the difference in heat absorption actually accomplished, since the evaporation was greater in the black pan by 1.15 ounces of water, which means the loss of sufficient heat after its absorption to have raised the temperature of 8 ounces of water to the boiling point, or of the entire 51 ounces 16.3° higher than that in the white pan, or up to 107.74°. This represents the gain secured by simply blackening the receptacle; but the total absorption of heat attained, and that might under proper conditions be utilized in warming the orchard soil, is much greater.

The observed rise in temperature was 10.8°. The total loss of water by evaporation from the black pan was 9.25 ounces; and the heat of vaporization used in vaporizing this amount of water is sufficient to have raised the temperature of 65.24 ounces of water (the whole 51 ounces and 14.24 ounces in addition) from the initial temperature, 75.2°, to the boiling point.

EXPERIMENT No. 2.

This was designed to ascertain experimentally what the protection of the surface from evaporation, in addition to the blackening of the surface, would accomplish in raising the temperature of the water.

Two pans of water were exposed at the same time and under like conditions excepting that the surface of one was normal while that of the other was covered with a coating of oil made black with lampblack.

Temperatures noted (degrees F.):

	Normal Pan.		Coated Pan.		
	Observed.....	Greatest gain...	Observed.....	Greatest gain...	Difference.....
8:50 a.m..	69.8	...	69.8	...	0.0
10:00 a.m..	82.4	...	89.6	...	7.2
11:25 a.m..	83.3	...	100.4	...	17.1
12:00 m...	85.5	15.3	104.0	...	18.9
1:00 p.m..	85.1	...	108.5	...	23.4
2:00 p.m..	82.4	...	109.4	39.6	27.0

The temperature of the water in the coated pan is seen to have been raised 39.6°, or 27° higher than that in the normal one at the same hour. While there was practically no evaporation from the coated pan, yet there was considerable loss of heat due to convection—warming of the air currents—while the coating was hotter than the adjacent atmosphere. This latter source of loss might be minimized in practice by keeping the water in motion in the reservoir while being heated.

EXPERIMENT No. 3.

In this both pans were closely covered with glass, and differed only in color of their inside surfaces.

Temperatures noted (degrees F.):

	Whitened Pan.		Blackened Pan.		
	Observed.....	Greatest gain...	Observed.....	Greatest gain	Difference...
11:25 a.m.	73.6	...	73.6	...	0.0
12:00 m..	89.6	...	95.0	...	5.4
1:00 p.m.	103.1	...	113.0	...	9.9
2:00 p.m.	108.5	34.9	120.2	46.6	11.7

While the temperature of the water in the blackened pan was raised 46.6°, even this does not represent the full efficiency of the treatment, since there was much condensation on the under surface of the cover glass, which kept the later hot during the period of experiment, much heat being lost by convection as in the second experiment, in both of which cases the difference in temperature of the air and the cover was quite large.

When we consider the results obtained in these experiments and the vast scale on which the principle involved may be applied to the warming of the soil—if only to the extent of a few degrees—the significance of the possibilities for the horticulturist is very great.

The writer believes that the chilling of the soil with the generally too cold irrigation water may be responsible for some of the troubles of the orchardists at present either unaccounted for or attributed to other causes. For instance, Mr. C. S. Berry pointed out to the writer in a Covina orchard a tree next to the flume, which, as he remarked, received more water than any of the others, and yet was distinctly the worst of all in general thriftiness. And this, too, in a locality where the orchards are believed to receive an insufficiency of water. This is one of several cases of the kind the writer has seen.

The Covina bearing orchards are supposed to receive 2½ inches of water per acre for four days every five weeks during the season; which is at the rate of practically 50 inches (rain gauge measure) rainfall per annum. This rainfall is considered generous for ordinary farm purposes, and when distributed in the even manner mentioned, should furnish ideal moisture conditions. And yet Dr. King found the moisture in these soils quite deficient. Now what becomes of the water? This is an important question, and one it behooves the orchardists to answer.

The writer believes that the 8.1 ounces of water lost by evaporation from the whitened pans (16%) furnishes the answer.

It would seem that something might be done along this line, and I trust that the showing made in these experiments will induce the growers to take the matter in hand, and, through their experts, demonstrate the value of "pre-warming" as they have "pre-cooling."

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(*Continued From Page 41.*)

Concrete floors are also advised on account of their ultimate cheapness, owing to the fact that they will last forever, while the urine will rot almost any wooden floor and wooden foundation in the course of time and make the expense of cleaning greater every time the floor is gone over. Even with a wooden floor, a concrete, brick, or stone foundation is advised, owing to the rapidity with which wood rots when brought into contact with the ground, especially under barnyard conditions. This, however, has nothing to do with the scoring of the dairy, as the quality of the milk is little affected by it.

The gutter behind the cows is required to be smooth and sloped so as to drain off the urine rapidly. It is sometimes advised, though optional with the dairyman, to have the whole floor of the barn slope about 18 inches for the length of a string of cows, rather than have a level floor and the gutter of varying depth. When this is done, a 2 by 4 is nailed to the 2-inch flooring of the stable and the floor of the gutter nailed to it, making a 4-inch gutter all the way along and permitting an easier and less expensive construction than when it is of one depth at the top and another at the bottom.

A plan that is suggested for keeping wooden gutters clean at their lower end is to bore holes through the floor, allowing the urine to run off into a drain. The drain is to lead far enough from the stable to permit the ground to soak in the moisture without making a mire for the cows to wade through. This, naturally, can be done only when the floor is elevated sufficiently to make a good fall from the ends of all gutters to whatever distance is necessary.

Since dust is one of the greatest factors in introducing impure germs into milk, a tight ceiling and walls and a minimum of ledges and beams for cobwebs and dirt to gather upon is desired and credit given therefor.

A stall, tie and manger which are convenient and comfortable for cow and milker are also given credit for, with the idea that a convenient piece of equipment will be kept cleaner and in better condition than one that is inconvenient.

Light and Ventilation.—The amount of light is considered an important factor, 4 square feet of window space being desired per cow, and 4 points given for this amount. This is done with the idea that the cow, and as a result, her owner, is better off with plenty of light, and that a light stable is a clean one. Light, as is well known, is a germ killer, as well as showing where dirt gathers. An excess of 4 feet per cow is considered an advantage, provided wind and rain can be kept out. If this could be done and only a roof kept overhead and a floor beneath, a perfect score for light would be given. An even distribution of light is also given more credit than an uneven one, where the light comes from only one quarter.

The subject of ventilation is given credit of 3 points. From 500 to 1000 cubic feet of space per cow is considered perfect, while less than 300 feet means no credit at all from that quarter.

On account of the way that milk absorbs bad odors, and the injurious effect of bad air upon the cows, an unwholesome atmosphere in the stable at milking time, due to poor ventilation, unclean conditions, moldy or sour food, or any other cause, will result in the loss of 6 points, which is enough to lower the credit of a dairy below the point of safety in many instances. Among the things that give a bad odor and cause an unwholesome atmosphere are brewer's grains, fed while wet, and ensilage, fed before milking.

The Cow Yard or Corral.—Closely related to the construction of the stables is the arrangement of the stable yard. A clean and well-drained yard gives 2 points. This is especially needed in winter where in level places the cows may have to drag their udders through the mire to get into the barns and thus get into a filthy condition. Unless they are cleaned off when in this condition, a heavy penalty in scoring is laid, but the object is to keep them in such a condition that a difficult job of cleaning will not be necessary.

A clean yard for rainy weather is secured at the Hutton Brothers' certified dairy at Dixon by laying solid concrete where the cows congregate in rainy weather. Others use gravel of various sizes, the heaviest being put on first to give good drainage, and this system is usually recommended if the dairyman wants to have a good yard without too great expense. The gravel has, of course, to be renewed every few years, sometimes every year.

At least one dairyman solves the problem by making use of a eucalyptus grove near his barn in winter, finding that the leaves and shallow roots prevent the cows from sinking down deep into the mud, even though the soil is heavy, and the surrounding country almost a bog after heavy rains.

The Manure Product.—The manure question is one of the greatest in the inspection business. If the manure is not removed from the stable after each milking, the penalty involved would tend to cause a temporary suspension of business in any dairy inspected under the usual system.

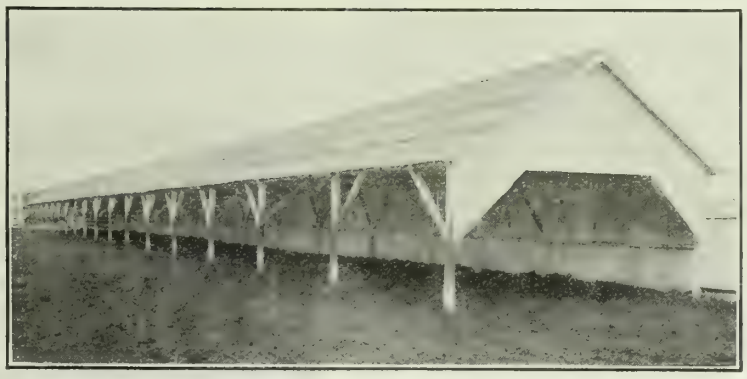
In the San Francisco system 4 points are given for its proper distribution after removal, and in the Berkeley system 2 points. The highest credit is given for removal to the fields each day, where it breeds no germ-carrying flies and increases the fertility of the land. This is conveniently done by running the wheelbarrow or handcart, in which the manure is loaded in the stable, up an incline and dumping it direct into a wagon or manure spreader. When this is full it can be drawn into the fields at once and returned to its former stand. Both time, labor, and fertility are said to be saved by this system, although it cannot always be used, owing to rough ground, or heavy mud in winter. It is recommended by inspectors on account of the number of flies that develop in the manure when allowed to stand in piles near the barn.

The San Francisco system requires the manure, if not spread on the fields, to be removed at least 300 feet from the barn in summer and 30 feet in winter to secure credit for removal away from the stable at all. The winter manure, of course, is not permitted to remain in place during the summer months. Other systems make 50 feet the distance for credit at all times of the year.

Milk Rooms and Houses.—After the stables comes the milkhouse, for which, with storage equipment, the following schedule is allowed in the San Francisco system: Location, 2 points, if away from hogpen, stable, privy or other source of contamination; construction, 2 points, for tight floor, walls and ceiling and freedom from flies; equipment, 3; cleanliness, 5; care and cleanliness of utensils, 5; water supply for cleaning, 5; and storing at low temperature, 3. For this last, 50° F. is perfect, and 1 point is lost for every 5 degrees above this temperature.

The freedom from flies is obtained by having screens on doors and windows. It is always advised to have the window, as well as door screens, open outward, so that the flies that gather on them in the morning can be driven out easily. The tight floors, walls and ceiling are needed to keep out dust and dirt as well as flies.

With a fly-tight room the flies may still obtain access if the milk is brought through the door as the pails are filled, and for this reason it is advised to have it poured into a small covered hopper on the outside, and run from there into the cooler and milk-vat below. This is claimed to be the best plan for both dairyman and consumer, as very little dirt can get into it, and it is more convenient than to open a door many times during the milking.



Open Shelter Shed for Dairy Cows.

The Cows.—Credit in the remainder of the inspection is gained in various ways. In the Berkeley system, if the cows are apparently in good health, 1 point is given, and in the San Francisco system, 2 points. If the tuberculin test is given and reacting animals removed, 10 points are given by the San Francisco inspectors and 5 by Berkeley.

In the Oakland system, which is not so elaborate, 20 points are subtracted if the test is made. To offset this loss, however, other requirements are not so rigid in order to get a good score, as the scoring is done on the basis of good practical management rather than theoretical perfection. The effect of the inspection and scoring and the standard for ordinary dairies is practically the same in both systems.

For the cattle's comfort, by which is meant bedding, etc., counts 1 point; an agreeable temperature in the stable, another. Clean and wholesome food counts 2, and clean and convenient water, 2 more. Cleanliness of the cows is given 8 points. For instance, if the sides or bag of the cows are covered with mud or manure, obtained by lying down in dirt of any kind, and not washed off, a severe penalty will be laid. Clipping the long hair on the flank and udders of the cows brings some credit; wiping the flank and udder of the cows with a moist cloth, 4 points, and washing and drying them, 2 more. No matter how clean the cows appear to be, a perfect score from this quarter cannot be obtained without this, as dust and dirt are likely to fall into the pail. Related to this, but in the classification of equipment, are 3 points given for small-mouthed pails, which will keep out a large part of the dust that might fall in.

Appliances.—For utensils not previously spoken of, the construction and condition counts 1, a penalty being involved for the use, for instance, of rusty cans. Hot water or steam, which must be in the milkhouse and not in the kitchen, counts 1 point, a milk-cooler 1, and clean milking suits 1 more. The suits need not be washed every day, but are not to be used for ordinary farm work.

Cans that are thoroughly washed and sterilized in live steam for 30 seconds give 5 credits, which is reduced by degrees according to whether sterilization, simple treatment with steam from a jet, or scalding with boiling water is employed. If the cans are inverted in pure air, 3 extra points are given. It is advised to put the cans over a rack standing a few inches from the wall, rather than to have them put over a peg.

In milking, dry clean hands counts 3, udders washed and dried, as before stated, 6. Cleanliness of attendants, aside from the condition of the hands, counts 1 point, the removal of the milk at once from the stable 1, cooling after milking each cow 2, cooling as a whole, mentioned before, 5, storage below 50 degrees 3, and transportation in ice 3, or in a wet jacket or blanket 2, and a dry blanket or covered wagon 1.

Credit given for prompt removal from the stable is due to the fact that it is often customary to have two pails for milking, and having one stand on the floor while the other is being milked into. This permits urine or manure to splash into it occasionally, and the custom is discouraged by granting credit for using a single pail and carrying it at once to the milkroom. When two pails are used, some dairymen prevent the entrance of dirt by hanging the one that is not being used on hooks on the walls of the stable.

Filth Kills Everything.—In all systems, if any particularly filthy condition is found, no matter how well other things are done, the sale of milk is prohibited, as care in some particulars is not permitted to offset gross neglect in others. If the water used by animals or in washing of milk utensils, is exposed to dangerous contamination, or if there is evidence of the presence of a dangerous disease among animals or attendants, the same ruling is effective.

It may be stated that by following out all the recommendations, the quality of the milk is improved and made that much more salable. The extra cost of doing so, might not, however, recompense a person for going to all this expense and trouble. Certified milk, in the production of which all these methods are used, may be sold and yet have nearly as many bacteria as will be found in milk produced under the best of conditions for usual sale.

Robert Kimble, of Hanford, has received 19 head of registered dairy cattle from Wisconsin.

FOR SALE

A Jersey bull calf sired by Ravachol's Romulus 74652; dam Blue Fox's Golden Rosebay 209372; half sister of Noble of Oakland's that recently sold at Cooper's 1911 sale for $15,000.

T. B. PURVINE, Petaluma, Cal.
R. F. D. No. 4, Box 152.

What an Eastern Expert Thinks of California Flocks.

We try to run away a piece now and then and take a look at ourselves, and it is even better to stand pat and have someone else take a good look at you. If such a look is taken by an expert and he is candid in his description of what he sees, one stands to learn something about himself. Such a chance may lie in what we find in the American Sheep Breeder about several California flocks:

San Ramon Shropshires.—The San Ramon Rancho Shropshires are Shropshires of quality, and number about 80 head established with imported Cooper, Tanner, Berry and Inge ewes, also American bred ewes from Wardwell, Davison, Hanmer and Lloyd-Jones. The present flock header is a first prize Royal winner bred by Sir Richard Cooper, sired by a noted Cooper ram. This ram was greatly admired by Mr. Davison and is now in his two-year-old form and is of the right type for a first-class breeder. Another stock ram in the stud flock is a first prize winner at the 1910 International, bred by Davison and a grandson of British Yeoman. There is also an imported Walford ram lamb, a first prize winner at Syracuse, Hartford, White River Junction and first and reserve champion at the last International. He was selected in England by Tom Bradburne and considered by him one of the best ram lambs seen in America for years. There are also two aged rams and two yearlings bred by Hanmer, and the two-year-olds are sired by imported Tanner rams. The ram lambs are sired by Davison 2054, a son of British Yeoman, and the other rams are sired by imported sheep and out of imported ewes. There are also about a hundred rams out of high-grade ewes sired by imported rams that will be offered this season. The young lambs weaned this spring are by the Cooper ram, "Altamont's Ambition" and "Altamont's Masterpiece." The flock includes the champion American bred ewe at the 1910 International, and other prize winners. The aim at the San Ramon Rancho is to produce good mutton qualities and conformation — well-covered Shropshires with dense fleeces. The purpose is also to build up the flock to a high standard and additions of both ewes and rams will be made from the best American and English flocks and the flock which is now under the faithful care of Shepherd Wynn Hughes will be seen and heard from on the Pacific Coast. The San Ramon Rancho is the property of Bishop Bros. of San Francisco, and comprises nearly 2700 acres in the San Ramon valley and adjoining hills, and all but 200 acres are under cultivation. There are 35 fields all enclosed by pig-tight fencing and all well watered by spring water. Hay, grain, corn and beets are the principal products, but the owners are just now giving considerable attention to walnut growing. The farming operations are conducted on a large scale and are under the efficient management of Mr. Rutherford, who has recently planned and constructed a most complete horse barn 168 by 80 feet.

The Howell Merinos.—J. M. Howell came to California from Missouri in 1862, bringing with him a band of well-bred sheep, which he carefully bred for many years, purchasing thoroughbred rams in the early years of his breeding operations from Rawson & Grayson and Thaddeus McConnell, all of whom were breeders of Vermont blood. Later he bought rams from Kirkpatrick and Bullard, and still later from the famous Shattuck flock of Stanberry, Mo. Two of these rams were sired by "Chance." Following these purchases several rams bred by Davis Cossitt, and others from other Eastern breeders, thirty altogether, were purchased of E. D. King of Kansas, who had bought them in Vermont and New York. Several have been more recently purchased of E. Peck & Sons and two or three from Vermont, including a Bascom ram. About six years ago Mr. Ralph Howell made a trip to Ohio, where he visited several leading breeders and selected a few breeding rams, including several from the Dennis flock.

The process of culling out the poorer individuals and breeding the best rams obtainable has brought the character of the flock up to a high standard of type and quality.

The Howell flock now numbers nearly 5000 head altogether. This number includes 3000 breeding ewes now dropping lambs sired by the present stock rams, chiefly by the Peck and Dennis rams. There are also 300 yearling rams and about 100 two-year-olds, mostly light B type of the same breeding. These sheep have been bred for size and wool qualities, particularly a fine, thick fleece with plenty of oil. The stock rams will shear from 20 to 30 pounds.

The ranch comprises 6000 acres lying in the matchless Sacramento valley, 400 acres of which are in the Thomes Creek valley, which is very fertile; a regular Garden of Eden, where the fields and orchards of lemons, olives and oranges are forever green and fruitful. Surrounding this valley on the east rise the snow-white peaks of the Sierras against the bright blue California sky. Westward, equally beautiful, appear the coast range, while on the north and 150 miles away Mount Shasta lifts his snow-crowned summit nearly 15,000 feet, forever cold and white as frozen marble. In the valley Mr. Howell has large orchards in peaches and other fruits, also 100 acres already seeded in alfalfa, from which they are harvesting three crops per year. The flocks remain at the home ranch during the spring, and early in June go up into the Sierras, returning in September. In the pioneer days Mr. Howell endured all kinds of hardships and privations defending his flock against the depredations of both wild animals and wild men, eventually succeeding, however, in establishing a high-class Merino flock in the Sacramento valley that is not only a credit and satisfaction to the owners, but a benefit to the sheep industry of California—a flock that will continue to leave its impress upon the flocks of the coming generations as a lasting memorial of his skill and faithful service as a shepherd and a man of his day and generation.

An Oregon Flock on a California Foundation.—The writer recently made a trip on horseback over the hills of Rambouillet Ranch, property of J. S. Herrin & Son, of Ashland, Ore. There are 30,000 acres of hill and mountain pasturage, over which graze 1500 well-bred Rambouillets, tracing to the famous old Blacow flock of California through purchases in the early eighties. As many as forty head of Blacow rams have been used in the breeding flock, and were purchased through the noted D. W. Stearns flock of Oakland, Ore. Mr. Herrin also states they have used at least twenty-five head of Glide rams, personally selected by him. There are 150 young rams, sired chiefly by the Glide rams purchased two years ago, and they show the same quality in wool fibre. They have been bred for heavy shearing qualities and are B type in character. Several of the stock rams have sheared from 30 to 40 pounds, and yearling ewes have sheared as high as 16 pounds, and aged ewes as high as 25 pounds. The flock re-

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mains on the home range during the early part of the season, going early in July up into the Siskiyou mountains and returning in October. Over 300 acres of the ranch lie gently sloping the famous Rogue River valley, three miles from Ashland, and are under the plow, producing great crops of hay and grain. Mr. Herrin recently celebrated his eighty-fourth birthday. William Herrin, son of the venerable J. S. Herrin, is head attorney for the Southern Pacific railroad, with headquarters at San Francisco. He takes great interest in the old home and flock at Ashland, generally spending his week-ends at "Rambouillet Ranch."

VALUE OF FORAGE CROPS FOR HOGS.

The Agricultural Experiment Station at Columbia, Mo., has made a very careful test of the amount of pork that can be produced per acre from the different varieties of forage or pasture, viz.:

	Pounds.	Value per Acre.
Alfalfa	596.8	$35.71
Corn	395.2	23.71
Clover	572.2	34.11
Rape, oats and clover.	394.0	23.64
Sorghum	370.5	22.23
Cowpeas	224.9	13.16
Bluegrass	295.2	17.71
Soy beans	183.1	10.99
Rye (green)	244.3	14.66

The estimates are based on 6 cents a pound pork and $10 per acre for rent, labor, seed, etc. After a charge of $10 per acre against the land for rent, taxes, etc., the average value of corn fed to hogs on forage was 80 cents. In the above table no account has been taken of the value of the fertilizing elements that are left well distributed upon the land from which the crops were removed.

DR. KEANE'S INVESTIGATIONS.

Dr. Charles Keane, State Veterinarian, who has returned from visiting the counties of the lower San Joaquin valley, states that the rabies has been spreading to a very appreciable extent recently in several of the southern counties, and that other animals besides dogs have been attacked by the disease. The rabies, Dr. Keane states, can be controlled very easily by simply muzzling the dogs, as it is through them that it is spread. If animals are not thrown into contact with others afflicted with it, the rabies will soon die out.

Dr. Keane states that the dairymen are showing great interest in the adoption of ordinances looking toward the ultimate eradication of tuberculosis in dairies.

SCOURS IN CALVES.

G. A. Brethern, the veteran Holstein breeder and showman of Peterboro, Ont., says the Rural Spirit, has found from experience that there is no remedy equal to the formalin treatment in dealing with scours in calves. The cause of scours is said to be a germ entering the navel of young calves. Damp quarters, milk from newly freshened cows fed to other than their own calves, milk too cold, etc., are predisposing causes. In any case the trouble should be investigated and the cause removed if possible. The formalin treatment as he applies it is: One-half once of formalin diluted with 15½ ounces water (nearly a pint). A teaspoonful of this solution fed in about a pint of milk, three or four times daily has always brought about an immediate cure.

A large number of shipments of live stock from ranges in Arizona and Mexico are being shipped into Imperial valley for fattening for market.

LIVE STOCK NOTES.

A hog on a ranch near Fowler, Fresno county, has had to be killed, owing to an attack of rabies, received through the bite of a mad dog. The hog is said to have been more vicious than dogs usually become.

Several cases of hog cholera have recently occurred in San Bernardino county, but Dr. F. W. Orme, county live stock inspector, claims that the disease is well under control.

Ed Curran, of Tracy, has disposed of his flock of sheep consisting of 1300 head of breeding ewes, to Devaney & Gallagher, and will retire from the sheep business, in which he has been engaged in California since 1870.

Among the sheepmen of Livermore valley and vicinity who have moved their sheep to the San Joaquin islands are Gallagher & Moran, P. Connolly, and John McGlinchey, who have moved their herds to Union Island.

The town of Lemoore, Kings county, has succeeded in checking the spread of rabies by compelling all dogs running at large to be muzzled. Early in June a dog died from the disease, but since the muzzling has been adopted no other cases have developed.

On the G. D. Young ranch, 11 miles north from Hanford, a cow and several hogs and chickens recently died from anthrax. The chickens took the anthrax by picking up the blood from the dead animals.

Cattlemen from the hills in the lower San Joaquin state that the feed in the mountain meadows is better than it has been in any year since 1878.

DAIRY NOTES.

The management of the Jersey Farm Dairy Company of Fresno county has erected four silos this year, each with a capacity of 150 tons, and has filled them with the first crop of alfalfa. Burleigh & Sons, of the same county, have also built a silo and partially filled it with alfalfa, intending to complete the filling with corn later in the season. The only silo in the county heretofore was one on the Minewawa ranch and the results from these are being watched with interest by many dairymen of the county.

The new buildings of the Danish Cooperative Creamery Association in Fresno county are about completed and new machinery is being installed. The manager, J. R. Murphy, hopes to have the new plant in operation before the first of August. It will be one of the most modernly equipped and convenient creameries in the State.

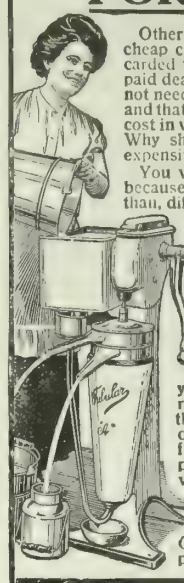
At a meeting of the Tulare County Dairymen's Association in Visalia Saturday, July 1, unanimous approval of a general clean-up of the dairies in accordance with the State law was expressed, with support by county officers, and it was decided to draft a new ordinance for adoption by the supervisors. Some opposition is still being expressed to the proposed compulsory tuberculin test for all dairy herds.

The Consolidated Creameries and the Western Creamery Company have purchased the Marysville Creamery and will work it in partnership.

The Berger ranch, four miles east of Hanford, which was quarantined for glanders last August, has been released from quarantine by Live Stock Stock Inspector Dr. George Gordon.

At the Stanford University ranch at Vina preparations are being made for the exhibition of 50 head of Holstein cattle at the State Fair in Sacramento this fall. F. Epperson, one of the noted horse men of the northern ranges of the State, is to accompany the exhibit and will do some bronco busting at the fair.

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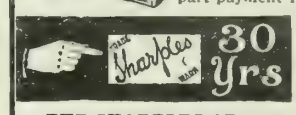


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GUINEA PIGS AS LAWN MOWERS.

An agricultural writer for an English newspaper in a recent article says:

A curious, but successful experiment is being made on a number of private lawns in Kent, and is about to be tried by a golf club in the neighborhod of Greenhithe. The idea is the novel one of substituting the guniea pig for the mowing machine and the weed killer.

Around the lawn is arranged a low wire barrier, and into the inclosure are turned a number of guinea pigs; or better, a passage is made from their hutch to the lawn. The animals at once attack all the worst weeds—the plantains first, then the dandelions and daisies. These broad-leaved plants, which no mowing machine will touch, are killed by the persistent cutting of the guinea pigs' teeth. When they have finished the weeds, which are broad-leaved and succulent, they proceed to the grass. In a short time the lawn looks as if it had been cut by the closest machine. The persistent cutting of the leaves kills the weeds, which can stand almost any other treatment, but does no harm to the grass.

One lawn, formerly a mass of weeds, has been made to grow nothing but the finer grasses. Another is still under process of treatment. The half of it in which the guinea pigs were first set to work has been cut quite even and very close. For golfing, it is as fast again as it was under the administration of the mowing machine, and not a weed is visible. The other half, where the animals have just been turned loose, is a mass of dandelions.

In this neighborhood it has been found that the guinea pigs do not suffer at all by being left to work in winter as well as summer. Indeed, they are healthier than under the usual treatment of those who keep them as pets. An astonishing demand for the animals has grown up in the neighborhood, and if the inland golf clubs, which have great difficulties with plantains, take the new method the guinea pig population is likely to go up in the ratio that the natural fecundity of the animal suggests.

THAT ALFALFA WEEVIL IN UTAH.

We have already given many facts about this deplorable pest of alfalfa that our readers may be always on the lookout against it. The following, in the Deseret Farmer, presents other phases of the trouble:

The alfalfa leaf-weevil is a small, oval, brown snout beetle, about three-sixteenths of an inch long, that is attacking alfalfa in Utah. It is not a native species, but has come to Utah from Europe.

It feeds on plants belonging to the alfalfa family, injuring all parts of the plant above ground.

The eggs are laid in the spring and early summer in the stems or on the buds and leaves, and hatch in about ten days. The young or larvae are small alfalfa-green worms with a black head; they never become much more than one-quarter of an inch in length when full grown. They feed on and in the leaf-buds, in the stalks and on the leaves.

The larvae have no true legs and have the habit of feeding or resting in a curled position.

When full grown, about 50 to 60 days after hatching, they go to the ground and spin around them a lace-cocoon, in which, in about fourteen days, they have turned into the full-grown, hard-shelled adult.

This adult feeds on the stems, leaves and buds for several weeks and in August goes into hibernation for the winter, seeking any well sheltered place.

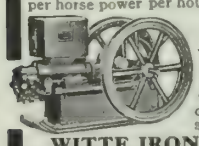
The insect now occurs in Salt Lake, Davis, Weber, Morgan, Summit, Wasatch, Utah and Tooele counties, and threatens eventually to reach all our alfalfa growing regions. It spreads rapidly in the adult or beetle stage by flying in spring and summer and by being carried with articles shipped from an infested region, and on railroads, in wagons and automobiles traveling through the places where it occurs.

The wool clip of northern Sonoma and southern Mendocino county that has been brought into Cloverdale has amounted this season to more than 250,000 pounds, with 100 odd bales yet to come. One San Francisco firm purchased over $30,000 worth of the wool at an average price of 16¾ cents a pound.

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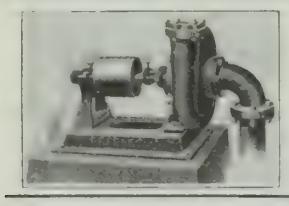


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POULTRY DEPARTMENT.

Conducted By M. RUSSELL JAMES.

POULTRY NOTES.

The National Convention of the A. P. A.—By the close margin of two votes, Denver won over Boston and brought the thirty-sixth annual convention of the American Poultry Association westward to Colorado, which will be held in Denver, August 7 to 12.

The Colorado branch of the Association worked hard to secure the convention, and is working still harder to give the visiting members the best time they have ever had for their money, including the extra cost of the trip west of the Mississippi; and, incidentally, they are working to secure the 300 new members from Colorado and the far West promised the Association in the heat of the race for the convention and due on or before the 7th of August. The Colorado association is calling loudly upon California and the other Pacific States to come to their help in the matter.

The Utility Poultry Association.—Heretofore the A. P. A. has scorned to be anything but a fancier's association, and has treated with as much contempt any suggestions of a utility standard as my fine lady would show at being asked to associate with her kitchen maid. We think the Association is beginning to see a light at this point and to realize that the chief end of poultry is utility, and that, no matter how fine the feathers, every breed of fowl must stand or fall on its utility points; consequently, to become a large and powerful organization, it must appeal to the utility poultry raisers by being helpful to them on commercial lines.

In the meantime, this need is being recognized by the organization of the "International Utility Poultry Association" as noted in a recent issue of the Rural Press. How such an organization appeals to the general poultry raiser is strikingly shown by a communication from a Missouri poultry woman to the Rural World. This poultry-woman, while not wanting fancy stock, was progressive and wanted the best pure-bred stock along utility lines; so she invested in a lot of pure-bred eggs at a price that made her country neighbors solicitous as to her sanity. Of this hatch, the breeder says: "Thirty-seven were big, lusty cockerels, and I decided to supply the whole community with good breeding stock, and offered them for sale at 50 cents apiece."

Evidently, there is one locality in these United States where exaggerated poultry valuations have not "took", and where the $10,000 Peggy hens would look and feel like 30 cents. The lady continues:

"The neighbors came and admired, but only three had the 'nerve' to invest in pure-bred poultry at such prices, though any amount of them wanted to 'swap' scrubs for my Barred Rocks. As I was buying feed all the time, I was forced to place them on the market, and took the remaining 31 to town and sold them for 8c. per pound (32c. apiece). The produce buyer paid me just the same price for my choice, pure-bred and well-

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Every Landowner His Own Irrigation District.

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Horse, Cattle and Poultry Food

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Contains no drugs. It is a spice composed entirely of a ground, soft, mellow root containing grape sugar, tannin and demulcent properties which exercise a very beneficial effect on the digestive organs, so that



A LITTLE OF THIS FOOD

enables stall-fed animals, whether horses, cows, bulls, pigs, sheep or poultry to ASSIMILATE ALL their hay and grain food by properly digesting it; thus their feed not alone fills them up but

BUILDS THEM UP.



Would people like Wells, Fargo & Co., San Francisco Brewing Co., John Wieland Brewing Co., Baker & Hamilton, the Fire Department, and many other owners of valuable horses use it for years if it was not beneficial?



Would skillful veterinary surgeons like Dr. E. J. Creeley of the San Francisco Veterinary College and Wm. E. Egan, V.S., formerly of the Board of Health, recommend it unless it possessed sterling merit?

See what Dr. Egan says:

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I know and I am convinced by my own experience, that your Food, Red Ball Brand, is a harmless and excellent adjunct to the horses' and cattle's food, mixed and fed according to directions. I prescribe and recommend the food wherever I can.

WM. E. EGAN, V.S.



Chickens produce more EGGS.

Cows yield more and richer MILK.

Stock takes on more weight—more BEEF.

It increases the power of endurance of the HORSE.

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SAN FRANCISCO

ALL DEALERS

fed cockerels that he paid Tom, Dick and Harry for their multi-colored, scrawny, half-starved mongrels, and that set me to thinking. The question arose in my mind whether he sold them in the same way, and I learned that he was very careful to grade them when cooping for shipment. Then I realized the need of an association that has for its aim the proper recognition of our utility poultry breeders and their products, and when I read the announcement of such an association, I at once wrote to the secretary, F. A. Kuhn, at Buffalo, N. Y., and soon had my membership card, and you may be sure that I shall do all I can toward securing members for the International Utility Poultry Association, for we must have a large membership to accomplish what we are after.

"In addition to the work outlined in the way of producing better utility poultry and marketing it to better advantage, the Association will soon begin an active campaign of a Utility Standard which will prove just the thing we need. The present Standard of Perfection may suit the needs of the fancy poultry breeders, but we need a more practical standard for the breeders of utility poultry. My pure-bred Rocks were handsome, large, and reasonably uniform in shape and color, and were excellent layers, yet had they been scored according to the Standard of Perfection, only a small per cent would have met the requirements for suitable breeders. I feel that there are many other poultry raisers in the same class as myself; that is, who raise good, pure-bred poultry, yet are not what may be classed as breeders of fancy poultry, or poultry that is eligible to the show-room. To all such, the Association extends a cordial invitation to help us work for better prices for our poultry products by becoming an active member and using your influence for the good of the association."

OUR INTERNATIONAL EGG-LAYING COMPETITIONS.—Inspired by the example of the egg-laying competition of Australia, which in the nine years of its operation has attracted world-wide attention and has proven its practical value to the Australian farmer, two international egg-laying competitions are on the tapis in this country. The more ambitious one has been inaugurated by one of the large dailies of Philadelphia, and will be conduced on the grounds of the Agricultural College at Storrs, Connecticut, and be under the direct supervision of a committee of poultry experts representing this country and Canada. As now constituted, the advisory board is made up of the following members: Prof. Stoneburn, Agricultural College Conn.; Prof. Elford, Mac donald College, Quebec; T. F. McGrew, author "Perfected Poultry of America"; Dr. P. T. Woods of the American Poultry Journal, Chicago; Dr. N. W. Sanborn of the Poultry Advocate, Syracuse, N. Y.; Dr. A. A. Brigham, South Dakota School of Agriculture; Prof. Homer Jackson, State College, Pennsylvania, and McDevitt and Turner of the North American staff.

For the purposes of the competition special buildings will be erected comprising an entirely new plant. The buildings will be models of their kind and ideal conditions secured. (Right here we see a flaw. Prof. Thompson has made it a point to conduct the Australian competition with "plain houses, plain yards, and plain feeding, the whole of the tests being carried out on plain, practical lines within the reach of the ordinary farmer." The ordinary farmer cannot provide "model" buildings or "ideal" conditions, but he may provide suitable and wholesome ones, even if plain and rough.)

While "scientifically accurate information as to the productiveness of the different breeds and varieties" will be acquired, the real purpose of the test, it is stated, is to learn how to increase the yield. Says the North American, the daily that has inaugurated the competition:

"Any discovery that will economically increase the production of any food is of enormous benefit. Few persons realize how vast is the poultry and egg industry, and what huge results will flow from a comparatively slight improvement in methods of management. We are told that these United States produce 29,520,000,000 eggs per year, a per capita of 295 eggs. Based upon an average of 80 eggs per hen per year, it required 370,000,000 hens to produce this enormous total. Should the competition show a decrease in cost of production of one cent per dozen, the saving to the producers would net $24,600,000, and if the cost of production can be lowered by establishing (as nearly as can be done in such cases) a fixed general method of feeding and handling poultry, the gain would be almost incalculable, and it would affect the householder to the same extent that it would the producer."

INDUSTRIES DEPENDENT UPON "BIDDY."

"Poultry (eggs and fowls used for table purposes) has the second largest money value of the products annually tabulated by our agricultural department. Is it reasonable to expect that this annual estimate embraces the entire poultry product? It is safe to say that it does not. The farmer's flock seems to be the basis of calculation, while the intensive egg producer, the man looking for a maximum output at the least cost, is seldom reckoned neither is the back-yarder or the fancier. Does this estimate of "Biddy's" value include the manufacture of incubators, brooders, wood and metal appliances, foods of all kinds, including animal food consumed by fowls, wire fencing, lumber, hardware, express and other transportation companies, and the great poultry press? Probably the use of the mails for poultry purposes has never received a thought. Gas and oil also play an important part in poultry husbandry, but are unlike those industries which depend wholly or nearly so upon poultry for existence.

FROM THE FANCIER'S STANDPOINT.

"From the fancier's standpoint the competition will have a double value. The history of the Australian contest shows conclusively that the heavier layers more nearly approach the standard requirements. In this country the commercial side of any proposition compels recognition, and the American standard of perfection will be the embodiment of the so-called 'egg-type' in all varieties. The show-room must remain dependent upon the so-called 'layer' to produce prize winners. Ornamental land and water fowl are kept for beauty; chickens are kept for eggs and meat. The most consistent hobby rider would not keep chickens except for their products. This competition will prove the value of both the fancy and utility birds, and give to the breeder of egg producers the same competition afforded the fanciers in the show-room."

POULTRY.

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For growing stock and fowls on range, fill the hopper and stand machine in the shade. See the fowls have water, then go and attend your business. The machines will take better care of your stock than you possibly could. It will cost you nothing to prove our claims. WE GUARANTEE THEM.

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The Home Circle.

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Build for yourself a strong-box,
Fashion each part with care;
When it's strong as your hand can make it,
Put all your troubles there;
Hide there all thought of your failures
And each bitter cup that you quaff;
Lock all your heartaches within it,
Then sit on the lid and laugh.

Tell no one else its contents;
Never its secrets share;
When you've dropped in your care and worry
Keep them forever there;
Hide them from sight so completely
That the world will never dream half.
Fasten the strong-box securely—
Then sit on the lid and laugh!

—Exchange.

A Wasteful Woman.

"It is true it is none of my business," said Miss Sellers to herself, as she left the pavement at the end of the village street, and struck out on the dusty road; but the reflection did not seem to call the slightest halt in her progress.

"I always did hate to see people imposed upon," he continued, "and 'specially a single woman; I'm single myself, and I know what a forlorn sort of fight a single woman keeps up against the world. Everybody is ready to cheat her, and take advantage of her; everybody. Well, this newcomer sha'n't be run over for want of knowing who it is that's doing it. I'm going to tell her myself. She looks sharp and cross enough; I wouldn't be a bit surprised if those good-for-nothing Woods children had met their match."

These thoughts, and a dimmer undercurrent of thoughts and feelings like these, kept Miss Sellers company out to the dilapidated gate of "The Briary," a suburban villa, which, after lying untenanted for years, had just been rented by a stranger. Miss Sellers' pull at the rusty bell brought the stranger herself to the door.

"You see I am my own housemaid," she said, in a soft voice, strangely at variance with her sharp nose and chin, and sharp, near-sighted eyes. "Walk right in, and please excuse my confusion; I am so much obliged to you for calling soon, it was very good of you."

"Well," said Miss Sellers, "I might as well tell you that I came early to give you a right start. You see this place has belonged to the public so long that if you don't shut down on them at first, there's no saying how much trouble you will see."

Miss Kitty Hart looked so astonished that a less persistent meddler would have been baffled, but Miss Sellers, being strong in her disinterestedness, went on:

"Now there's the Woods children, a gang of idle beggars; they were getting apples out of your lower lot yesterday, so I heard, the same as if they owned the place."

"Indeed!" said Miss Kitty, but very mildly; "where do they live?"

Miss Sellers located the offenders, and in answer to a few questions gave their family history. A pitiful tale it was, to be sure.

"Thank you for telling me about these people," said the stranger. "Are there any more in my neighborhood?"

"They are about the worst," said her visitor "but you are going to have trouble with Mrs. Bell's cow; they've not got any pasture lot, they turn old Brindle out to graze on the roadside, and nobody has been born smart enough to invent a gate that Brindle can't open."

"I wonder they should keep a cow, when they have no place for her," suggested Miss Kitty.

"La! They couldn't get along at all without Brindle; there are more babies in the family than you could shake a stick at, and the old cow really seems to work hard for something to make milk for those babies. You'd think they were hers."

Then a strange dimness came into the near-sighted eyes; perhaps the good angels knew it was a feeling of pity and found it beautiful, but to outward appearances it only made them red around the rims. Miss Sellers got up and said good morning.

"I'll look in on you again, when you are fixed up for company," she said, "this was just a sort of duty visit."

"I am a thousand times obliged to you," said the stranger; "you have done me a real kindness, and one that I am going to profit by, I assure you."

"That's right; you look after your own interests now, for if we don't look after our own, as I always say, nobody else is going to do it."

A little twist of a smile appeared on Miss Kitty's face as her visitor turned her back. "It seems as if there were somebody looking after mine," she said to herself, "so I must be looking after these others now; poor little apple gatherers! I'll see about them first."

Miss Sellers was so busy doing her fall cleaning, for the next few days, that she left the stranger wrestle with her own affairs; but chancing to see black Joe, who drove Mr. Bare's cows, and who had been her informant before, she hailed him and asked how things were going on at "The Briary."

"Lor' love your soul, Miss Mary," said the old man, "you ain't never seen such carryin's on since you been born! Them Woodses is thar twict a day, let alone onct. They totes home everything off the place. More'n that, she done 'ploy old man Woods to fix up de fences and such, an' de ole woman is makin' her carpets. Seems lek she done 'dopted de fambly. Den, dar is Miss Bell's cow jest fair reposin' in de pasture lot, you never see de beat, and a whole passel of dem chillun totin' of apples and sweet 'taters. Dis here is de most oncommon wasteful ooman I ever set eyes on, an' dat's a fac'."

Miss Sellers was stunned. What was the meaning of all this, when the stranger had thanked her for her prompt warning and had expressly said that she would profit by it? But she would see about this thing before she was a day older. Never mind about the flowered damask curtains; they could stay down awhile longer.

Miss Sellers picked up her skirts, and flew along the dusty highway again; she had no eyes for the purple thistle, blooming royally in the fence corners, nor for the red-shouldered "epaulette bird" scurrying before her on the rails. The first sight that attracted her attention and brought her to a full stop was what looked like a gypsy camp in the yard of "The Briary." Evidently it was an apple-butter spree, and the very leaves seemed to share the pleasure of the occasion, smiling and waving in the bright sunshine. Miss Sellers would have turned back, but curiosity carried her on, into the midst of the happy workers. As soon as Miss Kitty's near-sighted eyes made out who it was, she took her visitor off to a rocking chair on the sunny south porch.

"You don't mind my sitting out here, do you? I feel as if we ought to be storing up sunshine days like this; my carpets aren't down yet, nor my curtains up, but they can wait for the cloudy days."

"You seem to be storing up apple-butter, too," said Miss Sellers, with a rather grim look at the lawn party. "How many gallons can you manage to eat before spring?"

Miss Kitty laughed till the tears came. "Did you think I was going to undertake all that? Bless you, we're doing it on the shares."

"How many shares?" asked Miss Sellers, suspiciously.

"There are five children, and two grown-ups of them," answered Miss Kitty, innocently, "and I make eight; we'll quarter it, and then halve the quarters."

"You must have plenty of bank stock between you and the poorhouse!" exclaimed the visitor spitefully; she was thinking how her good intentions had been wasted.

"I have a very small income," said Miss Kitty, meekly; "but it would be hard on us poor people, if only the rich ones were allowed to help the needy. I feel so much happier, and more at home in this strange place, since I found that my Father had some of His poor creatures here that I could do something for. I have thanked Him every day for sending you out here to take my mind off house furnishing, and show me these minds that I could make happier."

"I don't know as He had anything to do with sending me," murmured Miss Sellers, and then she litted her eyes and saw Brindle "just fair reposin'" in the next lot.

"Good-bye," she said, getting up so abruptly that the rocking chair swung over backward. "You certainly are a wasteful woman, as Joe says. But there! It won't be safe to mention black Joe to you, or I'll find him browsing about on you next time I come. Well, maybe there's such a thing as being too saving; I never thought of that before."

But she thought of it all the way home, and for days after, until there crept into her heart, chilled with lonely selfishness, the glowing thought that God himself was blessedly prodigal of sunshine and blossoms, and sweet breezes. It is too late for her to learn Miss Kitty's full free-handedness, but there is more than one narrow home that will be brightened, and more than one hard-pressed fellow creature cheered this winter, because the lonely old soul is learning to be a wasteful woman!

Healthy Color.

One may have plenty of color in the face, yet, unless it is distributed right, this will not be pretty. For instance, we often see the lips blue and the nose red—in almost every instance an indication of poor circulation. Or perhaps the nose has been squeezed and rubbed so hard every time the face is washed that many of the little blood-vessels are broken and a permanent color is set up exactly in the wrong place.

Years ago it was thought that vigorous treatment was all that was necessary to bring and retain a rosy complexion, and the belles of ante-bellum days used bath towels and much muscle every day to bring the flush of youth. Nowadays we know that fresh air and plenty of outdoor exercise, coupled with careful diet, are the only means of keeping a beautiful complexion, and deep breathing is the very best way to produce permanent color.

"He loves me, he loves me not," murmured the romantic summer boarder.

"You must have picked a thousand daisies to pieces today," remarked the old farmer.

"Possibly I have."

"Couldn't ye play the game just as well with potato bugs?"—Pittsburg Post.

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Conducted By M. Russell James

Types in Girls.

The tender-hearted
Clinging maid
Has now departed,
We're afraid.

She's been supplanted
In life's whirl
By the undaunted
Modern girl.

Her hatpins bristle,
Eight or nine,
She's like a thistle,
Not a vine.

—Globe-Democrat.

Poultry Course for Young Folks.

DESCRIPTION OF BREEDS.

The Brown Leghorn.—The rich and beautiful colors of the American Brown Leghorn were produced by crossing the common brown Italian fowls with the Black-Breasted Red Game and the Black Spanish. The Brown Leghorn male in color is a brilliant red striped with black on neck, back and saddle; glossy black on breast; body, fluff and tail black, with sickles and coverts a shimmering greenish black. The female is even more beautifully colored and marked, with the feathers of the neck a rich orange striped with black; those of the back a soft brown stippled or dotted with darker brown, and those of the breast a rich salmon. To secure the exact standard shadings and markings in the Brown Leghorn female is the most difficult task of the fancier, while the rich dark colors of the male and the golden brown of the female require double matings to produce exhibition birds.

Though the Brown Leghorn is a thing of beauty when bred to standard requirements, and at once the delight and the despair of the fancier, she ranks among the first as a utility fowl, producing the greatest number of eggs at the least expense, of quickest maturity and hardy, and an all-around hustler and money-maker.

In the Rose Comb Brown Leghorn, Hamburgs and Pit Games were crossed with the Single Comb Brown Leghorns to produce the rose comb.

Mark Twain's Blue Jay.

(Continued from last week.)

And with that, away he went. You never see a bird work so since you were born. He laid into his work like a nigger, and the way he hove acorns into that hole for about two hours and a half was one of the most exciting and astonishing spectacles I ever struck. He never stopped to take a look any more—he just hove 'em in and went for more.

Well, at last he could hardly flop his wings, he was so tuckered out. He comes a-drooping down once more, sweating like an ice pitcher, drops his acorn in and says, "Now, I guess I've got the bulge on you." So he bent down for a look. If you believe me, when his head come up again he was just pale with rage. He says: "I've shoveled acorns enough in there to keep the family thirty years, and if I can see a sign of one of 'em, I wish I may land in a museum with a belly full of sawdust in two minutes."

He just had strength enough to crawl up onto the comb and lean his back agin the chimbly, and then he collected his impressions and begun to free his mind. I see in a second that what I had mistook for profanity in the mines was only just the rudiments, as you may say.

Another jay was going by and heard him doing his devotions, and stops to inquire what was up. The sufferer told him the whole circumstance, and says, "Now, yonder is the hole, and if you don't believe me, go and look for yourself."

So this fellow went and looked and comes back and says, "How many did you say you put in there?" "Not any less than two tons," says the sufferer. The other jay went and looked again. He couldn't seem to make it out, so he raised a yell, and three more jays come.

They all examined the hole, they all made the sufferer tell it over again, then they all discussed it, and got off as many leather-headed opinions about it as an average crowd of humans could have done.

They called in more jays; then more and more, till pretty soon the whole region 'peared to have a blue flush about it. There must have been five thousand of them; and such another jawing and disputing you never heard. Every jay in the whole lot put his eye to the hole and delivered a more chuckle-headed opinion about the mystery than the jay that went there before him.

The door of the house was standing open, and at last one old jay happened to go and light on it and look in. Of course, that knocked the mystery galley-west in a second. There lay the acorns scattered all over the floor. He flopped his wings and raised a whoop.

"Come here," he says, "come here, everybody! hanged if this fool hasn't been trying to fill up a house with acorns."

They all came a-swooping down like a blue cloud, and as each fellow lit on the door and took a glance, the whole absurdity of the contract the first jay had tackled hit him home, and he fell over backwards suffocating with laughter, and the next jay took his place and done the same.

Well, sir, they roosted around here on the house-top and the trees for an hour, and guffawed over that thing like human beings. It ain't any use to tell me a blue jay hasn't got a sense of humor, because I know better.

Why the Turkey Is Bald.

In the ages which are lost in the dim past, when man had no accumulated store of knowledge to guide him, he was like a child wandering in an unknown country, so he set about creating legends to account for the many strange and unaccountable things about him. Thus we have the curious mythologies of the Greeks, and the legends or myths of prehistoric folk. Among uncivilized races these are still revered as facts.

The Indians of our country have many legends connected with certain peculiar habits or customs prevalent among them, says the Red Man. If one should chance to visit the home of an old Indian he might notice a turkey wing hanging near the fire. And this is why he uses the wing of the turkey instead of the wing of any other bird:

Many years ago the fire of the world was nearly extinguished. This happened just at the beginning of the winter season. The birds of the air were filled with anxiety, for their intuition told them that they would need heat to keep warm through the winter.

A bird council was held and it was decided that birds which could fly the highest should soar up in the air and see if they could find a spark of fire anywhere. The efforts of the eagle, raven, and lark were in vain, and the honor was won by a little brown sparrow that spied a spark of fire in the hollow of an old stump in the heart of a deep forest. The birds flocked around the stump and tried to decide who should pick the spark out.

To their dismay they saw the spark growing smaller and fainter. The turkey volunteered to try and keep the tiny coal alive by fanning it with its wings.

Day after day the turkey kept fanning, and each day the heat became greater until the feathers were signed off the turkey's head. If one notices carefully he will see lumps that appear like blisters on the turkey's head.

The turkey was so badly burned that all turkeys since have had bald heads and wear the blisters as a memento of the bravery of the turkey. The faithful turkey lost his beautiful feathers, but he gave back fire to the world; so in his honor and as a memorial to his faithfulness the Indian uses the turkey wing to make his fire burn.

Who are the men of the morrow?
Seek ye the boys of today;
Follow the plow and the harrow,
Look where they rake the hay.
Who are the men of the morrow?
Look at your sturdy arm!
A nation's hope for the future
Lives in the boy on the farm.

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THE MARKETS.

San Francisco, July 12, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The market remains very quiet all over the Coast. There is some firmness in Northern markets, but locally there is some weakness as to values, though quotations stand as before.

California Club	$1.45	@1.50
Sonora	Nominal	
White Australian	1.55	@1.65
Northern Club	1.52½	@1.55
Northern Bluestem	1.65	@1.70
Northern Red	1.55	@1.65

BARLEY.

Trading is quiet locally, though there is some firmness on futures, and feed grain on the spot is a shade higher. Considerable activity is noted through the country, where the new grain is being moved into the warehouses, and the first lot for shipment has been sent to New York by steamer.

Brewing and Shipping	$1.52½	@1.55
Choice Feed, per ctl		1.27½
Common Feed	1.22½	@1.25

OATS.

This grain remains dull and featureless Trading is confined to narrow limits, and prices show no quotable change.

Red Feed	$1.37½	@1.42½
Gray	Nominal	
White	Nominal	
Black Feed	1.20	@1.50

CORN.

Eastern corn is extremely scarce, and prices have been sharply advanced. California stock is accordingly closely held, though the advance is less than on Eastern grades.

Cal. Small Yellow	$1.75	@1.85
Eastern Yellow	1.65	@1.70
Eastern White	1.65	@1.70

RYE.

Some sellers are quoting $1.50 to $1.60, but this quotation is practically normal, as there is no trading of any consequence and the offerings are light.

Rye, per ctl	Nominal

BEANS.

There seems to be something of a bear movement on limas in the consuming markets, as dealers are quoting prices a little lower, and the market is described as easy, notwithstanding the extremely small stocks remaining in first hands, and the time which must elapse before any new stock can be marketed. Some changes in policy are announced by the Lima Bean Association, the pool being closed earlier than usual, but it is assured that a great majority of the California acreage will be controlled by the Association. Blackeyes are also quoted a little lower, though offerings are extremely light. Continued firmness is noted in most other descriptions, for most of which the demand is exceptionally brisk for this season. Both large and small whites are higher, and a slight advance is noted in bayos and pink beans. Horse beans are extremely scarce, and accordingly firm, though no advance is noted.

Bayos, per ctl	$4.00	@4.10
Blackeyes	6.50	@7.00
Cranberry Beans	3.75	@4.00
Garvanzos	2.85	@3.25
Horse Beans	3.25	@3.50
Small Whites	3.50	@3.60
Large Whites	3.40	@3.50
Limas	6.15	@6.25
Pea		4.25
Pink	4.90	@5.00
Red Kidneys	6.25	@6.50

SEEDS.

Values stand as last quoted, but are largely nominal, as there is no demand of any consequence at the moment.

Alfalfa	Nominal
Broomcorn Seed, per ton	$25.00
Brown Mustard, per lb	5½c
Canary	3½@ 4 c
Hemp	3½@ 4 c
Millet	3 @ 3½c
Timothy	Nominal
Yellow Mustard	5¾c
Dried Peas, per ctl	3.75@ 4.00

FLOUR.

The export movement continues fairly active from this port, as well as from the North. Local trading is of about the usual proportions for this season, and no change is noted in prices.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.60	@4.80

Hay and Feedstuffs.

HAY.

For the past week arrivals of hay at San Francisco have been extremely light for this season. This market, however, is dull, and prices so far show no improvement. Dealers say that local consumers will not pay prices on a level with those prevailing in the country, and the market is accordingly more or less unsettled. As no buying has yet been done for future requirements, however, it would seem that consumers would soon be compelled to meet the views of sellers. Dealers state that their purchases in the country recently have been small, and for the most part will be placed on the market as soon as possible.

Choice Wheat	$13.00@14.00
Good Wheat Hay	10.50@11.50
Other Grade Wheat	8.00@10.50
Wheat and Oats	8.00@12.00
Tame Oats	8.00@12.00
Wild Oats	6.50@ 9.00
Alfalfa	8.00@11.00
Stock Hay	5.50@ 6.50
Straw, per bale	35@ 50c

FEEDSTUFFS.

Cracked corn has advanced quite sharply, in sympathy with the raw grain, the demand being steadily maintained. Other descriptions are steady to firm as formerly quoted.

Alfalfa Meal, per ton	$16.00@18.00
Bran, per ton	28.00@29.00
Cocoanut Cake or Meal	26.50@27.00
Cracked Corn	38.00@39.00
Middlings	34.00@37.00
Mixed Feeds	29.00@32.00
Rolled Barley	26.50@27.50
Rolled Oats	28.00@30.00
Shorts	27.50@31.00

Garden Truck.

VEGETABLES.

Onions are in good demand, both locally and for shipment, and are firmly held, new reds being a little higher. Garlic is also higher, surplus offerings of new stock being pretty well off the market. In other lines the arrivals are rather excessive, and the market in general is easy. Tomatoes in lug boxes are now arriving in considerable quantities, although choice stock from the Merced district is bringing good prices. Cucumbers are also easy, and summer squash is plentiful and cheap. There is a large surplus of string beans and green peas, but buying on the part of the canners keeps the market at about the present level. Cabbage and carrots are lower, and cauliflower is weak. Receipts of asparagus have fallen off, and better prices are obtained, while rhubarb at present is nominal. Green corn shows a wide range of prices, but ordinary stock is lower. Okra, eggplant, and green peppers are all lower.

Onions: New Red, sack	$ 1.00@	1.25
Yellow, ctl.	1.40@	1.60
Garlic, per lb	4@	5c
Green Peas, per sack	1.25@	2.00
Tomatoes, per lug box	2.50@	3.00
Cucumbers, per box	50@	75c
Cabbage	85c@	1.00
Carrots, per sack		1.25
Cauliflower, per doz		50c
Asparagus, per box	1.00@	2.00
String Beans, per lb	1@	3½c
Summer Squash, per lug box	50@	75c
Okra, per lb	6@	8c
Green Corn, per sack	1.50@	3.00
Eggplant, per lb	8@	10c
Green Peppers, per ctl	85c@	1.00

POTATOES.

River stock has been arriving quite freely for the last week, while the demand for shipment has fallen off, and supplies here are accumulating. Prices are accordingly considerably lower on both white and early rose potatoes, being the same at present for both varieties. The few sweet potatoes offered last week have been cleaned up.

River Whites, per ctl	$1.50@2.00
Early Rose	1.50@2.00

Dairy Produce.

POULTRY.

Quite a lot of Eastern poultry was held over from last week, and arrivals for this week will amount to about four cars. Local stock is less plentiful, but enough is coming in to supply immediate requirements and keep prices down. Fancy young roosters find the best demand, while small hens are even lower than before.

Large Broilers	$ 3.00@	3.50
Small Broilers	2.00@	2.50
Fryers	4.50@	5.50
Hens, extra	8.00@	9.00
Hens, large	5.00@	6.00
Small Hens	4.00@	4.50
Old Roosters		4.00
Young Roosters	6.00@	7.00
Young Roosters, full grown	8.00@	9.00
Squabs	2.00@	2.50
Geese, per pair		2.00
Ducks	5.00@	7.00
Turkeys, live, per lb	Nominal	

BUTTER.

The market is gaining a little more firmness, extras, firsts and seconds being all a little above the range of last week. Arrivals are liberal, but are kept fairly well cleaned up by the shipping demand

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	22	22	22½	22½	22½	22½
Prime Firsts	21	21	21½	21½	21½	21½
Firsts	20	20	20½	20½	20½	20½
Seconds	19	19	19	19	19	19
Packing Stock	17½	17½	17½	17½	17½	17½

EGGS.

All the upper grades have shown considerable firmness, as there has been quite a lively local demand, in addition to some shipping business, and production is steadily falling off. Prices are a little lower at the moment, but from reports in producing districts the advance is expected to continue.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	25½	25½	26	26	25	24
Prime Firsts	22	24	24	24	24	23
Firsts	20	23½	23½	23½	23½	21
Seconds	17	18½	18½	18½	18½	18½
Selected Pullets	20½	20½	20½	21	20½	20
Eastern	15	15	15	15	15	15

CHEESE.

Trading has been rather quiet on all descriptions, and local flat firsts are a shade lower. Monterey cheese is bringing a little better prices, but is dull and easier than was expected.

Fancy California Flats, per lb	12½c
Storage	14 c
Firsts	11½c
New Young Americas, fancy	14 c
Monterey or Jack Cheese	12½@13 c

Deciduous Fruits.

FRESH FRUITS.

Business has been a little more active this week, and while larger receipts are causing easiness in some lines, other varieties are scarce and firmer than usual at this season. The berry market is in poor condition, with large arrivals, a considerable part of which is disposed of to the canners. Watermelons are beginning to arrive freely, and prices have declined sharply, while cantaloupes are steadily held as before. Cherries are a little higher, as the crop has been cleaned up in many districts and arrivals are decreasing. New apples find a fair demand at former prices, and a good many pears are coming in, good prices being obtained for Bartletts. A few early grapes are also offered at fairly good prices. Early plums are lower, but Tragedies are held at about $1 per box. Apricots are more sought after than anything else, and choice lots are being held at an advance, as this fruit is much scarcer than usual. Peaches, however, are easier, with liberal arrivals, and figs have also declined.

Watermelons, per doz	$ 2.50@	3.00
Cantaloupes, standard crate	1.50@	1.75
Raspberries, chest	4.50@	7.00
Loganberries, chest	2.50@	3.50
Blackberries, chest	3.00@	4.00
Strawberries—		
Longworth, chest	5.00@	7.00
Large varieties, chest	4.50@	6.00
Cherries, Black, lb	7@	9c
Royal Anne, lb	8@	9c
Apples, New, box	1.00@	1.75
Apricots, crate	1.00@	1.25
Apricots, box	85c@	1.00
Peaches, per lug box	75c@	1.25
Plums, box	40@	65c
Currants, chest	7.00@	9.00
Figs, box, double layer	75c@	1.25
Pears, Bartlett, box	2.00@	3.00
Grapes, crate	1.25@	1.50

Dried Fruits.

There is now a little more activity in the country, and the trade in other quarters appears to be taking more interest than for some time past, though the movement is still comparatively small. Evaporated apples are firm, with a good demand in the East. Apricots are hardly to be had at quotations, but receive very little attention anywhere at present, and packers appear to be in no great hurry to buy. Peaches also are rather neglected, and while a good demand for them is expected later in the season, the packers have slightly reduced their offers. Prunes, however, are quite firm, with more activity than for some time past, and a strong demand from the jobbing trade in some parts of this country, as well as Europe. Some purchases are being made by packers at the former level, but more liberal offers are made for the better crops, and prices on the larger sizes have been advanced in the East. Neither buyers nor sellers seem to take any interest in future raisins, but quite a lot of old crop are being purchased at quotations, and will doubtless be cleaned up in the near future. The New York Journal of Commerce says:

"Although local buyers continue to withhold orders or show only a moderate degree of interest in future California prunes, the demand from other parts of the country, particularly the Middle West, and renewed buying by Europe tend to strengthen the views of Coast sellers. Some reports say that the short sellers among packers have about covered, but have had to pay the growers 4½c, and in some cases 5c. basis net. The European demand is chiefly for the large sizes, and on these the market is distinctly higher. Packers, while quoting 4¾c. f. o. b. 4-size bag basis on 50s to 90s, are raising their premiums on 30s and 40s. The former are now generally quoted on a 5¾c. and the latter on a 5¼c. f. o. b. bag basis, and some sellers are inclined to ask more. The offerings for October shipment are now few, most packers being sold up for that month. Some of them are quoting first half November shipment on a 4½c. f. o. b. 4-size bag basis for 50s to 90s, with ¾c. premium on 40s and 1¼c. premium on 30s, with not to exceed 15 per cent of the former and 5 per cent of the latter in assortments.

At the high prices demanded for new crop apricots little business is being done for home or export account. The export demand has fallen far short of the normal, as exporters fear that consumption will be greatly curtailed by the high prices. New season's goods are now ready for shipment to a moderate extent.

Peaches receive little attention and prices on futures are nominal on an 8½c. f. o. b. basis for choice yellows in 25-lb. boxes unfaced.

There seems to be no demand at present for California raisins for either spot or future delivery. Prices are nominal, but there is a steady undertone to the market, packers showing no desire to force business at this time.

Evap. Apples, per lb., 1911	8¾@	9½c
Apricots, new crop	14	c
Figs, new crop	5 @	7½c
Peaches, Spot	8 @	8½c
New crop	9 @	9½c
Prunes, 4-size basis, new crop contracts	4¼@	4¾c
Pears, new crop	8½@	10 c
Raisins—		
Loose Muscatels, in sweatbox	4 @	4¼c
1911 crop	4 @	4¼c
Thompson Seedless	4½@	4¾c
Seedless Sultanas	4¼@	4½c

Citrus Fruits.

The San Francisco market continues quiet, with very little feature. Lemons are comparatively cheap, all grades selling at the range quoted, while valencia oranges are steady as last quoted. Grapefruit is lower. Mexican limes were out of the market for a few days, but are now offered, prices being higher.

Orange and lemon shipments are gradually falling off as the season nears the end. During the past week shipments have averaged about 60 cars daily of oranges and 30 cars of lemons. In the East prices on the auctions have been higher for lemons, probably uue in part to the extreme heat. On Monday in New York lemons averaged $4.60 per box. At Philadelphia the prices ranged from $3 to $5.15. At Pittsburg the range was $3.85 to $4.60. At Clevelend the prices ranged from $4.25 to $6.10 per box.

Oranges in these markets averaged up well, being from $2.45 to $4.15 for valencias, and seedlings brought from $2.15 to $2.85.

The total orange shipments up to July 9 from California were 33,014 cars, and of lemons 5262 cars. The total for citrus fruits is over 12,000 more than to the same date last year.

Tangerines	Nominal
Lemons	$ 2.00@ 2.50

Valencias, choice to fancy	2.25	@	3.00
Limes	6.50	@	7.00
Grapefruit	2.00	@	3.00

Nuts, Honey, Hops, Etc.

NUTS.

New almond prices will probably be announced within a few days. A little business has been done outside the Association, but on such sales terms are kept private, and dealers who have any future stock to offer are asking about 18½c. for Nonpareils. High prices are expected for both walnuts and almonds, but values at present are nominal.

Almonds—			
Nonpareils	16½	@	17 c
I X L	15½	@	16 c
Ne Plus Ultra	15	@	15½c
Drakes	12	@	14½c
Languedoc			12 c
Hardshells	8	@	8½c
Walnuts—Softshell, No. 1			15 c
Standard			14½c
Softshell, No. 2			11 c
Budded			17½c

HONEY.

There is nothing new in the market, supplies being small, though the output in some places is larger than was expected. Prices are well maintained, though the local demand is light.

New Extracted, White, per lb.	8	@	9 c
Comb, White	12	@	15 c

BEESWAX.

The movement is slow, but the market remains steady at previous values.

Light	28	@	32 c
Dark	23	@	26 c

HOPS.

A large lot of old hops was sold a few days ago in the Sacramento valley at 25 cents, and it is believed that the old crop is now practically cleaned up in this State. This year's crop is firmly held, and no great amount of business is in progress at present.

Hops, 1910 crop	25	@	30 c
1911 crop	22	@	25 c

Live Stock.

Steers and cows are a little lower, arrivals having been fairly large for some time past. Light calves are about off the market, but show no change in price. Light and medium hogs are a little higher, though the demand is still limited. Lambs are beginning to come in from Nevada.

Gross weight:			
Steers: No. 1	5	@	5¼c
No. 2	4¾	@	5 c
Cows and Heifers: No. 1			4¼c
No. 2			4 c
Bulls and Stags	2½	@	3½c
Calves: Light			6½c
Medium			6 c
Hogs: Grain-fed, heavy			6½c
150 to 250 lbs	7	@	7¼c
100 to 150 lbs			7 c
Small prime wethers	4½	@	4¾c
Large prime wethers	4½	@	4¾c
Ewes	3¾	@	4 c
Lambs	5	@	5¼c

DRESSED MEAT.

Steers	8	@	9 c
Cows	7	@	8 c
Heifers			8 c
Veal, large			9½c
Veal, small			11 c
Mutton: Wethers	8	@	9 c
Ewes			7½c
Lambs			10½c
Hogs, dressed	10½	@	11½c

WOOL.

The only quotable change is an advance in spring lambs. The market continues quiet and unsettled, pending the action of the Senate, though there has been some buying recently in this State, and the Oregon clip is said to be well cleaned up. The London market is lower.

Spring Clip—			
Choice Southern, Year's staple	10	@	12½c
7 months	8	@	11 c
Lambs, spring	8	@	10 c
Northern, year's staple	14	@	16 c

HIDES.

All descriptions remain firm, though prices show no further change.

Dry—			
Dry Hides	18	@	19 c
Dry Bulls			16 c
Dry Kip, 10 to 15	18	@	19 c
Dry Veal, 5 to 10			20 c
Dry Calf, 7 down	23	@	24 c
Sheep Skins—			
Long Wools	$ 1.00	@	1.25
Medium Wool, 6 to 9 mos	75	@	90c
Short Wool, 3 to 6 mos	40	@	65c
Lambs	35	@	60c

HORSES.

This market is dull, with no new feature of any consequence. Offerings consist almost entirely of ordinary stock, which finds very little demand and will hardly bring top quotations. Heavy drafters, the only kind of horses in much demand, are extremely scarce, and buyers are paying full prices for them whenever they can be found.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	190@240
Wagon Horses, 1250 to 1350 lbs.	140@180
Delivery Horses, 1050 to 1250	100@125
Desirable Farm Mares	100@125
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

SPECIAL DECIDUOUS MARKET REPORT.

Sacramento, Cal., July 10, 1911.

There has been a large increase in the shipments from the State during the past week, but the crop in Placer county will fall considerably short of the estimate placed upon it a month ago. The fruit is of fine quality, however, and good size, and the growers will realize more money for their crops this season than they have for several years past. Indications point to the market remaining firm throughout the season, especially from the fact that the continued drouth throughout the Middle West has injured the crops in several States. Colorado also reports a very light crop, which will be the cause of reducing our competition on our late varieties.

Bartlett pears are opening up f. o. b. at $2.50, and we think this price will rule for at least ten days, or until the shipments become heavier. At no time, however, during the season do we look for the f. o. b. price on Bartletts to drop below $1.50. It is possible that the quotation will go to this figure only during the heaviest shipments. Sacramento river is just beginning to move its Bartletts in car lots.

Apricots are about cleaned up, with the exception of a few lots in the San Joaquin valley. All the early varieties of plums are out of the market and sold at very fine prices. Tragedies and Burbanks are moving in heavy supplies from the river districts and the Vaca valley. Climax are also showing up well, and we look for a few of the Japanese varieties to commence to move in about a week or ten days.

The Imperial valley will finish their shipments of cants in about a week and Turlock, Fresno and the Sacramento river will commence picking about the middle of next week, but practically the only competition on these late cantaloupes is from Arizona and Arkansas.

The first carload of Malaga grapes was shipped from the Imperial valley yesterday, and before this week is over several cars will be on the road East. It is reported that the quality is better than it has been for the past few seasons and we look for exceptionally nigh prices on these early grapes.

Tokays from the Lodi, Florin and American river districts are snowing up in fine shape, with the exception of the young vines in the vicinity of Lodi, where several shot grapes are noticeable.

The Gravenstein apple crop is lighter than it has ever been in the history of the industry, and as this variety is also late we do not look for shipments to move before the last week of this month. Practically all the apples will be sold f. o. b. at attractive prices, as there seems to be an active demand for this variety this season.

The extreme heat during the past week had a bad effect upon most of the markets, as the trade was afraid to purchase in large lots, fearing that the fruit, if displayed too long on the stands, would spoil on account of the tremendous heat. However, the weather is considerably cooler and a decided reaction in the market is noticeable.

The market averages for the week were as follows:

New York—Royal cots 70c. to $1.90; Clyman, 85c. to $1.80; Climax, $1.65 to $3.60; Alexander, 70c. to $1.30; Triumph, 95c. to $1.35; Tragedy, $2.10 to $3.75; Burbanks, $1.05 to $2.50; Red Junes, $1.45 to $2.15; Tartarians, $1.20 to $1.45; Bings, $1.15 to $1.30; Royal Anns, $1 to $1.75; Republicans, 85c. to $1.85; Comet pears, $1.65 to $1.75; Wilder pears, $1.30 to $2.25; Abundance, $1.10 to $1.20.

Chicago—Royal cots, 85c. to $1.35; Clyman, $1 to $1.25; Climax, $1.25 to $1.75; Triumph, $1.15 to $1.40; Tragedy, $2.10 to $2.35; Red Junes, $1.40 to $1.55; Moorparks, 90c. to $1.10; Burbanks, $1.25 to $1.55; Tartarians, 90c. to $1.15; Republicans, $1.15 to $2; Bings, $1.15 to $1.25; Abundance, $1.25 to $2; Royal Anns, 75c. to $1.50; Wilder pears, $1.75 to $1.85; Comet pears, $1.75.

Minneapolis—Royal cots, 85c. to $1.55; Clyman, $1.25 to $1.45; Climax, $1.75 to $1.80; Alexander peaches, $1.05 to $1.25; Triumph, $1.55 to $1.75; Bings, $1.55 to $3.

St. Louis—Royal cots, $1 to $1.75; Clyman, $1.30 to $1.45; Alexander peaches, 75c. to $1.15; Red Junes, $2; Burbanks, $1.30 to $2.55; Hales, 85c. to $1.30; Tragedies, $2.90 to $2.95; Climax, $1.50 to $1.75.

Philadelphia—Royal cots, $1.15 to $1.20; Burbanks, $1.30 to $1.45; Hales, 85c.; Abundance, $1.30; Tragedy, $1.70; Climax, $1.50 to $1.70; Bings, $2.30.

Cleveland—Royal cots, $1.20 to $2.10; Clyman, $1.20 to $1.75; Alexanders, 70c. to $1.90; Briggs May, $1.05; Tragedies, $2.10; Triumphs, 80c. to $1.20; Astrachan, $2.55.

Boston—Royal cots, $1.20 to $1.50; Clyman, $1.10 to $1.90; Alexander peaches, $1.20 to $1.30; Tartarians, 95c. to $1.70; Biggereau, $1.20 to $2.45; Royal Anns, $1 to $1.70; Bings, $1.75 to $2.20; Montgamet cots, $1.15 to $1.40.

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The Breeders' Gazette of Chicago, Ill., has just issued a new book entitled "Meadows and Pastures," by Joseph E. Wing. For many years the author has been collecting material for this notable work. A handsome volume of 418 pages, with more than 60 illustrations, is the result. It is designed especially for stock farmers who wish to secure the largest returns from meadows and pastures. It gives definite instruction concerning every phase of the subject. Illustrations and descriptions of all important hay and pasture plants, a comprehensive discussion of methods to secure and maintain profitable sods, a special article covering each State, and a complete index, make this the most practical, instructive, and up-to-date work of its kind in print. Price prepaid $1.50. Address the publishers, or this office.

Have you seen a copy of the book, "Trees of California", by Willis M. Jepson? This book is a very valuable treatise on the forest trees of the State, and for the price, $2.50, is well worthy a place in your library. Send to this office for a copy.

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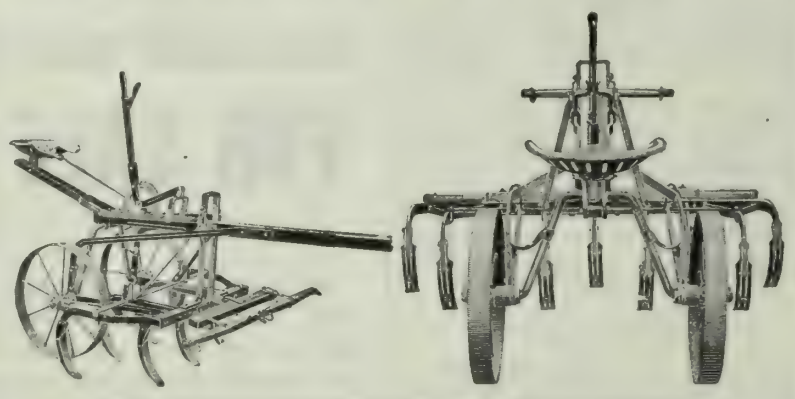
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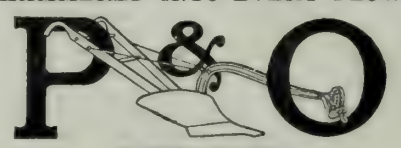
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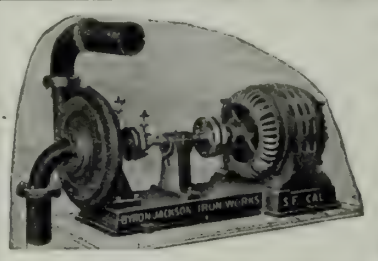
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CALIFORNIA STATE

THE PACIFIC RURAL PRESS

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California Onion Production and Trade.

Written for the PACIFIC RURAL PRESS by Mr. D. J. WHITNEY.

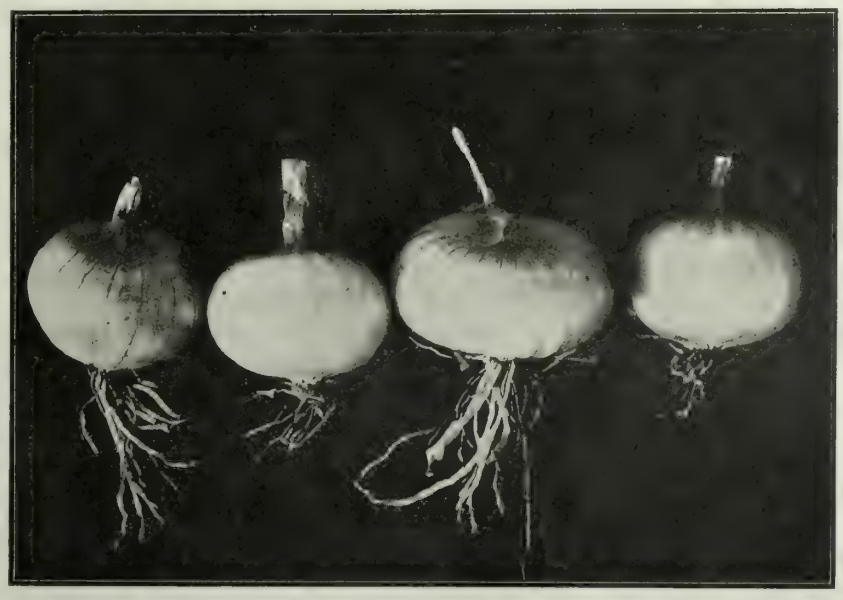
The onion is known as a plebian rather than a patrician vegetable and may not be an impressive subject to demonstrate the effect of varying conditions upon prices. Of all vegetables, however, that are grown in this state, the onion is one of the most profitable; it approaches perfection in both quality and quantity, and as the subject of a study of market conditions it shows extreme variation in price. One year the grower may make several hundred dollars an acre net, while the next year he may hardly pay expenses.

The onion may also be a thing of beauty, as strangers have become enthusiastic over the beauty of a supposed field of flowers, only to feel the beauty somewhat marred by the discovery that the flowers in question were onions going to seed. It is not, however, from the seed but from the food standpoint that this discussion is to proceed.

California produces many tons of onions, both for home consumption and for shipment. On the low lands of the interior valley and the fertile soils along the coast, as well as in many other places, they are commercially grown. The amount produced greatly surpasses the amount consumed here, and yet every year California has to import many bags to supply the home demand, the imported stock often selling at double the price of what is produced here. If the grower could arrange to take advantage of this, he would be that much richer, although that is a problem that would be difficult to solve completely.

It might be said, although probably understood by all readers, that the reason for the importations is the difficulty of keeping onions for a very long time after harvesting without having them sprout and spoil, which makes a bare market at the end of the season. As a result, the best method of obtaining high prices is either to produce onions so early that they will have the market to themselves, or to keep them so late that they compete only with the imported product.





One of the Most Profitable of California Vegetables.

The cycle for the year in the local markets begins about the middle of April or the first of May, when the Bermuda seed onions and, somewhat later, the Stockton Reds begin to come in. The old crop of dried onions at this season is practically gone and stock from Oregon or Australia is supplying the demand. The Bermuda onions, which are inferior in quality to the Yellow Danvers, sell at a lower price than the latter commands, although if the market is bare they command high prices.

In 1909 the price for Bermudas varied from $2 a sack at first to $1 toward the end. In 1910 the prices varied from $2 to $1.20, and this year from $3.75 and $4 to $1.75, this being an exceptionally fine year for prices. At the same time such yellow onions as were on the market were selling in 1909 and 1910 for as much as $1 and even $2 above these figures, although at times the prices for Bermudas is about the same as for other varieties.

In 1909 Early Reds sold at from $2 to 90 cents; in 1910 from $2 to 50 cents and less, and this year sold for the larger part of the season at about $2. The prices quoted in all these instances are not extremes that were met at rare times, but quotations at which considerable stock changed hands. Some years prices have gone so low that much of the crop had almost to be given away, considering the cost of harvesting and packing. The quotations given, however, show what may be expected in varying returns.

Both Bermudas and red onions are considered an inferior product to the standard yellow varieties and do not keep as well. As soon as the yellow onions come in, the market is spoiled for these early varieties. The presence of the red onions, however, which are sold for several weeks after the Bermudas have gone, keeps the prices of the yellow onions from going to as high a figure as they would if the markets were bare. The yellow onions usually begin to come in about the middle of June, barring other varieties and imports out for at least six months.

Prices for these in 1909 varied from 75 cents and $1 a sack in the beginning of the season to 60 and 70 cents in midseason and 70 to 80 cents toward the end of the year. In 1910 the prices ran from $1.60 and $2.20 in the beginning to $1.90 and $1.10 in midseason and from $1.25 to $1.40 in December. Toward the middle of January when the quality of California yellow onions begin to deteriorate importations commence from Oregon where the crops come in later and the stock is in better condition. The Oregon onions on account of their better condition usually sell at a slight premium over the local product. Some Nevada or Utah onions also may be shipped in if crops are good there and prices high in this State.

Before all this stock is used up and the early varieties are ready, importations begin from Australia. The seasons being reversed in Australia and California, the crops are just ripening in the southern hemisphere when the market is most bare here, and the onions sent across the ocean are practically fresh on their arrival. The average selling price in the San Francisco markets for the past three years has been $4, sometimes going above this figure, and seldom falling below it.

Good yellow onions grown in California and Oregon, which are sold while the Australian product is on the market, sell at about 50 or 60 per cent of these prices, or at 50 cents or $1 above December and January

(*Continued on Page 71.*)

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., July 18, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	00	00	.11	58	48
Red Bluff	00	00	00	112	70
Sacramento	00	00	00	98	56
San Francisco	T	T	.01	62	50
San Jose	00	00	00	82	50
Fresno	00	00	00	110	66
Independence	00	00	00	96	66
San Luis Obispo	00	00	.01	82	52
Los Angeles	00	00	00	92	58
San Diego	.05	.09	00	92	60

The Week.

We are printing from week to week what seems to us the most widely interesting and significant part of the proceedings of the Pacific Coast Nurserymen's Convention recently held in San Jose—some reference to the general importance of which has been previously made. The occasion seems timely to offer a few reflections of our own concerning the relations of nurserymen and their business to the general advancement and development which the coast has attained during the last half century. It is doubtful if they have received the credit which they have earned by the results of their labors. It has been almost fashionable to slam the nurserymen. In horticulture they have served as the butt of wit and complaining as has the plumber in constructive arts, the iceman in provisioning and the tailor in the adornment of mankind. But no joke on a plumber has stopped us from continually using more of his wares until our habitations have more pipes than an organ, our larders so much ice that special tanks have to be built for it and our wardrobes so many elaborate suits of clothes that the seven changes of raiment of ancient princes seem almost beggarly—especially when one remembers that a change of raiment was only the swapping of the sheets in which the ancients enfolded their god-like bodies. In spite of its abuse of plumbers, icemen and tailors the human race loves, honors and enriches them. It is just the same with the treatment of nurserymen. No matter how much the intending planter berates the nurseryman in his ordinary conversation he buys of them constantly increasing quantities of seeds, plants and trees for the improvement of his land or he becomes a commercial propagator himself, and thus breaks into a business of which he can hardly say too much evil, and comes at length to see that nurserymen are just like other men—possibly a little better, now that he has made himself into one of them and paid for the lessons of experience which the undertaking usually exacts.

The Nurseryman Is a Local Teacher.

Every self-respecting and honorable nurseryman is a valuable teacher of local horticulture. He should generally be the best teacher of the materials, methods and policies for the beginner in any locality. In some regions there are growers and horticultural officers who excel the local nurserymen in breadth of training and variety of useful knowledge, but in regions as they run, the nurseryman is best versed in the arts of propogation and in the methods of culture which make plants and trees thrifty and profitable; he also knows which are best worth having under the local conditions. If he does not know these things he is a poor nurseryman, because he has the best chance to see things of all kinds growing, and if he does not have the head and heart to get wise from his opportunity he cannot build up his business as he ought to build it. We are not claiming any particular credit to him for doing this, except as credit belongs to every man who succeeds in an honorable business, but we are simply stating the fact that a nurseryman, from the nature of the knowledge which is essential to his success and from the requirement that he must impart some of this knowledge to his patrons so that the plants he sells may grow and give satisfaction, is, and must always be, a teacher of horticulture to all beginners and to many others when they undertake a new line of planting. And we do not hesitate to say, as a result of our long experience and observation, that local nurserymen are expert teachers of horticulture, and though they may not be masters of pedagogical methods they are rendering valuable public service in the knowledge they give away with the plants they sell. We advise our young professional teachers of horticulture who are answering the public demand for this line of teaching in our schools, to seek the acquaintance of the local nurserymen and ask their assistance in the interesting demonstrations of plant growth which they should make for the guidance of their pupils. Some of them may be a little shy on grammar, some of them may be even funny in the theories which they spin to account for facts which they have observed, but the facts are generally correctly seen and constitute the basis for accurate local knowledge. The teacher can generally make a strong ally and a powerful help of the nurseryman if he knows and appreciates him for his special knowledge and his general disposition as a progressive citizen.

The Nurseryman as a Civic Factor.

Aside from his possible service in realizing the benefits of school improvement which calls for more straight looking into nature than into textbooks, and in addition to his helps to his adult customers who wish to make things grow, the local nurseryman is and should be a strong force in securing local improvements in the improvement and adornment of highways, parks, and recreation grounds, resting places for the ashes of the departed, and all other open-air tokens of an enlightened spirit in the community. His wares make it possible for the local preacher to protrude his angelic countenance from beds of roses and preach those sweet sermons which our fair ones find so uplifting. His potted plants adorn the chamber of commerce banquets where local orators and guests deluge each other with streams of promotive eloquence and the platforms from which the local graduates rise to local renown. All such contributions to community pride and progress the local nurseryman generally makes at his own expense, because he wishes to do his share in the creditable performances of his neighborhood. We do not know how much local nurserymen do in this line, but we are sure it is far more than the contribution of any other single craft in the community. We know of nurserymen who have given miles of trees for roadside planting. We recall a nurseryman who embraced all the widows of the San Joaquin valley in his offer of fruit trees to adorn the dooryards of the lonely ones who applied for them. Many times the localities recognize the civic spirit of the nurseryman and give him due share of neighborhood honor; but this we are not insisting upon. Like others of patriotic spirit, his chief reward is found in his own consciousness of having helped to do good things which commend themselves to him, and in this attitude he manifusts the true civic spirit.

The Nurseryman in Broader Lines.

It is a fact easily capable of demonstration that the great commercial fruit industries of the Pacific Coast were largely established upon the initiative of pioneer nurserymen who are now resting from their labors, and their works do follow them to a development of value of which they could hardly have dreamed in detail, though we know they devoutly hoped for it. Following the thought of these men as teachers of others, we desire to make acknowledgment of their educational services to the old California State Horticultural Society, organized in 1876, if we remember correctly. We were a youngster glad to be admitted to a class of middle-aged men who were then beginning commercial fruit planting and who became leaders in the large plantings of the '80s upon which the commercial fruit industries of central and northern California found their foundation. The president of the Society for nearly twenty years after its establishment was the distinguished Professor E. W. Hilgard, who was then building up the agricultural instruction and research work of the University of California and who shed the light of modern science upon the lessons of experience which were drawn chiefly from the pioneer nurserymen who were associated with him in the work of the society. It was from this self-constituted college of horticulture that we learned the beginnings of California fruit growing, the deeds of the pioneers, the spirit of the leaders, the methods which suited local conditions, the character of the problems likely to arise in the course of development. On the staff of this free-will college there were a score or more of pioneer growers, of whose lives and deeds we hope to write in detail before our own are finished, but at this moment we are thinking only of the nurserymen who led in the work and have already gone to their reward. Foremost was John Rock, then of San Jose. He was easily the leader in the California pomology of his time, expert in the characters of varieties, introducer of many which have made good, high-minded and generous in his intercourse with men, honest and large of view, and modest to a fault. Next perhaps in devotion was James Shinn of Niles; careful and conscientious in all his teaching, able in his mastery of culture conditions, a lover of the peach and propagator of some which now are popular; active and interested in importing new fruits. Another of the group was John Lewelling, last of the original family of Lewellings and Meek who brought to California the fruits of their early Oregon experience. When he spoke all listened, for he spoke well, but not often. Then W. B. West, of Stockton, who had been distributing trees and noting their behavior since the '50s, and whose knowledge of grapes, figs, olives, and nuts from Europe was always in demand. In nuts particularly, Felix Gillet of Nevada led all the rest, and now that French varieties of the English walnut are coming into their own in California, his pioneer introductions are being duly sought for and honored. W. H. Pepper brought tree lore from Petaluma before that district ran to eggs. M. H. Sanderson and B. S. Fox of San Jose were also high in the councils of the society. We probably do

not mention all, for we are writing hastily from memory merely. We are excluding those who were chiefly growers rather than nurserymen and those nurserymen also who still live to extend the lessons of those days for the public benefit. We are sure, however, that we remember enough to establish our point that in the broadest scope of instruction in horticulture, in that instruction which underlies the great attainments of the present day, the pioneer nurserymen were teachers, and should be remembered and honored as such by all who come after them.

The First Teacher of Pruning to Californians.

Our next reference to the public services of nurserymen to California fruit growers takes us beyond the group of Pacific Coast nurserymen to one whose life and work were national and whose service to us was incidental. Many years ago we found in a second-hank bookstore in San Jose a well-worn copy of the first edition of "The Fruit Garden" by Mr. Patrick Barry of Rochester, New York. The book had evidently been much used in the Santa Clara valley during the '50s. The significance of the discovery to us was a demonstration of the fact that the first suggestion of the low-head, well-balanced branching, and well-controlled top-growth, which is now known everywhere as the California style for a standard orchard tree, was drawn from Patrick Barry's clear analysis of the desirability of the form of French fruit garden tree, which he gave in his book, first published in the '40s. Barry's superiority over Downing and Thomas, who were his contemporaries, consisted in his appreciation that culture-wisdom was more important than enumeration and description of varieties. Downing had no appreciation of pruning and cultivation, Thomas was disposed to follow Downing, although later editions of his work by others have undertaken to do more with this line of knowledge. Barry was more of a philosopher and discussed training and culture as the fundamental arts of fruit-growing; that varieties would be always changing, but that the ways to grow thrifty trees, fit to carry a heavy burden where it could be gathered at minimum cost, would endure. It is true, of course, that Barry did not consider California requirements, nor know of them when he wrote the book, though he must have recognized his teachings as fundamental in the development of the California orchards which he saw at the time of his visit to this State in the early '70s. It is true, also, that the present ideal of a California fruit tree, embodying the teachings of half a century since he wrote, cannot be found in his book, but from his book came the first suggestion of what we should seek for, and Patrick Barry was a practical nurseryman.

When Greatness Comes to the Nurseryman.

As with other commendable occupations of men, the nursery business has been running to greatness very rapidly during recent years. The propagation and sale of plants of all kinds has expanded to such an extent that commercial problems have associated themselves with horticultural problems until financing, distribution, and transportation must engross the attention of a nursery manager, largely to the exclusion of technical plant knowledge. This being the case with those whose nurseries cover hundreds of acres of land, instead of the tens of acres of their predecessors in the craft, it is a question whether the nursery owner or manager can in the future render to the community such personal services in horticultural promotion as have been described as the good fortune of the past. If we are forced to grant this, we shall still insist upon the multiplication of local plant-handlers who shall not be merely order-takers and purveyors of plants and trees of which they know little and care less—beyond the money there may be in them. We wish it were possible for the large propagators to sell their produce through the local plant men rather than by traveling tree agents who are often too good at selling and too bad from the point of view of horticultural truth and value. We do not claim to know how to sell trees, but we can clearly see that if the large nurseries could find a way to build up the small local plant establishments and not cut away the living from them, it would be a great gain for satisfactory local progress in all that such local nurserymen, as we have already described, can minister to. It would be a way to promote horticultural knowledge and satisfaction, and thus advance the demand for plants. As it now is, too many tree-sellers sell plants by the same slick arts that they would employ to sell other merchandise and know nothing of what they are selling. Of course, selling trees in that way is not educational, and such a tree agent is not a teacher of anything worth knowing.

What Large Nurserymen Can Do for Young Men.

Large nurserymen, being necessarily so much engrossed in the business problems of their business, cannot know as much of the pomological aspects of their work as their predecessors did, but they can train young men to assist them in this line, just as other large business conductors do. Salesmen of electric machinery of all kinds today are not merely sharp and quick bargain drivers or voluminous order-takers; they are generally young college men trained in electro-mechanics and electric operation, or others who are self-educated in these lines, and they are able to give correct information and advice as well as to sell machines. Conductors of great electric manufactures recognize the fact that an ordinary man cannot judge of electric appliances as he can of a horse or a suit of clothes, and they provide to sell wisely because they wish their appliances to give satisfaction. In a way there is an analogy between this trade and that of the nurseryman. There are only a few things an intending planter can tell about a tree by looking at it or by reading its name and price in a catalogue, and these things may not be the most important things to know. To converse with a well-trained horticulturist who has a conscience and pride in the quality of the trees he offers for sale, is a boon to a buyer. There are many young men who would like to fit themselves for this work, and, where the proper aptitude and disposition are shown, the employer should help the youth as much as he can to attend an agricultural school or college, that he may learn the sciences underlying plant propagation, protection, and profitability. By surrounding himself with a well-trained group of assistants, the large nurseryman can handle pomology, pathology, biology as each may arise for adjustment of his work to the demand for it. This is the way the leaders in all the large producing enterprises organize their work. If the large nurserymen of today will do this, they will provide for the easier handling of their great enterprises and equip many men who will be fit to serve the public as we have claimed local nurserymen generally serve the communities in which they establish themeslves.

Queries and Replies.

Propagating Olives.

To the Editor: Please explain in your next issue the full details of propagating olives from seeds and cuttings.—Reader, Woodlake.

The growing of olive trees from hard wood cuttings, which is the most available way, unless one desires to provide bottom heat, was described in the Pacific Rural Press of March 11 last. Growing olives from seeds is promoted by assisting nature to break the hard shell. This can be done by pinching carefully with ordinary wire pliers until the shell cracks without injury to the kernel, or the shell may be cut into with a file, making a very small aperture to admit moisture. The French have specially contrived pliers with a stop which admits cracking and prevents crushing. Olive seeds in their natural condition germinate slowly and irregularly. They must be kept moist and planting about an inch deep in sandy loam and covering with chaff or litter to prevent drying of the surface. Before experimenting with olive pits, crack a few to see if they have good plump kernels. Some varieties, like the Mission, are apt to be empty, while others bear good seeds. Seedling olives must be grafted, of course, to be sure of getting the variety you want. For this reason growth from cuttings is almost universal.

Bad Conditions for Potatoes.

To the Editor: We have a failure in a crop of potatoes here in this part of Los Angeles county and would like to know the reason for it. The potatoes were planted early and were frosted several times while young. Now that we come to harvest them we find them with very large tops green. The largest of the potatoes are about the size of a hen's egg and from that they run down to the size of a pea. The larger ones are beginning to send out roots, four or five to a potato. The potatoes have not been irrigated lately and the ground they are in is dry. There are many potatoes in a hill, but they are not large enough to be worth digging. Runners, many of them 18 inches long, run out from root near surface of ground. On these are many small potatoes the size of peas. If you can tell us the reason for this we will be very much obliged.—Grower, Hynes.

The ugly behavior of your potatoes is doubtless due to irregularities in temperature and moisture which have forced the plants into abnormal or undesirable activity. Potatoes should have regular conditions of moisture so that they shall proceed from start to finish and not stop and start again, for this will usually make the crop unsatisfactory and worthless. Excessive moisture is not desirable, but the requisite amount in continuous supply is indispensable.

Clean Ground for Beehives.

To the Editor: We wish to ask what we shall use to kill out grass, weeds, etc., permanently? We have four apiaries in which, among the hives, wild oats, grass, weeds, etc., grow every winter. We find it almost impossible to get men who will work at such business, and have decided to destroy the soil, so far as growing vegetation is concerned. We can get crude salt from the lagoons along the coast. If you advise that, about how much should be used on each 100 feet square? —Beekeeper, San Diego.

We cannot tell you how much crude salt you would have to use in order to kill all vegetation, as you propose. You will have to make application, noting results, and apply more if necessary. A more effective commercial weed killer is made as follows: Dissolve one pound of concentrated lye in one gallon of water and then dissolve in this solution two pounds of white arsenic. After the arsenic is dissolved, add the solution to twenty gallons of water. It is then ready to spray upon any plant which you wish to kill and is useful in cleaning land on which no vegetation is desired, for its effects will remain longer than the killing by salt.

Gumming of the Cherry.

To the Editor: My cherry trees are six years old. Some of them are dying. The leaves on some branches are dead; the rest look light in color and are drooping. The roots look all right. Gum runs out in different places from under the bark, and there is sometimes a soft spot filled with thick white gum that runs out when opened. Some of the trees have this on and look all right as yet. Should this gum be removed? Can anything be done to save the trees? Is it sour sap? Any information through your paper will be gratefully received. NEW SUBSCRIBER.

Mountain View.

The gumming of the cherry tree is caused by some unfavorable growing condition. A very comprehensive statement on this subject was recently prepared by Prof. W. S. Thornber, formerly of the Washington Experiment Station. He mentions some things which do not occur in California, but some of those he cites are involved in our troubles. He says:

PROF. THORNBER'S STATEMENT.

Cherry gumosis is probably the most serious problem that the cherry grower has to contend with. The fact that it is neither an insect nor a plant disease enemy makes spraying useless under any consideration after a good case of gumosis has developed.

The primary cause of gumosis is usually difficult to determine in most cases, since it is frequently concealed by other difficulties; however, any of the following causes may or may not cause gumosis:

1. Poor soil drainage or too wet land.
2. Strong late fall growth, followed by fall or winter injury.
3. Late summer tillage.
4. Root injury caused by crown gall, too deep cultivation, or winter freezing.
5. Repeated injuries from the singletree or cultivator handles.
6. A severe attack of aphis, borers, or slugs.
7. Too heavy spring frost that kills leaves, blossoms, etc.
8. A severe check of growth caused by over-irrigation, under-irrigation, or any natural cause.
9. Poor, shallow soil underlaid with hardpan or rock.
10. Too much alkali, barnyard manure, or commercial fertilizers.

In the treating of gumming trees the essential thing is to, if possible, remove the difficulty. If the bark is dry and tough, it should be softened by a good coat of whitewash or a thorough scrubbing with a stiff brush and strong soap suds. It is sometimes advantageous to slit the outer bark on two or three sides of the trunk or large limbs with the point of a penknife, not deep enough to injure the inner bark or the cure will be worse than the disease.

If the gum has already started to ooze out and harden, cut away all the patches, at the same time removing all dead, injured or diseased bark, cleanse with strong bordeaux mixture and when dry, coat over with orange shellac or lead paint. A large percentage of trees can be cured in this way, and lives of all greatly lengthened even though not cured. A thorough draining of wet soil, proper handling of most soils, and care in pruning of affected trees will usually help them.

A HORTICULTURAL COMMISSIONER'S ADVICE.

To the Editor: From 20 to 30 inquiries regarding cherries have come to E. F. Petersen, Horticultural Inspector in Alameda county, as a result of his letter in the PACIFIC RURAL PRESS of June 10 concerning the gumming and die-back of cherry trees.

Most of the inquiries are regarding the gumming of trees, for which Mr. Petersen gives the following prescription: Mix thoroughly one pound of whale-oil soap in 50 gallons of water; to this add a paste made of equal parts of lime, clay, and fresh cow manure, until the whole is made into a thick paint. Apply this paint to the parts of the tree that are gummed as often as appears necessary. Mr. Petersen and the other inspectors of the county have recommended this treatment in numerous instances during the past few years, and claims that a cure has invariably resulted.

The gumming is caused by a heavy flow of sap in warm weather being suddenly checked by the cold, the sap souring and exuding from the bark at the weakest part of the tree. Other gum that comes usually appears at the same place, and the bark becomes dry and flakes off, causing that part of the tree to die if not cared for. The above paint is said to keep the bark soft, to prevent it from drying out, and giving it a chance to heal up. The paint when applied to the crotch of a cherry tree where moisture and refuse may gather prevents decay.

When the branches die back the only thing to do is to cut off the dead wood at once, cover the wound to prevent decay, and slit the bark with a penknife if it appears too tight. The die-back is due to bad soil conditions, or a poor root stock which cannot get the best from the soil, and is prevented by having a good root stock and keeping the soil in good condition. Mr. Petersen considers the life of a tree grafted on common stock to be from seven to twelve years under average conditions, while the Mahaleb or Mazzard stock will be serviceable for many years longer. W.

RAPID PLANTING OF FRUIT TREES.

We do not believe in encouraging too rapid planting of fruit trees, for there is always danger of slack work, uneven stand of trees, and consequent losses and disappointments, and, incidentally, many left-handed compliments for the nurserymen, who have trouble enough of their own without taking those which belong to the planter. However, accounts of rapid planting are interesting. A correspondent of the Missouri Fruit Grower, writing from Pennsylvania, describes some rapid planting done by Prof. H. A. Surface, economic zoologist of Pennsylvania, in the Cumberland valley, two miles south of the fluorishing town of Mechanisburg, Pa. The method is one long used in California, but we never knew of its being worked so fast.

The farm of Professor Surface is situated on a ridge of shale-loam, especially well adapted to fruit growing. Originally consisting of 92 acres, it was enlarged some months ago so as to complete the full 100. The planting of the original tract with apple, pear, peach, plum, quince and cherry trees was commenced by Professor Surface five years ago, and there are now some 17,000 trees on the premises, in flourishing condition. The other eight acres are being planted this year, several acres to be reserved for the testing of new varieties of fruits, including grapes and berries.

The professor has termed his method of setting out trees in a commercial orchard as a "rapid-fire system." Having prepared the ground thoroughly, so as to have a uniform depth of disintegrated soil, it is scored in furrows at right angles with a plow. As peach trees were to be planted at this particular time, the furrows were run 20 feet apart. Thus, the rows are 20 feet apart with the trees separated at distances of 20 feet in each row.

The trees had been previously gotten ready, within a short time of being planted. They were first "topped" by passing bundles of the trees in front of a circular saw, sometimes called a "buzz" saw. The stems, or trunks, were left at not more than 18 inches from the roots. The ends were somewhat jagged, and the professor explained that this was not a "fancy method", but it was sufficient for his purposes.

The roots of each tree were examined and rapidly trimmed. This was done in the field, where the trees had been placed in trenches and "heeled in" after they had been topped. The central tap root was shortened, as well as some of the long, lateral roots, the latter being cut at an angle so that they would rest squarely upon the ground. All broken and damaged roots were removed.

The tree planting was then commenced. As an attendant dropped a tree at each intersection of furrows, Professor Surface, without further help, proceeded to set it, and then, getting around the tree with his feet, making one revolution, pressed the earth down firmly that he had thrown upon the roots with a spade. More earth was then thrown in and pressed in place, and the planting was finished.

As timers the audience selected Prof. J. S. Briggs of Norristown, Fred R. Fertig of Lebanon, and C. F. Fox, while State Nursery Inspector Enos B. Engle was chosen referee.

Seven trees were planted in the first minute, and six a minute until the fifth minute, when an obstruction was encountered and only four were planted. This continued for ten minutes until 61 trees had been carefully set and planted. A special effort, or "spurt" was made in the last minute, when the professor succeeded in planting nine trees.

Following is the record by minutes: First minute, 7; second, 6; third, 6; fourth, 6; fifth, 4; sixth, 5; seventh, 5; eighth, 6; ninth, 7; tenth, 9. Total, 61.

The variation in time was due to the "lay of the land," one portion having more grade than another. Several of the trees, also, were faulty, and required extra care.

THE BROWN APRICOT SCALE PARASITE.

To the Editor: Active work in the distribution of the comys fusca, the parasite for the brown apricot scale, is being carried on by the horticultural inspectors of Alameda county under the direction of Commissioner Fred Seulberger. The methods employed in the work could be used by any orchardist that could find the insect, and according to Commissioner Seulberger much greater progress in the control of the scale would be accomplished if the inspectors alone were not compelled to do all the distributing that is done.

The comys fusca has been sent out from the State Insectary for several years, and can now usually be found in suitable numbers in any apricot orchard where they were once placed. In Alameda county they hatch out first about the middle of June and continue to do so for a month or more. They can be found after this date running over the twigs where are the scales. In appearance they resemble closely small ants and can easily be mistaken for them. The scales in which are the insects ready to hatch are black, or spotted with black, and can easily be told, as sound scales are an even brown. By going to such an orchard no demand for the parasite need be made on the State Insectary, and none is made in Alameda county.

It is advised to put a number of twigs in a Mason jar or wide-mouthed bottle, which is covered with a thin cloth that will permit the entrance of air. They are kept there for eight or ten days until a number of insects have hatched, and are then liberated in an orchard infested with scale. The twigs can be laid on the crotch of a tree.

As soon as the comys fusca comes out it attacks the sound scales, eating them with great relish, and later laying their eggs in others. The larva, after hatching out, eats the eggs of the host scale and both kills it and prevents any young from being produced. It is claimed by inspectors and commissioners in various counties where much work has been carried on that a substantial difference can be found in orchards where the insect has been freed and those left in their natural condition, and that spraying has to be resorted to less often.

The work of distribution can be done by any person, as soon as a tree upon which the insects live can be found. As many as 15 to 20 jars in as many orchards are often put out by the individual inspectors since the generation for this year came out. More progress still might be made if private individuals would see about introducing it into their orchards, if the inspectors were unable to get around to them.

Greater success from the use of the comys fusca is obtained in some places than in others, owing to the fact that the comys fusca is the prey of another parasite, which does as much damage to it as it does to the scale. Where this parasite is absent the comys fusca is generally considered the most effective parasite introduced, with the exception of the vedalia cardinalis, which attacks the cottony cushion scale. D. J.

Oakland.

How the Sicilians are Trying to Give Us a Lemon.

[In the PACIFIC RURAL PRESS of July 8 we had a notable statement from ex-U. S. Senator Cornelius Cole, of Los Angeles, giving reasons why the California lemon should receive protection against the fruit of Sicily, from the point of view of the California grower. Below we have very timely information of what the Sicilian lemon dealers are doing to break down that protection in ways that should not be allowed to prevail.—EDITOR.]

To the Editor: Some phases of the tariff revision war are peculiar, and almost humorous. When the Payne-Aldrich bill was under discussion, the most insistent demands for reduction of duties were voiced by the importing interests, which naturally have no sympathy at any time with American industries or American labor. In the present fight, certain importers have sought and obtained the co-operation of foreign producers, who are submitting to a tax for the creation of a fund with which to fight protection in its lair, and to influence legislation right here in Washington.

What the Tariff Does.—It is a fact well known now that speculators in Palermo, Sicily, and in New York City, have joined hands to secure a reduction in the lemon tariff which in 1910 paid into the U. S. Treasury the very respectable sum of $2,233,527.87, as compared with collections of $1,351,758.88 for 1909, the year before the new tariff went into effect. As a tariff producing a substantial revenue, this appeals to conservative Democrats, while as a measure giving reasonable protection to a growing home industry, it is favored by Republicans and protection Democrats alike. The consumer does not suffer by it. On the contrary, he is benefited by competition which would not exist if the tariff were wiped out or reduced to a figure which would not allow the American lemon growers to exist, or which would keep them out of the New York market. With no tariff, or an inadequate one, the American growers would hardly be able to sell their fruit east of the Alleghanies. This would give the Sicilian fruit an absolute monopoly of that section of the United States, by reason of the lower price at which it can be produced, and the cheap ocean freight rate to New York. As the business is in a very few hands, combined under a close working agreement, and as it enjoys further the protection of the Italian Government to an extent which practically offsets the benefits derived in this country from the tariff, the New York price could and would be kept at a figure limited only by the rapacity of the importers and the ability of the public to pay. Any attempt by the American growers to invade the Eastern markets could be met, as in the past, by a temporary reduction in prices which would drive them back into their limited Western territory with severe losses, after which the prices would again advance for the benefit of the importers.

What They Are Fighting For.—Here is a stake worth playing for. It is for this that the Sicilian growers are giving up an assessment which has ranged from 4 cents to 10 cents on every box of lemons shipped to the New York market. It is for this that they are vociferously demanding the reduction or abolishing of the lemon tariff. It is for this that they are hiring lawyers and lobbyists, to try to influence legislation. It is because of this meddling with American legislation that the names of certain Congressmen, who are held to be friends of the Sicilian lemon growers, are spoken of freely as friends of the alien rather than as representatives of American industry.

California Growers Must Fight Back.—With a well-financed campaign like this, aimed at an American industry, it becomes necessary for the lemon growers to defend their commercial existence. Through their mutual organization, they employed the foremost expert in their line in the world, G. Harold Powell, whose investigations for the Department of Agriculture in California, Spain and Sicily demonstrated his high standing as a practical scientist. It was decided to procure detailed figures showing the cost of producing lemons in California and also to procure full data regarding the industry in Sicily, Italy, and Spain, although the latter country does not figure largely in the production of lemons for export. Mr. Powell has just returned from his tour of investigation, and while he has not collated his data, he is in a position to substantiate all that he has said previously regarding the cost and conditions of production abroad.

Mr. Powell's Report.—Mr. Powell sailed April 18 for Europe, accompanied by Frank F. Chase, vice-president of the National Orange Company of Riverside, and one of the best authorities in the world on the orange and lemon. His intimate practical as well as theoretical knowledge of irrigation engineering, and on every phase of the industry, constituted him an expert and supplemented the practical and scientific knowledge of Mr. Powell, so that the investigations made by them had all the value of a dual inquiry. They studied the industry in all of the important lemon-producing sections of Sicily and Italy, took numerous photographs, and found that they were able to determine the variations in the difference of cost of production, cultivation, irrigation, fertilization, yields of trees, number of trees per acre, value of properties, cost of equipment, and all of the factors entering into the problem. They also determined the cost of transportating the fruit, and the variations in the cost of getting it from the groves to the steamships. Mr. Powell's investigation, made two years ago for the Government, had made him thoroughly familiar with all the details of the business, and the growers and shippers, appreciating this fact, extended him every courtesy and opportunity to study the industry from all standpoints.

The most striking thing found by the investigators was that no two groves or shippers gave the same figures as the basis of cost. This is doubtless due to the fact that the groves vary in size from a few trees to groves containing hundreds or thousands of trees. The cost often represents a little more than the value of the labor of the family that cares for the grove. The greatest variation was found in such items as the cost of gathering the crop. Sometimes this would vary 100 per cent in different localities.

An important factor in the situation is the protection extended to the industry by the Italian Government through the citrate of lime monopoly. Twenty per cent of the entire crop is converted into citrate of lime and the government guarantees a minimum price, thereby materially affecting the price of the fruit exported to the United States. It acts practically as a bounty on the price of the fresh fruit, and in that way the Italian Government does practically the same thing this Government does through a customs tariff.

Europe Needs More Lemons.—Mr. Powell secured a large amount of data from Rome, and from the various experts in Italy, on lemon and orange culture. He found that the lemon industry is now in a very flourishing condition there. Lemons constitute the most profitable crop in Italy and Sicily, and the growers are prosperous. The price of lemons to the grower is higher now than it has been for years, on account of the great growth in the demand for lemons all over Europe. Lemon exporters at Palermo told the Americans that the European market is expanding rapidly, and that new markets are opening up every day. With the increased demand, the damage to the crop by frosts and windstorms has resulted in an abnormal increase in the price. There is a tendency in New York, Mr. Powell found, to attribute higher prices to the Payne-Aldrich tariff, but the tariff on lemons has had no adverse effect on the business in Sicily, where the exports are heavier than ever before. For the year following the enactment of the Payne-Aldrich bill, imports of lemons into the United States were 25,000,000 pounds in excess of the importations for the previous year, and it is probable that the imports for this year will equal those for last, as lemons are coming over in unprecedented quantities.

Funds for Fighting Our Fruit in Our Own Markets.—As has already been stated, Mr. Powell found in Palermo a very vigorous organization which is collecting funds and sending them to the United States to be handled through the American-Italian importers. The existence of this fund is no secret in Italy, but its purpose is known and understood by everyone. Prior to May 1, this money was collected by the American importing interests. A change was made in the place of collection on account of the difficulty of making the collection in New York. Mr. Powell learned in Palermo that the collection of the fund is provided for in the steamship rate. The rate was raised to cover the amount of the assessment for the fund, and the amount of the increase is rebated and paid into the anti-tariff campaign fund, with which the foreign interests are seeking to influence public sentiment and to affect legislation in Congress.

That there is a big difference between the cost of labor in this country and in Europe was fully proven by Mr. Powell's inquiries. He learned that labor is about one-third to one-fourth as dear in Italy and Sicily as it is in California, while the cost of handling the fruit is only one-half to two-thirds as expensive, and the cost of transportation is about one-third as great as in this country.

Another proof of the fact that foreign interests are back of the fight on the lemon tariff is the activity of Congressman Francis Burton Harrison in the fight for the importers. He comes from the "pushcart" district, and the Italian pushcart men are completely dominated by the importing interests. Moreover, Harrison has said that 300 politicians in New York have petitioned him to have the duty lowered. The importers are very active, and are circularizing the trade through their New York office, but the nature of the campaign is well understood in Washington.

CORRESPONDENT.

Washington, D. C., June 30.

DUE CREDIT TO PROF. CLOSE AND MARYLAND.

To the Editor: I would like to have you make a correction with reference to what appears in the PACIFIC RURAL PRESS for June 24, 1911, page 491, under the heading of "Warming Peach Buds in New Jersey." There is no Experiment Station Horticulturist by the name of C. P. Chase. What you really refer to is the work which I did here at the Experiment Station in Maryland in 1910, an account of which is given in the 1910 report of the Maryland State Horticultural Society. So far as I know, nothing has been done at all in either Delaware or New Jersey in orchard heating. I believe the Maryland Experiment Station is the only one in the Eastern States which has done any work along this line. My work was continued here this year.

C. P. CLOSE.
State Horticulturist.

College Park, Md.

[We are glad of the correction. We took the outline as printed in an Eastern exchange. We hope Prof. Close will send us later information on his interesting work.—EDITOR.]

Hay By Measure.

To the Editor: Kindly advise me of the number of cubic feet that should be allowed for a ton of alfalfa hay loaded on a wagon from the shock. I must sell more or less in that way, as no scales are near enough to be used.—Subscriber, Livingston.

Who can help with this? It is a proposition, practically, as to the weight of loose hay, which could of course keep changing the higher you built the load on the wagon. It is easier to give figures on weight from a stack in which there has been something like uniform pressure for a time. In the case from a 30-day stack it is common to allow an eight-foot cube to a ton, etc.

AGRICULTURAL REVIEW.

With the Fruit Men.

An appeal to the Interstate Commerce Commission to have the minimum weight of carload lots of fresh fruits to Chicago reduced from 26,000 pounds to 24,000 has been made by fruit shippers.

Acreage figures for bearing vines in Kings county are as follows, according to a report rendered to the supervisors recently: Raisin grapes, 7710; wine grapes, 123; apricots (trees), 80,700; peaches, 430,200; prunes, 56,100. The non-bearing trees would increase these figures considerably. The acreage of standing alfalfa is placed at 12,622.

Horticultural Commissioner H. H. Bowman, of Placer county, in a report to the board of supervisors, states that the pear blight has been practically eradicated. The peach worm is also well controlled. He states that Eastern fruit shipments will amount to about 1800 cars for the season. The revised standard rules for packing fruit have not met with approval from all sections. Fruit buyers in the county at the time of the report were paying 65 to 75 cents for peaches, and $1 to $1.25 for plums.

The Anaheim cannery has opened and will put up 100 tons of apricots, for which an average price of $40 per ton has been paid, after which peaches will be handled.

The crop of red and white Astrakhan and Alexander apples in the Sacramento valley is estimated at about 40% of last year's crop.

Lee Gray, of the Home Packing Co. of Fresno, has returned from a trip East and reports tnat conditions are very favorable for high prices for raisins there.

The recent convention of the National Educational Association in San Francisco was the occasion for gifts of fruit from many sections of the State.

Carload lots of fruit from Vacaville amounted to 282 up to July 12, 1911, against 509 for the season ending July 13, 1910.

The first fruit train of the Western Pacific left Sacramento for the East Wednesday, July 12. Daily trains are to be run for the season.

Good olive prospects are reported from Oroville.

The annual meeting of the San Dimas Lemon Club, a week ago, brought out an attendance of 250 persons.

Owing to high prices and a late season, the Winters cannery was very late in opening, and when the run started it was upon apricots imported from the Suisun section.

A section of land on Berry creek, Plumas county, is being put out to apples by William Camton.

The removal of suckers from trees is recommended by Charles A. Dewey, of Upland, as a remedy for the deterioration of the Washington navel.

Fruit shipments from Kerman this year are estimated at 40 cars, including peaches and grapes.

Prices and Prospects.

The system of selling grapes by the acre is being tried around Lodi, offers of $65 to $75 being made.

A car of assorted peaches from Winters was recently sold at $2602 in Chicago. Up to July 14, about 200 carloads of fruit left that place.

Andrew Mattei, of the "Independent" wine men of Fresno, states that the price for wine grapes will be $9 to $10 per ton.

The first Damson plums in Fresno brought 5 cents per pound in local markets.

The most of last year's hops were closed out recently when 372 bales were sold in Sacramento at 25 cents per pound.

Shippers sending green peaches to Chicago are paying $40 for Elbertas and $50 for Tuscans.

Reports from Ontario state that C. P. Humphreys has contracted to sell his entire output of 100 tons of dried apricots for 12½ cents per pound, or $250 per ton.

A number of growers of Fresno are holding their Thompson's Seedless raisins at 6 cents. Offers of 5 cents and for Muscats at 4 cents are said to be made.

Ranchers at Livermore are holding the best hay at $15 per ton. The largest sum obtained was $13.50.

A number of sales of almonds are reported at 16 cents.

A shipment of Thompson's Seedless grapes from Imperial recently sold in Chicago for $3.55.

Packers are offering 4¾ cents for prunes, with a greater premium on large sizes than has been usually offered.

Packers are reported to have decided to meet the price of 9 cents on 1911 peaches.

The sudden collapse in prices for potatoes is said to be due to the desire to market the crop at high figures and the putting of potatoes on the market before they were sufficiently mature.

On Wednesday afternoon, July 19, the following prices were given by a dried-fruit house of San Francisco for various fruits: Peaches, 9 and 9½c.; new raisins, 4½c.; old raisins, 4¼c.; apricots, 14 cents; prunes, 4½c. base, with a large premium for 30-40s and 40-50s; pears, 11 to 12c.; nectarines, 11 to 12c. The demand for fresh and canning supplies was said to be limiting the amount available for the driers and responsible for high prices. The prune crop is estimated by the concern to be at between 150,000,000 and 160,000,000 pounds.

Deciduous Fruit Shipments.

Sacramento, Cal., July 15, 1911.

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, July 14, 1911, as reported by the California Fruit Distributors:

Cherries—7½ cars. Cherry shipments have kept up better than expected. They have been running as high as two cars per day occasionally, but dropped off to less than one car on the 13th, and none at all on the 14th. Movement is now practically completed.

Apricots—8 cars. So few of this variety are now available that they are not worth mentioning. The movement will entirely cease this week.

Peaches—83 cars. This fruit has not been in as large supply as expected last week, and will continue light for the week to come. The early varieties are now nearly done. Early Crawfords and Fosters are beginning to make their appearance. Car-lot shipments of these varieties will begin next week from the San Joaquin valley. Quality of the fruit is fine. About July 20 the heavy movement of peaches will begin and will continue for about three weeks. The crop is not as large as expected.

Plums—184 cars. It is likely that the plum movement was as heavy during the past seven days as it will be at any time during the season. The early sections are now practically through with the heavy shipment, although they will continue in lighter supply for the next three weeks. In the valley the large shipments are just beginning. Offerings for the next seven days will probably be considerably lighter than during the past week. Tragedy, Sugar, Bradshaw, Wickson, Santa Rosa, Comedy, and a few Diamonds will represent the varieties available next week.

Pears—60 cars. Bartletts from the river are now coming in more freely, the movement for the past seven days being nearly five times as large as the previous week. Fruit is now better developed, both for size and quality. It is expected that shipments of this variety will be as large during the next seven days as at any time during the season. There has been some complaint of the reappearance of fire-blight in the pear orchards, but it will not affect the output this season.

Grapes—The first shipment of Fontainebleaus from the Vacaville section appeared several days ago. Car-lot shipments of Thompson's Seedless are now going for-

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All $20.00 to $25.00 suits, SALE PRICE $15
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Summer Overcoats, Same Huge Reductions (THIRD FLOOR)

Men's Furnishings

Sale of E. & W. Shirts continued also
$1.50 E. & W. shirts, SALE PRICE $1.15
$2.00 E. & W. shirts, SALE PRICE $1.35
$2.50 E. & W. shirts, SALE PRICE $1.85
$3.50 E. & W. shirts, SALE PRICE $2.35
50c. Neckwear, SALE PRICE 30c
MAIN FLOOR

Boys' Suits

Knickerbocker Suits in the latest double breasted, single breasted and Norfolk styles—Russian and Sailor Suits—Reefers and Overcoats:
All formerly up to and including $5.00, SALE PRICE $2.95
All from $6.50 to $8.50, SALE PRICE $4 95
All from $8.50 to $12.50, SALE PRICE $6.95
$1.50 Corduroy and Woolen Knickers, SALE PRICE 95c

MAIL ORDERS FILLED PROMPTLY

Children's Furnishings

MAIL ORDERS FILLED PROMPTLY

Boys' 75c. Negligee Shirts for..... 55c
Boys' $1.00 Negligee Shirts for..... 85c
Boys' $1.50 Negligee Shirts for.....$1.15
Boys' $2.00 Negligee Shirts for.....$1.65
$2.50 Middy Blouses, up to size 14....$1.95
50c. Bath Slippers, slightly soiled.... 25c
25c. Four-in-Hand Silk Ties; FIVE for $1
Pajamas (flannelette), sizes 6, 8, 10... 85c
Pajamas (cheviot), sizes 8 to 16.....$1.50
$1.50 Sweaters; reduced to.....$1.15
Khaki Military Suits; reduced to.....$1.40
Indian Suits, sizes 4, 6, 8, 10; SALE $1.00

CHILDREN'S STRAW HATS HALF PRICE

Roos Bros. INC.
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SAN FRANCISCO

BOYS' WASH SUITS HALF PRICE

ward from the Imperial district and some have already reached Eastern markets. The outlook for the grape crop continues fine. Mildew has appeared in several different sections, but is being promptly looked after, and it is not expected that it will have the effect of materially decreasing shipments.

Shipments of fruit from this State so far this season have been disappointingly small. On July 14, 1910, total shipments amounted to 2460 cars. On the same day this year the total had reached only 1198¾. Allowing for 100 more cars, owing to the increase of the minimum from 24,000 to 26,000 pounds, would give us a total of 1300 as compared with 2460 last year, or a little more than half.

General Agriculture.

A quarantine circular against the alfalfa weevil of Utah has been issued by the office of the State Commission of Horticulture.

The value of the grain to be harvested from Richgrove to Lois, Tulare county, a distance of about 17 miles, is estimated to be about $350,000, making one of the best crops for several years. The yield is estimated partly by the number of sacks ordered by ranchers of the district. Winter wheat in the district is giving from four to six sacks per acre, and summer-fallowed land only eight or a little more.

J. D. Hornsby, of Poplar, Tulare county, claims to have corn on his place that measures 13 feet 4 inches in height. Another record plant is a root of alfalfa grown by W. E. Fremo of Porterville which weighs eight pounds dried, the stalk being large enough to carry a room.

On some newly reclaimed land in District No. 70 of Sutter county, G. R. Summy has harvested 30 sacks of barley per acre.

The first of this year's cotton of Imperial county was ginned July 14. The crop as a whole is much superior to that of 1910.

A production of 72 bags of barley per acre in some spots and an average of 50 per acre is claimed to have been obtained on the Clifton Court tract, northeast of Byron.

Onions weighing 5½ and 3 2-5 lbs. from the field of T. Orlando of San Jose are being exhibited at the Chamber of Commerce of that place.

From Imperial valley nearly 2800 cars of melons were sent out this year. To care for the crop, 56,000,000 lbs. of ice was required.

Commissioner G. A. Lamiman of Shasta reports that 15,000 sweet potato plants have been put out in Happy valley this season.

The U. S. Crop Reporting Board makes the estimate of the condition of winter wheat on July 1, 1911, as 76.8% of perfect crop, against 81.5% a year ago, and spring wheat 73.8%, against 61.6% in 1910. California is given 3% of the total acreage, with an 83% condition for winter wheat. For potatoes (white) the estimates are 76 and 86.3%, with only 97.60% of the acreage of 1910. For the average of all crops, California has 1.7% above normal condition. Compared with a ten-year average throughout the country, the prospects for crops are in part as follows: Dry beans, 98.1; apples, 97.6; pears, 96.3; grapes, 96.1; lima beans, 92.3; all wheat, 89.6; onions, 88.9; potatoes, 84.1; barley, 82.0; and peaches, 75.6%. With the acreage considered, the production compared with that for the past five years will be about as follows: Wheat, 1.4% larger; barley, 11.6% less; potatoes, 10.8% less.

Miscellaneous.

The Cottrell process for eliminating sulphur fumes has been tried at the Balaklala smelter at Coram, Shasta county, and has given sufficient satisfaction to justify the management in reopening the establishment.

Farmers at Livermore have requested the University to hold an Institute at that place for the purpose of discussing thoroughly the dry-farming system for local application.

Farmers' Union No. 60 of Santa Clara county recently quadrupled its membership at a single meeting. The union set 5 cents as the price for which prunes should be held.

The Alameda Sugar Co. is reported to be looking for a site for a sugar factory in the Sacramento valley.

By a vote of 4 to 1, 360,000 acres in Imperial county were organized into an irrigation district under the Bridgeford act, July 12. All irrigation systems in the county will be merged into one as a result of this action, and 104,000 acres of new land added to the 220,000 now under ditches.

The Italian-Swiss colony is to erect a three-story building at Battery and Greenwich streets, San Francisco, to be used for bottling, storage, and shipping purposes.

From one acre of land near Niles, Alameda county, garlic to the value of $225 was shipped to Panama last week.

Dissensions among the different systems taking water from the upper Tule river bid fair to be brought to a close soon with the agreement of most of those concerned to aribtrate their differences.

The Petaluma Poultry Fanciers' Association has decided to take steps looking to the formation of a central organization of all poultry associations of the State.

W. G. Simmons, of San Diego, has the Guatemalan tree tomato fruiting successfully on his place.

The Napa branch of the California canneries will open on Bartlett pears and peaches before August 1, with a new plant.

The owners of adobe lands near Nelson, Butte county, are considering the organization of a drainage district.

While eggs in the San Francisco markets were bringing 25 cents per dozen, the price in Hanford (Kings county) stores were given last week as 15½c. cash and 17½c. in merchandise. The retail price was 20c., as against 30c. in San Francisco.

The Napa Grange is preparing to conduct a series of institutes under the University to determine just what crops are best suited to the soil and climate of the county, in order that farmers may specialize upon some crop.

A fungus growth which appears to do considerable damage to morning glory has been found on plants near Porterville by L. Ashley.

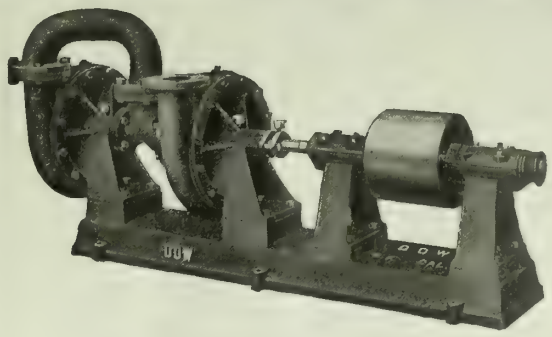
Reclamation work on land of the Fresno Irrigated Farms Co. at Kerman has started with pumping of wells to lower the water table.

Monterey County Fair.

Elaborate preparations are being made for the coming Fair and Carnival at Salinas from August 1 to 5. The Spreckels company is going to give an exhibit of beet culture, showing every step in the history of the beet from the time of preparing the soil until it comes out the finished product. The company intends having small plats showing the beets growing, the best methods of thinning, irrigating, plowing up, topping, and other cultural processes. The potato exhibit will also be very good, as the large growers intend to show how the Salinas Burbank reaches a state of perfection.

During the week there will be racing, airships, and a wild west show. Vaqueros from all over the State have entered the contests, such as quick lassoing, tying and branding cattle, riding bronchos and bulls, and the State is being searched for outlaw horses and bulls for these events. Cash prizes will be awarded in all the wild west contests.

J. C. Tetrault, buttermaker at the Porterville Co-operative Creamery for the past four years, has left for a trip to Montreal. Charles R. White, a graduate of the State School at Davis, and a former employe of the company, has been appointed in his place.



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Alaskan Agriculture.

It seems that this coast is pretty good for growing things even up to the roots of the North Pole. A report just issued by the Canadian Dominion Government on the agricultural resources of the Yukon quotes a review by Dr. Dawson, written a number of years ago, an abstract from which follows:

"During the past few years comparatively large quantities of oats, potatoes, and vegetables have been grown along the Yukon valley, particularly in the vicinity of Dawson, and in nearly all cases excellent results have been obtained. It is computed that the quantity of potatoes grown near Dawson last season and placed on the market aggregated 200 tons. It has been estimated that the population in the Yukon consumes annually $200,000 worth of potatoes. Potatoes grown in the Yukon are quite equal in size to the imported product, and when the proper kind of seed is planted in suitable soil and attention is given to the cultivation, potatoes can be grown fully equal in quality to the best outside product. The best quality of potatoes so far have been grown on the islands in the Yukon river. On the land surrounding Dawson, either in the valleys or on the benches, potatoes of good quality can be grown only after the land has been cultivated for a few years. On an island in the Yukon river at Ogilvie, 175 pounds of potatoes were planted on May 12, and by the first or second week in September the crop was ready for lifting, and yieled 8000 pounds. The was plowed as early as April frost would permit, stable manure and about 300 pounds of lime per acre being applied. The potatoes were planted as near the surface as possible and hilled up as the vines grew. It is estimated that during the present season a much larger quantity of potatoes will be grown than in former years, and some of those interested in agriculture predict that within the next few years there will be a sufficient quantity of potatoes grown to supply the market. Besides what is required for the local market a considerable quantity of potatoes is shipped every year to Fairbanks and other points in Alaska.

"On an island in the Yukon at Ogilvie three or four bushels of oats per acre were sown about the first of May and harvested about the middle of August. The yield was about two tons of oat hay per acre, which was sold at an average of $50 per ton. Native hay, averaging 1 to 1½ tons per acre, was also harvested about July 15.

"Many islands in the Klondike valley and along the Yukon have been cleared and made into gardens, in which vegetables of excellent quality are grown. Last season a comparatively small quantity of vegetables was imported, the market gardeners near Dawson being almost able to supply the demand. The seeds of nearly all vegetables are sown in hothouses early in February and then transplanted to cold-frame boxes, where plants which are intended to be planted outside are strengthened and prepared for outside planting."

Writing of the growth of garden produce in the Yukon valley, Professor Macoun says:

"Growth of vegetables is so rapid and vigorous that to a person coming from the East it is simply astounding. When I reached Dawson on July 10 early cabbages were being set out, and on August 5 their weight ranged from 3 to 5 pounds. On the 22d, when I made my last visit, hundreds of matured cabbages and cauliflowers had been cut and sold. I measured the two lower leaves of a cabbage cut the day before, and these, placed opposite each other, had an expansion of 3 feet 9 inches with a breadth of 16 inches. I cannot call even this an average one, as there were hundreds larger but later in maturing. Cauliflowers were from 6 to 10 inches in diameter, but I was told larger ones had been cut."

FORCING.—Tomato culture is all under glass. The average yield of a plant is 8 to 12 pounds. They sell for 30 to 50 cents per pound. About 10 tons per annum are raised in the vicinity of Dawson. Lettuce is grown under glass until about June 1. The first growth is ready for market about April 1. It is sold for from $2 per dozen bunches when first placed on the market to $1 per dozen bunches later on in the season. A large quantity of this is used on account of there being a scarcity of vegetables in the early spring. Celery grows rapidly. This is all started under glass and matures in the open. It sells for about $2 per dozen stalks. Cabbage is started under glass and transplanted. An early variety is used in order that it may mature before frost. It sells for from 5 to 15 cents per pound.

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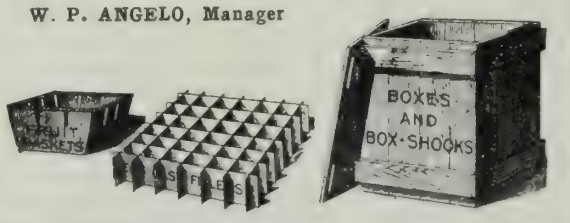
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War Munitions for Agricultural Peace.

To the Editor: Swords and spears have long been out of date as implements of war, but the makers of war machinery have had to think hard and work lively to keep abreast with the advance in the development of the plowshare and the pruning hook, and all that helps to make the farm and the farmer a mighty factor in the affairs of a nation. So far, however, labor and time-saving devices are mainly for the valley farmer, and the man whose acres cover the hills and mountain sides of this and other States must still plow and cultivate in the old way.

Nations are multiplying "Dreadnaughts" while the International Peace Commission is loud in its outcries against such great extravagance. Right here let this commission sit up and take notice; let it turn its eyes upon the farmer, especially the hillside farmer, and it may find a solution for some of its problems. By the aid of the manufacturers of the materials that make the "Dreadnaughts" dreadful the farmer is being trained to turn the forces of destruction into forces of production.

Under the auspices of the Wrights Local of the Farmers' Eucational and Co-operative Union, the Du Pont Powder Company gave a very interesting demonstration of the uses of dynamite on the farm, on the farm of A. G. Palmer, near Skyland, in the Santa Cruz mountains, on Saturday, June 24, 1911. Fully a hundred farmers and farmers' wives and farmers' children came from the surrounding hills and valleys to see the demonstrators, Mr. Oliver and Mr. Stibich, blow up the farm.

In the morning dead fruit trees that had been planted in soil composed of shale rock, covered with an 18-inch layer of shot loam, were blasted out, and the one shot also prepared the hole for a new tree. Both methods of firing were used; that is, with fuse and cap and with a blasting machine.

The visitors had brought well filled baskets, and at noon all adourned to Adams Grove, near by, to enjoy a brief social time. Coffee was served by the social committee of Wrights Local. After luncheon the gentlemen held a discussion with the demonstrators as to the advantages of "Farming with Dynamite," and the necessity of this work in Santa Clara and Santa Cruz counties. Mr. Wrinch, the president of Wrights Local, then called for order and introduced Mr. Homer Craig, State Vice-President of the Farmers' Educational and Co-operative Union, who spoke on the organization of this great movement in the days of cotton speculation in the South and the marvelous growth it has made in the past few years. He gave much credit to Mr. Barret, the national president, whose work was of such merit that President Roosevelt made him a member of the County Life Commission.

Mr. Craig was followed by Mr. Edward Berwick, of Pacific Grove, who spoke briefly but to the point on the equal suffrage amendment which is to come before the voters in October. Numbers of the College Equal Suffrage League of San Francisco were present with an abundance of literature on the same topic. Lack of information of this important subject can be no excuse for the farmers of Santa Cruz and Santa Clara counties not doing their duty voting this fall.

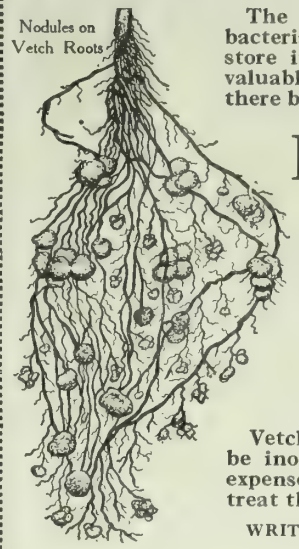
A return was made to the Palmer vineyards, where it was demonstrated that by using one stick of Red Cross Extra (25%) dynamite old vines could be blasted out and on the place where the old vine stood a perfect hole was left to receive the new vine. Three shots were fired with electricity at once for tree planting holes and perfect results were obtained, as the soil immediately surrounding the bore-hole was shattered for a radius of 2½ feet and the cementing material broken for another three feet. These last shots also showed the manner of rejuvenating old orchards. The hole is bored between rows of trees and the soil is so broken by the shot that the tender hair roots are enabled to make a better growth, and to have easier access to the moisture below. The task of hillside plowing is made easier by this rejuvenation process which also takes the place of sub-soil plowing.

Let some one now come forth and show us how we can receive a sure crop and a stable market and the farmers will show you a nation of "dreadnaughts," for place and plenty will reign.

CORRESPONDENT.

Skyland, Santa Cruz county.

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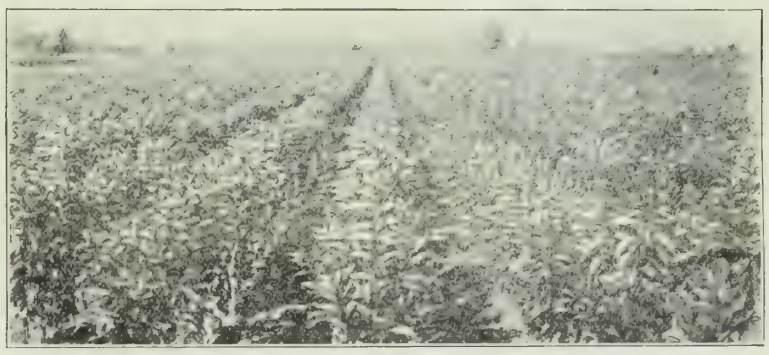
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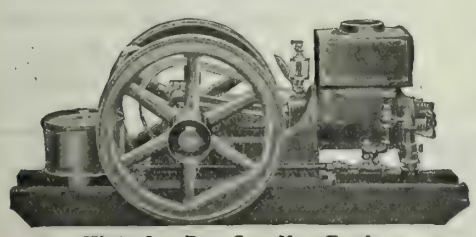


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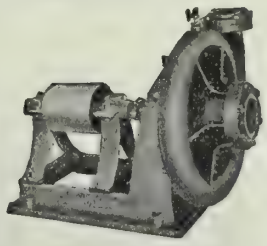
Parties contemplating the planting of citrus groves this coming spring will do well to send for our prices soon, as there will evidently a a shortage of strictly first class stock. Write today for particulars, or, better still, pay us a visit so that we may be able to show you just what we have.

Our finely illustrated booklet, "Citrus Fruits," covering the industry from the seed to the market, mailed to any address on receipt of 25c in stamps.

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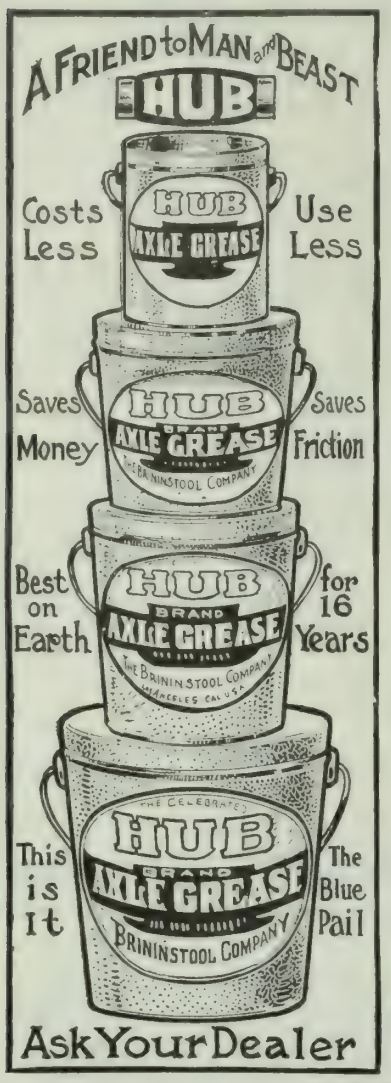
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The Rhubarb and Berry Specialist
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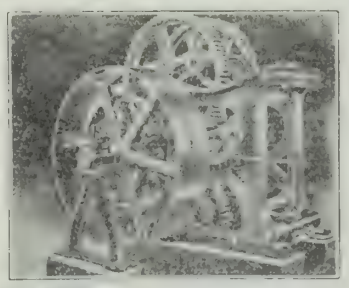
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CALIFORNIA ONION PRODUCTION AND TRADE.

(Continued From Page 61.)

prices. The reason for this advance price is, of course, due to the fact that the vegetables would sprout if kept until late in the season, and as a matter of fact, when prices show a decided upward tendency toward the first of the year and afterward, only those onions which are ready to sprout are sold, the others being kept as long as possible for the increased returns. By having them well dried so that they will not sprout, the largest part of the problem in getting good prices can therefore be solved.

It is this danger of sprouting that makes this crop a risky one to handle. Potatoes, for instance, can be held until prices go up, provided a buyer can gain control of the crop. When onions are cornered, other dealers only need to wait until sprouting is imminent and they get them back at their own figure. Of course, when sprouting starts the stock has to be sold at once or the owner will lose everything.

This sprouting often makes a collapse of prices when there is not a great deal on the market, and permits a person who holds good keeping stock to feel quite sure that prices will revive when the spoiled stock has been consumed.

From this State onions are regularly sent to the Alaska markets, no shipments of great size being sent to that place from other States, provided prices are normal. A large amount of the product is also sent to Texas after what is raised in that State is used up, but this is as far East as onions are normally sent. Many times, however, shipments are made to other places when prices are good, where in normal years none would be sent, and the same thing is true for stock sent here.

The amount of onions consumed does not vary a great deal, and prices, except when weather conditions or methods of handling cause sprouting to take place early, are affected mainly by the demand in other places which causes large shipments and a resulting shortage here.

It is generally figured that one sack of onions is consumed for every ten of potatoes, both here and elsewhere, although a variation in the price of one has no effect on the price of the other. The amount produced in this State last year was approximately 2,352,000 sacks.

Early onions are transplanted from the seed bed, while others are planted in the field direct. The cost per acre of raising a crop is calculated to be about $100, and the crop may vary from 8 or 10 to as much as 25 and 30 tons per acre—anything above ten tons being a good crop. The early red onions which need greater care than the others are grown usually in small patches with other garden truck, mostly coming from Stockton. Other varieties may be given field culture and have a wider area of production.

Dr. George Gordon, live stock inspector for Kings county, in his monthly report to the Board of Supervisors, states that an exceptionally great interest in improving sanitary conditions is being shown by dairymen of the county, in accordance with the provisions of the state dairy law.

The Chaise dairy farm, below Arlington, Riverside county, has been leased to P. R. Karales, accompanied by the sale of all stock thereon.

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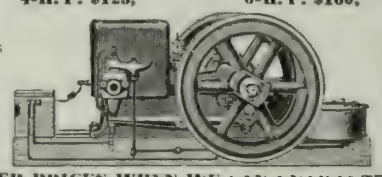


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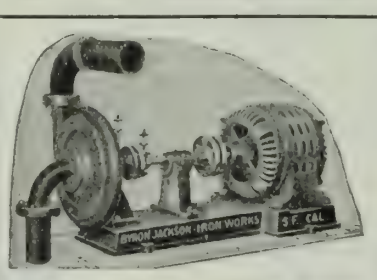
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BARLEY, BRAN, ETC.

To the Editor: I have heard from different large dairymen who state that they use barley with better results than bran, claiming it gives the cow greater nourishment and strength and produces more and richer milk. Is there anything in this?

Should the seed-end of a potato be thrown away when planting? Have heard it produces small potatoes.

From whom and how might I learn more of the Babcock system of milk-testing?

Is ensilage better than dry alfalfa hay, etc., for beef producing? SUBSCRIBER.

Barstow.

[Under certain conditions bran is better than barley, and under other conditions, the reverse. If you are feeding largely alfalfa or alfalfa hay, rolled barley is more rational than bran. If you are feeding grain-hay, bran makes a better balanced ration with it, etc.

In field planting, the whole potato is generally cut in for seed. In garden planting where people take more time, the small eyes at the end are taken off with a slice of the skin and the rest of the piece goes with the next eyes below, helping them to grow strongly.

You should get one of the up-to-date text-books for an explanation of the Babcock test—like "Milk and Its Products" by Prof. Wing. The dealers in dairy supplies have pamphlets and circulars telling how to use the apparatus.

Corn silage and alfalfa hay are used to advantage together. Alfalfa hay is, however, more available for beef-making—in connection with grain if you wish to go to that expense and can get enough for the beef to pay for it.

WHEN TO CUT ALFALFA.

Messrs. E. H. Grubb and W. S. Guilford of the Sacramento Valley Irrigation Company give in the Willows Journal these timely suggestions:

The time to cut alfalfa is when it begins coming into bloom. The best time, under ordinary circumstances, in which to irrigate, is a few days before cutting, instead of a few days after cutting. By following this well-established method, the five and six crops now annually cut can be increased to six and seven and in some instances eight.

The grazing animal is a good guide to follow in determining the time to cut hay. An animal will not eat ripened, woody grass unless forced to it. The most palatable and nutritious grasses are those in which the elements of nutrition are in a more or less liquid state. When they are woody and hard, a chemical analysis will show plenty of nutritive elements, but they are not in condition for assimilation by the animal.

On the other hand, grass cut too green and watery will not keep well, and the elements of food have not been stored in its tissues in sufficient quantity to make it valuable. Grass should not be cut for hay after it has made its growth, but before the processes of maturity begin, and this is just before coming into bloom. When large yields of hay are to be harvested, the cutting should begin when the buds are forming for bloom. Unless this is done, the last end of the crop will be ripe and woody before it is reached by the harvesters.

When grass is allowed to start seed-forming for reproduction, the growth of the plant is checked for the completion of these processes. When cut just before this stage, the plant immediately starts active development for the production of more growth preparatory to another seeding.

After mowing, hay should be raked in small windrows as soon as the leaves are wilted. If left longer the leaves become brittle and are lost when handled. The leaves are the most valuable part of the grass plant. Bunching can be done either with a hay-rake or by hand. The action of the air passing through these bunches evaporates the moisture from the plant, leaving the stems and leaves intact. When a large per cent of the area of the hay crop is exposed to the sun, the leaves are dried rapidly and crumble off before the moisture is taken from the stems.

A CLEAN HOG WALLOW.

The hog has a reputation for loving the mire and mud, and the furnishing of the same to him is more of a benefit than an injury, provided the proper facilities for preventing the mud from drying on him are given. The hog wallow in some places has fallen into disfavor through the injury done on the hot days by the mud that sticks to the hog's sides as he comes out of the water, drying on in hard flakes.

This can be prevented by having the banks of the wallow lined with boards, so that when the hog comes out of the muddy water he will walk on wood and not be belly deep in mud. By walking slowly up wooden planks the mud on his sides will drain off with the water and he will be quite free from it when coming out. Cleats can be nailed on the boards to prevent the hogs from slipping as they come out of the water.

When there is quite a pond, only two or three planks need to be run down from the higher ground and the rest of the pond can be fenced in, so that the only entrance and exit will be over the wood, and the hobs can be as clean in coming out as if the whole was lined with wood.

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Goodyear No-Rim-Cut tires—10% oversize—cost no more than tires that rim-cut, or tires not oversize.

The sale of Goodyear No-Rim-Cut tires has multiplied six times over in the past two years. Over 600,000 have already been sold.

Sixty-four leading motor car makers have contracted with us for these tires. The demand from users is now so great that our mammoth factories run night and day.

This patented tire has become the sensation. It is saving millions of dollars to motor car owners. It is a tire that you should know.

No Hooks—No Bolts

The No-Rim-Cut tire has no hooks on the base. No tire bolts are needed to hold it on.

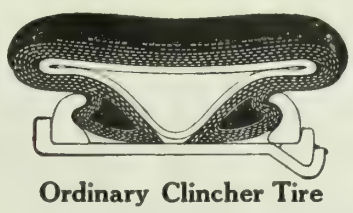
Into the tire base we vulcanize flat tapes made of 126 braided wires. These make the tire base unstretchable. The tire can't come off because nothing can stretch it over the rim flange. But when you remove one flange, the tire slips off like any quick-detachable tire.

This braided wire, flat tape feature is controlled by our patents. It is the only way known to make a safe hookless tire. That is why other tire makers still recommend the old-style clincher tire.



The No-Rim-Cut Tire

This tire fits any standard rim. Simply reverse the removable rim flanges—that is, slip them to the opposite sides. They will then curve outward, as shown in the picture above. The tire comes against a rounded edge, and rim-cutting is made impossible.



Ordinary Clincher Tire

In the ordinary tire—the clincher tire—the removable rim flanges must be set to curve inward. They must grasp hold of the hooks in the tire base, to hold the tire on. Note how those thin flanges dig into the tire when deflated. That is the cause of rim-cutting, which may wreck a flat tire in a moment.

10% Oversize

The No-Rim-Cut tire, where the rim flanges flare outward, can be made 10% over the rated size and still fit the rim. And we give you that oversize without extra cost.

That means 10% more air—10% greater carrying capacity. And that, with the average car, adds 25% to the tire mileage.

This oversize takes care of your extras—top, glass front, etc. It avoids the overloading which causes blow-outs on nine cars in ten which have skimpy tires.

These two features together—No-Rim-Cut and oversize—will under average conditions, cut tire bills in two. Yet these tires cost you nothing more than other standard tires. Do you wonder that men who know these tires insist on getting them?

GOODYEAR
No-Rim-Cut Tires

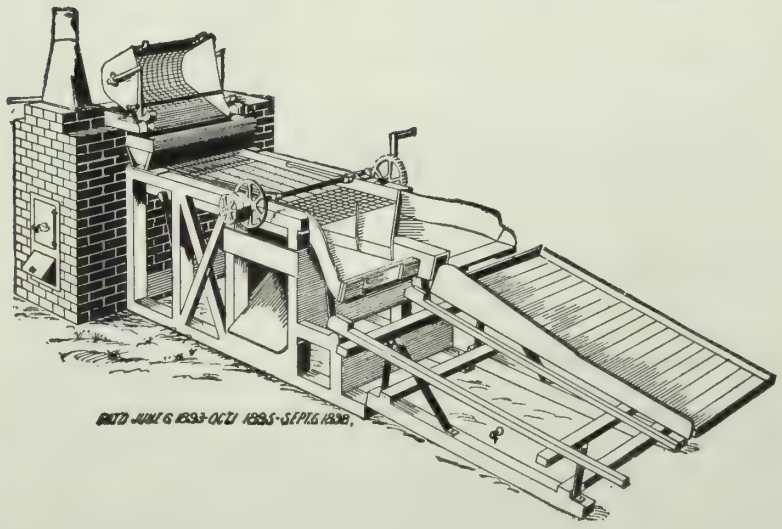
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The season is late this year, with more than even chances of poor drying weather, and a good prune dipping outfit may save several times its price. Needle boards, grading screens, and all extras carried in stock.

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333-361 WEST JULIAN ST., SAN JOSE, CAL.

Swine Raising in Pacific Northwest.

By D. O. Lively, General Agent Portland Union Stock Yards Co.

A booklet, bearing the above title has been issued for general distribution in the effort to upbuild the hog husbandry.

Fertility of soil and a plentiful supply of pure water are the essential points to be considered in choosing a suitable location for hog raising..

Water.—Either artesian, shallow well or running stream, preferably the latter, is good for hogs. If water must be hauled, or is scarce, an automatic watering device should be used. It will pay for itself quickly. The small running streams originating from springs on the individual farms are the best and safest. Best, for the reason the water is fresh and sweet, and safest for the reason that the water cannot have been contaminated by disease from other herds up the stream. Where larger streams run through the place, great care should be exercised to know what herds water above you and the condition in which they are kept, for the reason that one herd at the head of a stream becoming diseased will be a source of danger that will be conveyed by the stream to all other herds watering below it. It should be considerred by every farmer, in cases of disease where conditions make it impossible to keep his herd from the stream that it is his moral duty to notify all farmers below him of the outbreak, in order that they may protect themselves. Indeed it should be a moral obligation among farmers to notify each other promptly of the outbreak of disease whether on streams or not, so that preventive measures may be adopted to forestall the spreading of same.

Shade.—Pick your locations for hog pastures where the shade is good and there will be no necessity for the foul and unhealthy hog wallow. Hogs, contrary to an erroneous prevailing opinion, are cleanly animals and never seek the filthy, stagnant pools to wallow in if there is plenty of fresh water, and seldom seek the water at any time if there is abundant shade, and they are kept free from lice and other unhealthy conditions. It is only when they cannot get comfort from the heat any other way that they seek the wallow, and the wallow does not begin to offer the comfort that a shady tree with the breeze playing under it offers.

Housing.—Under housing, we must consider two things; first, feeding; second, farrowing. In feeding in this country, a closed-in house is unnecessary. It is advisable to have the north, east and west sides closed, preferably with the walls at least two feet high removable, so that in the summer there is nothing to obstruct the ground breeze. With very little ingenuity this can be accomplished, by leaving off the bottom four boards all around in the summer and slipping them in place in the winter. These removable boards should be put in place from the inside, so that the framework will offer resistance against the weight of the hogs crowded against them. The south side should remain open with a small hood in front of it. The floor should be of wood, or cement, from both standpoints of economy and healthfulness. It will be economical, because no food will be buried in the dirt and the hogs will not be compelled to swallow dust and germs in eating it. The house snould be divided into two compartments to keep the larger hogs apart from the smaller ones. The troughs should have divisions made by nailing pieces across about every twelve inches to keep the hops from lying in same and crowding each other out. Let the trough be nailed at each end to two pieces of 2x4, about three feet long, the trough resting on the center of the pieces; this will prevent the overturning of the troughs. Clean the troughs out every day and clean the floor. Keep the hogs out of feeding house except at feeding time. At all other times their place is on the pasture; don't forget this item: At all other times their place is on the pasture.

Farrowing Houses.—Each sow, at farrowing time, should have her own house. Houses about 6x8 feet, floored, roofed and with plenty of ventilation, are large enough. Around the house, except at the door, put a pole or board about eight inches above the ground and about six or eight inches from the walls. This can be set on stakes driven in the ground, and is for the purpose of preventing the sow from crushing the life out of the pigs. If the tent-shaped farrowing house is adopted, this guard rail is unnecessary, as the angle of the walls offers the same protection.

Fences.—Above everything build your fences right and build them permanent. Once your hogs learn they can get through your fence your trouble begins. Not only does this prevent control of your own herd, but puts you absolutely at the mercy of your neighbor's diseased, fighting and scrub animals, which will contaminate and worry your hogs and make you feed many pounds more feed to catch up the weight lost by worry. Always remember it is the contented and quiet dispositioned hog that puts on weight.

The Boar.—The most important factor in the herd is the boar. In all instances use a pure-bred boar. Too much emphasis cannot be laid on this. Choose him from among the best, for the best is none too good. Have him from a family entirely foreign to your own. The inexperienced had better let line breeding alone. See that he is well conformed, full of vitality and of good disposition. Avoid a long head, long neck and long legs. See that he stands well up on his toes. Don't buy a swayback, nor one too arched; his back should be nearly straight. A little arch won't hurt, but must not be too pronounced. Don't use a 2x4 on him, for a light whip will handle any boar that has been properly trained. Keep him away from the sows until tney need him. Use a crate for breeding purposes—it will save your boar's vitality. Don't put him in service too young; eight months of age is the earliest time he should be used and ten months is better. Have him get accustomed to his new home and surroundings before he is put to work.

Brood Sows.—In selecting from your herds the gilts you expect to make brood sows, remember, as in the boar, the best is none too good. Select them from large litters, expecting them to have inherited prolificacy. Choose them for their conformation also. See that they are good feeders and they will more likely be good milkers. After the first farrowing, watch them for their mothering qualities; a sow may produce large litters, but on account of the fact that she is a poor mother will raise but few pigs. Such a sow should be immediately promoted to the feed lots. Generally speaking, a long, rangy sow is a better brood sow than the short, chunky one. In mating the sow, find out any deficiencies that she may have and mate her with a boar that is extra strong in the points she is weak in. If she is weak in the legs, have the boar extra strong in the legs with large bone. If swayback, use a boar that is somewhat arched. In other words, remember that weak characteristics may be eradfcated by using opposite strong characteristics. I would not

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By competent, sober and industrious man, dairy and stock ranch of 20 to 50 cows to work on shares, for a term of years. Distance from school makes no difference.
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IT DOES THE WORK.

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They Last Longer
The only sure way to get a HOME Industry Harness is to look for the Hercules stamp
Made by W. DAVIS & SONS, San Francisco, Cal.
Your Dealer has our Catalogue

advocate breeding gilts until they are at least nine months old. That is plenty young enough, and by that time the gilt will have obtained growth and strength enough to carry her through the first litter. In western Oregon or Washington, two litters a year can be depended on. Keep good brood sows as long as they continue to give good results. Some people claim it is best to put sows out of service at three to four years of age, but the writer has seen some of the finest litters come from sows up to nine years of age. Remember that a well-proven brood sow of any age within reason is worth more than the unproved gilt.

After breeding, let sow continue with other animals on pasture for two months, then put her with the other pregnant sows and feed for bone and muscle. Keep her in good form, but not too fat. Bran, shorts, ground oats and peas, and a little wheat or barley should be fed. Also see that she has good green pasture to run on. Two weeks before farrowing time put her in farrowing pen so that she will get acquainted and become contented in her new quarters. Have a liberal supply of salt and ashes handy for her, which will prevent her from acquiring a desire for animal food and keep her from eating her pigs. See that she has plenty of fresh water. After farrowing she should have nothing but water and a little thin slop for the first day. After that feed lightly for several days. After a week begin to increase feed as fast as she will eat with relish, milk-making foods. It takes plenty of sow's milk to make healthy, growthy pigs. During time the pigs are with sow give her plenty of green feed.

PIGS.—Attention given the sow at farrowing time is money saved. If the pigs come in cold weather, put them in a warm box until she is through farrowing and then put them with the sow immediately. If the pigs begin to scour, feed the sow less and give her plenty of strong lime water. If the pigs are old enough to drink when they scour, scalded milk with a little wheat flour and a half egg for each pig, stirred together is good. If too young to drink, give them four or five drops of paregoric. Give them a runway adjoining the pen with an opening about a foot square through which the pigs can get, but which will not permit the sow to get through. At three weeks of age, feed them a few grains of soaked wheat on a board floor in their runway (not in the pen for the sow to steal it from them). After they get used to eating, gradually lead up with shorts, peas or ground oats. Give them all the skim milk you can. At this age feed for bone and muscle, not fat. By giving them plenty of pasture with the above feed, at about eight weeks the pigs will practically have weaned themselves. After weaning, the pigs must never be permitted to stop growing. Never forget that the most and cheapest pork is made in the early months of the pig's existence. Castrate young boars at about five weeks old, spay the young sows at about three months old. At that time she will have developed enough for you to know whether you want to keep her for breeding purposes or not.

FEEDING.—Bear in mind that the hog appreciates a variety of foods just as much as the human does. No one food will produce as much pork as a variety of equally good foods. The question of palatability enters into the success of the food of animals in a greater degree than is usually considered. Pasturage is the foundation of pork and is the most important factor in pork making. Without good pasturage you have no means of forcing the hogs to exercise, which is necessary for their health. In the Pacific Northwest, alfalfa, which is the best forage in the country, grows in most places, but clover, vetch and kale and barley and wheat and oats provide an opportunity for pork making that gives this country special advantages. Other pasture crops, such as kaffir corn, milo maize, sorghum, field peas and artichokes furnish not only pasturage, but a large percentage of grain food.

The annual slaughter of hogs for the last ten years has averaged 30,370,000. For the year ending March 31, 1911, the number fell to 26,511,000, nearly 4,000,000 below this figure, and with one exception the lowest for the decade, showing that in spite of great increase in population the production of hogs has not been overdone.

THESE FARMERS Say SHARPLES Tubular Cream Separators Cost Least To Use

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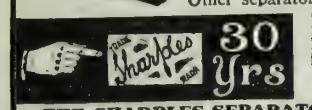
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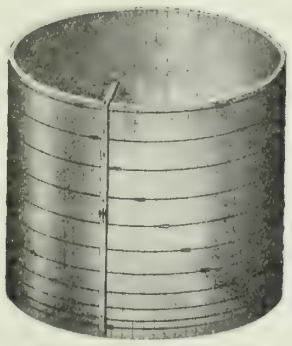
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Cutter's Anthrax and Blackleg Vaccines

are given the preference by 80 per cent of California stockmen because they give better results than others do.

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NO HOOF=NO HORSE

Especially is the dry season in this section very hard on hoofs. If you have a horse with a bad foot caused by tender, brittle, hard or contracted hoofs, split hoofs, quarter cracks, mud fever, scratches, corns, cracked heels or grease heels, send 16 cents postage and we will send you a 50c package of ESHELMAN'S WOOL FAT HOOF HEALER, and if satisfactory, send us the 50 cents. If not, write us to that effect, and you need pay nothing. We take all the risk, you just try it. Send for it today, or send for folder with many testimonials of big horsemen, vets and others.

TOMPKINS & CO.,
111, 113, 115 WINSTON ST., LOS ANGELES, CAL.

LIVE STOCK NOTES.

Horsemen are reporting a revival in the demand for high-class saddle horses for city use.

A good-sized cattle shipment from Paso Robles to Los Angeles was made recently from the La Planza ranch.

Most of the sheepmen of the Alameda county hills have moved their flocks to the San Joaquin river bottoms for summer pasture.

A flock of 300 sheep of P. Connolly of Pleasanton is being used in the hop fields of that place to remove suckers from the hop vines, according to the Livermore Herald. This work was formerly done by hand, but it was found that the sheep could do it as well for nothing and get fat at it.

According to the census of April 15, 1910, the total number of sheep and lambs in the United States was 51,638,590, including 39,470,312 wool-bearing sheep and 12,168,278 lambs. In 1910 there were 39,852,967 wool-bearing sheep and 21,650,746 lambs. The difference in the number of lambs is due to the fact that the returns for 1910 were made from June 1, after the main lambing season. The sheep in incorporated towns and cities are not included in the above figures. In this State there were 1,424,968 sheep in 1900 and 1,440,532 in 1910. The average weight per fleece for sixteen States for which returns were made was 7.4 pounds, while ten years before the weight was only 6.8 pounds, and the average for the country 6.3 pounds.

The report of County Veterinarian Dr. George Ray of Tulare shows conclusively that rabies exists in that county.

James Bryden, of Yuba county, who has moved his sheep into the mountains near Downieville, Sierra county, has lost an exceptionally large number of animals through bears and lions, sixteen being killed in one night.

Jos. D. Biddle, of Lakeside, Kings county, recently shipped 500 hogs, averaging nearly 300 pounds each, to Los Angeles and San Francisco markets.

Horse Owners! Use

GOMBAULT'S



Caustic Balsam

A Safe, Speedy, and Positive Cure

The satest, Best BLISTER ever used. Takes the place of all liniaments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish*

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HORSES AND CATTLE.

WE WANT TO BUY COWS FOR SETTLERS—We are furnishing purchasers of land at Los Molinos all the fresh cows they want, to be paid for with half the butter-fat receipts from month to month—without interest. Settlers are coming in so fast that we find it difficult to get as many good cows as we need. Those having good cows for sale please write us promptly. Don't write unless you have good ones; we furnish settlers no other kind. We can use 3 or 4 carloads immediately. Settlers coming from near-by localities may pick up good cows and bring them for their own use, and we will advance the money to pay for them. LOS MOLINOS LAND CO., Los Molinos, Cal.

N. H. LOCKE CO., Lockeford, Cal., are offering registered Jersey bulls and bull calves of the choicest Island and American breeding, from prize winners and big producers; also a carload of unregistered Jersey cows, and a car of Jersey heifers, unregistered.

JOHN LYNCH, breeder of Registered Short-horns; milk strain. High class stock. First-class dairy breeding. Smooth cattle. Best pedigree. P. O. Box 321, Petaluma, Cal.

PURE-BRED SHORT-HORNS, Poland-China hogs, and Shropshire sheep. Roselawn Stock Farm, Woodland, Cal.

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HENRY WHEATLEY, Napa, Cal.—Breeder and importer of Shires and Percherons.

THOROUGHBRED SHROPSHIRE SHEEP, both sexes. S. H. Fountain, Importer and breeder, Dixon, Cal.

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DESIRABLE YOUNG HOLSTEIN COWS, cheap, for immediate sale; pedigreed Guernsey cows, heifers and a fine young bull, all of the Yeksa strain. Office, Bellavista Stock Ranch, 503 First National Bank Bldg., Berkeley, Cal.

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POLAND CHINA HOGS; Barred Rocks and Black Minorca poultry; young stock and eggs for sale. M. Bassett, Hanford, Cal.

THOROUGHBRED MULEFOOT AND BERKSHIRE HOGS. California Hog & Land Co., Calistoga.

GEO. V. BECKMAN, Lodi, San Joaquin Co. Cal. Registered Poland-China Hogs, both sexes.

G. A. MURPHY, Perkins, Cal. Breeder of Champion Herd of Berkshires; also Short-horns.

KNOB HILL STOCK FARM—Reg. Poland-China swine. A. M. Henry, Farmington.

BERKSHIRE AND POLAND-CHINA HOGS. Both sexes. C. A. Stowe, Stockton, Cal

STUDARUS & CUNNINGHAM, Mills, Cal Registered O. I. C. swine.

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroughbred Berkshires.

H. B. WINTRINGHAM, Middletown, Lake Co., Cal. Breeder of Tamworths.

DAIRY NOTES.

George McKenzie, who recently purchased 400 acres near Yuba City, is erecting the buildings for a model dairy there Another new dairy near Yuba City will be started by P. R. Peterson and M. Davis of Colusa county, who have leased for nine years 300 acres along the river near the Jackson farm.

F. S. and W. J. McAdams of Tulare recently purchased some thoroughbred Holstein stock for their dairy and stock farm from Woodland breeders.

Robert Kimble of Kings county has received a shipment of 19 high-class Holsteins from Juneau, Wisconsin.

In both Tulare and Kings counties great progress in legislation and work by the dairymen to secure sanitary dairies and healthy cattle is being made, although the final drafts of the ordinances which will be passed by the boards of supervisors have not yet been decided upon. The newly organized dairymen's associations in each county, however, have expressed themselves as being in favor of ordinances providing for sanitary dairies and inspection. In Tulare county a quarantine will be established against all diseased cattle and two inspectors appointed to assist in the enforcement of the State dairy law and of such county ordinances as may be passed. The enforcement of tuberculin testing has not been decided upon. In Kings county a dairymen's association has been formed which has prepared an ordinance to be submitted to the board of supervisors and recommended a strict quarantine and inspection of dairies. Dr. George Gordon, county veterinarian, has received the appointment of inspector of the State Dairy Bureau to assist in the enforcement of the State law.

CURE THAT SPAVIN

—or that Curb, Splint, Ringbone or other lameness with Kendall's Spavin Cure. Mr. Montgomery Sheppard of Richfield, N. J. writes this about

Kendall's Spavin Cure

"I have been using your Spavin Cure and have found it a sure cure for Spavins, Splints, Ringbone, Lameness, etc."

Let us send you other letters. Get a bottle of Kendall's at once. You may need it any day. At your druggist's $1 a bottle. 6 for $5. Ask for "Treatise on the Horse"—Free, or write to

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POULTRY DEPARTMENT.

Conducted By M. RUSSELL JAMES.

A LARGE POULTRY PLANT.

We have been reminded that very little of the voluminous stream of instruction, advice and experience constantly flowing from the poultry press applies to poultry-keeping upon a large scale. With equal truth it may be replied that the person who has attained to a large and successful business in poultry-farming is no novice at the work, but has grown into the business; consequently, he has little need of the advice and instruction which is helpful to the beginner and worth while to the more experienced who have but a fraction of time to devote to practical work in the poultry yard. In fact, the large poultry raiser, having been through the school of experience, has little regard for other than large practical experience as a teacher, and looks with something akin to contempt upon the time-killing and fussy methods of doctoring and caring for poultry too often advocated by poultry writers of authority.

ECONOMY OF LABOR.

The vital point on the large poultry plant is economy—economy of all kinds of expenditure, but, most of all, economy of labor. There are more small details in the care of poultry than with any other kind of stock. This is why many who can successfully handle other stock fail in the handling of poultry on a large scale, and why it is more difficult for the poultry farmer to obtain competent help than it is for the stockman, orchardist or ordinary farmer. The successful poultryman on a large scale must learn to lump these details; that is, to so arrange his plant and systematize the care of his poultry as to secure the minimum of labor and time. He must depend largely upon himself for the labor; first, because competent poultry



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THE real proof of the strength, durability, and value of I H C wagons is what they have done and are now doing for thousands of farmers throughout the country. Light loads and heavy loads have been carried by I H C wagons, over good roads and bad roads, for so many years that there is hardly a farmer who is not familiar with the high quality that these names on wagons represent—

Weber New Bettendorf Steel King

The reputation gained by these wagons is not due to any one particular feature but to all-round perfection and superiority of the design, the material, and the workmanship used in their construction. They are built especially for the western country and every feature that will increase their wearing life is incorporated in their construction.

WEBER wagons have been leaders for sixty-six years. All the wood is carefully selected and straight grained. It is air-dried for at least two years—so that the sap is retained, giving the wood wonderful stamina. Hickory is used for axles, single-trees, double-trees, and neck-yokes. Oak is used for hubs, hounds, bolsters, reaches, and sandboards. Oak and hickory are used for spokes. The New International stake is also furnished. This is one of the greatest conveniences ever added to a wagon.

NEW BETTENDORF is a steel gear wagon of standard quality with carrying capacity unexcelled. It is the only gear having an axle with removable malleable sleeve which can be replaced when worn.

STEEL KING has the only perfect adjustable stake; hollow steel axles and bolsters made to resemble the old wooden type; skeins are cast and can be easily replaced; wheels are A-grade; wagon box of best quality and construction.

I H C WAGON BOXES have long-leaf yellow pine bottoms, box-board sides, protection for the bottom over the front and rear bolsters, and the best box binders ever furnished. A tool box is attached to the front end.

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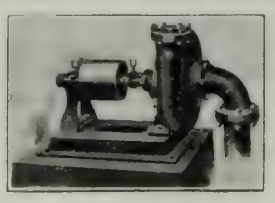
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Our retail prices are less than our competitors' wholesale prices.

We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.

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Horse, Cattle and Poultry Food

(Red Ball Brand)

Contains no drugs. It is a spice composed entirely of a ground, soft, mellow root containing grape sugar, tannin and demulcent properties which exercise a very beneficial effect on the digestive organs, so that



A LITTLE OF THIS FOOD

enables stall-fed animals, whether horses, cows, bulls, pigs, sheep or poultry to ASSIMILATE ALL their hay and grain food by properly digesting it; thus their feed not alone fills them up but

BUILDS THEM UP.



Would people like Wells, Fargo & Co., San Francisco Brewing Co., John Wieland Brewing Co., Baker & Hamilton, the Fire Department, and many other owners of valuable horses use it for years if it was not beneficial?



Would skillful veterinary surgeons like Dr. E. J. Creeley of the San Francisco Veterinary College and Wm. E. Egan, V.S., formerly of the Board of Health, recommend it unless it possessed sterling merit?

See what Dr. Egan says:

San Francisco.

I know and I am convinced by my own experience, that your Food, Red Ball Brand, is a harmless and excellent adjunct to the horses' and cattle's food, mixed and fed according to directions. I prescribe and recommend the food wherever I can.

WM. E. EGAN, V.S.



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Cows yield more and richer MILK.

Stock takes on more weight—more BEEF.

It increases the power of endurance of the HORSE.

For weaning foals, calves, lambs and shoats it is invaluable.

Compared with results, the cost is trifling.

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help is difficult to get, and second, because such help eats too deeply into the profits. That one man may properly care for a thousand or more laying stock they must be housed on the colony plan with a fair range; the houses must be simple affairs, inexpensive and easily cleaned, so that the care-taker may make the round with a team, feed and care for the fowls, clean and disinfect the houses, and do all as expeditiously as possible.

The general plan of colony houses on the successful egg farms of California is a simple board structure some 10x12 feet, elevation some 7 feet at the eaves, with a large door in one end which serves not only the purposes of a door, but also those of window and ventilator, being always kept open. The furniture consists of low perches which cover the floor space and may be easily removed for cleaning. Where there is ample range, these houses are changed to fresh ground every two or three weeks by attaching a team to the runner-like girders and moving them at night. Some 75 or 100 hens are allowed to each house of size mentioned.

Hens kept on the intensive plan and in small numbers may average a higher egg production, but this is more than offset by the extra labor required, and by the soil contamination which eventually puts the intensive plant out of business.

An Eastern poultry instructor of Petaluma poultrymen, upon learning through a correspondent that the ordinary range is as dry as a stubble field for some ten months in the year, advises the egg-farmers of Petaluma to keep their hens on the no-yard plan. If he had understood somewhat of the cost of lumber and labor for caging hens by the thousands in this State he would not have fallen into such a blunder.

DOCTORING POULTRY ON LARGE PLANTS.

The hatchet-cure is the general remedy for sick fowls on a large plant. On such plants there can be no parleying with disease. The sick fowl which the small poultry raiser may get into shape by dosing and nursing cannot obtain the individual care from the keeper of thousands of fowls, and might start an epidemic of disease among such a flock. Preventives, not cures, are what is required, and to dispose of weakly and ailing fowls is a prime preventive of disease. In the case of a possible epidemic, the fowls must be doctored en masse. This may be done by inhalation, filling the closed poultry house with a fine spray of coal oil or other antiseptic, or by adding the required medicine to the drinking water or food, or germs may be destroyed by fumigation at night with sulphur and carbolic acid, being careful to remove the same the instant the fowls begin to sneeze.

THE MATTER OF FEEDING.

In the matter of feeding on a large plant, the supply of suitable animal food and fresh greens is the important and difficult proposition. With irrigation the green feed may be raised, but not animal food.

There are vegetable foods which contain large amounts of protein, but this does not take the place of animal protein. Some animal food is necessary to profitable growth and egg-production. Fresh lean meat, though best for this purpose, cannot be obtained in quantities sufficient for the supply of a large plant even if prices were not prohibitive. The superannuated horse has been tried out on such plants, but there are many disagreeable features as well as much work connected with butchering horses, and also difficulty in making sure that the animal is healthy. Again, fresh meat is fed raw or allowed by any means to become tainted or soured is liable to generate the deadly ptomaine.

A GOOD GRADE OF BEEF SCRAP.

The solution of the matter is a good grade of beef scrap. We have it from Carl Gregory, one of the foremost fanciers of Petaluma, who was adjudged the honor of having the best conditioned Leghorns in the Petaluma show, that a sweet, meaty beef scrap is better than fresh meat for poultry, according to his experience. The point is to make sure of getting such an article by buying from reliable well-established supply dealers who cannot afford to sell stuff largely composed of hair, hide and the like to their customers.

Frequently diarrhea is caused by even good beef scrap because the poultryman overlooks the fact that it is a very concentrated article and uses too large a proportion of it in his feed. Beef scrap is dried meat, and contains more than twice the amount of protein per pound that fresh meat does, while blood meal is still more concentrated. In using beef scrap only one pound should be mixed with some fifteen pounds of mill stuff, such as bran, middlings and the like, and with this mixture should be fed a liberal amount of fresh green food. The best and safest way to use beef scrap or blood meal is to scald it with boiling salted water, then make dry with bran, shorts and the like in the right proportions.

An alfalfa-meal mill is being erected at Standish, Lassen county.

2335-ACRE RANCH

FOR SALE

We have a Stock Ranch of 2335 Acres, three running streams, two barns, two houses, well fenced, rolling hills, good soil, about 1500 acres tillable, and has produced as high as eighteen sacks of wheat per acre. Four miles southwest of Dunnigan, Yolo County.

PRICE, $18 PER ACRE

EASY TERMS.

Write for full particulars to

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Yolo County, - Cal.



Egg City Hatchery

Orders booked for spring delivery of baby chicks. Our specialties are Rhode Island Reds and S. C. White Leghorns.

W. L. SALES,

722 3rd St., Petaluma.

POULTRY.

IF YOU COMMENCE FEEDING CROLEY'S Ground Green Bone NOW, you will be benefited in the fall when eggs are high. Write for circular and sample. Geo. H. Croley Co., 629 Brannan St., San Francisco.

S. C. B. MINORCA EGGS for hatching at $6 per 100; can fill large orders; 12 yards large beautiful hens, excellent layers. Black Beauty Poultry Yards, Dixon, Cal.

MY FAMOUS S. C. WHITE LEGHORN baby chicks. I am NOW prepared to ship on mail orders, present or future delivery. Carl Stange, 1409 Silver Ave., San Francisco.

OAKLAND POULTRY YARDS, 149D, California St., San Francisco.—Est. 40 years. Standard bred poultry. White Orpingtons, R. I. Reds, Brd. Rocks, White Leghorns

IF INTERESTED IN INCUBATORS or how to feed, write for our free Catalog. PETALUMA INCUBATOR CO., Petaluma. California.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea fowl and eggs. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

WAYSIDE YARDS—A few settings from special S. C. White Leghorn matings, at $5 for 30. Carl Gregory, Petaluma, Cal.

FREE BOOK—"Poultry Feeding for Profit," on application to Coulson Co., Petaluma, Cal., Box P.

WHITE LEGHORNS—Chicks, eggs, cockerels. Fine stock. Reasonable. O. B. Morris, Lodi, Cal.

BUFF ORPINGTONS—Mr. and Mrs. W. S. Sullivan, 25 Market St., Agnew, Santa Clara County, Cal.

BRONZE Turkeys and Eggs. Ed Hart. Clements, Cal. Large size, good plumage, early maturity.

TWIN OAKS FARM—W. H. Bissell, Proprietor, Livermore, Cal.—Buff, White Orpington.

HATCHING EGGS—White Leghorns. Circular 164. A. H. Gregory, Fruitvale, Cal.

So that it will keep fresh and wholesome, we take out 30% of water. ALL the nutritious and essential properties remain in

CROLEY'S GROUND GREEN BONE.

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FREE BOOK

ON APPLICATION TO

Coulson Poultry & Stock Food Co.

PETALUMA, CAL.

The Home Circle.

The Flag Goes By.

Hats off!
Along the street there comes
A blare of bugles, a ruffle of drums,
A flash of color beneath the sky:
Hats off!
The flag is passing by!

Blue and white and crimson it shines
Over the thinned and tottering lines.
Hats off!
The colors before us fly;
But more than the flag is passing by.

Sea fights and land fights, grim and great,
Fought to make and to save the State:
Weary marches and sinking ships;
Cheers of victory on dying lips;

Days of plenty and years of peace;
March of a strong land's swift increase;
Equal justice, right, and law,
Stately honor and reverend awe;

Sign of a nation, great and strong
To ward her people from foreign wrong:
Pride and glory and honor,—all
Live in the colors to stand or fall.

Hats off!
Along the street there comes
A blare of bugles, a ruffle of drums;
And loyal hearts are beating high;
Hats off!
The flag is passing by!
—Henry Holcomb Bennett.

The Economy of Happiness.

It is so usual to associate economy with material things that one is in danger of forgetting that economic principles may be applied with equal advantage to matters of the mind and heart.

This is too commonly the neglected realm in the jurisdiction of the busy wife and mother. Engrossed with economic measures to bring prosperity and happiness to her family, many a woman becomes too careless about her own comfort and convenience.

She finds it easier to do without things that she wants than to ask for them; more congenial to serve herself, no matter how weary she may be, than to let her desires be known to husband, brothers, or children.

Such "economy" is a great mistake, and the pathetic part of it all is that it so often fails of its object. Indeed, it is a well-established fact that the families of women who save everything except themselves are more or less peevish, exacting, and ill natured.

Human nature can only endure in silence to a limited extent. When the self-imposed burden becomes too heavy, the self-sacrificing wife and mother, economic of everything except her own heart's coin, realizes the vanity of her endeavor, and in her helplessness succumbs to irritability and other morbid states of mind that tend to make her presence anything but a pleasure to those with whom she comes in contact. She cannot make others happy, for happiness must be possessed before it can be bestowed.

Doing is not the whole of life, though so many people appear to think it is. We must be as well as do, and often it is not so much what a mother can do for her children as what she can be to them. —Mabel L. Stewart.

My Wish for My Baby.

I desire for my baby neither great beauty nor great wealth, nor fame, nor anything to mar her happiness. But give her a contented spirit, ministering hands, and willing feet, that her presence may radiate joy wherever she may be. May she care nothing for society, but may she love her neighbor as herself. Let her motto through life be, "Noblesse oblige." May she never know ambition, nor seek to explore life's mountain tops or steeps, either through curiosity or great yearning, but may her little feet tread tranquilly life's common way. May she be cursed with neither brilliance nor wit, but give her a sense of humor, a tender tact, a gracious presence, and only sufficient beauty to make her face lovely to her friends. May the public pass her by in utter ignorance and never know of the existence of my little maid. May she never seek her own, but let her always minister to others without though of reward. Thus give her happiness in great measure, pressed down, shaken together and running over, and as her crowning glory may she know the supreme joy of a great and selfless love.—Lillian Bell.

Some Corn Recipes.

The season for roasting ears is here, and the following methods of preparing corn for the table are timely:

Roasting Ears.—Select nice smooth ears, remove husks and silks, put in kettle, cover with cold salted water, let come to boil, cook about 25 minutes until well done. Serve on cob.

Corn Salad.—To 26 ears of sweet corn prepared and cut from cob, as for cooking, add six mango peppers, six large onions, one large head of cabbage, all chopped fine; one quart vinegar, three quarts water, three cups sugar and two tablespoons of celery seed. Mix all together; set on stove and cook one hour. This can be sealed in glass jars and is a delightful dish for use in winter.

Canned Corn.—To twenty-one cups of corn, cut from cob, add two cups sugar, one cup salt; stir this well together and let set for two hours, then put on stove; let cook for twenty minutes, stirring constantly. Have cans ready and seal at once. Set away until ready for use; open can, empty in pan with water to cover, let stand few minutes, drain off, then add butter, pepper and sweet cream.

Dried Corn.—Select good ears, cut off, dry in sun until ready to store away; when ready to use, take one cup of well-cooked dried corn, add to it one egg, tablespoon of flour, a little salt and pepper, one cup of finely rolled cracker crumbs; mold into balls and fry in hot fat.

Household Hints.

The woman who makes her work the whole thing and cuts out her friendships and fads because she hasn't time, is turning life into a treadmill.

For a dresser scarf three pretty handkerchiefs, join them together with lace insertion, and finish with a lace ruffle.

If a thin, soft cloth is wet with distilled witch-hazel and laid lightly over the eyes at night it is healing and cooling.

Discolored teeth can be bleached to a milky whiteness by brushing them daily

Under certain conditions bran is bet-

Dust and lost stitches soon wear out any gown, no matter how well made. Your appearance will testify to the care you take of your clothes.

Like a Romance.

A plain Missouri farmer, almost penniless says the Globe-Democrat, founded the industry which made him the best-known resident in Cass county and which enabled him not only to distribute flowers among the poor, but gave him an income which he expended largely in benevolent works.

The founder of this industry, now forty years ago, drove into Pleasant Hill in an old wagon with his invalid wife. The fertility of the soil, the welcome extended by the residents with the warmth of the sunshine made the couple conclude that they had found their Eden and they decided to remain. The invalid woman could do little work, but she was fond of the open air and the sunshine, and had a wild passion for flowers. Her husband planted for her a bed of carnations, roses, and violets, which she tended with such care and devotion that they prospered and grew as no other flowers had ever done in that county.

The residents of Pleasant Hill greatly admired the flowers of the invalid woman, and some were willing to buy bouquets of them which they sent to friends in Kansas City and other places. This put the idea of raising flowers for the market into the head of the amateur nurseryman. He met with success almost from the start. Before long he had an acre under glass, and when he died a few years ago, he had the largest greenhouses west of the Mississippi, and immense sales. Thus the love of a woman for flowers and a husband's love for a wife builded one of the most prosperous and unique enterprises in Missouri.

The Office Boy.

Me boss tells me never t' look at de clock, but he takes a peek at it ev'ry mornin' when I show up t' work.

It's mighty easy f'r de man dat's already got here t' pat me on de head an' say: "Work hard, me son; dat's de way I got my start." But he fo'gits dat he didn't hev so far t' go.

De early boid catches de woim, w'ich is hard on us woims.

De guys w'ot is allus advisin' us t' love our woik oughter give us more o' de kind o' work dat we kin love.

Aleck de Great weeped 'cause he didn't hev no more woilds t' conquer. Doubtless Pierp Morgan and Jawn Rockyfeller t'ink Alec wus a softy.

I've heard a lot o' sontays and nockturns an' sich, but de sweetest music is de sound o' me mudder's voice when she says: "Supper's ready."

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OUR YOUNG FOLKS' DEPARTMENT.

Conducted By M. RUSSELL JAMES

The Sunshine of the Heart.

The sunshine of the heart is mine,
That beams a charm around;
Where'er it sheds its ray divine
Is all enchanted ground.
No fiend of care may enter there,
Though Fate employ her art;
Her power, tho' mighty, bows to thine,
Bright sunshine of the heart!

Beneath the splendor of thy ray
How lovely all is made!
Bright fountains in the desert play,
And palm trees cast their shade;
Thy morning light is rosy bright,
And ere thy beams depart,
Thy waning light still yields delight,
Sweet sunshine of the heart!

—Lover.

Poultry Course for Young Folks.

DESCRIPTION OF BREEDS.

THE BUFF LEGHORN.—This variety of Leghorns is an English production. Leghorns of lighter and darker shades of yellow with white in wings and tail were found in Italy, and in 1885 a yellow Leghorn was exhibited in Denmark, but no such thing as a buff Leghorn fowl was known when two English fanciers, Mr. and Mrs. Lister Kay, undertook the work of producing a pure Buff Leghorn variety. As with other varieties of this color in the various breeds, the even golden buff was borrowed from the Buff Cochin. After eight years of systematic breeding and selecting from hundreds of birds raised each year, the Cochin shape and feathered legs were bred out and the beautiful buff color retained in birds of true Leghorn type. The original stock of this variety imported from England, however, was not the equal of the Buff Leghorns seen in our shows today. The American fancier has so perfected the variety that our birds now excel the English Buff Leghorns.

The Buff Leghorn while possessing the general Leghorn points and characteristics, must be an even golden buff throughout in the surface color of its plumage, both in male and female, with the undercolor a lighter shade of buff. A mealy appearance in the color, black or white in wings or tail, or any foreign color in the plumage, are serious defects; as are different shades of buff on neck, wings, back or tail. The back of the fowl from top of head to tip of tail should glisten with a metallic golden luster. This produces an exceedingly rich and beautiful effect; in fact, there are few more charming sights in chickendom than a flock of standard-bred Buff Leghorns. An even golden buff is a color that is peculiarly attractive and soothing to human eyes, and one that lends an added attraction to any breed of fowls; when this is combined with the graceful curves and sprightly motions of the Leghorn, we have, indeed, a beautiful variety of fowl.

As a utility fowl, the Buff Leghorn, when pure-bred and of good strain, is rated with the first as an egg-producer and also as a table fowl where a small carcass is required, equalling the White Leghorn in these respects. The difficulty with this variety is breeding it true to color. Naturally, this will not be done on the large egg farm, but by keeping the variety pure and breeding only from the pick of the flock with frequent introduction of standard-bred males from reliable fanciers, the egg farmer can combine utility and beauty in his flock.

The Black Leghorn and Silver Duckwing Leghorn has each its peculiar beauty of color and marking, but neither variety has attained to popularity.

SUMMARY.

The Leghorns belong to the Mediterranean Class of chickens and are distinguished as an egg breed. They are graceful birds of rather small size and great activity, with large red combs and wattles, white or creamy white earlobes and yellow legs and feet. They are practically non-setters and lay a pure white egg.

Girls' Tomato Clubs.

The fine work done by the boys through the organization of the Boys' Corn Clubs under the direction of Secretary Wilson backed by the Governors of the different States, has drawn the attention of the whole country. Throughout the South the corn clubs have more than 100,000 members, and it is estimated that the number will reach 200,000 before the close of the year. Now, Uncle Sam is turning his attention to the girls and giving them a chance along with the boys to acomplish things and become noted workers on agricultural lines. Last January a girls' tomato club was started at Aiken, S. C., with the U. S. Agricultural Department back of it, and now there are more than three thousand girls in different parts of the South who are each raising a patch of tomatoes under directions sent them from Washington.

WANT TO COMPETE WITH BOYS.—The idea came from the corn clubs, says the Courier-Journal. In them each boy was allowed one acre by his father. He was to plow and plant it himself and have all the profits. In certain cases the boys made several hundred dollars off their respective tracts. Since the organization of the corn clubs, the girls of the vicinities have been writing to the Agricultural Department whether there was not something for them to do. They have been allowed to compete with the boys in the corn clubs, and in a number of instances they have produced corn above the average of the clubs to which they belonged. In a South Carolina corn club, for example, Hannah Plowden, of Clarendon county, raised 120 bushels on her acre. She belonged to a club of 142 members, of whom 140 were boys. There were only three boys who raised more than she did, and the average of the club was 62 bushels to the acre.

THE FIRST GIRLS' CLUB.—In Aiken county the boys' corn club had 60 members, and their success was the envy of their sisters. The boys' clubs were organized through schools, and the girls discussed this matter with their teachers. Thereupon, Miss Cromer, one of the teachers, started the tomato club movement. She was assisted by the county superintendent and by the State agent of the Agricultural Department. As a result a club of 46 little girls was organized, and a list of valuable prizes secured for those who did the best work. Some of the prizes were money, others books; one was a college education for the girl who secured the highest results. This prize was won by a girl who planted, cultivated and gathered a sufficient crop of tomatoes from her one-tenth acre to fill 512 three-pound cans. She not only raised the tomatoes, but canned them. Her cans of tomatoes were sold at the rate of $1.25 per dozen, bringing a gross amount of between $50 and $60.

The Department of Agriculture thinks it best to confine the work at first to tomatoes, although a little later on, cucumbers and beans will be added. It is expected also to extend the prizes to poultry, but the competition in poultry raising will be confined to the graduates of the tomato clubs, and will succeed their instruction in vegetable raising.

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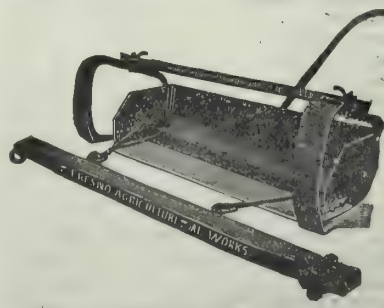
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THE MARKETS.

San Francisco, July 19, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The local market remains dull and uninteresting, the only buying movement being for current needs. Some wheat is being exported from the north. The new crop is large, and buyers are holding off, in anticipation of a decline. Northern Club is quoted a little lower, but otherwise prices stand as before.

California Club	$1.45	@1.50
Sonora	Nominal	
White Australian	1.55	@1.65
Northern Club	1.50	@1.52½
Northern Bluestem	1.65	@1.70
Northern Red	1.55	@1.65

BARLEY.

This market is not especially active, but there is quite a heavy movement through the country. The market is firm, with another slight advance in choice feed. There is apparently a strong demand in the East. A price of $1.12½ is reported at Woodland.

Brewing and Shipping	**$1.52½**	**@1.55**
Choice Feed, per ctl	1.27½	@1.30
Common Feed	1.22½	@1.25

OATS.

Prices stand as before. There is no movement of any consequence, supply and demand both being moderate.

Red Feed	**$1.37½**	**@1.42½**
Gray	Nominal	
White	Nominal	
Black Feed	1.20	@1.50

CORN.

Eastern corn prices have taken another jump, and California stock, which is now pretty closely held, is higher in sympathy. Considerable Eastern stock has arrived during the week, but the movement locally is not large.

Cal. Small Yellow	$1.75	@1.80
Eastern Yellow		1.70
Eastern White		1.70

RYE.

Some odd lots are quoted at $1.50 to $1.60 as before, but there is no trading of any consequence, and the prices asked are little more than nominal.

Rye, per ctl	Nominal

BEANS.

Few changes in quotations are noted this week. Both blackeye and lima beans have been marked down quite sharply by local dealers, but other descriptions are steady as before. Both large and small whites remain quite firm. The demand for shipment is not especially active, but is well maintained, and most descriptions seem likely to clean up pretty well at about the present level. Dealers continue to report weakness in limas, and the situation in this variety seems a little uncertain, though the Association is in a strong position. Local dealers attribute the weakness to the large crop in sight, the old stock remaining on hand, and the present light demand. A dealer in southern California estimates present stocks at over 70,000 bags. The recent movement has been slow, and it is now so late in the season that dealers are willing to reduce their holdings. This tendency, however, may be regarded as an effort to weaken the market before the new crop appears.

Bayos, per ctl	$4.00	@4.10
Blackeyes	6.15	@6.35
Cranberry Beans	3.75	@4.00
Garvanzos	**2.85**	**@3.25**
Horse Beans	3.25	@3.50
Small Whites	3.50	@3.60
Large Whites	3.40	@3.50
Limas	6.00	@6.20
Pea		4.25
Pink	4.90	@5.00
Red Kidneys	6.25	@6.50

SEEDS.

The present movement is of a very small nature, and prices are little more than nominal. Quotations are unchanged.

Alfalfa	Nominal
Broomcorn Seed, per ton	$25.00
Brown Mustard, per lb	5½c
Canary	3½@ 4 c
Hemp	3½@ 4 c
Millet	3 @ 3½c
Timothy	Nominal
Yellow Mustard	5¾c
Dried Peas, per ctl	3.75@ 4.00

FLOUR.

Northern millmen report an increasing demand for export. Shipments from this market are small, but larger than last year, the local trade remaining about as usual. Prices are unchanged.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.60	@4.80

Hay and Feedstuffs.

HAY.

Arrivals are much larger than last week, and the stock does not move off very rapidly, though dealers have advanced their prices on a number of varieties. The local range, however, is still below that generally prevailing in the country, where there is considerable business all the time. Consumers through the country appear willing to take on stock at present prices, though city dealers continue their efforts to bear the market, and say it is impossible to sell to local consumers at profitable prices. They have, however, already bought quite a bit of hay.

Choice Wheat	$13.00@14.00
Good Wheat Hay	11.00@12.50
Other Grade Wheat	8.00@11.00
Wheat and Oats	8.00@12.50
Tame Oats	8.00@13.00
Wild Oats	7.00@10.50
Alfalfa	8.00@11.00
Stock Hay	5.50@ 6.50
Straw, per bale	35@ 50c

FEEDSTUFFS.

Following the advance in corn, cracked corn is again higher, and finds a lively demand. Rolled barley is also firm, but prices are unchanged.

Alfalfa Meal, per ton	$16.00@18.00
Bran, per ton	28.00@29.00
Cocoanut Cake or Meal	26.50@27.00
Cracked Corn	38.00@39.00
Middlings	34.00@37.00
Mixed Feeds	29.00@32.00
Rolled Barley	26.50@27.50
Rolled Oats	28.00@30.00
Shorts	27.50@31.00

Garden Truck.

VEGETABLES.

Onions are still moving well, but arrivals have been large and prices are lower on both yellow and red. Garlic is steady as last quoted. General garden truck is coming in freely, and as a rule it is impossible to clean up the market from day to day. Some lines, however, are doing a little better than for some time past. Green peas are steady as before, and string means are a little firmer, good prices being realized for choice lots. Asparagus also is coming in more slowly, and prices are considerably higher, while a slight advance is noted in okra. Tomatoes are arriving in large quantities and prices have been dropping for several days. Cucumbers are also declining. Green corn is considerably lower for ordinary lots, though choice stock from around the Bay is still bringing good prices. Carrots, eggplant and green peppers are also lower, while cabbage and cauliflower are steady as formerly quoted.

VEGETABLES.

Onions: New Red, sack	$ .90@	1.00
Yellow, ctl	1.20@	1.40
Garlic, per lb	4@	5c
Green Peas, per sack	1.25@	2.00
Tomatoes, per box	1.50@	2.00
Cucumbers, per box	50@	75c
Cabbage	85c@	1.00
Carrots, per sack		1.25
Cauliflower, per doz		50c
Asparagus, per box	1.50@	2.50
String Beans, per lb	2@	5c
Summer Squash, per box	40@	60c
Okra, per lb	10@	15c
Green Corn, per sack	1.00@	2.50
Eggplant, per lb	5@	7c
Green Peppers, per box	65@	75c

POTATOES.

There has been some congestion of stock both here and in the river market, accompanied by a sharp drop in prices. The decline, however, has resulted in a renewed demand for shipment, and some of the surplus, at least, is beginning to move off.

River Whites, per ctl	$ 1.25@	1.75

Dairy Produce.

POULTRY.

Four cars of Eastern stock have come in this week, and the market is liberally supplied, though California chickens are not arriving quite so freely. Prices remain about as before, but some improvement is expected on large hens. The Eastern arrivals include considerable young stock, which is inclined to drag. Broilers find a little more demand, but prices are unchanged.

Large Broilers	$ 3.00@	3.50
Small Broilers	2.00@	2.50
Fryers	4.50@	5.50
Hens, extra	8.00@	9.00
Hens, large	5.00@	6.00
Small Hens	4.00@	4.50
Old Roosters		4.00
Young Roosters	6.00@	7.00
Young Roosters, full grown	8.00@	9.00
Squabs	2.00@	2.50
Geese, per pair		2.00
Ducks	4.50@	7.00
Turkeys, live, per lb	Nominal	

BUTTER.

There is still some movement into storage, and a continued surplus above local needs is cleaned up by an active shipping movement. Prices tend upward, being a little higher than last week, though seconds are unchanged.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	22½	22½	23½	23½	23½	24
Prime Firsts	21½	21½	22½	22½	22½	23
Firsts	20½	20½	21	21	21	22
Seconds	19	19	19	19	19	19
Packing Stock	17½	17½	18	18	18	18

EGGS.

Arrivals are still falling off, and with an active buying movement on the part of local dealers the market is firm for all grades. The lower grades are a little higher, though firsts stand as before, and extras have been somewhat lower than last week.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	24½	24½	24½	25	25½	25½
Prime Firsts	23	23	23	23	23	23
Firsts	21	21	22	22	22½	22½
Seconds	18½	18½	18½	18½	18½	19
Selected Pullets	20	20½	20½	21	21	21
Eastern	15	15	16	16	16	16

CHEESE.

New cheese finds more demand than for some time past, and all grades, including Monterey cheese, are higher.

Fancy California Flats, per lb	13½c
Storage	14 c
Firsts	12½c
New Young Americas, fancy	14½c
Monterey or Jack Cheese	13@15 c

Deciduous Fruits.

FRESH FRUITS.

Cool weather has been against trading, but the general scarcity of good supplies has caused a fair degree of firmness in the San Francisco market. Cantaloupes are higher and prices on watermelons are pretty well maintained. Strawberries are fairly strong, and both loganberries and blackberries are higher. Arrivals of cherries are now very small and prices are higher, though there is not much demand. Gravenstein apples are beginning to appear, and the demand is quite strong, fancy four-tier stock being scarce at top prices. Apricots are scarce, and while there is no great demand in the general trade the canners are paying up to $60 per ton. Peaches are quite firm, with higher prices for attractive offerings. Bartlett pears are lower, but find quite an active demand, while figs are bringing a little better prices. Plums are in steady demand at former figures. Some malaga grapes are coming in and find a ready market at quotations.

Watermelons, per doz	$ 2.50@	3.00
Cantaloupes, standard crate	2.25@	2.50
Raspberries, chest	5.00@	6.00
Loganberries, chest	3.00@	4.00
Blackberries, chest	3.00@	4.50
Strawberries—		
Longworth, chest	5.00@	8.00
Large varieties, chest	4.00@	6.00
Cherries, lb.	8@	10c
Apples—		
Fancy Gravensteins, box	$ 2.25@	2.50
Other varieties	75@	1.25
Apricots, crate	85@	1.10
Apricots, box	60@	75c
Peaches, lug box	1.00@	1.50
Carriers	85@	1.25
Plums, box	40@	65c
Figs, box, double layer	1.00@	1.25
Pears, Bartlett, box	1.25@	2.75
Other varieties	75@	1.00
Grapes, Malaga, crate	1.00@	1.25

Dried Fruits.

Interest in new crop stock is gradually increasing. Prunes are hardly as much of a feature as for some time past, as packers have provided for immediate needs and are willing to wait awhile. There is considerable demand in the Middle West, however, and any strong buying movement would undoubtedly cause considerable stir on the Coast. Apples continue firm and in good demand as last quoted. Such new apricots as have appeared show excellent quality, and the price quoted is readily obtained, though the trade is a little slow to pay the figures asked in some quarters. Old peaches are closely cleaned up, and prices are a little higher on both old and new stock, with considerable business in progress. New pears have been advancing sharply, probably owing to the shortage of apricots and the strong shipping demand for green pears. The Eastern trade has not yet made any open move toward buying new raisins, but the local packers show considerable anxiety to get both old and new stock, and have made a ¼ cent advance in the prices offered for both crops. They are getting considerable stock at the present figures. The New York Journal of Commerce says:

"Futures are neglected and the demand for spot goods reflects only immediate necessities, which always at this time of the year are unimportant.

"In California prunes the market for futures as represented by the quotations of packers is more settled than at any previous time this season. In other words, the f. o. b. four size bag is now uniform. October shipments, according to all accounts, cannot be bought on less than a 4⅛ cent f. o. b. bag basis for 50s to 90s, and all of the packers seem to be exacting a premium of half a cent on 40s and at least a cent on 30s. Some of them make the premium on the latter size 1¼ cents. Europe is said to be showing interest in 1911 Oregons, and according to some reports has recently placed orders for considerable quantities on a 4⅞ cent f. o. b. bag basis.

"Nothing is being done in future peaches apparently, but there is more or less business in spot goods in a jobbing way, the inquiry coming principally from the West and South. Recent sales from store are reported at 9 cents for choice and proportionate prices for other grades. The last f. o. b. quotations on August-September shipment from the Coast based on 50 pounds, unfaced, were 9½ cents for choice, 9¾ cents for extra choice, 10¼ cents for fancy, and 11 cents for extra fancy. Spot apricots move slowly, but the supply is light and concentrated and the market firm. Future apricots offer in 50-pound boxes, unfaced, at 15½ cents for choice, 16½ cents for extra choice and 16¾ cents for fancy f. o. b. Coast for July-August shipment.

"Raisins are not wanted and prices are nominal, but the market has a firm undertone."

Evap. Apples, per lb., 1911	8¾@	9½c
Apricots, new crop	14	c
Figs, new crop	5 @	7½c
Peaches, Spot	9 @	9½c
New crop	9¼@	9¾c
Prunes, 4-size basis, new crop contracts	4¼@	4¾c
Pears, new crop	11 @	12 c
Raisins—		
Loose Muscatels, in sweatbox	4¼@	4½
1911 crop	4¼@	4½c
Thompson Seedless	**4½@**	**4¾c**
Seedless Sultanas	**4¼@**	**4½c**

Citrus Fruits.

Oranges are still being shipped from California at the rate of about 60 cars a day and the Eastern auctions are paying fair prices for the fruit. It would seem that there would be a break in the price, but during the whole season markets have held firm, even under the strain of over 10,000 cars more of oranges being sent over last year to the same date.

Lemons are also in strong demand w shipments of about 40 cars a day, and with a total of over 1400 cars in excess of last year at this time.

On Monday, July 11, in New York the auctions averaged from $3.40 to $4.00 per box for valencia oranges. On the same day at Philadelphia valencias sold from $3.95 to $4.90. At Boston the prices were about the same.

Lemons on July 17, in the auctions, brought from $4.70 to $6.75 at Boston, and at Cleveland the price ranged from $5.30 to $5.55. At Cincinnati the price was $3.75 to $4.60.

The San Francisco market is rather quiet, with unfavorable weather and liberal offerings of deciduous fruits tending to decrease the demand. Prices, however, are a little higher on valencia oranges, lemons and limes.

Lemons	$ 2.00@	6.00
Valencias, choice to fancy	2.25@	3.50

Limes	5.50	@	6.00
Grapefruit	2.00	@	3.00

Nuts, Honey, Hops, Etc.

NUTS.

New prices for almonds have not yet appeared, but are expected within another week. So far little business has been done in the new crop, and dealers who have made any purchases are keeping the terms private. The prices asked by packers, however, have been advanced, new Nonpareils being quoted at 18½ cents. Spot prices are altogether nominal, as there are very few of either almonds or walnuts on the market.

Almonds—			
Nonpareils	16½	@	17 c
I X L	15½	@	16 c
Ne Plus Ultra	15	@	15½c
Drakes	12	@	14½c
Languedoc			12 c
Hardshells	8	@	8½c
Walnuts—Softshell, No. 1			15 c
Standard			14½c
Softshell, No. 2			11 c
Budded			17½c

HONEY.

Supplies here are still limited, though offerings are increasing in some parts of the country. Comb is pretty firmly held, but extracted is easier. The movement here is very slow, and at present little demand is reported anywhere.

New Extracted, White, per lb.	8	@	8½c
Comb, White	13	@	15 c

BEESWAX.

There is no business of any consequence at present. Prices stand as before.

Light	28	@	32 c
Dark	23	@	26 c

HOPS.

This market is rather quiet at present, offerings being comparatively light for this seasan. There is a good demand and prices are held firmly as last quoted.

Hops, 1910 crop	25	@	30 c
1911 crop	22	@	25 c

Live Stock.

Quotations stand precisely as last week, and there is no noteworthy change in dressed meats. Veal is rather scarce locally, but sheep are plentiful and easy, with increasing arrivals from Nevada. Hogs remain firm, as they are coming in rather slowly.

Gross weight:			
Steers: No. 1	5	@	5¼c
No. 2	4¾	@	5 c
Cows and Heifers: No. 1			4¼c
No. 2			4 c
Bulls and Stags	2½	@	3½c
Calves: Light			6½c
Medium			6 c
Hogs: Grain-fed, heavy			6½c
150 to 250 lbs	7	@	7¼c
100 to 150 lbs			7 c
Small prime wethers	4½	@	4¾c
Large prime wethers	4½	@	4¾c
Ewes	3¾	@	4 c
Lambs	5	@	5¼c

DRESSED MEAT.

Steers	8½c
Cows	7½c
Heifers	7½c
Veal, large	9½c
Veal, small	11 c
Mutton: Wethers	9 c
Ewes	8 c
Lambs	10½c
Hogs, dressed	10½@11½c

WOOL.

Prices are unchanged, and values are a little unsettled owing to the general uncertainty of the outlook. There is little business under way at present.

Spring Clip—			
Choice Southern, Year's staple	10	@	12½c
7 months	8	@	11 c
Lambs, spring	8	@	10 c
Northern, year's staple	14	@	16 c

HIDES.

Prices are firmly held on all descriptions of hides, quotations standing as before.

Heavy Steers, over 56 lbs			12½c
Medium			11½c
Light Steers, under 48 lbs.			11 c
Heavy Cows, over 50 lbs			11 c
Light Cows, 30 to 50 lbs			10 c
Kip			13 c
Veal	16	@	16½c
Calf			16½c
Dry—			
Dry Hides	18	@	19 c
Dry Bulls			16 c
Dry Kip, 10 to 15	18	@	19 c
Dry Veal, 5 to 10			20 c
Dry Calf, 7 down	23	@	24 c
Sheep Skins—			
Long Wools	$ 1.00	@	1.25
Medium Wool, 6 to 9 mos	75	@	90c
Short Wool, 3 to 6 mos	40	@	65c
Lambs	35	@	60c

HORSES.

There has been very little business here of late, the general demand at this season being limited, and offerings are also less numerous than a few weeks ago. Prices are not quotably changed, but it is difficult to realize full quotations on anything but the most desirable class of drafters. Sellers in the country are holding for higher prices than city dealers are willing to pay, and there is not much business anywhere.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	190@240
Wagon Horses, 1250 to 1350 lbs.	140@180
Delivery Horses, 1050 to 1250	100@125
Desirable Farm Mares	100@125
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

SPECIAL DECIDUOUS MARKET REPORT.

Sacramento, Cal., July 17, 1911.

This past week's shipments from the State, although heavier than the previous week, are about two-thirds lighter than the corresponding dates of last year. The situation is decidedly peculiar, inasmuch as it was estimated that the crop in certain districts was heavy, especially on pears along the Sacramento river, but the shipments do not indicate any great amount, and, although we look for a big increase this coming week, it will be nothing alarming. The quality of the pears this year is not equal to that of last year, as the damage done by the thrips is clearly shown on the short neck and round shape as against the beautiful bell shape that has always been noticeable on Sacramento Bartletts. However, the shipments from the river this season have sold at remarkably high prices, and every indication points to a continuance of a good market.

There seems to be considerable complaint in Placer county and Vacaville districts regarding split pits in the early Crawfords. The first picking of this variety has always been split more or less, but it is claimed that the defect is more noticeable this year than it has been for some seasons.

Tragedy plums are rapidly cleaning up, and those that have been shipped have been sold for high prices. The fruit seems to be carrying in good shape, and the Eastern buyers are not as particular this season on account of the light arrivals.

We felt practically no competition from Georgia this season, and, as the shipments from that State will end this week, we look for California to have clear sailing for at least the next three or four weeks.

There is considerable mildew noticeable in the San Joaquin valley and if this is not checked within the next few days it will curtail the shipments to quite an extent.

There is not much to add, as the situation is about the same as it was a week ago; market active, demand very brisk throughout the country, and very little competition expected from any State for the next few weeks, except from Utah, where it is reported that the shipments will amount to 200 cars more of peaches than last year.

The Pecos valley in New Mexico is sending out a few peaches, supplying a few of the Texas markets. However, the shipments are limited and will have but little effect on the market. Arkansas reports a few cars of Elbertas, which will be ready within a few days, but we do not look for very much competition from this State. Colorado will have a very light crop, having suffered from the late frosts, and, unless Michigan comes in early, we do not look for very much competition on our Elbertas.

It is possible that there will be a slight slump in the markets between the 15th of August and the first of September, but, as the shipments about that time from California will be light, we doubt if the effect will be very noticeable.

The prices realized during the past week in the various markets are as follows:

New York—Wickson, $2.12½@2.50; Climax, $0.75@2.25; Tragedy, $1.30@2.25; Red June, $1.20@1.90; Simoni, $1.00@1.80; Abundance, $1.15@1.50; Burbank, $1.20@2.37½; Alexander, $1.20; Hale, $1.35; St. John, $1.40; Triumph, $0.85@1.55; Wilder, $0.90@1.95; Bartlett, $3.45; Lawson, $1.40@1.80; Royal Apricots, $0.55@1.70; Figs, $0.75@1.65; Republican, $0.90@2.25; Tartarian, $0.85@1.80; Royal Anns, $0.85@1.90; Bings, $1.00@3.12½.

Chicago—Wickson, $1.25@2.60; Climax, $1.40@1.80; Clyman, $1.20@1.35; Tragedy, $1.45@2.25; Red June, $1.60; Simoni, $1.15@1.65; Abundance, $1.25@1.60; Burbank, $1.20@2.05; Royal Native, $1.30; Alexander, $1.05@1.40; St. John, $1.40@1.85; Triumph, $1.30@1.75; Bartlett, $1.50@4.50; Royal Apricots, $0.90@1.80; Moorpark, $0.75@1.15; Figs, $1.10@1.35; Thompson's Seedless, $3.50@3.65; Republican, $1.10@2.05; Royal Anns, $1.10@1.75; Bings, $1.45@1.75.

Boston—Climax, $1.35@2.00; Clyman, $1.25@1.50; Tragedy, $1.85@2.60; Red June, $1.00@1.45; Burbank, $1.30@1.85; Royal Native, $1.60; Triumph, $1.10@1.80; Royal Apricots, $0.75@1.50; Republican, $1.15@2.25; Tartarian, $1.05@1.35; Royal Anns, $1.20@1.80; Bings, $1.55@2.85.

Philadelphia—Climax, $1.20@1.55; Clyman, $1.10@1.30; Tragedy, $1.60@2.15; Red June, $1.15@1.45; Simoni, $1.00@1.40; Abundance, $1.20@1.55; Burbank, $1.30@1.55; Alexander, $0.75@1.20; Hale, $0.70@1.35; St. John, $1.00@1.05; Triumph, $0.55@1.20; Wilder, $1.25@1.35; Royal Apricots, $0.45@1.30; Figs, $1.15@1.25; Republican, $0.75@1.75; Tartarian, $1.15@1.65; Royal Anns, $0.90@1.90; Bings, $1.35@3.10.

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PUBLISHER'S DEPARTMENT.

BACK TO MARKET STREET.

After August 1 the office of the PACIFIC RURAL PRESS will be found on the fifth floor of 420 Market Street. Prior to the fire of 1906 the office was for years located in this block, and it will seem like getting home when we get into the new offices. The business of the paper is gaining so fast that the extra room we will have is needed, and as the location is so central, we expect all of our old friends will call frequently, and with the new patrons already added ought to make our rooms the center of agricultural printing activity of this Coast.

More than a hundred new subscribers were added to our list last week. The way the RURAL PRESS is growing these days is astonishingly delightful.

The Witte Distillate Engine is being handled by Miller & Kitts in this city. Notice the advertisement of the firm in this week's paper. The Witte engine is an old, well-known make, and before purchasing, it will be to your interest to write the firm for their literature.

"Agricultural Pumps" is the title of an exceedingly tasty and useful booklet being sent out by the Geo. E. Dow Pumping Engine Co., of San Francisco and Los Angeles. The book contains tables on ditch construction, water measurements, friction loss, converting pressure into feet, head of water, etc., all of which is interesting to irrigationists. Write to the firm for a copy. See their adv. in another column.

"Electric Pumping Plants," a handbook of electric pumping for irrigation, is another valuable booklet issued by the Pacific Gas & Electric Co., of San Francisco. This book is being sent free on request, and every farmer in the Sacramento and upper San Joaquin valley should get a copy. Not only is the book handsome and interesting, but it contains facts and tables of interest to users of water as well as information about electrical equipment. You owe it to yourself to become posted on every phase of irrigation and best methods. Read the ad of this company elsewhere in this issue and then send for the book.

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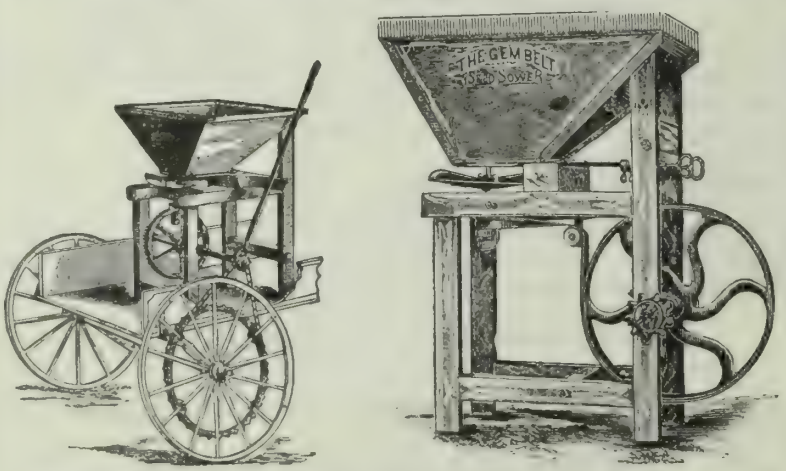
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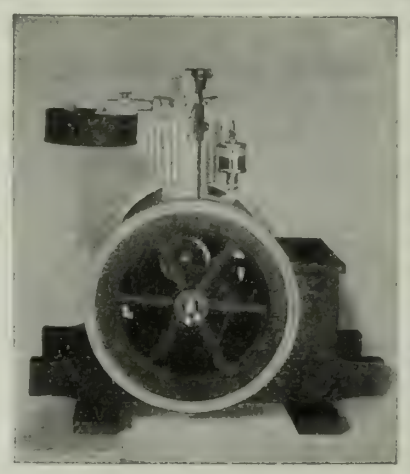
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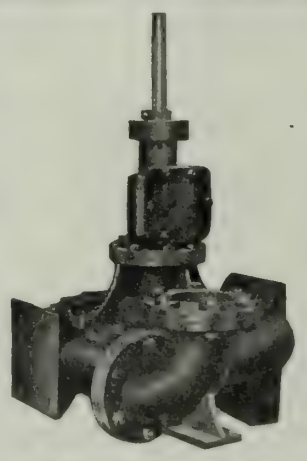
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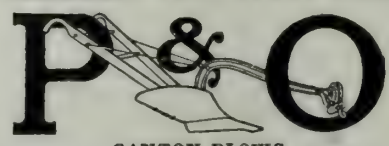
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THE PACIFIC RURAL PRESS

Vol. LXXXII. No. 5. SAN FRANCISCO, SATURDAY, JULY 29, 1911. Forty-first Year.

The Coming Apple Crop of the Pacific Coast.

Written for the PACIFIC RURAL PRESS by Mr. DUDLEY J. WHITNEY.

Prospects for good prices for apples depend less upon the size of the local crop than with any other fruit grown here. The California production of prunes, apricots and most other fruits governs largely the prices that can be secured during the year, but there are so many apples produced in other parts of the country that the prices may not be affected greatly by the local output. For this reason it is necessary to examine into the crop and market conditions for apples in all parts of the country in order to prophesy prices with any degree of accuracy.

Fall Apples.—The California apple crop, aside from early summer varieties like Astracans and a few others, is divided into two main parts, fall and winter apples. The two types of fall apples which are most prominent are the Bellefleurs and Gravensteins, both of which this year are about three weeks late. The first of these are grown mainly in the Pajaro valley around Watsonville, the second near Sebastopol, Sonoma county.

Both varieties of apples are sold to be consumed before the winter apples come upon the market in large quantity and meet with but little competition from other varieties. The prices vary with the prices that can be secured for other kinds of deciduous fruits, as cheap fruit means cheap apples, and expensive fruit expensive apples.

The Sebastopol Gravensteins are now controlled largely by the Apple Growers' Union of that place, which has about 80 per cent of the acreage signed up. A large part of the remaining 20 per cent is tied up by contracts, and the only competition that is expected is from growers in other parts of the county. Future sales of several carloads have been made by the Union for from $2 to $2.50 per box f. o. b. Sebastopol.



A Young Apple Orchard in the Pajaro Valley.

The Gravenstein output is expected to be only about one-third of last year's crop, the greatest estimate that the writer has been able to find being from the buyer of a large fruit company, who stated that he expected a half crop. On the one-third estimate the output would be about 50,000 boxes. This fruit is to be packed in three grades: Extra fancy, which will be packed for color as well as quality; fancy of equal quality, but not having such a high standard of color; and choice, which will be of good quality, but of off color, shape or slightly injured by scab or codlin moth. These will be further divided according to size.

The poorer grade of Gravensteins will be sent only to local markets and will not be wrapped or packed with the care that would be necessary if they were going to distant markets where the buyers were accustomed to a fine quality of fruit. At the present writing the local markets are taking at high prices fruit that usually would be dried.

The Bellefleurs of the Pajaro valley are expected to make a full crop of 2000 cars of 640 boxes each, nearly half the whole output of the district. These, like the Gravensteins, have the market to themselves in a way, as few Bellefleurs are produced in other States. A very large part of these, at least 80 per cent, are already contracted for on the acreage basis, as is customary in the Pajaro valley, and are out of the hands of the grower. The contracts are made at the time the fruit sets, and before the market prospects are known. Recent contract prices have been considerably higher in the average than in previous years. Prices per loose box have been about 20 cents on the tree, or $20 to $25 per ton delivered at the packing house, the buyer taking the culls.

Winter Apples.—In the Pajaro valley the late apples, about two-thirds of which are Newtown Pippins, will make about 70 per cent of a full crop, or 2000 cars. These, like the Bellefleurs, are nearly all contracted for. In Sonoma county the late apples are going to run close to a good average. From Sebastopol there will be about 100,000 boxes of these, mostly red varieties. In the remainder of the State the apple production, as a rule, is not large enough to affect the markets to a very great degree, except as growers in small apple regions where packing systems are not well developed turn out a poor pack which competes with good packs from other places.

The Eastern Crop.—In the East, up to the beginning of the recent hot season, the apple prospects were at least up to average, the U. S. Department of Agriculture estimating the apple crop for the whole country on June 1 at 97.6 per cent. The hot spell, however, caused extensive dropping and fairly baked the apples on the tree, reducing the percentage greatly below average. In a trade paper, for instance, where underestimates of the crop are likely to be the exception, it is stated that Virginia Newtown Pippins, which compete to some extent with the Watsonville Pippins, will make but 35 per cent of a crop.

The Eastern apples as a rule are marketed differently than those from California and the Northwest, being sold in barrels with but little grading, and in spite of their general reputation for fine flavor bring lower prices. The Eastern shortage, however, is considered favorable for good prices for the local product.

The Upper Coast.—In the Northwest, where apples come up to a high standard for both quality and pack, and are handled and packed in a similar way to those from this State, only better as a rule, the government estimate on June 1 was 87 per cent of an average crop for Idaho, 81 per

(*Continued on Page 90.*)

Pacific Rural Press

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E. J. WICKSON - - - - - - - Editor
FRANK HONEYWELL - - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., July 25, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	T	T	.11	64	50
Red Bluff	00	00	00	100	64
Sacramento	00	00	00	98	52
San Francisco	T	T	00	70	50
San Jose	00	00	.01	86	46
Fresno	00	00	T	104	58
Independence	.10	.10	.10	94	56
San Luis Obispo	00	00	.01	78	48
Los Angeles	00	00	00	88	56
San Diego	00	.11	00	72	60

The Week.

For a period in midsummer the week has been very active in California agricultural affairs. The largest fruit shipping day of the season thus far was included, although the season's total is over a thousand cars short of last year's at the same date. More is expected of the later fruits, peaches, plums, grapes, and apples, and yet the supply is moderate as compared with the demand and buyers are active at full prices. Owing to the irregularity of home-grown fruits in other parts of the world, the warrant for increased planting in this State seems clear, and a good demand for trees next winter is indicated. There have been during the week many meetings of those interested in development. At San Diego ground was broken with due ceremony for the local exposition celebrating the opening of the Panama Canal, and thus our southern city has scored one on San Francisco, which has just announced the site selected. There is plenty of time, however, and it is better to break the best than soonest. The State Conservation Commission met in Sacramento and decided to take steps to ascertain how our irrigation waters can be best guarded and distributed, and will co-operate with the U. S. Irrigation Investigations toward that end—a most commendable thing to do. In Berkeley a convention was held at the University of those interested in the promotion of purity in dairy products and to secure proper recognition and reward for dairymen who enter upon higher-class production. River improvement in the opening of the Mokelumne river to navigation was the subject of a large gathering at Stockton at which co-operation with the Government engineers was undertaken. Water transportation to all possible points on our interior waterways is one of the great needs of the State. Cotton is going to the gin in the Imperial valley, and preliminary experiments with sugar cane by the University investigators are reported to be promising. The State Development Board, under its president, ex-Governor Gillett, is taking up new plans for State-wide work. Meantime the United States reports foreign business during the preceding six months at the record figure of three and a half billions of dollars—all of which is pretty good for the midsummer vacation season.

A Difference in Turtles.

California is to give the world a problem which will rival those based upon the Calaveras skull of pioneer days. The story is that Thomas Donlon, who has a bee ranch 3000 feet up on the slope of "Old Baldy" mountain in Los Angeles county, seeking a rock fragment to weight down a hive, dug out one of which part protruded from the ground and unearthed the perfect fossil of a huge sea tortoise, which Hector Alliot, curator of the Southwest Museum of Los Angeles, pronounces the most important discovery of the kind ever made in southern California. It is solid stone, weighing 100 pounds, and showing the exact markings, and even some of the original color, on the back and yellow bottom. The specimen is nearly 30 inches in diameter. Mr. Alliot estimates that it is 400,000 years old, and beyond a doubt by far the most ancient ever picked up on the Western Hemisphere. It swam in these seas, he says, when California and all the territory this side of the Rocky Mountains was still a mile or two under water, and, already petrified, was subsequently rolled and ground in the glacial period ice for 70,000 years—certainly an experienced sort of a turtle.

Almost on the same day, as reported by telegraph, Romano Gienetto, an East Boston shoe worker, captured a 250-pound turtle at Chelsea beach by seizing it by the tail, and dragged it home. During the process the turtle spit out a large copper penny. The coin was minted in 1770 and marked with the name of George III of England. All this is very true to life. If you shake out a Yankee turtle you might expect to get a copper cent. If Mr. Donlon had shaken his California capture it couldn't have coughed up less than a twenty-dollar piece—for such was the way of the California pioneers.

A Wrong Way to Get Wiley.

They seem to be beating around the bush at Washington to "get" Dr. H. W. Wiley, chief of the chemistry branch of the U. S. Department of Agriculture, who has laid California under several obligations to dislike him by his attitude toward our drying of fruits, naming of wines, etc. They will not get Dr. Wiley by going around the bush after a technical ill-behavior upon the basis of which he can be dismissed, because there are so many politics on the other side of the bush and Dr. Wiley can do more politics in a minute than the rest of them can in a week. We therefore do not believe in arraigning Dr. Wiley on a technicality: because it is not fair to him and because he can beat anyone who goes after him that way. Those who know Dr. Wiley cannot believe that he would do anything for his pecuniary benefit on the technicality route, though we would believe he might do a technical wrong to have HIS OWN WAY, because he believes his way is the right way—and all that. Therefore, arraignment on a technicality in administration will fail because disinterested opponents of Dr. Wiley's way will not like it and his friends will get hopping mad about it—so mad that the reformation of Dr. Wiley is retarded and his dismissal from official station impossible. We have said the present issue is full of politics—it is as full of politics as the Ballinger issue was: but politics are not our line, so we drop them. We still have hopes that the time will come when expertness in government policy and science in government service will be free from politics and wish to say a word or two as though that time had already arrived.

If Dr. Wiley is to be arraigned, let it be on the basis of insubordination in not accepting the execution of the pure-food law in the way the law provides that it shall be executed, and in massing his friends in packed conventions to declare for execution in other ways, to wit: HIS OWN WAYS. He should also be arraigned for unscientific obstinacy in that he refuses to accept the verdicts of his peers on his attitude and ways, but persistently endeavors to set their scientific work at naught and to annihilate them by his political art and force. For instance, he does not accept the decision of the Referee Board that benzoate of soda can be used in meat preparations without injury to consumers, and, we understand, makes trouble for products in which it is used, even when its use is noted on their labels—as the Secretary of Agriculture, who is charged with the execution of the law, prescribed that it should be. If that is not insubordination in office, what is it? What is the use of beating the bush for technicalities when there is a real issue?

What Will Happen to Our Sulphuring Problem?

It seems to us that Dr. Wiley could be successfully arraigned on another real issue, to wit: unscientific obstinacy in his attitude toward the Referee Board, selected by President Roosevelt to pass upon the scientific questions involved in Dr. Wiley's proscription of sulphur in fruit drying, etc. This Board was selected from among the most celebrated physiological chemists in the country as a scientific tribunal, to which Dr. Wiley, if he had any loyalty to science at all, would have said: "All right, gentlemen, go ahead and let us see how you come out." But a man who has no respect for anything, except HIS OWN WAY, cannot brook any tribunal and so Dr. Wiley proceeded forthwith to break down that tribunal by lining up his subordinates and the State food chemists and commissioners, who are largely of his own making, in conventions and cutting and drying proceedings for those conventions exalting Wiley as the Moses of the pure-food law and abusing everybody else as a black-hearted, thin-legged and flat-chested Egyptian. Dr. Wiley should have been arraigned for this behavior by the American Association for the Advancement of Science and told to behave himself. He would have been, except that Wiley's politics work in that body as elsewhere—and we are writing about a time when politics are out of science, you remember.

Having insulted the Referee Board through scientific politics in conventions claiming to be scientific, he has been always busy in efforts to destroy it through political politics in Congress and elsewhere. This he proposes to do by taking away the funds with which it is working. The telegraph says: "That the Remsen board of consulting scientific experts which is taking an extremely long time passing on questions of vital interest to the stomachs of 90,000,000 people may be put out of business and dropped off the payroll is a strong possibility." Dr. Wiley is being backed up in this undertaking, of course, by Democrats and all others who are opposed to the present administration. It may be mighty good politics for them to seize the opportunity to get their political way, but from the point of view of science and the good of the people in the triumph of the truth, it is abominable for Dr. Wiley to participate in such an undertaking simply for the purpose of having HIS OWN WAY. If the people will allow this prostitution of science and expertness to politics and personal self-will in official position, what is vox populi? Of course, if the Referee Board is strangled, we shall get no authoritative declaration as to the wholesomeness of dried fruits made good by correct use of sulphur, and Dr. Wiley will be allowed to condemn

fifteen million dollars' worth of dried fruits in this State alone, because he succeeded in preventing the review of HIS OWN WAY by a tribunal unimpeachably scientific and unprejudiced! Is it conceivable that a one-man-power and its henchmen will be allowed to do such a thing in the United States of America?

There is no Issue Against the Pure Food Law.

It is of course a trick of Dr. Wiley and his minions to make it appear that all who long for the truth, as it may be brought to light by the Referee Board, are opposed to the beneficent pure food law. Such misrepresentation is disgraceful. See how they do by their inspired telegrams from Washington: "Coincident with the exposure of the attack on Wiley there is thrown into the limelight some of the outlines of the system whereby the stringent enforcement of the pure food law has been interfered with. Democrats and progressives in both Houses of Congress will make a fight in behalf of Wiley and for the strict enforcement of the pure food law." To make Wiley and the Pure Food Law synonyms is of course the basis of their political game. It should be understood by all that there is no issue against this law and no suggestion that it be not enforced, by those who are endeavoring to secure science, truth and justice for California products. They support the law as grand and beneficent. Californians called for a pure food law against sophisticated wines, bogus honey, imitation olive oil, etc., years before a word was said at Washington and they rejoice in the prevalence of such a law. But, as we have said, there is no issue against the law except as Wiley and his associates raise it by misrepresentation. The issue is against certain arbitrary regulations made by Dr. Wiley, which are not a part of the law but are in the machinery of enforcement. Congress did not make them, and why Congress should manifest such concern about them that it desires to support them and to rule out all tests of their accuracy, is simply because a majority of Congress can do politics with them. Does anyone doubt that there ought to be a science in this country which would be beyond the reach of politics?

Dr. Wiley Prances on Prunes.

One of the humors of the situation, which may a little relieve its exasperating gloom, is the announcement from Washington that Dr. Wiley recently distinguished himself by recommending the seizure of a shipment of French prunes from California. He recommended that they be seized on the ground that they were misbranded because they were not grown in France. The board which passes on questions of that kind refused to certify the case to the lawyers who bring prosecutions and so the California prunes escaped seizure. If Dr. Wiley did this, it simply shows how useless it is for a man to think that he knows everything and is therefore entitled to have HIS OWN WAY in everything. Of course the name "French prune" has been for 70 years or more in this country, and how much longer in England we do not know, merely a pomological title. This kind of plum has been expatriated for a century at least and is simply a world fruit with a name indicating its origin, not in any way indicating its present area of production. To claim that "French prune" means produced in France is just as silly as to hold that our esteemed friend, Mr. John French, was made in France, and our distinguished citizen Col. John P. Irish is a product of an Irish bog and not of a Western prairie. And then if we cannot call our prunes by their accepted pomological name, what must we do with our Lima beans, our Bermuda onions, our Winningsted cabbage, our Missouri Pippins and a hundred other horticultural names which everyone but Dr. Wiley knows indicate origin, are prized and retained because of their distinctive and historical value and have no relation to present places of production? And how about English walnuts? That term we cannot defend on line. It does not indicate origin, but simply a nut which the English have liked to import for centuries from Persia and France. And now we are planting French walnuts and calling them English so that a buyer will get the kind of a nut he desires. It ought to be clear enough that the choice of names is a matter of history and taste, and except in rare and particular cases is wholly dissociated from significance of geographical production.

What Then Shall Be Done with Wiley?

We do not know; but we are quite sure that what his opponents are trying to do is not the right thing. Suppose they should succeed in breaking his political neck: that would be the political way, but it does not commend itself to us as either just, or fair or very possible, under the circumstances. Nor are we convinced that the ultimate consequences would be good, if it should be possible. We have never sympathized with the cry to have him knocked off his perch as though he were sitting there like an ordinary place-holder. He is a man of great force and energy and has rendered distinguished public service. In a way, his independence and persistence are of immense value to the public service, and if he could be filled with scientific esprit du corps which extended beyond his own circumference, he would make perhaps the grandest scientific leader in the country. As it is he is merely a violent partisan. Possibly if he could be sent up higher he would get a broader view: it would be safer and hold better chances than undertakings to debase him. If he were made President he might have troubles of his own which would give him more respect and sympathy for others who are trying to know something that is true and do something that is right. If he has lost the government something by some wrong vouchering, dock him that much of his salary. If he has been disrespectful to his superiors, let the President publicly spank him on the steps of the White House. If he cannot stand correction, from which no erring man should ever consider himself exempt, let him resign, but do not ask for his resignation on any technical or trivial charge. If he could be haled before a scientific tribunal, such as we anticipate may be some day provided to review the acts and attitudes of those employed in the scientific service of the country, we are sure that he would respect such authority and obey its suggestions for the public good. But to place such a man in a political arena like that at Washington, with both hands full of political weapons which he knows so well how to wield, we are sure that he will fight to the last ditch and probably leave his opponents in it. Under the circumstances we commend to the American people the example of the sage of ancient time who when he met one who was as obstinate in his immorality as Dr. Wiley is in his un-science, and, not desiring to bring a railing accusation against him, said: "The Lord rebuke thee"!

Queries and Replies.

Covering Morning Glory.

To the Editor: In your issue of July 8, "Vineyardist," Fresno, inquires how to kill a small patch of morning glories. I think he can destroy them effectually by covering the patch with tar paper, lapping the edges and weightiing it down with stones, clods or odd pieces of wood and leaving covered for one growing season.—E. M., Campbell.

All kinds of covering for smothering morning glory have been tried without success. The plant has reappeared after prolonged covering with a thick mat of straw and manure, after such paper cover as you propose, also after actually planking down with close, battened boarding. We have no confidence in such treatment—not to mention the prohibitive cost of maintaining it if the area is considerable.

Trees Rise at the Top, Not From the Bottom.

To the Editor: We have a point in dispute: whether in the case of low-headed fruit trees the low limbs rise at all as the tree gets older. For instance, if the first limb is made to branch off 12 inches from the ground, my friend claims that several years afterward the center of that limb would be several inches further from the ground. I claim that all growth is put on in the annular rings of wood and that the trunk of a tree does not lengthen out, except on the leader.—Beginner, San Francisco.

Trees do not rise from the ground. In fact, the branch has a tendency to approach the ground by virtue of its enlargement in all directions from the central point where growth started. Sometimes in process of cultivation the ground surface is interfered with in such a way that the tree does seem to have risen, but this is due to changes in the ground surface and not to the rising of the tree.

Japanese Dwarfed Trees.

To the Editor: I am desirous of learning how the Japanese stunt, or check the growth of trees, as they do at home and some in this country. I have looked in my "Wood Botany" and failed to find the information.—Reader, Oakland.

We understand that Japanese trees are dwarfed by having them grow in small pots with just enough water and plant food to maintain the life of the plant. Then as the growth is started each twig is pinched back so as to cause another start, and by this continual reduction of root force by short rations and by reducing promotive action of the leaf upon the root, the plant is held indefinitely in the condition in which we find the very old trees produced by the Japanese. This is only an outline of the process as we understand it, and we do not guarantee it to be adequate nor sufficient in detail to be a guide in practice.

Onions From Sets.

To the Editor: Will you kindly advise me in regard to onion sets? If planted in this month, will they grow and mature in the fall months?—R. W. P., Merced.

Good onion sets grown during the last winter and spring should be now mature, and if planted after drying would proceed to make a full growth of large onions if growing conditions should be right for them. Large quantities of onion sets are grown in this State for shipment to Texas during June and July, and are used to secure earlier onions than can be had in that State from sets which are grown there.

Treatment of Buds Put in Bearing Trees.

To the Editor: I am budding over some old peach trees. Should I cut away the branch above the bud when the latter seems to have taken?—D. A., Wallace.

The sap flow to the upper part of the branch should be checked by part girdling or by part breaking or bending the top above the bud, after the bud is seen to have set or taken. Do not remove the whole top until the growth on the bud has started out well or else you will "drown it" with excessive sap flow.

The Nurseryman---A Pioneer, Not a Pirate.

(By P. A. Dix, of Roy, Utah, at the Pacific Coast Association of Nurserymen at San Jose.)

All great movements, enterprises, and revolutions have or had their pioneers, whether civic, moral, political, scientific, or business in their nature.

No great achievement has been accomplished in a day; all had their beginnings in the pioneer.

The pioneer is the fellow who leads the way, blazes the trail, toils and suffers, subdues nature and overcomes obstacles, and too often leaves the fruits of his labor to be garnered by those who follow.

The men who conceived the idea of tunneling the Hudson were pioneers of a great enterprise; they spent their time and money and failed, but started an idea that culminated in success and a great benefaction to the public and commerce.

This great State did not spring up in a day. Its climate has been here always, the country with its great possibilities was discovered by the pioneers of '49, through hardship, toil, and suffering, sacrifice of life and property; they came, opened the mines, cleared the fields, builded the cities, and established the commonwealth.

But the pioneers who led the way to its great and permanent source of wealth, happiness, and general prosperity are the men who discovered the horticultural possibilities, grew, sold, and planted fruit trees.

The nurseryman has always been and now is a pioneer, and not a pirate, as so many people would have you believe. I do not hesitate to say—and without fear of successful contradiction—that the nurseryman's work has ever been one of benefaction to his country and humanity. No country so old or so new that he is not there, sowing his seed, planting his trees, and selling his flowers, so that country may not only be more habitable, but more beautiful and joyfully prosperous.

Tell me, where are the places you would rather live? Are they on the sand-swept deserts, where only the "Josua" flourishes? Or on the hard, bleak plains where only hardy Russian varieties of wheat grow? Or high up on those hoary mountains where only the lofty pines rear their crested heads? Or is it in those tempered climes where the apple and the orange-blossoms grow, where the orchards bear their golden fruit?

The banker with his well-earned gold and silver hair; the merchant with his competence; the Eastern farmer with his stiff joints and sunburnt and weather-beaten face; the shop man, with his grimy, horny hands and the office man, with his hollow cheeks and sunken eyes, are all looking for small orchard homes or orchard tracts in Colorado, New Mexico, Utah, Idaho, in the valleys of the Yakima, Wenatchee, the Willamette, and some are even hardy enough to tackle California, where they can make future homes and live near nature and nature's God.

Then who is, and must be, responsible for these beautiful conditions? It is not the builders of great railroad systems alone; not the men who go down in the bowels of the earth and bring up the precious metals; nor yet the man who tunnels the Hudson; nor the man who arrested the little mosquito laden with deadly virus on its way to inoculate its victim; nor he who has made it possible for one great leviathan of the ocean to catch the signal of another in distress and hurry to her relief. Not all of these; just the poor overworked, much-abused, and wholly misunderstood nurseryman.

Who has created, propagated, cultivated, and given to you so many of the stately avenue trees which stand guard like sentinels over beautiful driveways and parks; shrubs, roses, and vines that decorate the elegant homes all over our country. Just the patient, long-suffering nurseryman.

Well, you exclaim, this nurseryman is truly a wonderful fellow. So he is. He goes out on the highway and sees a field of wild daisies, bright, pleasing little fellows. He stops and watches them as they toss their heads in the breezes, and he soliloquizes, "You are beautiful, but if I could make you just a little larger and of a more brilliant hue!' Then he begins to work his magic, and by and by you have the Shasta daisy. This man, some people call a dreamer. Dream on, Mr. Burbank; humanity is better for your having dreamed.

Again, in this great land they grow figs. They had the Adriatics, the Sanpedro black, and the Sanpedro white; these were good, but not good enough. A nurseryman gets busy; he studies the fig and concludes there is something better in the far-off East. He rails across this continent, plows the silver crest of the placid Mediterranean and up the Nile, and climbs the mighty Cheops, and from its top looks for a better fig. In the great scope of his vision he beholds Asia Minor. Down from the lofty Cheops he comes, runs the gauntlet of the murderous Turk and tree inspector, and yonder on the shores of the Baltic he captures his prize—and now every man, woman, and child in America who sits down to their plate of Smyrna figs, sing the praises of George C. Roeding, the nurseryman.

It is true that the nurseryman, in a more restricted sense, does not actually create or discover all of the good things in horticulture and floriculture, but to them it is given—the general propagation, publication, and distribution.

Your own Mr. Burbank creates many wonderful things; but after he has blown them into existence they must be tried out, grown, and distributed by the nurseryman.

The nurseryman is the pioneer in the development of the fruit industries and fruit sections all over this great republic. He is a toiler and a scrapper. He has climbed the winding trails over those mountains, slept under a sagebrush, gone hungry and thirsty to bring to his weary brother the gospel of true happiness and prosperity—tree planting. He has gone faithfully and steadily forward in the discharge of his duty to humanity in the face of hostile legislation, unrelenting criticism of the press and blatant politician. I often think of the words of our Saviour when He was being crucified: "Lord, forgive them; they know not what they do."

Then let us console ourselves with the fact that we are pioneers of a great industry which has done and is doing its full share in the development of the country.

GRADING NURSERY STOCK.

(By Mr. C. F. Breithaupt, of Richland, Wash., at the Meeting of Pacific Coast Nurserymen at San Jose.)

The grading of nursery stock is a question that interests us all more or less, according to the size of our plant. It has been a mooted question for years, but there has been nothing done to systematize the matter, probably on account of lack of organization of the nurserymen.

The question naturally arises, "Why should we want a better system of grading than the one we are now using?" I will briefly give a little of my experience in the past few years, and see if it does not coincide with your own. If, then, what I have observed is our general experience, it goes to say conclusively that some steps should be taken at once to remedy, if possible, the existing conditions.

Grades Should Be Intelligible.—It has fallen to my lot in the past few years to purchase from other firms more or less stock, and I have bought from the East, Middle West, and the Pacific Coast, and in no case, except where a double system of grading is used, have I known to any extent what I was going to receive, as there was absolutely no uniformity of stock, not even when the same came out of the same nursery at different times. One man grades as 2-3, 3-4, or 4-6 foot trees, the other as No. 1, No. 2, or No. 3, but this I find means nothing to a great many of us. What constitutes a 2-3, 3-4, or 4-6 foot tree? In some cases it means from the union, and in other cases it means over all; by this I mean the root drawn down as far as possible without tearing it off. How we grade depends upon the season, whether the same has been favorable or not, and if the demand for certain stock is great or small—a very convenient system.

I had an occasion to buy some quince from an Eastern firm the past season which were listed as 3-4 foot trees, but no caliper measurement given, and when they arrived they had the height, but there was not one tree in that order that would caliper one-fourth inch, and most of them went only two-sixteenths. I was "stung", and had to take my medicine. I bought of another firm the same grade, and I do not think that the smallest one measured less than one-half inch, three to four times the caliper and a first-class tree, yet both listed the same way.

Some one says that I grade No. 1, No. 2, and No. 3. Very well, but what do you mean by No. 1, No. 2, and No. 3? What I may term a No. 1 you might call a No. 2 or No. 3, and vice versa. It is as I heard a man in the livery business say to a customer, when the latter kicked about a team he had been sent out with: "I asked you to give me a No. 1 team and you gave me a very poor excuse of a team." "Well," says the liveryman, "it is merely a difference of opinion; I consider that a fine team." So it is merely a difference of opinion.

This applies not only to trees, but also to vines. I have bought No. 1 grape vines with roots a yard long, and again I have bought vines that a man needed a strong glass to discern whether they were cuttings or rooted plants, and yet they were all billed to us as No. 1. With these conditions in actual existence, where is the retailer at who has to buy part of his stock? He never knows when he tells his customer that he will get him No. 1s what that means, whether that which he buys will be up to his expectations or far below the grade he intended to sell. This not only demoralizes prices, but bewilders the orchardist. It bewilders the man who buys, in that he has no way of knowing what you and I mean by these different grades that we arbitrarily make. It ruins prices, because the nurseryman who uses the light grade can sell for less money and still be getting more than his competitor who grades strong. This causes price cutting. I know of an instance where a certain nurseryman, who sells his stock by the grade of No. 1, No. 2 and No. 3, bought some apple trees of a nursery that grades by height only, and immediately upon receipt of the stock he regraded the same as No. 1, selling the second-grade tree at the first-grade prices. This, you see, is what some people term shrewd business ability, but it must react somewhere, and the reaction falls upon us, in that when we go to the planter to try to sell him trees he quotes Mr. John Doe as offering his trees a size better than ours at the same price and naturally you have to meet your competitor or lose the order. Thus you have cut the price, which you did in good faith, not knowing that your competitor was beating you with your own stock. Then there is another way that some do. All summer long they sell large grades, and when fall comes they find themselves short, so they immediately proceed to make the heavy grade by taking a size smaller and measuring it with that elastic yard stick that is so convenient.

There Should Be Uniform Standards.—In every business there is a standard and a grade that means something, but the nurserymen seem to have just as many standards as there are different firms. I believe that we should adopt a uniform system of grading, so that we may know exactly what we are going to get if we should buy, as we all are compelled to do at times. My preference would be for a system of No. 1, No. 2 and No. 3, and No. 4 if necessary, with a caliper measurement which is to govern in all cases. My reason for having the caliper govern is obvious, as it is often that a tree, qualified in every way to class as a No. 1, is 6 inches short for a 4-6 foot grade, yet it is a far better tree than the one grown right beside it that measures 5 feet.

But, methinks, I hear someone say that your double grading system is too expensive and we cannot afford to use it. I believe everyone can use it, from the smallest to the largest grower without it proving a great burden. It may take

more time, but will it not more than repay by giving you a chance to get the same prices that your competor does? Let us throw away that elastic yard stick and use the calipers a little more. I am sure that it will do more to standardize the grades than anthing else we can do.

I would like to see a committee appointed to work out a schedule of what shall constitute a No. 1, No. 2 or No. 3 tree, have the same printed or typewritten and sent to each member for his suggestion and returned. The committee could then pick out the very best of the suggestions and incorporate them into a code to be gotten out in regular form and sent to each member.

Die-Back of Citrus Trees.

(By Horticultural Commissioner E. O. Essig, of Ventura County.)

[The dying of the branches of citrus trees backward from the tips toward the body of the tree has caused some citrus growers concern and loss. In Bulletin 200 of the University of California Experiment Station, 1908, Prof. R. E. Smith describes and discusses the trouble as a physiological disease of the tree, and prescribes more rational culture and removal of soil defects as a means of escape from it. Mr. Essig has published in the Pomona College Journal of Economic Botany a very interesting and useful account of the occurrence of the trouble, with specific suggestions of remedies. We present the following portions.—EDITOR.]

Causes and Conditions Favorable to Die-Back.—The exact causes of die-back are not all thoroughly understood, but enough is known of the disease to tell almost with exactness the conditions which are favorable to it and which will nearly always produce its characteristic symptoms. It is the general belief that the disease is caused by malnutrition, that is, an irregular or improper food supply.

The conditions most favoring it are excess of ammonia and improper soil conditions.

In Florida excess of ammonia seems to be the chief source of trouble, and much more time has been given to the investigation along this line than along any other. Field experiments have been carried on for years with organic nitrogenous fertilizers and enough field observations made to satisfy experts that this excess of ammonia is a most favorable condition for the growth of die-back.

The excess of ammonia is brought about by using large amounts of stable manure, bone and blood, dried blood, cottonseed meal, and any excess of organic matter. In fields that have been highly fertilized for raising truck crops and later transformed into citrus orchards the die-back has been found to do great damage and to occur in almost every instance. This same is true of intensive farming between the rows of citrus trees and the application of organic fertilizers.

Trees growing in or near barnyards, stables, or chicken yards, almost invariably show die-back.

All of these observations, then, indicate that in Florida this really has been a great source of trouble, but in California the trouble is not so much of this nature. In almost every instance die-back here is caused by improper soil conditions.

Pooly Drained Soil.—This is accountable for numerous cases of the disease in question. A large supply of water, bringing with it an oversupply of food, invariably produces the malady. The rise of bottom water during the winter months or during irrigation periods also produces a favorable condition for the spread of the disease. It is this last named condition that is responsible for the worst case near Santa Paula. The affected portion of the orchard is situated near the foot of a hillside where the winter water oozes down during the rainy season, and where the irrigating waters are stored up during the summer months. The soil is a stiff adobe with a few small rocks mixed in for about four feet, where an impervious clay begins. This heavy soil is able to retain a large supply of water and therefore affords a most unfavorable condition for the roots to thrive in. Poor cultivation and very irregular irrigations on the part of the owner add to the already unfavorable natural conditions, and as a result die-back has been able to get a thorough hold in the grove.

Hardpan and Underlaid Impervious Clay.—Soil underlaid with hardpan or an impervious clay affords the condition for the worst case of die-back. Such soils should never be planted to citrus trees is the claim of many experts. In Florida the seat of most of the "soil die-back" is on such soils and large amounts of money are being annually expended to partially remedy this condition.

Granitic Porous Soils.—This particular type of soil has been connected with die-back by Prof. Ralph E. Smith of the Whittier Pathological Station. At the Thirty-fourth Annual State Fruit Growers' convention at Marysville, in April, 1908, he makes this report: "The disease (die-back) is described in Florida as being due to an excess of organic nitrogen in the soil. That this is not entirely the case, but rather that its cause is more complicated than this, is shown by the appearance of the trouble in this State, where it is limited almost entirely to a certain type of soil. This is the coarse granitic, very porous soil, which is found particularly along the base of the mountains in various places between Highlands and Pasadena. On such soils the Florida die-back is of quite frequent occurrence. There have been a very few cases of this disease on heavier soils where the Florida experience seems to hold true, all the instances of such soils of which we are aware having been associated with very heavy applications of fertilizers rich in organic nitrogen. In the case of the type of soil mentioned, however, the disease occurs very severely in many instances where only moderate amounts of fertilizers have been applied. The most pronounced quality of this soil is the free passage which it affords to water. It becomes very wet during irrigations, but unless water is applied very thoroughly and carefully and quite frequently, the upper soil becomes absolutely dry between irrigations. This soil also takes up water very poorly in a lateral direction, so that the space between the trees and much of the whole body of the soil becomes extremely dry in many orchards. This disease appears to be brought about in some manner through an irregular food supply, resulting from irregular water supply which trees get in this soil, unless irrigation is well carried out. With trees that are not well fertilized, the effect is simply one of ordinary die-back. True exanthema seems to result where the soil is of the type described, and a fair amount of fertilizing material had been applied. It is apparently a sort of indigestion in the tree, more food being taken up during irrigation than the tree can take care of after it gets into the condition of dryness which follows. On heavier soils the same thing occurs only where very excessive amounts of nitrogen heve been applied."

Improper Cultivation and Irrigation.—Anything that tends to bring about malnutrition or indigestion in the tree may be a favorable condition for the growth of die-back. Proper methods of cultivation to aerate the soil and to conserve a regular water supply is important in controlling die-back. Irregular irrigations, with too much or not enough water at a time, may also bring about this disease.

Destructiveness.—In California there have been no recorded facts with relation to the loss because of this malady. As has been stated, it was claimed that whole groves were destroyed before 1902 in the San Gabriel valley, and from time to time since then reports have come in that the disease has done considerable damage. In the reports of the State Pathologist for 1906 and from 1906-1909, the disease is mentioned as being more or less common, but no serious loss is recorded. In Ventura county, where the writer has made his observations, the greatest amount of damage may be accorded to a single orchard, where some twelve or fourteen trees are doing absolutely nothing for the owner. Many other trees also show signs of the disease, but not to any great extent. No doubt the greatest amount of damage in this State is in the production of stunted trees or "drones," which are doing absolutely nothing and which are a source of anxiety to the owner who does not know their ailments.

Control Methods.—Since an over-production of ammonia seems to cause die-back it is necessary to employ some means of preventing the tree getting too much in its food. This may be accomplished by cutting down the water supply and by cultivating only enough to keep the tree in shape through dry spells.

In plowing, all green manure crops or grass should be first removed from the grove to prevent the addition of more nitrogen. If any fertilizing is necessary, use sulphate of ammonia or nitrate of soda to obtain nitrogen. What has been said applies to an orchard which has had an excessive application of organic nitrogen fertilizers. When the condition has been remedied small amounts of organic fertilizers may be again applied, but with such fertilizers as stable manure, blood and bone, dried blood, guano, cottonseed meal, and green manure crops, add also potash and phosphoric acid.

For Improper Soil Conditions.—Drain low and poorly-drained soils so as to prevent the over-accumulation of seepage water.

Blast out the hardpan under the trees if it is possible. This method has been very successful on soil of this type in Florida. Subsoilers may be used.

Irrigate regularly so as to prevent over-irrigation at some periods and a scanty supply at others.

Cultivate so as to aerate the soil in case of heavy soils, and try to keep the orchard in good condition. If this will not cure die-back it may be a good investment as a preventive.

Fertilize so as to avoid an excess of ammonia as described above.

Pruning in Relation to Die-Back.—According to H. H. Hume, die-back in Florida often follows the freezing of the tops, while the roots remain uninjured. The result is that the amount of food supplied by the roots cannot be utilized by the smaller top, and indigestion or malnutrition begins which in turn produces die-back. In such cases Mr. Hume recommends root-pruning. He says: "The amount of pruning required will depend upon the severity of the attack, the size of the tree and the character of the soil. Pruning may be done by cutting a circle around the tree with a sharp spade, thrusting it well into the soil so as to sever a large number of roots. The balance of the tree is restored by this method, and a complete recovery frequently follows this practice. It should be borne in mind, however, that in addition to this treatment, the cause of the disorder in the tree should be sought for and the conditions favoring the development of the die-back removed as far as possible."

Spraying for Die-Back.—So far is I have been able to discover no work of this sort has ever been published as referring to such method of control in this State. Again, we must go to Florida, where it is claimed that very good results have been obtained by the use of bordeaux mixture. It must be remembered, however, that an underlying hardpan cannot be remedied by the application of sprays. In such cases, and in all cases, in fact, the cause of the malady must first be sought and remedied as far as possible. It is then that good results may be expected from the application of sprays. The bordeaux mixture is attributed by Hume as accelerating the assimilative processes in the leaves and other green parts of the tree due to the "chemo-toxic" effects of the solution, and not as a fungicide in the ordinary sense.

The mixture used for this spray is as follows:

Copper sulphate (bluestone)	6 pounds
Unslacked lime	4 pounds
Water	50 gallons

Since a 4-4-50 bordeaux mixture has been found effective in spraying for the wither-tip, it might be possible to get good results with this spray on die-back at the same application.

Relation of Die-Back to Wither-Tip.—While these diseases are widely separate in characters and method of attack, yet they are often associated together on the same trees. The die-back, by weakening the tree, affords an excellent starting place for the wither-tip. (See PACIFIC RURAL

PRESS, March 18, 1911.) Thus a slight attack of die-back may be followed by a severe attack of wither-tip without the presence of the die-back being manifested. This very thing happened in a valencia orchard near Santa Paula this winter, and it was only after the wither-tip had abated that the die-back showed up.

The stained fruit of the die-back presents the same reddish-brown color of the so-called "red spot" of the wither tip, and where there are no splits may be confused with it, unless careful observations are made. In the case of the die-back the red spots are never depressed, while in the case of wither-tip they are depressed and in more advanced stages present dark-colored fruiting bodies, while in the advanced stages of the die-back the red spots appear as pads and are accompanied by splitting of the rind.

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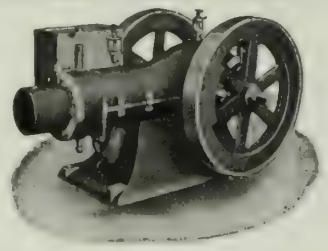
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AGRICULTURAL REVIEW.

With the Fruit Men.

Recent estimates from Idaho regarding the apple crop run from 65% to 70% of a full crop, with the quality very good. The bearing acreage is said to be 5% greater than in 1910 around Lewiston, and the total acreage for the State 60,000 acres, with a probable increase in the coming two years of 30,000 acres. The bearing average for the State is about 20% greater than in 1910. From Moscow, Ida., prices are given as from 80 cents to $1.20 per box.

Prunes in the vicinity of Colusa are said to have dropped to some extent during the recent hot spell, a reduction of 10% from previous estimates resulting from the loss.

Leading grape growers and wine men recently formed a State organization, to be known as the Grape Growers' Association of California.

T. F. Hunt, of the University of California, who has been investigating orchards near Selma, Fresno county, reports that the "little leaf" of the peach can be easily avoided by sufficient irrigation in the late summer. No great injury is said to have resulted from this trouble.

The Sebastopol Berry Growers' Association expects to ship East almost double the amount of berries sent out last year. The C. F. C. A. is receiving two carloads a day, the Pacific Coast Syrup Co. of San Francisco two tons a day, and the Sunlit Fruit Co. of Berkeley three carloads a week.

Horticultural Commissioner Hecke of Yolo county states that a number of prunes have been injured by recent hot weather.

At the last meeting of the Santa Clara county branch of the Farmers' Union it was estimated that the crop of dried prunes in the county could not run over 70,000,000 pounds, dried.

The Fay Fruit Co., at its branch at Porterville, has offered to buy fruit already packed at prices depending on Eastern markets.

Six thousand seedling date trees have been set out by C. F. Boarts in water district No. 8 in Imperial county.

Some trouble is being experienced in Ventura on account of uneven ripening of apricots.

The West Ontario Citrus Association of Narod has filed articles of incorporation. The authorized capital is $35,000, and the principal place of business is at Ontario.

Prices and Prospects.

Wednesday, July 26, the following prices were given by a dried fruit house in San Francisco as being offered to growers: Peaches, 10¼ to 11 cents; new raisins, 4½ cents in the sweatbox; apricots 14½ cents; apples, 9¾ to 10 cents; pears, 12 cents; prunes, 4½ cents, with a general upward tendency on most of the above fruits.

It is stated around Fresno that $40 per ton is being offered for Orange clings and $50 for Tuscans and Phillips. One sale of first-class Tuscans is given at $52.

Sliding contracts for watermelons, beginning at $15 per ton, and going down to $7 per ton later in the season, have been made in the San Joaquin valley.

Picking of the fig crop in the San Joaquin valley will begin this year about the 15th of August, considerably later than usual.

Prices of 5¼ cents a pound are said to have been secured for Thompson's Seedless raisins in Kings county. The Pioneer Fruit Co. is said to be paying $40 per ton for Elbertas.

A large part of the fig crop is said to have been sold at 4¼ cents, with a few sales above this mark.

From Selmat it is stated that hand-sorted muscats have been selling at 4¾ cents and the standard grades at 4½ cents.

The management of the North Ontario is said to have contracted for 3000 tons of new peaches last week in the San Joaquin at from 9½ to 10 cents.

Kerman wine grape growers have formed a pool, representing 400 acres of vineyards and are out for the highest offers.

Fresno grape growers state that $9 per ton is being offered for black wine grapes.

Tomatoes from Gridley have been contracted for at $15 per ton after August 1, with $20 and $25 before that date.

Prices to be asked by the Almond Growers Association for different grades of almonds are: 18¼, 17, and 16¼ cents.

Raisin prices, according to a San Francisco buyer, are 4¼ to 4½ for Muscatels, 4½ to 4¾ for Sultanas, and 5 to 5¼ cents for Thompson's Seedless.

Deciduous Fruit Shipments.

The following gives number of cars of deciduous fruit shipped from all points in California for the week ending Friday morning, July 21, 1911, as reported by the California Fruit Distributors:

Cherries—1 car. There have been no cherries shipped since the 19th, when one-half a car was forwarded

Apricots—10½ cars. Although over ten cars of this fruit is reported, this is an error, as nine cars were destined to local canneries and were erroneously included by the railways in their report. The actual movement of this fruit from the State should, therefore, be reported as 1½ cars. This concludes the shipment for the season.

Peaches—71½ cars. As indicated in our letter of last week, the quantity of peaches going forward has been rather limited, being about 12 cars less than for the preceding seven days. Fruit has not been ripening as rapidly as expected, but during the next week we expect to see a considerable increase in the output. Early Crawfords and Fosters will be the principal varieties; the crop is generally light. Elbertas cannot be expected in quantity much before the first of August.

Plums—157 cars. As expected, the shipment of this variety has dropped off, and it probably will continue to do so during the remainder of the season, although there are very considerable quantities left and shipment will be maintained in fair volume for some time. Tragedies are nearly done. Most of the Santa Rosas have been shipped. Diamonds are still very scarce, but will be more plentiful at the end of the week. Some Yellow Eggs will be available about the same time.

Pears—155¾ cars. The output of Bartletts from the river is disappointingly small. This should have been one of the heaviest weeks, whereas it is comparatively light. It is not expected that there will be many more shipped next week than this. Thrips are reported at work in some sections, and may have the effect of further reducing the small quantity offered. The demand is very strong and it has been impossible to supply all that have been asked for.

Grapes—18 cars. Thompson's Seedless and Malaga are being shipped from the Imperial district. These varieties will not appear in quantity in the central portion of the State for several days yet. There should be a considerably increased movement from the southern districts during the coming week. Fontainbleaus are going forward from the northern districts in increasing quantities, but there will not be enough of them to cut much figure.

The weather during the past week has been favorable, generally speaking. The last two or three days have been considerably cooler than those preceding them, and this has had the effect of making a considerable increase in the mildew which has been heretofore noted as appearing in several sections. Otherwise the grape crop is looking fine.

Total shipments to July 24, 1832 cars; total shipments to same date last year, 3767 cars.

General Agriculture.

Experiments in growing sugar cane in Imperial county have given good indications of success. Florida cane proved most satisfactory.

Cotton picking in the Imperial valley will begin August 1. The acreage, according to reports from various ditch companies, is less than last year, but the crop will be larger. The growers this season are usually persons who made a success with cotton in 1910 and have given their fields proper care, while the decrease in acreage is due to the withdrawal from the industry of those who made little or no money last year.

Estimates place the value of the lima bean crop this year in southern California at $5,000,000. The citrus crop is valued at $30,000,000, and beet sugar at $12,000,000, making beans the third in line in value in the southern counties.

The American Beet Sugar Co. at Chico will begin the summer campaign on July 29. The acreage this year is larger than usual and the sugar content high. The Anaheim and other factories will begin work about the same date.

At the National Plant Introduction Station at Chico 400 varieties of grain were threshed this season.

Hop picking in Yuba county is to commence August 1. Machines will be used on the Horst property and hand picking on the Durst and Drecher yards.

William Coyne of Redding Shasta county, has purchased 30 spineless cactus plants from the Burbank nursery at Santa Rosa to test for future extensive planting in case they prove a success under Shasta county conditions. All the Burbank varieties are being tried out.

A correspondent from Humboldt county reports that crops are in excellent condition, though several weeks late. The pea crop that for the last two years has been almost destroyed by the green aphis, is looking promising and the aphis is doing but little damage. J. L. Foster of Arcata has raised 20 acres of fine alfalfa on the river bottoms, which were thought to be too cold for the plant. The late frosts reduced fruit to a medium crop, and berries are a month late owing to cold weather, although bearing heavily.

Miscellaneous.

An insecticide laboratory of the University of California at Berkeley has been opened in accordance with the provisions of the insecticide law passed by the last legislature. The law provides for the proper labeling of all insecticides as to percentages of active ingredients and the examination of these substances will be made there. The working staff of the laboratory is composed of Professors C. W. Woodworth and George C. Colby, and George P. Gray, assistant chemist.

The Sacramento Ramie Co. was organized this week to manufacture ramie textiles. A considerable acreage of the plant may be put in next fall, and in the meantime the raw material will be imported from China.

The Farmers' Club of Ukiah has decided to prepare an exhibit of Mendocino

county products for exhibition at Ukiah. A library and clubroom is also to be established.

The management of the Campbell and Moreland ditch of Tulare county is cementing 1900 feet of the ditch; 2660 feet have already been cemented.

The California State Federation of Poultry Clubs was formed last Saturday at the Santa Cruz poultry show.

Beekeepers of Ontario, Canada, claim that the honey yield is very short this year and the Association has directed an advance in prices.

The winery plant of Joseph Oberti in Green Valley, Solano county, was recently destroyed by fire, together with several thousand dollars' worth of wine.

Rental prices for the San Joaquin delta lands have generally been increased from $4 to $6 per acre this season.

The following officers were recently elected for Pomona Grange of Sonoma county: Worthy Master, H. N. N. Latimer; Overseer, S. H. Stone; Lecturer, C. E. Wingate.

About 200 residents of the proposed irrigation district at Woodbridge, San Joaquin county, recently visited the Modesto irrigation district to study irrigation methods.

The Japanese labor contractors of Fresno are advertising for more Oriental help for that part of the country.

The beet sugar factory at Hamilton City, Glenn county, will open August 2, fifteen days later than in 1910.

Ten crates of thoroughbred poultry were recently received by Chris. Nisson of Two Rock, Sonoma county, from Grand Rapids, Michigan.

George B. McKinney, of Santa Rosa, recently imported a number of Sicilian Buttercup fowls, some of the first to be brought to the Coast.

F. H. Bennett of Vernon, F. F. Morehead and A. A. McRae of Yuba City were recently appointed commissioners for reclamation district No. 1001 in Sutter county. The cost of the improvements is estimated at $851,730, and the number of acres 32,738.

W. P. Dwyer of Sacramento, F. C. Kranks of Antioch, and N. E. Hughes of Dunnigan have been elected trustees of reclamation district 729 in Yolo county. Six dredges are at work on the place and the district will include 53,251 acres of land.

The next meeting of the California Irrigation Association of the northern San Joaquin valley will be held in Turlock, August 25, during the melon carnival.

The California Likfresh Co. has just completed the installation of a two-ton plant for W. G. Boner of Healdsburg. Mr. Boner will buy the fruit which will be used in the plant.

SELLING OLD POTATOES FOR NEW.

It is a game which we have heard of since childhood but it seems ever new to some. It is too late to play it this year, but if any reader of the RURAL is not yet wise about it, let him get wise for next year. Mr. C. L. Fitch, potato specialist of the Colorado station, wrote in this way a few weeks ago:

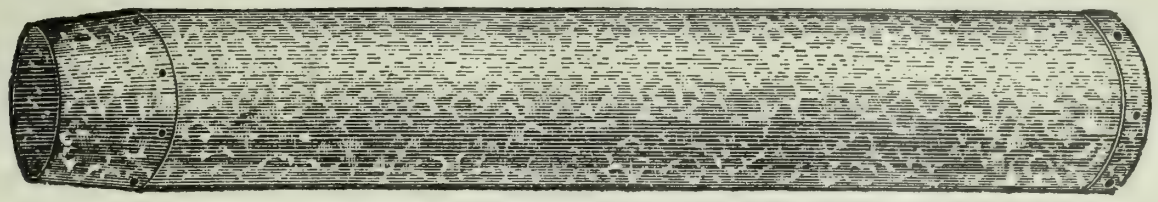
Small Peachblow or McClure potatoes are being sold in Colorado as early potatoes. Two dealers found handling these potatoes claim that they bought them from a Denver dealer as Southern-grown Triumphs.

The Peachblow is an excellent keeper, and there can be screened from them a large number of small and medium-sized tubers of even, round shape. Here the similarity ends. Triumphs, which are the first early potatoes from California, Cuba, Florida, and Texas, always skin badly at this time of the year and are of a brownish red color. Peachblows are red or pink, veined with white, and at this season are always a little tough and rubbery. It is impossible for this variety to be produced in the South, because it is the latest variety we have. Dealers who are selling California Triumphs are obliged to ask about 7 cents per pound this season, while the fraudulent early potatoes are being sold six pounds for a quarter.

Housekeepers have one sure test which they may apply. Early potatoes at this season will show no signs of growth for from 60 to 90 days, or longer; while these fraudulent potatoes, as usually stored, show signs of life by starting of the sprouts, however small. True early potatoes will be found without signs of life at the eyes.

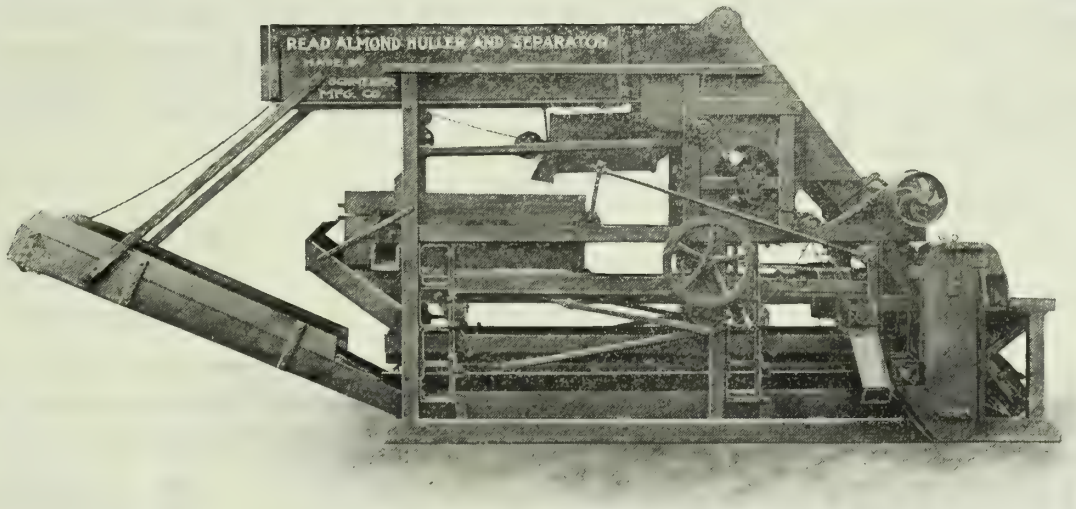
A shipment of 93 head of young steers sent out from Calexico recently by Fred Gunterman averaged up 930 pounds each.

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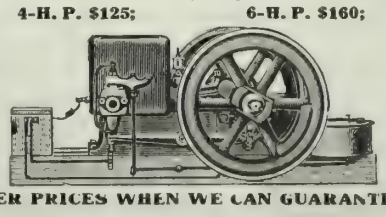
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The Agricultural Value of the U. S. Weather Bureau.

To the Editor: I am requested by the Chief of the Weather Bureau to ask an expression from you regarding the general value of the Weather Bureau and its work in this section. Your answer will be forwarded to Washington to be presented to the House Committee on Expenditures, which is now making inquiry regarding the value of the work done by all Bureaus of the government.

Some sections of the country have already forwarded statements showing the value of work done, particularly the States of the Middle West, in connection with the protection of fruits from frost. Now there is no part of the United States where the problem of frost protection has been developed so highly as in California. In fact the work may be truly said to have begun here, and the large savings that have been made this year not only in our own country, but in other parts of the world, can be traced back to the educational work as well as the experimentation carried on in California for the past fifteen years. The patent office records show that a number of patents have been granted to the Department of Agriculture for inventions in frost protecting. Four patents are already on file in this office and are open for inspection. In every case the patent is open to the public and there is no payment of royalties to the officials. It may interest you to know that in the course of a singe season the San Francisco office has been appealed to from all parts of the United States, from the Deputy Minister of Agriculture of British Columbia, from professors in agricultural colleges in England and Australia, from prominent orchardists in New Zealand (by cable), by representatives of Japan for the protection of the mulberry leaf, and from other parts of the world. This is strictly for your own information and is made known to you only to substantiate the claim which we believe we are justified in making, that the fruit growers, not only of California, but of the world, owe something to the Weather Bureau office in San Francisco.

Now this work, although it has been in progress for fifteen years, needs further development, and there are still open important lines of investigation which will benefit not only our own fruit growers of California, but all fruit growers.

There are other lines of work, such as study of the snowfall and prospective water supply, study of north winds and dry periods, studies of fog, etc., which are progressing slowly, and some of which could be carried further if means were provided. So far as the Pacific Coast is concerned, I can say of my own knowledge that there has been no misuse or waste of public money, and I believe a full return has been made to the people.

I should add that the RURAL PRESS has always done its share in the frost propaganda, and notes and articles in its columns form a valuable reference list.

ALEXANDER G. McADIE.

Professor U. S. Weather Bureau.
Merchants Ex. Bldg, San Francisco.

[We presume Prof. McAdie did not intend this letter for publication, and we hope the publication of it will not get him into any trouble. This matter of the efficiency of the Weather Bureau in its service to the agricultural interests of California is such an open secret that we consider ourselves in publishing the letter so that the members of our PACIFIC RURAL PRESS family can bear witness to the facts either individually or through the agricultural organizations with which they are connected. Prof. McAdie must pocket his modesty while this is being done and his superior officers must hold him blameless for any contributory knowledge of this publication. We do it entirely on our own responsibility because we believe the readers of the PACIFIC RURAL PRESS are entitled to this privileged publication.—EDITOR.]

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Squirrel Killing.

Some of our newer subscribers may be helped by details of squirrel killing which are known to the elders. In the campaign against squirrels which is being conducted in the bay district to protect our great cities from introduction of bubonic plague which squirrels catch and carry, advice as to ways of killing are being widely published. The following is being broadcasted by the Alameda county supervisors:

BISULPHIDE.—One method, applicable during the wet season when the green grass is out depends upon the use of liquid bisulphide of carbon which is placed in the holes. A second method depends upon the use of poisoned grain.

A common method of applying this bisulphide is as follows:

From one to three days prior to the application of the poison all squirrel burrows in the area to be poisoned are well stopped with earth. The holes found opened, upon the arrival of the poison squad, will indicate to them the burrows containing squirrels. Two men working together can apply the poison most rapidly and economically.

One man is provided with a supply of waste, sacking or other absorbent material divided into a number of small balls about half the size of the fist. The bisulphide is carried in an ordinary one gallon oil can and refilled from time to time from a supply kept in a cool place out of the sun. He is supplied with matches. His partner carries a mattock. On arrival at an opened burrow a small ball of waste is saturated with two ounces of bisulphide, dropped deeply into the burrow and a match applied. After a few moments' time the man with the mattock stops with earth this burrow and all other burrows from which the gas escapes. On subsequent inspection of the field all opened burrows will indicate holes lacking effective treatment.

POISONING.—During the dry season some form of grain poisoned with strychnine will probably serve the purpose best. A formula for the preparation of poisoned grain is as follows:

Whole barley or wheat, lbs.....	20
Gloss starch paste, pint.....	1
Saccharine (soluble), drachm.....	1
Strychnine sulphate (pulverized), oz..	1

The grain is placed in a receptacle large enough to permit thorough stirring (as a wash tub). One pint of water is then brought to a boil and sufficient laundry starch (about two tablespoonfuls dissolved in a little cold water) is slowly added to form, when well cooked, a paste about the consistency of cream. The strychnine (first powdered if in crystals) and the saccharine are now added to the hot starch paste and the mixture well stirred until dissolved. While still hot this is poured over the grain, mixed well, and the whole put aside for several hours before using.

This formula is recommended because of its simplicity, cheapness and effectiveness. Scatter a teaspoonful or two along the squirrel trails or on hard bare places, near the holes. The poison should not be placed in heaps on the soft ground at the mouths of the holes. It will probably be found most effective if placed early in the morning, between the hours of 3 and 7 o'clock, or late in the afternoon.

The market affords many excellent preparations for squirrel extermination which will undoubtedly be found very efficient.

FROM AN ADVOCATE OF EQUAL SUFFRAGE.

To the Editor: I like your paper very much. You have had good articles on a number of subjects, as poultry, and woman's suffrage. I have only been here in California two years this time, but I lived here 32 years ago.

I could give you some pointers on woman's suffrage. I lived in Idaho over 20 years, where we have had women voting for many years. Cardinal Gibbons may know something about religion, but he knows nothing about woman's suffrage. A man must live in a State where it has been tried for many years to know that women usually vote right when it comes to reforms that benefit the whole people.

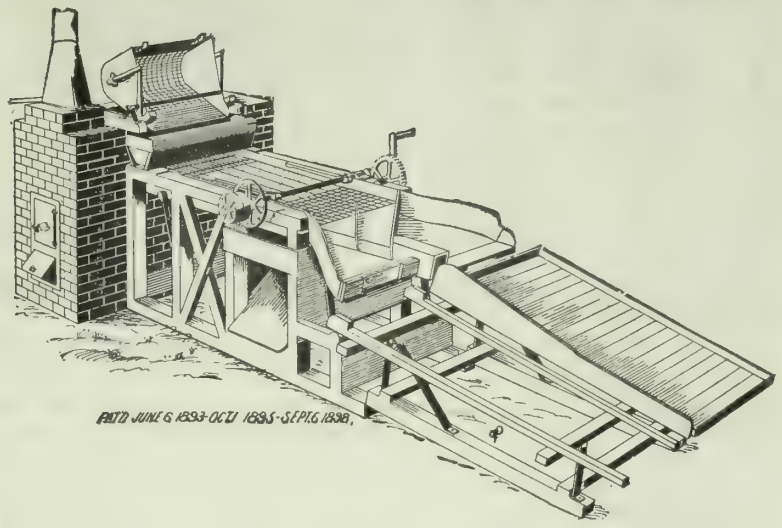
Are you in favor of parcels post? I believe in it; also in guaranteed deposits.

Los Molinos. JOS. L. KUHLE.

[We certainly believe in parcels post, and it is coming fast.—EDITOR.]

The California Association of Medical Milk Commissioners held its annual meeting in Berkeley Tuesday, July 18.

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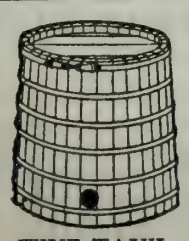
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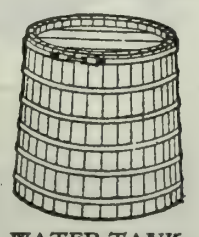
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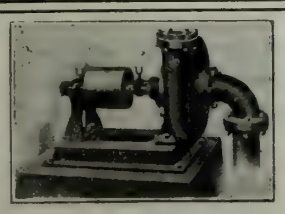
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THE COMING APPLE CROP OF THE PACIFIC COAST.

(Continued From Page 81.)

cent for Washington and 75 per cent for Oregon. California was given 77 per cent of a crop. A prominent eastern fruit house in a published statement gives Idaho a full crop, and Oregon and Washington the same as last year.

Special correspondents of the PACIFIC RURAL PRESS in Oregon who can estimate conditions very closely vary in their estimates from 35 per cent to 40 per cent, one saying from 40 per cent to 60 per cent, with a 10 per cent increase of bearing acreage. Local manufacturers of spraying material state that orders placed last fall in the Northwest were reduced to about one-third after the fruit had set this spring indicating a great reduction in the probable production. The correspondents estimate the crop at from 35 per cent to 50 per cent of that of 1910.

One writer from Oregon states, "The apple bloom was very light last spring. Spitzenbergs are virtually a failure on account of not blooming. Newtowns are about 40 per cent of a crop. Summer and fall apples are not to exceed 10 per cent of a crop." This gentleman is a horticultural commissioner.

From Toppenish, Wshington, the estimate is 50 per cent of last year's production, with a 15 per cent increase in acreage. The crop is said to be very spotted. From Walla Walla an estimate of 80 per cent of a full crop for the State, or 65 per cent of the crop of last year is given; by the full crop evidently being meant an average crop. Prospective prices are said to be good and the quality of the apples good. From Oregon no prices are mentioned.

In the Northwest Horticulturist it is stated that the Yakima valley can send out only 100 cars of apples at the best, or 40 per cent of the best production. The Rogue River valley is said to have only a 35 per cent crop, the Willamette valley 25 per cent and the Hood River and The Dalles half a crop.

One factor that is already influencing prices, in the Pajaro valley at least, where five-year contracts are often made, is the fact that the opening of the Panama Canal is expected to lower the freight rates to England at least 25 cents per box. The present rates are $1.77 per hundred, which it is hoped will be reduced to $1 a hundred. As about one-fourth of the Newtown Pippins are now sold there at prices that often run up to $2 a box, the cut in freight is expected to open the market considerably.

The crying need now, according to the best growers and shippers, especially in the Pajaro valley, where culling and packing is poorly done, is a better grading and pack, both from the isolated growers and the large shippers.

A NOTE ON PRUNE PRICES BY A GROWER.

To the Editor: With pleasure I write this article for your many readers who are growing prunes for sale. They may think me previous this time, because this is the earliest article in ten years I have written for the guidance of prune growers. Two years ago I wrote from Paris, which was about the 25th of July. I was then in the Importers and Packers office when they read their first news of a very large crop—the best they had had for five years, etc. I wrote that fact and advised all to sell at a very moderate price, and it proved good advice to all who sold for the market price when that news was first published in your paper, because the price of prunes gradually declined.

Last year I advised to hold for a stiff price. All those who followed that opinion made extra good money.

The best reports are that very light crops are prevailing all over Europe. It is almost a certainty that 55% of a crop in this State is about the right estimate, or 110,000,000 pounds—200,000,000 pounds being an extremely heavy crop, probably never possible again.

I caution all growers to hold on to their prunes for the top price. I am refusing 4¾c. basis now. I expect a 5c. basis or better will be paid. I am confidentially informed that many have been paid 5c., and that others have been offered it and refused it. There seem many reasons why they may be right in refusing to sell on a 5c. basis with a premium on the larger sizes. One reason is a shortage of all kinds of dried fruit all over the world. The next is all kinds of fruit are sold and delivered out of the packers' hands and probably consumed. Another reason is the packers have been doing well on all their pack for several years and have confidence enough to put their money back into the business that has been so profitable to them, and large amounts of money can now be had by them on the showing they have made to their bankers. The next reason is the shortage of Oregon prunes and most all kinds of fruit east of the Rocky Mountains. For the above reasons I think a 5c. basis not by any means too high. Dr. GEO. W. LEEK.

San Francisco.

FAIR AND SHOW FIXTURES.

Salinas, Cal.—Monterey County Agricultural Association Fair, Aug. 2 to 5.

Sebastopol, Cal.—Gravenstein Apple Show. Aug. 14 to 18.

Sacramento, Cal.—California State Fair Aug. 26 to Sept. 2.

Hanford, Cal.—Kings County Fair, Sept. 25 to 28.

Fresno, Cal.—Fresno County Fair. Oct. 3 to 7.

San Jose, Cal.—Santa Clara Valley Poultry Show. Oct. 6 to 9.

Watsonville, Cal.—Annual State Apple Show. Oct. 9 to 14.

Stockton, Cal.—San Joaquin Poultry Association Poultry Show. Nov. 7 to 11.

Oakland, Cal.—Alameda County Poultry Association. Nov. 21 to 27.

Petaluma, Cal.—Petaluma Poultry Association. Dec. 6 to 9.

Turlock. Cal.—Annual Melon Carnival. Aug. 24 and 25.

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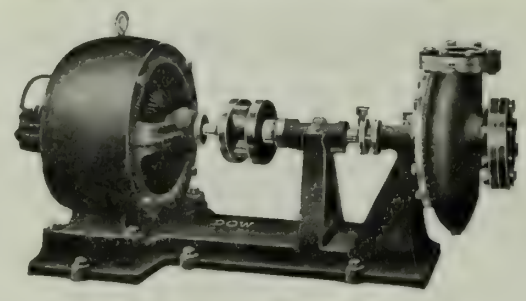
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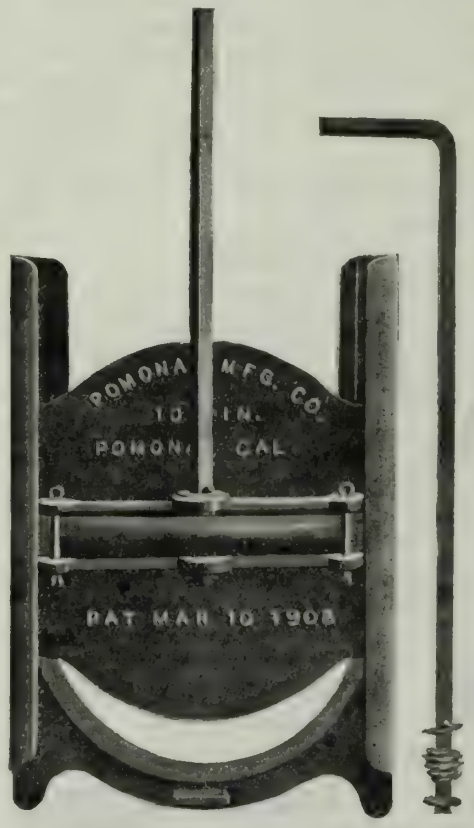
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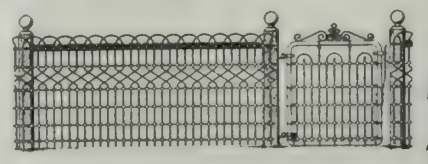
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LEGUMES FOR FORAGE.

To the Editor: Please tell us whether Canadian field peas and cow peas would be valuable as a forage crop for cows and hogs; also their value as fertilizer. Please tell us also when to plant, how to plant, when to cut or turn under, and the best variety for either use.

Healdsburg. NEW SUBSCRIBER.

These legumes have been under constant discussion in our columns for several years, but of course new subscribers cannot know that. These plants are of high forage value as cow feed; also as a soil restorative when the whole crop is plowed under green or when the roots and manure from feeding add to the soil. But for either purpose the result depends upon how much growth you can get, and that can only be told by local trial and such trial on a small scale to determine growth before any great reliance or outlay should be placed upon the plants. Canadian peas are hardy against frost and can be broadcasted and covered with shallow plowing as soon as the land is moist enough from fall rains—except in very frosty parts of the State. They can also be sown in drills to advantage. Cow peas are beans, and cannot be planted until frost danger is over in the spring. They are only available for summer feeding, and whether they will be worth while or not depends upon how much moisture can be held in the soil for summer growth. They should be sown in drills and cultivation continued for moisture conservation until the plants cover the ground too much to get the cultivator through.

HORSES AND CATTLE.

N. H. LOCKE CO., Lockeford, Cal., are offering registered Jersey bulls and bull calves of the choicest Island and American breeding, from prize winners and big producers; also a carload of unregistered Jersey cows, and a car of Jersey heifers, unregistered.

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PURE-BRED SHORT-HORNS, Poland-China hogs, and Shropshire sheep. Roselawn Stock Farm, Woodland, Cal.

A. W. MORRIS & SONS, Woodland, Cal.—Importers and breeders registered Holsteins.

STEVENSON & WAGNER, Newman, Cal.—Holstein-Fresian bulls, heifers for sale.

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LIVE STOCK NOTES.

The Four Oaks Stock Farm of Woodland has shipped a six-year-old Berkshire boar weighing 800 pounds, a young boar and several gilts to A. B. Humphrey, Mayhew, Cal.

The Bullard Company of Woodland recently sold two Rambouillet ewes to the Government Experiment Station at Laramie, Wyo., for $300 each.

Mrs. S. F. Wiles of El Centro is to purchase a number of registered mulefoot hogs to form the basis of a herd there. These will be the first hogs of that kind in the county.

Guy L. Greenfield has purchased the 273-acre ranch of Frank Marini in Conn valley, Sonoma county, which he will use as a stock farm.

The largest shipment of spring lambs made from Winters this year was made recently by Joe B. Griffin, who shipped seven cars of the animals to San Francisco.

The farmers of Imperial county are said to be much slower in shipping hogs this year than usual, holding them for higher prices. There are about 40,000 hogs in the county to be sold by the end of the year.

DAIRY NOTES.

H. G. Johnson of the Feather River Dairy has started the business of supplying customers in Marysville with fresh milk.

At a recent meeting of the State Dairy Bureau directors, Col. D. H. Bryant and C. A. Starkweather were appointed inspectors. Col. Bryant began work in San Jose, standardizing scales where dairy products are sold and testing milk for the addition of water. Mr. Starkweather is working in the San Joaquin valley.

The Alpha Creamery of Petaluma has been sold to the Central Creameries Company of San Francisco, which now controls creameries in all parts of the State.

C. R. Pears of Tulare and Duke Lipscomb of Visalia have been appointed dairy inspectors by the county board of supervisors of Tulare, to enforce the provisions of the new dairy ordinance.

The University of Wisconsin has purchased several forms for the construction of concrete silos and is renting them to dairymen in the State at a nominal price. The demand for the forms has been greater than could be filled during the first season.

At the Chico district fair next September a contest to determine what dairy cow can produce the greatest amount of milk in a given time will be held.

The management of the Lemoore, Kings county, creamery have installed a large pasteurizer, as well as other improved equipment. All butter in the future will be made from pasteurized cream.

The Kings County Dairymen's Association has decided to make a study of all Federal and State quarantine laws relating to dairy cattle before making recommendations to the supervisors for a new ordinance.

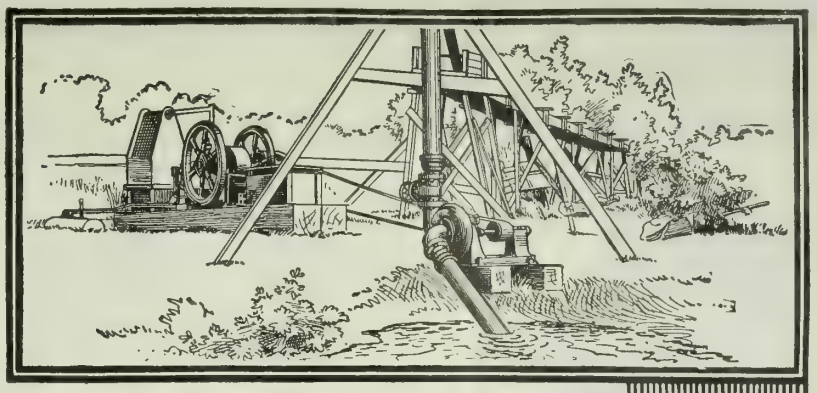
W. H. Brown of Davis has purchased 47 acres in Merced colony No. 2 which he will plant out to alfalfa and use as a dairy ranch, removing his Holstein herd to that place.

Officials of Imperial county are enforcing carefully the ordinance against importing dairy cattle that have not been inspected for tuberculosis, several fines having been laid recently for importers who have brought in cattle in ignorance of the law in the case.

A cheese factory has been started on the former Fred Paine place in Yuba City, by M. Marti.

Five dairy cows on the ranch of De Witt & Harrison at Antioch, Contra Costa county, died suddenly last week from a disease much like anthrax, although poisoning from wild parsnip is also suspected. The dairy has been quarantined until further inspection.

The Modesto creamery was destroyed by fire recently, but will be rebuilt immediately. The plant was valued at $15,000.



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The Bureau is a center where the best ways of doing things on the farm, and data relating to its development are collected and distributed free to every one interested in agriculture. Every available scource of information will be used in answering questions on all farm subjects. If the questions are sent to the I H C Service Bureau they will receive prompt attention.

VETERINARY QUESTIONS AND ANSWERS.

Written for the PACIFIC RURAL PRESS by Dr. C. A. PYLE, Pathologist, San Francisco Veterinary College.

To the Editor: I would like your advice in regard to the treatment of my horse. Several weeks ago he was taken sick suddenly. The doctor's diagnosis was influenza. He was at the time breathing very heavily. The influenza, as near as I can tell, is cured, but the heavy breathing continues, like a horse with a bad dose of "heaves," only this horse is that way day and night and nothing seems to relieve him. He feels good and eats his feed the same as when he was well. If there is anything that will relieve him, I will be very thankful for the information. R. EDWARDS.

Cupertino.

This case is one that needs good care, feed and moderate work for several weeks. As to medicinal treatment, strychnine and arsenic given daily over a period of three or four weeks is needed and should be given under the direction and control of a local veterinarian who can follow the case. Such treatment will probably clear up the trouble.

Barren Heifers.

To the Editor: I have three heifers, three years old, which have run with the bull right along and have failed with calf; have had three different bulls to them; what can be done?

Waukena. W. F. TENNISON.

There is a possibility of contagious abortion causing these heifers to fail to breed. If this has occurred in the herd, the heifers are very apt to be affected.

If apparently healthy, reduce the feed and make the heifers take considerable exercise to reduce flesh. Give each a dram of powdered nux vomica and one-half dram of dried sulphate of iron once daily in a little feed. Breed to a healthy bull when the heifers come in heat.

JOSH BILLINGS ON AGRICULTURE.

Beloved farmers, agrikultur iz the mother ov farm produce; she is also the stepmother of garden sass. Rize at haff pas 2 o'clock in the morning, bild up a big fire in the kitchen, burn out two pounds ov kandles, and grease yure boots. Wait pashuntly for day brake. When day duz brake, then commense to stir up the geese and worry the hogs. What iz a lawyer?—What iz a merchant?—What is a doktor?—What is a minister?—I answer nothing. A farmer iz the nobles work of God; he rizes at 2 o'clock in the morning, and burns out a haff a pound ov wood and two kords of kandles, and then goes out tew worry the geese and stir up the hogs.

Important Facts About Mares and Foals.

After urging that mares should be carefully handled during the latter part of their carrying period, a writer for the Iowa Homestead points out the fact that mares heavily in foal can be injured by field work if not handled judiciously. Two years ago we knew another man who had several pure-bred mares about ready to foal when spring work opened up. There was a large amount of work to be done on the farm. New land had been purchased and horse-power was short on the place. An old alfalfa field was to be plowed. Four horses were put on the gang plow, and a helter skelter sort of youngster from town was sent out to drive them. The manager told the young chap to push the work as fast as possible, and he did so. As one of the four horses on the plow, the most valuable pure-bred Percheron mare on the place was used. She had raised four colts in the four years that she had been owned by that man. Three of them had sold for a total of $2800. The fourth was still on the farm. The driver pushed the team hard, as he had been directed. The work of plowing the alfalfa sod was exceedingly heavy. In fact, a careful driver would have been needed even had six horses been used instead of four.

After about three days of strenuous, straining work, just what might have been expected happened. The mare aborted. That wasn't all. Internal lesion occurred. Infectious germs got inside the genital organs and the mare was in a very critical condition for some time. She recovered, but would not breed that year. Thus the use of a mare that had previously been a regular breeder was lost for two years.

Still a Mare Can Be Worked.—It is not to be taken that the mare is not to be worked. The writer believes in that just as much as anybody does. However, judgment must be used, else bad results may follow. Instances are so common of mares working right up to foaling without injury that they scarcely need be mentioned here. On the farm where this is being written one spring a mare foaled while at work in the field. The colt was loaded into the wagon and taken to the barn. Another mare was put into the team in place of the one that had just dropped her foal. Before night this second mare had foaled. Both colts lived and thrived. The mares did not seem to suffer in the least by having been worked up till the last. However, we generally give the mares a few days' rest with exercise in pasture or lot before foaling time.

We have a pair of big mares, one of which is due to foal soon. For a month she has not been worked when the ground has been slippery or when the work would be heavy or straining. Also she has been left off the manure spreader when it had to be backed into the pit under the barn. Backing a wagon, either loaded or not, is a very common source of injury, owing to the strain upon the muscles of the back and belly. It is best to leave the mares heavy in foal off this kind of work.

Dangers in Field and Feeding.—When the pregnant mares run in an open field there are several dangers to be guarded against. Probably the worst is the danger of injury from the heels of other horses, especially vicious old mares. Those cross, ill-tempered old mares, that are always kicking and fighting, ought to be kept away from the others.

The matter of feeding the mare is quite an important consideration. The pregnant mare needs feed to keep up her bodily vigor, to nourish her young, to get her into physical condition for foaling, and to enable her to be in such condition of flesh that she will give an abundance of milk for the colt after foaling. To bring about such conditions in the mare the feed needs to be plentiful, appetizing and nutritious. Another point which is often overlooked is that the food have a slightly laxative effect upon the bowels. This is essential for quick, easy and safe foaling.

Good Feeding for Mares.—Alfalfa is especially good for mares that are not working. It furnishes a large amount of protein which builds up the embryo. It is very appetizing. Furthermore, it has a slightly laxative effect. However, we never need feed it up to the extent of all the mares will eat. Oats, of course, make the best grain. Some bran adds to the variety and it is nutritious. Oil meal is a protein feed and not needed where alfalfa forms part of the roughage. However, if neither clover nor alfalfa are fed, a pound of oil meal daily may be fed with good results. The amount and kind of grain must be varied to suit the condition of the mare, whether she is working or not and other points.

As the time of foaling approaches we watch the mares quite closely. They are given a box stall over night for a week or more before expected foaling, if it is possible to do so. When wax begins to form on the teats foaling time is very near. The stalls are cleaned thoroughly and disinfected with coal-tar dip and all possible precautions taken to prevent accidents.

FORAGE PLANTS AND THEIR PUTTIN-IN.

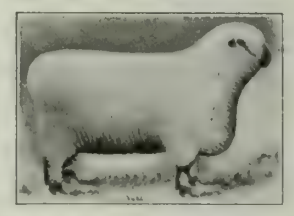
To the Editor: Is Turkestan alfalfa considered preferable to the common variety? If so, for what reason? Could one obtain the seed here with any assurance that he was getting the simon pure? Is it more costly? Is there danger that frost will kill it if sown in fall at an 1800-foot altitude? Which would be best, fall or spring sowing? Would it pay to run a subsoil plow in furrows after the stirring plow to mellow up subsoil and so give seed a better and deeper seed bed to start in? Do they have subsoil plows in this part of the world? I have not seen one one the Pacific Coast. C. B. C.

Oakland.

Turkestan alfalfa is a better grower during the winter in our valley and foothill situations because it is active at lower temperatures than the common variety. You might have frosts that would stop its growth, but not to kill it, unless the plants were just starting. There is no trouble about getting good seed from responsible seedsmen. It costs a little more than the common kind. Fall sowing is best if you can get the land moist enough to start the seed and get the plants into the third or fourth leafing before the low temperatures of December come on. Therefore the earlier fall sowing you can do the better, providing the moisture is right. Subsoiling is a very good thing. If done for fall sowing it should be followed by subsoil packing or deep harrowing. If done in the fall for spring sowing the rains will probably settle the ground sufficiently. Subsoil plows are common enough in some parts of the State. Any implement dealer advertising in the Pacific Rural Press can give you description and prices.

A colony of Swiss dairymen have purchased about 1800 acres on the Bear river near Wheatland and will run both a dairy and a creamery on the place.

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FOR
CATTLE POULTRY SWINE
FOR PRICES SEE OR WRITE
THE GRANGE CO., Modesto, Cal.

Cows Give 262 lbs. More Milk Daily
After substituting a part of their regular feed with Proteina, says a leading dairyman. ¶ Unequalled for Cows, Calves and Poultry, and fed at a comparative low cost.
46% PROTEIN - 10% FAT
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The U. S. Agricultural Dept. says: "A bushel of Soy beans is at least twice as valuable for feed as a bushel of corn." ¶ Poultry men find Proteina better than Beef Scraps for laying hens. Write for signed letters from Poultrymen and Dairymen.
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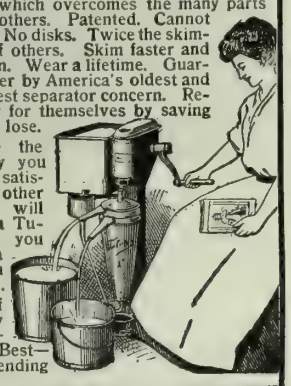
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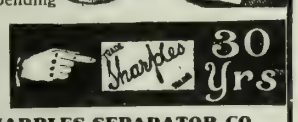
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A Jersey bull calf sired by Ravachol's Romulus 74652; dam Blue Fox's Golden Rosebay 209372; half sister of Noble of Oakland's that recently sold at Cooper's 1911 sale for $15,000.

T. B. PURVINE, Petaluma, Cal.
R. F. D. No. 4, Box 152.

Cost of Growing Hogs in Nebraska.

The Nebraska Experiment Station has just issued Bulletin No. 121, entitled "Growing Hogs in Nebraska." This bulletin is divided into two parts.

COST OF SOWS AND LITTERS.—Part I gives a summary of the cost of growing young pigs to the weight of 50 pounds. The items of cost taken into consideration include the cost of keeping the sow for an entire year, charging for the pasture and the grain eaten, both by the sow and by the litter, up to the time the litter reaches an average weight of 50 pounds. On this basis the cost is about $18 to $20 for keeping old sows, and $20 to $22 for gilts or sows farrowing their first litter. This cost is partly repaid by the increase in weight of yearling and two-year-old sows. After deducting the value of the growth of the sows, the net cost to be charged against the pigs is from $9 to $12 per litter when they reach the 50-pound average weight.

The average number of pigs farrowed in these experiments was 9.8 pigs for old sows and 8 pigs for young sows. The average number per litter at the close of the experiment was 6.5 pigs for old sows and 6 pigs for young sows. In the test, 44 old sows and 50 young sows were used.

The cost of feed charged up against each pig at 50 pounds weight was $2.13 as the average of all sows for two years. This makes the cost of producing pigs up to 50 pounds, $4.26 per hundred, which is somewhat higher than the cost of grains after that weight, provided the pigs are economically fed and sold when they reach about 225 pounds weight.

To reduce the cost to the figures given in this bulletin, the yearling and older sows were kept upon pasture alone during the pasture season after weaning their litters and upon rations of about one-half alfalfa hay and one-half grain during the winter season. In winter, for each 100 pounds weight of the mature sows, one and one-half pounds of grain was fed daily; that is, if ten sows weigh 3000 pounds they would require 45 pounds of grain daily, with an equal amount of alfalfa hay fed either in racks or cut and mixed with the grain. Upon these rations the sows gained 112 pounds each during the winter season up to farrowing time.

The gilts required liberal feeding during the summer on pasture and during the winter following. From 2.5 to 3 pounds of grain, generally corn, was fed for each 100 pounds live weight of the pigs while they were on pasture; that is, 10 pigs weighing 1000 pounds received from 25 to 30 pounds of grain daily. Ten pigs weighing 1500 pounds received from 38 to 45 pounds daily.

After these gilts were placed in winter quarters they were given the run of a field of rye and were fed a ration of one-quarter chopped alfalfa and three-quarters grain consisting of barley and corn, ground and mixed with the alfalfa. Of this ration they were fed three pounds daily for each 100 pounds live weight, which ration had to be decreased in some cases because the pigs were becoming too fat. Upon this ration they gained, during the winter season, November 1 to March 1, about 150 pounds each, weighing over 300 pounds at farrowing time and about 260 pounds when their litter were weaned.

COST OF PIGS AFTER WEANING.—Part II deals with the cost of growing pigs from weaning time, or about 50 pounds weight, to the time they are taken from alfalfa pastures and put into the feed lot. Seven hundred and ninety-two pigs are included in these tests, which cover several years' work. In general, these pigs were fed less than a full grain ration, most of them receiving 2 to 2½ pounds of grain daily for each 100 pounds live weight. The average cost of the grain and pasture in growing these pigs was $3.30 per 100 pounds. It will be seen that this cost is lower than the cost of producing the 50-pound pig, and it is also lower than the cost of finishing the pig for market after he is placed in winter quarters. According to figures which will be presented in a subsequent bulletin, the cost of feeds per 100 pounds of gain with pigs in dry lots is $3.57 per hundred, figured upon the same cost for feed as that used in these experiments.

CATCHECHISM ON COWS.

To the Editor: What breed of dairy cows do you think would be preferable to keep for butter, at an altitude of about 1800 feet, in Nevada county—Jerseys, Guernseys, Alderneys or Ayrshires? I do not mean to have them to rustle for their own living, but to feed them well, house and care for them in all weather, particularly in stormy weather.

Is there any risk to run in taking cows to such an altitude from a much lower one?

Jersey bulls are apt to become vicious after a time; is it so to the same extent with bulls of the other named breeds?

What should a thoroughbred cow with first calf, or due to calve, cost? Also yearling bulls of above named breeds? I want utility stock.

I would be pleased to see articles in the PACIFIC RURAL PRESS descriptive of the different breeds of dairy cows. Also of the Red Polled cattle. C. B. C.

Oakland.

The best breed for a man is the one he likes best, providing it has been bred for the purposes he desires to attain. All the breeds you mention are suited to the scheme you outline; "pay your money and take your choice."

There is no quarrel between a cow and a mountain. Ever since the settlement of the State cows have been driven directly from the valley up to the mountain meadow pastures, both for butter and for beef-making, in the summer time. The foothill elevation you mention is only a starting to elevations of 6000 feet and more to which cattle are driven every season.

The Jersey bull is conceded to be crosser and more dangerous than other bulls, but no bull should ever be allowed to have a chance at a man. Never consider a bull gentle and you will be safe with him.

You can get young thoroughbreds from $100 upward, according to pedigree and performance of ancestors—upward into the thousands.

We are always discussing the performance of breeds. We are always glad to receive from breeders accounts of what their stock is doing.

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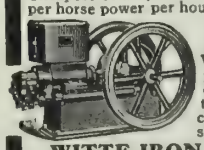
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POULTRY DEPARTMENT.

Conducted By M. RUSSELL JAMES.

POULTRY VERMIN.

Poultry vermin is always a live subject with the poultryman, and at this season of the year it is unusually lively—at least the vermin are. Sloth cannot be ascribed to these pests at any time of the year. They are always as industrious as opportunity will permit, still the month of August may be reckoned as their swarming time, when if allowed the least leeway they will take the premises. Just now, therefore, the subject may be considered of sufficient importance to devote a chapter to the genealogy, life history and general doings of poultry vermin.

Thirty-two species of fowl parasites have been identified, with others yet to be heard from. Fortunately, however, the poultry keeper has only a few of these species to contend with at one time. In a general way these may be divided into lice and mites; the former living on the fowl as well as living off it; that is, making the host furnish both board and lodging; the latter visiting the fowls to feed and living and breeding in the cracks, nests, and like places of the poultry quarters. There are also several species of mite which remain on the fowl, either on the surface of the skin, as the depluming mite, or under the skin, as the mite causing scaly leg.

The two most common kinds of hen lice are entirely different in their habits. One kind is lively and infests every part of the body, subsisting on the skin and feathers; the other remains on certain parts of the body, sucking the blood, where it may often be seen with its head buried in the skin and its body erect.

It seems that these parasites are very particular about their habitation and scorn to take up with just anybody that comes along. Theobald, in "Parasitic Diseases of Poultry," says: "So particular are bird lice that it is quite the exception to find one species on two distinct kinds of birds. Fowl lice will not attack the duck nor duck lice the fowl. Nearly every bird has its own particular Mallphagan parasites. They may possibly pass to some strange host for a short time, but they will not live and breed. Moreover, particular species attack restricted areas on the same host and are seldom found in other positions."

A leaflet of the English Board of Agriculture gives the following points on the life history of hen lice: "Eight distinct species of lice attack fowls. Dark, damp places when dirty are sure to harbor all these pests, especially when badly ventilated. It is said that breed effects their presence, but observation tends to show that all breeds are more or less subjected to infestation. Lice and other parasites flourish on unhealthy birds. All lice breed rapidly. The eggs or nits are laid upon the down feathers as a rule; they are often beautifully sculptured objects, oval in form. In from six to ten days they hatch into small, pale, active lice, which at once commence to irritate the birds."

THE MIGHTY BAD MITE.

Bad as are the lice and every one of the thirty-two parasites, the worst of the whole bunch is what is commonly known as the "red mite." In "Poultry Diseases and Their Treatment," the Maine Experiment Station has this to say about this pest: "The mites are small eight-legged animals related to the spider. There are eighteen species of mites, but only four of these are sufficiently injurious and widely distributed to be of great economic importance. The most common and most injurious mite parasitic on fowls is the common fowl mite or red mite, Dermanyssus gallinae. This mite is a little more than ½ millimetre. The female is a little larger than the male. When empty they are gray with dark spots, but usually they appear some shade from yellow to dark red, according to the amount of fowl's blood they contain. They visit the fowls only to feed and spend the rest of the time on the underside of the roosts, in cracks and crevices, under collections of filth and in the nesting material is dirty straw. The mites breed in these places. They reproduce very rapidly, especially in spring and summer. The young mites are white and have only six legs. Their first food is probably filth or decayed wood. They moult several times and their cast skin is often seen as a white powder on the perches. After the first molt the larvae have eight legs. The mites are able to live and reproduce for months at least without animal food, but when associated with fowls the older larvae and adults depend upon the blood of the fowls for food. They usually attack the birds at night, but sometimes are found on laying or brooding hens during the day. They pierce the skin with their needle-like jaws and suck the blood. The mites thrive best in dark, damp, dirty houses, and may be found in such places months after all fowls have been removed. They will bite man or other mammals, causing severe irritation, but do not remain on strange hosts for any length of time. Fowls should not be allowed to roost in sheds with other animals, as the sheds may become infested with mites."

THE SCALY LEG MITE.

These mites burrow under the scales of the feet and legs of fowl, and are said to sometimes attack the comb and beak. The legs of the affected fowl become roughened and enlarged and eventually assume the appearance of a scaly and gnarled tree trunk, causing lameness and in extreme cases the dropping off of the toes. The disease is very infectious. A scaly-leg fowl will infect a whole flock or a hen her whole brood of chicks. The larger, quieter breeds of fowl are more subject to scaly leg than the small, active ones.

POULTRY.

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Dear Sir:—In answer to yours of the 7th inst., will state that I have closely watched the animals under my charge and will say that horses on which your preparation is used are more susceptible to our medicines and treatments, make more rapid recoveries and are working, while others with less serious attacks are perhaps convalescing. It is a rare thing to find an animal subject to colic while using your Food. It may not be policy on my part to recommend a Food which is a detriment to our profession, but from my own experience it pays to give an honest opinion. We may lose on the individual case, but in the long run I make up what is lost ten times over again.

DR. E. J. CREELY, D. V. S.,
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Chickens produce more EGGS.
Cows yield more and richer MILK.
Stock takes on more weight—more BEEF.
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SAN FRANCISCO

ALL DEALERS

Dry, barren runs, especially on alkaline soils and where there are ashes and cinders thrown, are said to be favorable to the spread of this disease, while dirty perches are the best ever for its propagation.

THE DEPLUMING MITE.

This microscopic parasite attacks the base of the feathers and causes the fowls to become bare in spots. Often the intense irritation makes the bird pull out its own feathers or birds to pull each other's feathers, in which case the fowls are likely accused of feather-eating. While the bare skin of the affected fowl presents no unusual appearance, at the roots of the adjoining feathers may be found a dust-like powder, which the microscope shows to be the mites and their nesting. This disease is even more infectious than scaly leg.

THE HARVEST TICK AND OTHERS.

The various species of ticks are likewise mites. These are a dreadful scourge in warm sections of the country, for they have the uncanny trick of getting hold and holding on to the death. One of these which attacks chickens as well as larger prey is the so-called "harvest bug," which though too small for detection by the naked eye becomes under the microscope a creature to strike terror to the heart of its victim. From our former authority we quote: "This small brick-red mite, rarely visible to the naked eye, is bred upon berry and currant bushes, vegetables and grain, but when opportunity offers it bites almost any animal, often attacking man. It sometimes causes considerable mortality among late-hatched chickens that frequent its breeding places. The parasites fasten themselves so firmly by their claws and palpi that they can only be detached by force. They produce intense irritation which often leads to epileptiform symptoms and death follows in a few days.'

The "stick-tight" is another pest of warm climates which fastens itself most generally on the fowl's comb and wattles, often crowding about the eyes so thickly that the victim is unable to see. The bird is unable to free itself from them and even the poultryman cannot pick them off.

THE HEN FLEA.

Fleas belong to a different class of vermin, and the term "insect," meaning a divided body, is correctly applied to them. From the leaflet of the English Board of Agriculture we quote somewhat in regard to the hen flea: "The fleas, which are true insects, belong to the order of flies (Diptera). They feed upon the blood. One species only lives upon the fowl, namely the bird flea (Pulex gallinae or avium), which attacks also most other birds. The hen flea, as it is generally called, is abundant in dirty fowl runs, and especially in the nests where straw is used. The adult flea is dark in color, and, as in all fleas, is devoid of wings. Fleas are provided with very sharp, piercing mouths. They are what are termed 'partial parasites'—parasites which only go to their hosts to feed. The female flea lays her eggs (nits) chiefly in the nests among dust and dirt and in the crevices of the walls and floors. These nits give rise to pearly white maggots with brown horny heads, and can only be found among the dust. Fleas breed all the year round, but chiefly in warm weather. It is well to remember that wherever there are dark and dirty hen roosts there are sure to be Pulex gallinae."

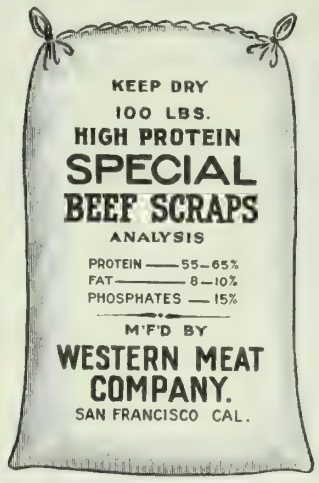
While the foregoing are but a few of the poultry vermin, they are those with which the poultryman has most commonly to deal. Next week we shall have something to say about the different methods required in dealing with these different pests.

ANIMAL MATTER A NECESSITY FOR POULTRY

Experiments at various State Experiment Stations have demonstrated beyond a doubt that Protein derived from animal sources is far superior, as an egg producer and flesh builder, to Protein derived from any vegetable source.

Our High Protein "Special" Beef Scraps Will Supply That Necessity

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WESTERN MEAT CO., San Francisco, Cal.



FREE BOOK

ON APPLICATION TO

Coulson Poultry & Stock Food Co.
PETALUMA, CAL.

QUESTIONS AND ANSWERS.

CHICKEN POX.—A subscriber at Redding writes: "My one and two-year-old White Leghorns are getting scabby combs. It starts with a round blackish spot and swells into many spots, finally nearly covering one side of the comb. Sometimes accompanying this is the closing of one eye, and later both eyes. It seems to be spreading. Can you tell me what it is? The houses, nest boxes, etc., are clean and sprayed with cresolene. I have touched the affected part of the comb with cresolene and vaseline and the eyes with boracic acid. Kindly advise me through the PACIFIC RURAL PRESS."

Our subscriber's fowls have become infected with chicken pox, which is a very contagious disease. At the South, where the disease is common, it is known as "sorehead," and usually treated by applying strong brine to the sores and giving the fowls Epsom salts in the drinking water. Another treatment which was successful in an epidemic of pox among a flock of fowls in the East, consisted in bathing the sores with strong salt and water and giving the fowls a mash containing one teaspoonful of calcium sulphide for each 25 hens. With a large flock of hens the method successfully employed by one of the large Coast ranches in stamping out an epidemic of the disease was to place a sulphur smudge, to which had been added a little carbolic acid, in the poultry house after the fowls had gone to roost. This was allowed to remain till the fowls began to sneeze, when it was instantly removed. The affected fowls were also treated by dipping the heads in a solution of permanganate of potash. However, the treatment employed by our inquirer is good. It might be well to add a little powdered charcoal and sulphur to the mash for two or three times, and during the hot weather to follow the practice used by many of the Southern poultrymen of giving Epsom salts in the drinking water once a week.

The various antiseptics combined with cleanliness are the medicines used to stamp out and prevent the spread of disease. As any of the antiseptics when given in too large doses may become as injurious to the fowls as the disease germs, perhaps the safest and certainly the most convenient practice would be to obtain such remedies accompanied by explicit directions for their use from the poultry supply houses. The reliable firms in that line have made an exhaustive study of the requirements and diseases of poultry, and the free booklets which they put out, though intended primarily for the sale of their goods, are often valuable treatise on the care of poultry and the handling of poultry diseases. We advise our readers to send for the free booklets advertised on this page.

The Home Circle.

Foiled.

My daughter sits out on the porch at night.
I, knowing there is danger in night air,
And thinking I might teach her to do right,
Prepared a quart of glue and spread it there.

That evening, though she sat out there till ten,
No harm to any of her clothes was done.
I puzzled over this till morning; then
Stuck to the steps I found my neighbor's son.

—June Lippincott's.

Coziness, Cleanliness, Convenience and Comfort.

The kitchen of every woman, but particularly the farm woman, because her work is really much harder than the town woman's who has so many more modern conveniences at her disposal, should be notable for four things. First, coziness. A gentleman once said to this writer that he preferred sitting in the kitchen, as it is the heart of the house. Now, the farm wife's kitchen is as much a reception room as is the drawing room of her city neighbor. When she has guests they immediately come to the kitchen, because country folks are entirely devoid of that false pride which prevents so many city women from being really friendly. Out they come, ask for an apron, and begin helping to get the meal, or to do what ever else the housewife may be engaged in. For this reason if for no other, the farm kitchen should be a cozy place. The walls should be prettily papered, or painted. The woodwork should be painted or stained in harmony, the linoleum or the bare floor should be of a harmonizing shade, or shades, and the tables covered neatly to correspond. But, in addition to this "color-scheme," there should be an air of coziness about the apartment—an air of being lived in, of brightness and life and good cheer. I think a cat adds much to the liveableness of a room. In winter she may snuggle down behind the woodbox or the stove, and her soft purr forms a pleasing accompaniment to the teakettle's song. In summer she basks in the patch of sunshine made by the open door, or curls up in the deep window sill, and even her presence is "cozy" and "comfy." Then a flower or two, in pots, make a great difference. Somehow I am partial to red geraniums, and if the window sills happen to be painted white, and there are white swiss sash curtains the effect is all that could be asked. The housewife will not get so weary if surrounded by an atmosphere of coziness, and the guests will always want "to come again." They will feel, too, that these little touches are a compliment to them, and will "like" the woman whose kitchen is thus arranged better than the one who works and grinds amid all sorts of real ugliness.

Cleanliness, of course, is the second of my kitchen "C's." It is quite superfluous to say to a farmer's wife that her kitchen should be immaculate. She knows it much better than anyone else, and she keeps it that way, too, to the extent of her wisdom and powers. Sometimes, though, there are kinds of uncleanness that she does not know of, and it behooves every housewife, both city and country, to read all literature that has as its object keeping of the foods and the home, and the kitchen. So many microbes, so many germs, so many diseases, deary me. It makes one long for the days of our grandmothers, when such things were as yet undiscovered, and where ignorance was bliss. However, as the pests have been given a habitation and a name, the conscientious housewife and mother will do all in her power to have her kitchen match those of the famous Spotlesstown. There are all sorts of devices on the market, all kinds and conditions of soaps and powders, and every imaginable sort of implement and utensil for the clean-keeping of things in general, so that if a woman goes even to the five and ten-cent store she will find friends at hand to help her in bringing about that cleanliness which makes for righteousness and also for perfect health.

My third "C" for kitchens is convenience. Of course this more or less dovetails into the former C—cleanliness, but it covers more ground. Every farmer's wife owes it to herself, to her husband and her family to demand all the conveniences that the family's purse or ingenuity will allow. There are some kitchen conveniences that may be made at home, for instance a work table with high legs, so that she need not stoop and break her back when preparing vegetables, etc. There are many things indeed a boy clever with tools could make to "save mother" and add to her kitchen conveniences.

My last C is comfort. You will say there isn't much comfort to be had in a kitchen. That may be true, but there is some—for instance, why not have a low chair to sit in when peeling potatoes, shelling peas, etc., instead of one that is just a little too high for comfort; and, why not have a rocker in the kitchen, and a magazine or two at hand so that when the housemother has a few moments waiting for something to cook, she may drop down, rest and read?—Farm News.

A Shower for a Matron.

Why keep all the showers for the bride or the bride-elect? To be sure, she is interested in accumulating as many things as possible to stock her dower chest with; but, on the other hand, she is sure to have a good many new and attractive things, many more, in fact, than the matron of ten years whose supply of the useful household linens is apt to have run low.

A very pretty idea was that of a woman who gave one of her friends an apron shower on the tenth anniversary of her wedding.

As a shower for the bride-elect each invited guest brought with her an apron. Some were ample kitchen aprons of useful gingham; others were dainty little sewing aprons or channg-dish aprons. As each guest entered tne room she came bringing her apron with her, and as she greeted the guest of honor she tied on the gift that she had brought. The result was ludicrous after a while, but the much-aproned lady didn't seem to object. Cards or games followed the shower of aprons, and the bride of ten years was perhaps even more appreciative of her gifts than she would have been ten years before, when she didn't know how many aprons she could use.—Exchange.

Had His Troubles.

"Michael Dolan, an' is it' yourself?"

"Yes; sure it is."

"Well, ye know thot bletherin' spalpeen, Widdy Castigan's second husband?"

"That I do."

"He bet me a bob to a pint of whisky I couldn't swally an egg without breakin' the shell uv it.

"An' ye did it?"

"I did. It's there," lying his hand on the lower part of his waistcoat. "If I jump about I'll break it and cut me stomach wid the shell, an' if I kape quiet it'll hatch and I'll have a Shanghai rooster scratchin' me inside."

Homely Hints.

On wash days or when baking wear an apron made of black oil cloth, also a pair of black sleeves made of same. A nicer apron may be made from rubber sheeting, which costs but 60 cents a yard.

A wire clothes line which becomes rusty can be remedied by painting it with a coat of white paint and when dry paint it again. These two applications will keep the line in good shape for a long time.

Apply coal oil to a burn to prevent blistering.

To save your hands, take an old paper bag and thrust your hands in it and you can rub the stove with the cloth without getting grimy.

To keep cookies from drying out put a sweet apple into the cooky jar.

When ironing use a rug or old piece of carpet to stand on. It will save your feet from that tired feeling.

To remove tar or axle grease from wash goods, rub freely with lard in which a little turpentine has been mixed. It can then be washed without leaving a stain.

Helping Him Out.

"What's the matter, got a cold?"

"Yes. I suppose, like every one else, you want to tell me what to do for it?"

"No, not particularly. But I can tell you what I used when I had one."

"Go ahead, one more won't hurt me. What did you use?"

"A handkerchief."

No Frenzied Financier.

"Do you assimilate your food, aunty?"

"No, I doesn't, sah. I buys it open an' honest, sah."

OUR YOUNG FOLKS' DEPARTMENT.

Conducted By M. Russell James

Poultry Course for Young Folks.

DESCRIPTION OF BREEDS.

White-Faced Black Spanish.—This is one of the oldest distinct breeds of fowls in the Mediterranean class, in fact one of the oldest known to man. This variety of fowl presents a peculiar and striking appearance with its glossy black plumage, brilliant red comb and wattles, and long, smooth white face looking almost like a mask of kid. It is a medium-sized fowl, the standard weight being 8 pounds for cock and 6½ for hen, and is an excellent layer of white eggs. Some 25 years ago this breed was one of the most common and popular of pure-bred fowls, but the newer Spanish breeds, especially the Black Minorca, have displaced it in general favor, and it is now bred by only a few fanciers.

Black Minorcas.—This breed was produced in England from the White-Faced Black Spanish on native stock. They were first called Red-Faced Spanish and were known in that country a long time ago, there having been made an old painting of Single Comb Black Minorcas in the beginning of the last century.

The Single Comb Black Minorca is the largest of all the Mediterranean breeds, the standard weight being 9 pounds for cock and 7½ pounds for hen. It is a beautiful bird with very large comb and wattles of brilliant red, ivory-white earlobes, and smooth plumage of glossy black with a greenish sheen. A standard-bred male of this breed in the pink of condition is like a jewel in rich and lustrous coloring. The back is long and sloping, with the tail carried lower than with the Leghorn and the head held high. The body is powerful looking, set well up on strong legs, with full rounded breast and graceful curves. The legs are smooth

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and dark colored, and the flesh of the fowl is white with pinkish white skin.

Though the skin and legs are not of the color popular in our markets, the flesh is particularly fine-grained and delicious, and together with the large size of the bird constitutes a first-class table fowl. But it is as a layer of large white eggs that this breed touches the height of excellence. The egg averages the largest in size of all chicken eggs and also among the first in numbers. The Minorca is a hardy and active fowl, a pleasure to the eyes of its owner and a profit to his business.

The Rose Comb Black Minorca is an American production and differs from the single comb variety only in comb and weight, being a pound lighter.

SINGLE COMB WHITE MINORCAS.—This variety has the same standard weight as the Rose Comb Black; that is, 8 pounds for cock and 6½ for hen. Some fanciers claim that the White Minorca is a sport of the Blacks, others that it was produced by a cross of the White Leghorn and White Game. The plumage must be pure white and the shanks and toes white or pinkish.

School in the Woods.

There is a pleasure in the pathless woods,
There is a rapture on the lonely shore,
There is society where none intrudes
By the deep sea and music in its roar.
I love not man the less, but nature more,
From these our interviews in which I steal
From all I may be or have been before,
To mingle with the universe and feel
What I can ne'er express, yet cannot all conceal. —Byron.

Way up in the little town of Norway in Maine the children go to school in the woods. The very name of this little town makes one think of the fragrant Norway pine woods.

If you lived in Norway, says a chronicler, you would often see the boys and girls during the spring and summer months, frequently as early as 5 o'clock in the morning—for that is the best time to study the little feathered people of the woods and field—trooping together in enthusiastic groups into the nearby forest.

The work that is being carried on by the teachers of Norway serves to illustrate what an admirable plan it is. There is much rivalry between the boys and girls as to which shall do the most work and secure the largest list of identified birds. Some of the most remarkable work is being done in the fifth grade.

Each child has a note book that he takes into the fields with him, in which he fills out the descriptions of all the new birds he sees. The children study also at home, throwing out crumbs to call the birds that they may identify them. They also have a note book in which as soon as they learn about a new bird, each child makes an accurate record of his own observations, adding colored pictures of the birds to his notes. Descriptions are also placed on the blackboard, about the size of the bird, describing its nests and breeding habits, together with such general notes as help to identify it. The boys and girls know about these birds from their own observations, and so correct are their descriptions that any one unfamiliar with the birds might identify any one of them. The children describe the birds and talk of bird-lore as they would of base ball or any other recreation. They also make a study of old nests, and the school room often resembles a museum of bird dwellings. All spend a part of each day in looking for new birds, and Saturday is the time for a tramp in woods and fields in search of songsters.

The star naturalist in the classes is a boy not yet fourteen years old. He brought in twenty-eight of the fifty-four birds recorded. He keeps a novel bird list. He has fifty birds recorded; and besides the local name he keeps the scientific name as well, giving one directly after the other.

A Defense Against Misfortune.

"The keynote is that the best defense against misfortune is to give every child in the country such an education that it shall be able to earn its own living on a piece of land, if necessary, when it reaches its majority," says Chairman Brown of the State Country Life Commission of Washington. "Students of affairs believe the time is at hand when every child in the United States should learn how to earn his living on a plot of ground, as well as being taught the principles of living. This necessity is becoming more apparent every day. Ignorance of farming and inertia have become so widespread and so heavy as to constitute a national menace. It is the result of neglected agriculture and the decline of farming interest."

The World's Work has discovered a county in the State of Mississippi, in fact, the only county in the Nation, where practically every white boy of school age is working a piece of ground with his own hands as a part of his education—working it, too, under proper directions so that what he does has a definite educational value; working it, too, so as to produce a better yield at a lower cost than the land ever knew before.

The Girl Pioneers.

The Girl Pioneers are going to do for the girls of the country what the Boy Scouts will do for the boys, if the plans of those interested in the new movement succeed, says the Globe-Democrat. Once upon a time there was a trail of "schooner" wagons across the prairies of the West, and every one of them had a woman in it. The Pioneer Girls want to be womanly and ready for any emergency in life.

The organization is to include the girl of wealth and the girl of factory or store. The girls who go into camp will pitch their own tents and do the cooking, as well as enjoy themselves swimming and boating. Mrs. Charlotte Farnsworth is the executive head until a president is elected, and Mrs. Ernest Thompson-Seton the treasurer.

There are camps at Thetford, Vt., and Portland, Me. Like the boys, the girls are taught how to give first aid to the injured. In camp they wear middy blouses and bloomers.

Dahlias and Potatoes.

By a kind of horticultural irony, says the Scientific American, the dahlia, that popular flower that so often forms a conspicuous display at flower shows, has a dreadfully prosaic parentage.

It has been developed from the Mexican tubers introduced into England about one hundred and twenty years ago by the Swedish naturalist, Dr. Dahl, for the purely commercial purpose of supplementing the potato. The doctor's scheme did not meet with favor, and the dahlia dish soon disappeared from British tables. But the gardeners of the old country at once perceived the great potentialities of the flower, and accordingly proceeded to produce the double dahlia and other delightful floral fantasies. The tubers of the dahlia, too acrid for most tastes, are still eaten in some parts of France.

The Sun Saved Tommy.

Tommy is the Malayan sun-bear in the Bronx Park Zoological Gardens. Tommy has endeared himself to his companions and to the general public by his unfailing ugliness and an ingrowing grouch, making it possiole for his relatives to play all sorts of pranks on him. He is the smallest bear in the world, but he makes up in ill temper what he lacks in size. When the sun is shining he gets as near to sociability as his surly nature will permit, but when the sun fails to put in an appearance his rage knows no bounds.

The three rainy days the first of last week, says a New York paper, came near ending Tommy's cares. He pranced up and down his apartment, snarling his displeasure at Old Sol's absence, and literally collapsed from exhaustion. Attendants sought to revive him by standing in front of the cage with highly polished dish-pans, but it was no use; a red-headed attendant marched back and forth with his hat off, but Tommy refused to fall for the subterfuge.

His life was despaired of until the sun came out and brought a change for the better in his condition. The sun helped a little, and the sunshine of the following two days did wonders for the patient. Tommy was able to sit up and growl, and his friends knew that he was getting back to form.

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THE MARKETS.

San Francisco, July 26, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

There is not much feature to the market, as there is no trading of any consequence here and the movement is rather light in the north. California club is a shade lower. No Northern Club is offered here at present, and other northern grades are little more than nominal, as local buyers are unwilling to pay the prices asked.

California Club	$1.45	@1.47½
Sonora	Nominal	
White Australian	1.55	@1.65
Northern Club	Nominal	
Northern Bluestem	1.65	@1.70
Northern Red	1.55	@1.65

BARLEY.

No further advance is noted, but the market is quite firm. The local demand is only moderate, but feed is beginning to move fairly well, and there is a strong demand in the country for both feed and shipping grades. Considerable stock is being concentrated at shipping points, and it is expected that the export movement will soon begin. There is considerable demand in the East.

Brewing and Shipping	$1.52½	@1.55
Choice Feed, per ctl	1.27½	@1.30
Common Feed	1.22½	@1.25

OATS.

Quite a lot of low-grade red oats are coming in, and prices show some reduction accordingly. Black oats are steady as last quoted.

Red Feed	$1.30	@1.40
Gray	Nominal	
White	Nominal	
Black Feed	1.20	@1.50

CORN.

The Eastern situation has eased up a little, and all grades are rather weak at present, though there is no quotable decline.

Cal. Small Yellow	$1.75	@1.80
Eastern Yellow		1.70
Eastern White		1.70

RYE.

There is very little trading. Considerable undesirable stock is offered, but is neglected, while offerings of good quality are small.

Rye, per ctl	$1.55	@1.65

BEANS.

There is not much new in the market this week, quotations showing no change whatever. The movement is rather slow, but is keeping up quite steadily to the recent average, and on most descriptions prices are firmly held. Large and small white beans, though no higher, are especially firm, as these varieties are in more demand than others. Pinks are steady, while continued weakness is noted in the lima bean market, owing to the anxiety of holders to clean up their stocks before the new crop comes on the market. There is still quite a bit of stock in the State, and at the prices which have prevailed of late the demand is confined to narrow limits. Representatives of Coast dealers have made sales of new-crop limas in the East on the basis of $4.05 for September, $4.95 for September-October and $4.80 for November delivery.

Bayos, per ctl	$4.00	@4.10
Blackeyes	6.15	@6.35
Cranberry Beans	3.75	@4.00
Garvanzos	2.85	@3.25
Horse Beans	3.25	@3.50
Small Whites	3.50	@3.60
Large Whites	3.40	@3.50
Limas	6.00	@6.20
Pea		4.25
Pink	4.90	@5.00
Red Kidneys	6.25	@6.50

SEEDS.

Trading at present is entirely of a small jobbing nature and quotations are nominally as before.

Alfalfa	Nominal
Broomcorn Seed, per ton	$25.00
Brown Mustard, per lb	5½c
Canary	3½@ 4 c
Hemp	3½@ 4 c
Millet	3 @ 3½c
Timothy	Nominal
Yellow Mustard	5¾c
Dried Peas, per ctl	3.75@ 4.00

FLOUR.

There is little feature to the local market, prices being steadily held. There is considerable export movement from the north.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.60	@4.80

Hay and Feedstuffs.

HAY.

Notwithstanding the fact that arrivals this week have been the heaviest in a long time, and about twice as large as last week, prices in this market are higher on all descriptions. Dealers have been complaining for some time of difficulty in moving off the hay which arrived from week to week, but these heavy shipments appear to have been disposed of with very little difficulty. Prices in the country are still rather higher than the city basis, but quite a lot of hay is changing hands in the interior of the State, where buyers show little hesitation in filling their requirements at the prices asked. Alfalfa is quiet, and it is reported that dairymen are considering the use of clover hay, which is available at rather easy prices.

Choice Wheat	$13.50@14.50
Good Wheat Hay	11.50@13.00
Other Grade Wheat	8.00@11.50
Wheat and Oats	8.00@13.00
Tame Oats	8.00@14.00
Wild Oats	7.00@10.50
Alfalfa	8.00@11.50
Stock Hay	5.00@ 7.00
Straw, per bale	35@ 55c

FEEDSTUFFS.

Middlings are a little easier, while shorts have been advanced. Rolled barley is higher, and finds quite an active demand. Mixed feeds are rather irregular in value, most descriptions being a little lower.

Alfalfa Meal, per ton	$16.00@18.00
Bran, per ton	28.00@29.00
Cocoanut Cake or Meal	26.50@27.00
Cracked Corn	38.00@39.00
Middlings	34.00@36.00
Mixed Feeds	28.00@30.00
Rolled Barley	27.50@28.50
Rolled Oats	28.00@30.90
Shorts	28.50@31.00

Garden Truck.

VEGETABLES.

Red onions are no longer quoted. Supplies of yellow onions have been increasing, with a rather moderate local demand at the moment, and prices are rather easy at a decline. Garlic is also lower, as arrivals have been heavy of late. In miscellaneous garden truck there is a general tendency to easiness, with lower quotations on many descriptions which are now coming out in large quantities. The tomato season is well advanced and prices are down to about the usual midsummer level. Green peas and string beans are steady as before. Some green lima beans are appearing and bring good prices. Cucumbers are steady as before, while okra and eggplant are offered freely in box lots. Green peppers are higher on light arrivals, and find an active demand. Green corn shows a narrower range of prices, the best lots being a little easier, while ordinary stock is higher. Cabbage and carrots are lower and asparagus is rather easy.

Onions: Yellow, ctl	$ 1.00	@ 1.20
Garlic, per lb	3@	4c
Green Peas, per sack	1.25@	2.00
Tomatoes, per box	50@	75c
Cucumbers, per box	50@	75c
Cabbage	85@	90c
Carrots, per sack		1.00
Cauliflower, per doz		50c
Asparagus, per box	1.00@	2.25
String Beans, per lb	2@	5c
Lima Beans, per lb	6@	8c
Summer Squash, per box	40@	65c
Okra, per box	1.00@	1.25
Green Corn, per sack	1.50@	2.25
Eggplant, per box	90c@	1.10
Green Peppers, per box	75c@	1.25

POTATOES.

Prices are about the same as last week. Supplies are still rather large, but the demand has been quite active, and dealers are looking for some advance. Sweet potatoes are appearing again and find a ready demand at good values.

River Whites	$ 1.50@	1.75
Sweet Potatoes, per lb	5@	6c

Dairy Produce.

POULTRY.

Arrivals of Eastern stock have not been so heavy this week, though the market is well supplied. Local chickens have been arriving in large quantities for the last day or two, and while one or two varieties are bringing a little better prices it is impossible to move the ordinary offerings at the prices asked.

Large Broilers	$ 3.00@	3.50
Small Broilers	2.00@	2.50
Fryers	4.50@	5.50
Hens, extra	8.00@	9.00
Hens, large	5.50@	6.50
Small Hens	4.50@	5.00
Old Roosters	4.00@	5.00
Young Roosters	6.00@	7.50
Young Roosters, full grown	8.00@	9.00
Squabs	2.00@	2.50
Geese, per pair		2.00
Ducks	4.50@	7.00
Turkeys, live, per lb	Nominal	

BUTTER.

The butter market is gradually strengthening, prices for the week as a whole being on a higher level than last week. Local trading is not very active, but there is no pressure to sell, and the demand for shipment continues strong.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	23½	24	24	24	24	25
Prime Firsts	23	23	23	23	23	23½
Firsts	22	22	22	22	22	22½
Seconds	21	21½	21½	21½	21½	21½
Packing Stock	19½	19½	19½	19½	19½	20

EGGS.

Prices again show an advance over the previous week, extras being 1½ cents higher, while a slight advance has occurred in most of the lower grades. Production is rather light at the moment, and large quantities of eggs are being shipped to distant points direct from producing districts.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	26	26	26	26½	26½	27
Prime Firsts	23	23	24	24	24	24
Firsts	22½	22½	23	23	23	23
Seconds	19½	19½	19½	19½	19½	19½
Selected Pullets	22	22	22	22½	22½	23
Eastern	16	16	16	16	16	16½

CHEESE.

Fancy local flats are a shade lower, but no other change is noted in grades quoted on the Exchange. Monterey cheese is suffering from overproduction, and it is difficult to keep the market cleaned up even at the present low values.

Fancy California Flats, per lb	13 c
Storage	14 c
Firsts	12½c
New Young Americas, fancy	14½c
Monterey or Jack Cheese	11@12 c

Deciduous Fruits.

FRESH FRUITS.

Prices show comparatively little change from last week. The local movement is about up to the average, and a strong demand for shipment strengthens the market materially. Cantaloupes find a strong demand, but are arriving freely from various points, and those from Imperial are lower. Watermelons are also rather easy, though the best offerings bring full prices. In the berry line, raspberries and blackberries are easier, while strawberries are higher. Cherries are about cleaned up. Apples are arriving in large quantities, and the best stock finds a ready demand, though ordinary lots are accumulating. Apricots are a little easier, owing to a temporary interruption of the demand from the canners, who have been taking the surplus at high prices. Peaches are quoted as before and are in very strong demand both for the local trade and for shipment. Plums and prunes are moving freely at the former prices, and a few nectarines are appearing. Figs are scarce and higher, while pears are lower, with increasing arrivals and little demand from canners. Grapes are a little higher.

Watermelons, per doz	$ 1.50@	3.00
Canataloupes, standard crate	1.25@	2.75
Raspberries, chest	4.50@	6.00
Loganberries, chest	3.00@	4.00
Blackberries, chest	3.00@	4.00
Strawberries—		
Longworth, chest	6.00@	9.00
Large varieties, chest	4.00@	6.50
Apples—		
Fancy Gravensteins, box	$ 2.25@	2.50
Other varieties	1.00@	1.25
Apricots, crate	85@	1.00
Apricots, box	60@	75c
Peaches, lug box	1.00@	1.50
Carriers	85@	1.25
Plums, box	40@	65c
Tragedy Prunes, box	65@	90c
Nectarines, box	1.00@	1.25
Figs, box, double layer	1.50@	2.00
Pears, Bartlett, box	1.00@	2.00
Other varieties	50@	75c
Grapes, Malaga, crate	1.25@	1.50

Dried Fruits.

The season of activity appears to have started in a number of lines, as some new fruit is ready for market, and buyers in many quarters manifest increasing anxiety to secure supplies. California evaporated apples have taken another jump and are extremely firm, as it is reported that the crop in the Middle West has suffered great damage from a windstorm. There is considerable foreign inquiry for apples. Apricots are also a little higher, and packers are now getting considerable stock. The demand in the East is said to be slow, but the amount of apricots dried is even smaller than was estimated, and it is now evident that there will be an extreme shortage. Prunes are unchanged and are not receiving any great amount of interest at the moment, though the situation has been strengthened somewhat by damage due to hot weather. Pears have again advanced, owing to the heavy shipping demand for the green fruit and the shortage in other lines. Old peaches have been practically cleaned up, and new-stock is considerably higher, with increasing inquiry both from the East and for Oriental shipment. Muscatel raisins are not yet moving to any great extent in the East, but the seedless varieties are in fair demand, and in view of the short crop packers are offering considerably higher prices. They are also taking a little more interest in muscatels, but are unwilling to pay more than 4½ cents for loose sweatbox stock, and are getting a fair amount of raisins at this figure. The opinion is expressed in some quarters that there will be a shortage of raisins before the new crop is available, and that old stock will bring considerably more than present prices. The New York market reports this week are not especially interesting, trade in general being very dull there on account of the hot weather, though there is a little more interest in some sizes of prunes.

Evap. Apples, 1911, per lb	9¼@	9¾c
Apricots		14½c
Figs, new crop	5 @	7½c
Peaches, new crop	10¼@11	c
Prunes, 4-size basis, new crop contracts	4¼@	4¾c
Pears, new crop	12 @13	c
Raisins—		
Loose Muscatels, in sweatbox	4¼@	4½
1911 crop	4¼@	4½c
Thompson Seedless	5 @	5½c
Seedless Sultanas	4¾@	5 c

Citrus Fruits.

With light receipts in the Eastern markets and hot weather to increase the demand, lemons and oranges brought good prices last week. The price advanced steadily from the beginning to the end of the week. Oranges averaged from $4.25 to $5 per box, and some valencias sold up to $6. Lemons sold at about $5.50 per box.

On Monday the New York auctions showed a firm market and prices were fully as high as last week. At Boston the orange market was very firm, but easier on lemons, the latter selling for $3.30 to $4. At the Philadelphia auction on July 24 oranges brought from $4 to $5.25 per box, and lemons $2.65 to $4.25.

Total shipments of oranges to July 23 were 33,984 cars, as against 23,356 cars to same date last season. Lemon shipments to July 23 were 5689 cars, as compared to 3875 last year.

Lemons	$ 2.00@	6.00
Valencias, choice to fancy	2.75@	3.50
Grapefruit	2.00@	3.00

Nuts, Honey, Hops, Etc.

NUTS.

The San Francisco market is featureless and uninteresting, trade being limited on all descriptions. Ordinary valencias are a little stronger, while Mexican limes are nominal in the absence of offerings.

Association prices have been named on new-crop almonds, and are quoted below. The Association is said to control about half the crop. The figures are extremely high, and while some outside growers got about the same prices early in the season buyers are rather slow to enter the market at present. As the crop is very short everywhere, however, the California yield should be cleaned up at these figures without much difficulty. Walnut prices are entirely nominal.

Almonds, 1911 crop—	
Nonpareils	18½c
I X L	17¼c
Ne Plus Ultra	16½c
Drakes	14½c
Languedoc	14½c
Hardshells	8 @ 8½c
Walnuts—Softshell, No. 1	15 c

Standard	14½c
Softshell, No. 2	11 c
Budded	17½c

HONEY.

Values are unchanged in the local market, and the movement is quiet.

New Extracted, White, per lb.	8 @ 8½c
Comb, White	13 @15 c

BEESWAX.

Prices are nominal as before, both demand and supply being very light at the moment.

Light	28 @32 c
Dark	23 @26 c

HOPS.

It is reported that the old crop is practically cleaned up, the last sale being at Santa Rosa, at about 27 cents. New hops are a little higher, but there is not much movement at present.

Hops, 1910 crop	25 @30 c
1911 crop	24 @26 c

Live Stock.

LIVE STOCK.

Considerable revision of prices is noted. Arrivals of hogs are still very small, and with a little more demand the situation is very firm, medium and light stock being higher. Cattle and beef remain about as before, while sheep are coming in from Nevada quite freely and prices are easy at a slight decline.

Gross weight:	
Steers: No. 1	5 @ 5¼c
No. 2	4¾@ 5 c
Cows and Heifers: No. 1	4¼c
No. 2	4 c
Bulls and Stags	2 @ 3 c
Calves: Light	6½@ 6¾c
Medium	6 @ 6¼c
Hogs: Grain-fed, heavy	6½c
150 to 250 lbs	7¼c
100 to 150 lbs	7¼c
Small prime wethers	4 @ 4½c
Large prime wethers	4 @ 4½c
Ewes	3½@ 3¾c
Lambs	5 @ 5¼c

DRESSED MEAT.

Steers	8½c
Cows	7½c
Heifers	7½c
Veal, large	9½@10½c
Veal, small	11 c
Mutton: Wethers	8½c
Ewes	7½c
Lambs	10½c
Hogs, dressed	10½@11½c

WOOL.

Prices remain nominally as last quoted. The situation is still unsettled, and buyers are reluctant to pay full values at this time. Quite a lot of wool was sold recently at Lakeview, Ore., at 12 to 14½ cents.

Spring Clip—	
Choice Southern, Year's staple	10 @12½c
7 months	8 @11 c
Lambs, spring	8 @10 c
Northern, year's staple	14 @16 c

HIDES.

The demand continues fairly active, cleaning up the surplus of this market without difficulty, and prices are steadily maintained at the former level.

Heavy Steers, over 56 lbs.	12½c
Medium	11½c
Light Steers, under 48 lbs.	11 c
Heavy Cows, over 50 lbs.	11 c
Light Cows, 30 to 50 lbs.	10 c
Kip	13 c
Veal	16 @16½c
Calf	16½c
Dry—	
Dry Hides	18 @19 c
Dry Bulls	16 c
Dry Kip, 10 to 15	18 @19 c
Dry Veal, 5 to 10	20 c
Dry Calf, 7 down	23 @24 c
Sheep Skins—	
Long Wools	$ 1.00@ 1.25
Medium Wool, 6 to 9 mos.	75@ 90c
Short Wool, 3 to 6 mos.	40@ 65c
Lambs	35@ 60c

HORSES.

The prices realized at recent sales have been well within the range of quotations given, but conditions appear to be rather better than for some time past. There is no demand for ordinary or defective stock, but good horses find ready sale at full prices. Heavy horses are the most sought after, as the supply is never sufficient for this market, but good wagon and delivery horses are also wanted, and there should be no difficulty in disposing of any good stock of 1200 pounds and over.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	190@240
Wagon Horses, 1250 to 1350 lbs.	140@180
Delivery Horses, 1050 to 1250	100@125
Desirable Farm Mares	100@125
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

SPECIAL DECIDUOUS MARKET REPORT.

Sacramento, Cal., July 24 1911.

The heavy shipments predicted for this past week did not materialize and the situation remained practically the same as stated in our last letter. However, we understand that the pears are sizing up, and this week will unquestionably be the heaviest one up to date this season. At no time, however, do we look for any day's shipments to be as heavy as the corresponding date of last season. All of the Eastern markets continue to be active and the demand very brisk, principally on account of the light arrivals from California at the Atlantic seaboard points, and the very light offerings from the Eastern States, whose shipments have been heavily curtailed owing to the lack of rain. The total shipments from Georgia amounted to 775 cars of peaches, as against 6500 last year, and we understand that the State is practically through shipping.

Competition from Georgia this year was hardly felt in California and we do not look for any serious competition throughout the season, though it is predicted that Michigan has a little better than an average crop of peaches, which will move about the last of August. Owing to the excessive heat and unprecedented dry spell in Michigan, the peaches will be of only fair quality and a good many will be undersized. On this account, though the demand is already very brisk on these peaches, we do not look for any serious competition.

We are expecting a very strong market on California Elbertas, and, unless the supply is heavier than now predicted, the f. o. b. prices should remain in the neighborhood of $1.

The shipments of fancy plums continue fairly liberal and the market eased off a trifle owing to the heavy arrivals. However, good prices are being maintained on nearly all varieties and, as the bulk of plum shipments will be over by the last of this week, we expect considerably higher prices to prevail for the balance of the season.

The cling situation is somewhat up in the air at present, owing to the very light crop. As a matter of fact, the Tuscans will not average 10% of a crop in Placer county and not better than 10% in the Sacramento valley. Down in the San Joaquin valley the crop is a little heavier, but not enough to affect the market to any great extent, and very fancy prices are being offered by the canners. There are very few clings in the market, and it is not at all unlikely that a great many of these will be shipped, as every indication points to a brisk demand near the latter end of the season for this particular variety of peach.

The Sacramento river shipments will hang on until near the last of August, and, owing to the lateness of the season, will probably affect the sale of Suisun Bartletts to some extent.

Looking at the situation from every angle, so far this season, it has been the most profitable year that the fruit industry has known for some time, and there is nothing to indicate that there will be any perceptible easing of the market, except on an occasional variety and for a short period. The crop in some localities is a great deal lighter than was at first predicted, and, on this account, the State will probably be short from two to three thousand cars as against the total shipments of last season.

The markets for the past week ranged as follows:

New York—Wickson, $1.40 to $3; Climax, $1.15 to $2.78; Tragedy, $1.50 to $2.37; Burbank, $1.30 to $2.50; Hale, $1.30 to $1.65; St. John, $1.55 to $2.12; Wilder, 1.90 to $2; Bartlett pears, $2.12 to $4.50; figs, $1 to $1.45; Thompson Seedless, $3.25 to $3.80; Republican cherries, $1.10 to $2.62; Royal Ann, 90 cents to $2.37; Bings, $1.15 to $3.50.

Chicago—Wickson, $1.45 to $2.35; Climax, $1.40 to $1.80; Tragedy, $1.45 to $2; Simoni, $1.40 to $1.50; Burbank, $1.25 to $1.95; Crawford, $1.50; Hale, 75 cents to $1.30; St. John, $1.20 to $1.75; Triumph, 55 to 90 cents; Bartletts, $3.05 to $3.50; Royal cots, $1.65 to $1.95; Malaga grapes, $2.40 to $4.15; Thompson Seedless, crates $1.80 to $2.15, barrels $3.10 to $3.35; Republican cherries, $1.90 to $2.10; Royal Ann, $1.35 to $1.75; Bings, $1.60 to $2.30.

Philadelphia—Wickson, $1.50 to $2; Climax, $1.45 to $2.40; Tragedy, $1.75 to $2.15; Abundance, $1.50; Botan, $1.50; Burbank, $1.55 to $1.75; Hale peaches, $1.45; St. John, $1.40 to $1.70; Bartletts, $3.65 to $4.35.

Boston—Wickson, $1.85; Climax, $1.50 to $1.90; Tragedy, $1.85 to $2.50; Red June, $1.55 to 1.70; Abundance, $1.40 to $1.55; Burbank, $1.30 to $2.05; Triumph, $1.55; Alexander, $1.55; Hales, $1.50 to $1.60; St. John, $1.55 to $2; Sugar pears, $1.10 to $1.25; Bartletts, $3.80 to $4; Royal cots, $1.05 to $1.10; Republican, $1.60 to $2.50; Royal Ann, $1.50 to $2.

St. Louis—Climax, $1.25 to $1.55; Clyman, 85 cents to $1.40; Tragedy, $1.45 to $1.75; Red June, $1.35; Abundance, $1.30; Burbank, $1.40; Hales peaches, 75 cents; Triumph, 75 to 95 cents; Bartletts, $2.75 to $3.05; Malaga grapes, $1.50 to $1.80; Thompson Seedless, $2.45 to $2.55.

The Housefly and the Small Boy.

Grown-ups may still remember some of the nice little poems about the gauzy-winged fly with the wonderful feet, learned in a childhood when consideration for this buzzing insect that carries filth and microbes on itz gauzy wings and wonderful feet, was something of a dividing line between the good child and the bad one. Now, all this is changed and children are taught that it is their duty to "swat the fly." At last, this ungrateful insect's ill deeds have found him out and the fly must go.

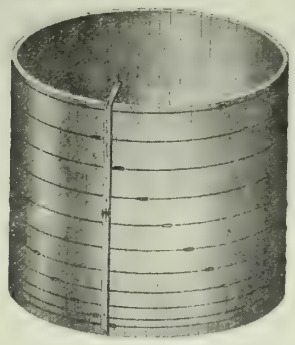
For some time Texas has claimed the championship in fly-catching. In a contest which closed at San Antonio on the 4th of July, the slaughter of flies by the small boys of that city mounted up to a pile three feet high and five feet wide and represented one and a quarter million dead flies. Robert Basse carried off the first prize of $10 with a record of 484,320 dead flies.

Now, however, there comes a dispatch from Worcester, Mass., to the New York World which gives the Texas boy a back seat. Over ten barrels of flies were gathered by the 232 contestants in an anti-fly crusade which began on June the 22d and came to an end July the 13th.

The winner, who gets a prize of $100, turned in ninety-five quarts, or a total of 1,219,000 flies, captured in traps of his own construction, and claims the world's championship. He is Earl C. Bousquet, twelve years old.

The entire collection of flies will be placed on exhibition in Clark University.

This should be an object lesson to the commonwealth that in order to exterminate a pest make it worth while for the small boy.



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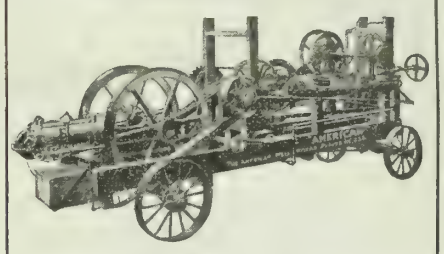
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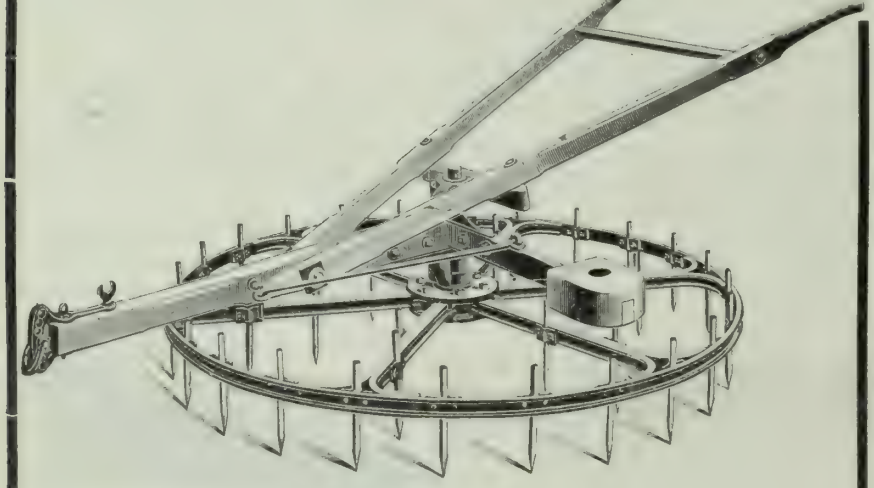
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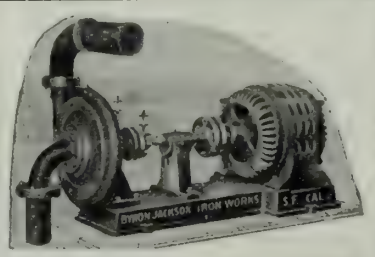


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THE PACIFIC RURAL PRESS

Vol. LXXXII. No. 6. SAN FRANCISCO, SATURDAY, AUGUST 5, 1911. Forty-first Year.

The Outlook For Table Grapes.

Written for the PACIFIC RURAL PRESS by Mr. W. H. SCHRADER.

In view of the fact that growers of table grapes in California have fared rather poorly the last few years, it gives us pleasure to announce that the outlook for this season is decidedly favorable. The crop for the most part is good, the late frosts not having done as much damage as was at first anticipated. In the Sacramento valley only the vineyards lying in the low lands suffered seriously. In the San Joaquin valley the damage was greater. Fresno and Tulare counties report 75 and 50 per cent crops, respectively.

However, good crops alone do not spell prosperity for the grower. There must be good marketing facilities and fair prices. To get at the outlook along these lines for this season, we interviewed State Horticultural Commissioner Jeffrey and the leading shippers of Sacramento, including F. B. McKevitt, head of the California Fruit Distributors; John M. Walker, head of the Pacific Fruit Exchange, and J. L. Nagle, of the California Fruit Exchange, and learned the following facts:

The California crop is estimated at from 7000 to 8000 cars. This large crop is due to much new acreage coming into bearing and the increased age of previous bearing acreage. The table grape crop in Michigan, Ohio and other Eastern States is a good one and will probably total from 8000 to 10,000 cars. Shipments of other California deciduous fruits, however, have been very light to date, only 1832 cars having gone East up to July 24, as against 3767 last year at that date. This together with the light crops in the East has made high prices for all kinds of deciduous fruits. The effect of small supply and high prices of all other fruits will be very favorable to table grapes and make prices good in spite of large crops both in California and the East. To secure these prices, however, quality must be maintained and the fruit must be carefully packed and properly distributed.



A California Grape Picker at Work.

Lodi is the center of the San Joaquin county grape industry and the center of the largest Tokay producing section of the State. We found both growers and shippers there optimistic. With few exceptions, growers report good crops. Estimates vary from 2500 to 3000 cars for the district, as against 2000 cars last year. Buyers are active and a considerable part of the crop has been contracted at prices of from $18 to $20 per ton, $25 per ton being offered for August delivery. Quite a number of vineyards have been bought by the acre, the buyer to pick and handle the crop, at prices around $75 per acre. For some of the older and heavier bearing vineards in the neighborhood of Woodbridge, as high as $125 per acre has been paid.

That the shippers realize the necessity of standardizing and keeping up the quality of the pack is evidenced by the fact that most of them are establishing packing facilities at Lodi or in that vicinity. In past years practically all of the grapes have been packed at the vineyard, and the result was there was great variation in quality and all attempts at standardizing failed. One firm, however, realizing that in order to standardize the pack it was necessary to centralize it, have been buying the grapes in lug boxes, grading and packing them at their own packing house. They have found this method entirely successful, having marketed many hundred cars without a single rejection, and at prices ranging from 10 to 15 cents per package above the established f. o. b. prices for mixed growers' pack in ungraded cars. It is the success of this company that has induced the other shippers to follow its example, and a large percentage of the packing this year will be done in the shippers' packing houses.

The California grower is located a long distance from the Eastern market, and a very important consideration in marketing a fruit so perishable as the table grape is proper refrigeration. The Pacific Fruit Cooling & Vaporizing Company is installing a plant of large capacity to be completed in time for this season's pack. This will make it possible for the shippers to start every car to the Eastern market in perfect condition and with the probability that it will reach its Eastern destination in the same way.

It has been in seasons of high prices that the greatest damage has been done to the market. The high prices have tempted the growers to ship everything possible, and, to use the words of another, grapes have gone East that should have gone to the winery or hog pen. Under the conditions prevalent at Lodi this year, this is not likely to happen. We trust that the same condition will prevail in the other districts. With a good demand in the Eastern market and with good crops both in quality and quantity to fill that demand, the growers and shippers of California table grapes have an excellent opportunity to advertise and establish a reputation for their product.

Principles of Wine-Making.—There is no reason, except lack of skillful wine-making, why any California wine should be bad, according to Prof. Frederick D. Bioletti, in a bulletin on wine-making just issued by the college of agriculture of the University of California. The bulletin states in part: "While some improvement might be made in our grapes in many cases by a better choice of varieties, there is probably no grape-growing country where the grapes as a whole are more generally suitable for making good sound wine. They are seldom injured by diseases or inclement weather, and their commonest fault, that of excess of sugar, is most easily avoided and remedied. All our wine ought to be good, and it depends principally on the wine-makers to make it so.

"The most important part of the manufacturing process is the fermentation. The handling of a properly fermented wine is simple, easy, and understood by all good cellermen. An improperly fermented wine is never a good wine, and to save it from spoiling and becoming a dead loss taxes the ingeunity and skill of the most experienced wine handlers. The most critical period is the first week of the life of the wine; that is, of the 'main fermentation.' An almost equally important period is the following month or six weeks, that of the 'after fermentation.' A wine neglected or improperly treated during these periods is a cripple for life.

"Fermentations of all kinds are due to the action of microscopic plants: yeasts, molds, and bacteria, of which there are innumerable kinds. In wine they are all bad except one, the true wine-yeast, known botanically as Saccharomyces ellipsoideus.

"On the surfaces of grapes in the vineyard may be found any of the bacteria and fungi usually carried by the air and by insects. Many of these, especially the bacteria, are incapable of growing in grape juice on account of its high acidity. The older the wine becomes, the less suitable it is for the growth of micro-organisms, but it is never quite immune.

"On the skins of sound ripe grapes as they hang in the vineyard, the micro-organisms are comparatively few and in an inactive condition, and with intelligent methods they cannot injure the wine. On broken or

(*Continued on Page 110.*)

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Aug. 1, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	00	T	.11	58	48
Red Bluff	00	00	00	102	66
Sacramento	00	00	00	100	54
San Francisco	00	T	.01	64	50
San Jose	00	00	.01	86	50
Fresno	00	00	00	106	66
Independence	00	.10	00	92	56
San Luis Obispo	00	00	.01	90	50
Los Angeles	00	00	00	90	54
San Diego	00	.11	00	88	60

While this issue of the PACIFIC RURAL PRESS is being printed, the office is moving to 420 Market street, San Francisco, where all mail should be addressed in the future.

The Week.

The most important midsummer event of the year is the choice of a site for the Panama Pacific Exposition, which was effected just as we were going to press with last week's issue. We wish to declare that in our judgment the site is grand and unique and the universal approval of its choice by the people most promising and satisfactory. At some future time we hope to have an engraving showing the extent and variety of the lands and situations which the exposition will cover and their relation to the city itself and to its rich scenic environment of land and sea. Probably reference to the site by use of the terms applied to the different tracts of land involved by San Franciscans, would mean little or nothing to distant readers. Most of them, however, know that San Francisco occupies the northern end of a hilly peninsula and that a good part of the city is built high upon more hills than ancient Rome could boast of. Those hills which look westward face the Pacific Ocean; those northward face the long strait known as the Golden Gate; those eastward face the Bay of San Francisco—while the crests of many of them command all these views as the beholder turns upon his heel. A great exposition, obviously, could not be set upon a hill top, and yet the great exposition of 1915 will include all that can be seen from a hill top, because it will occupy a collective site, including lands facing westward, northward and eastward and still closely connecting, so that unity is secured and the exposition will not be a collection of fragments, but a harmonious whole. The service which the body of distinguished San Franciscans entrusted with the selection of a site, has rendered to the great enterprise will be more and more appreciated as the plan which has been decided upon is worked out. It seems to us fairly grand in its scope and in its infinite variety—beyond anything which the world has seen—and will evoke wonder and surprise everywhere. Those who know somewhat of the city will recognize the main features of the site when it is stated that the west half of the Golden Gate Park will be thickly set with great features of the exposition in full view of incoming ships, and these will connect with other lands extending northward to the south headlands of Golden Gate, upon which notable erections will rise; thence eastward along the south side of the strait large areas will be occupied both with land and water features, and eastward still a grand boulevard will extend until it encircles the crest of Telegraph Hill and commands a superb view of the whole lower city and the bustling water-front industries. Thus the city will be almost encircled by the exposition, which will be entered at numerous points both by land and water and the whole city will be enfete with its spectacles and activities. No world's fair has ever been identified with the life of a great city as the Panama Pacific Exposition will be with San Francisco through the encompassing character of its site, which makes the city itself the greatest exhibit thereof. It is no wonder that the city is ablaze with enthusiasm over the outlook.

New Site for the Pacific Rural Press.

It is not perhaps strange that even so staid a dame as the PACIFIC RURAL PRESS should become excited over the selection of a site to such an extent that although fair, fat and over forty, she should lift her hobble a little and two-step down to a new site of her own at No. 420 Market street. She has never felt quite at home south of Market street, and now returns with the joy of a homecoming to the location where, before the flames of the great catastrophe, she had enjoyed a quarter of a century of successful and satisfactory endeavor for the promotion of California agriculture. On the some old ground she now expects to emulate the victories of her youth, for she is not old enough to enjoy victory merely in reminiscence, but is young enough to strive for it again. In fact, applying the time-honored rule that a lady is just as old as she looks, we can claim that the PACIFIC RURAL PRESS is still young because never handsomer or more effective and eager than on her 41st year. We are looking forward, then, to better service for our patrons, who are now multiplying faster than ever before in the history of the journal, amid surroundings at the corner of Front and Market streets, which experience formerly demonstrated to be most convenient and favorable. Here we shall be installed in a new modern building and have better facilities than ever before for all departments of our work. Here all who are interested in it will be welcome. Here our latchstring will wave in the balmy zephyrs, and all who grasp it with friently intent will receive a responsive thrill which will cause them to think that they have laid hold upon the trolley wires with which the district abounds.

A Californian Who Will Work for Peace.

A good many Californians have worked for the world's peace. Mr. Edward Berwick of Pacific Grove, to our knowledge has begrudged Uncle Sam every dollar he has spent for warships for a quarter of a century. President Jordan of Stanford University has talked peace valiantly for a couple of decades—and there are other peace-makers among Californians. A distinguished citizen who now has a grand opportunity to do good work for the world's peace is Mr. A. W. Foster, formerly of railway fame, but now largely occupied with his extensive farming and with the promotion of the interests of the University of California, of which he is a devoted regent. Mr. Foster is now owner of the best equipped poultry plant in California, but he will not confine his work for peace to the breeding of doves. He was selected by Mr. Carnegie as one of the trustees of his international arbitration peace fund, and has now been placed at the head of one of the main subdivisions of the work entrusted to the trustees. It consists in part in collation and publication of facts and figures involving the economic aspects of war and peace. Some of the most prominent of the trustees have been put on this division with Mr. Foster, who is exceptionally qualified by training, experience and habit of mind for their leadership. We have an idea that in the present trend of the world's thought, an effective showing that peace pays will settle the whole question.

Californians Buying California.

We are glad to note that Californians are not being wholly left out of the future ownership of California, but are asserting themselves in the rush for land. We saw the other day a sales-list of one of the newer San Joaquin colony enterprises in which about 80 per cent of the buyers were Californians, the rest being from the Mississippi valley States. We could not ascertain from the list what percentages were from California cities and rural districts, respectively, but from our conversation with people we judge that city people are securing their privileges in this line quite fully. From other colony movements it seems likely that we shall have an increase of communities filled with people of similar origin. We have now everything from the blond Swedes to the dusky Africans in colonies, and apparently prosperous and contented, each kind by itself. Now we are promised collections, not by race alone, but by beliefs and other bonds of relationship. The Cuyama ranch of about 65,000 acres in Santa Barbara county is to be purchased by a colony of Mormons. More than 500 Mormon families are expected to settle on the ranch and they propose to build a modern city as well as develop the country. Recently the head of the Persian delegation in Washington visited California looking for lands to work out his plan to bring 1000 or more Persians from Chicago and other places where they have drifted, together with other immigrants, and plant them in a colony on California soil, where their natural aptitudes for arts and crafts, fruit growing and various agricultural pursuits can be followed out to advantage. It is also reported that there may be more than 6000 Austrians in Kern county within the next three years, according to the natives of Austria who are there now and have sent home reports so favorable that emigration officials of the fatherland are recommending California and Kern county. There is also a report of Japanese buying land for colonizing in the Sacramento valley in anticipation of some restriction being placed upon sales to Ortentals by coming legislatures. It really looks as though California might usurp the place of the United States as the high place of cosmopolitanism, which may be desirable or not according to your point of view, but still we are glad to note that Californians are buying California land, and hope that they will do well with their investments.

Land Rentals Advancing.

Those who still own California lands seem to have a chance to get back some of the higher rents which their fathers enjoyed and lost thirty years or more ago. There is naturally owing to activity and interest in agricultural production a general appreciation of rents for our lands which keeps behind and still within sight, perhaps, advance in actual selling value of such lands. This increase, according to Stockton reports seems

to be about 30 per cent. The owners of reclaimed lands west of Stockton have decided that the returns from the soil are so profitable that higher rentals should be paid for land that has proved its worth, and have announced that they would increase the rentals from $17, $18, and $19 to at least $26 an acre on the best property. Already some leases have been signed at $20 on land that has heretofore rented for $15 an acre. The Rindge tract has been rented from $22 to $26 an acre for the coming year for potatoes and onions. Owners of well-leveled tracts declare that they have been besieged by renters and for that reason have been able to demand a high rental. It is of course only to be expected that they would take this course. That is what they are owning the land for and we are glad to know that they are getting it.

About the Aura and all That.

If we mistake not, the human race has been busy almost since its beginning in the effort to find out what the everlasting life in a man is and has tried very hard to catch sight of it as it left its tenement of clay—on which word we claim a recently announced discovery to be in the agricultural line; if it is anything, which we doubt. A dispatch comes from Chicago stating that a Dr. O'Donnell, who deals in X-rays, has rigged up a chemical screen through which can been seen the "aura" of an object, which he describes as "a strong radiation of light surrounding the entire outline of the body and head." How it could surround the entire body and omit the head, we cannot see; but never mind that. He has not only seen this, but has shown it to others in his office at Mercy Hospital in this way: "On each occasion four young women were the subjects. Using a film of dicyanin and other chemicals held between two small plates of glass sealed together, all of the physicians agreed that by looking through the screen they could distinguish the auras of all the subjects." We are rather disposed to believe that. We have ourselves sometimes had occasion to regard women as self-illuminating or luminous, if you like, but we never believed it of a man. We never yet heard of a man being able to illuminate his own keyhole on a dark night without striking a match. But Dr. O'Donnell claims a greater discovery, and when he makes it he drives all others away, so he could find it alone—just as Peary did with the North Pole. Here is his account: "The patient was reported as having only a few minutes to live. I looked at the man through the screen for almost half an hour. The aura was plainly distinguishable. The attending doctor said the patient was sinking rapidly. I did not take eyes from the subject. Suddenly the physician announced that death had occurred. At the same instant the aura, which as a bright light had been radiated from the body to all points, began to spread from the body and disappeared. Further observation of the corpse revealed no sign of the aura." And there you are. The life of a man has been caught leaving the body. "My experiments," says the doctor, "seem to prove that it is the animating power or current of life of human beings."

The announcement does not satisfy us. It is inconceivable to us that the everlasting life in a man knows less when it is freed from its handicap of clay than it did before is escaped therefrom. Therefore the spirit of the patient knew better that it was being seen than Dr. O'Donnell knew that he was seeing it. This being an incontestable fact, is it conceivable that the spirit would have sped away without tipping a wink of appreciation and acknowledgement to Dr. O'Donnell for piercing the mystery of death and seeing what man never saw before? It could not wink, of course, without an eye, but you cannot make us believe that this supreme intelligence of a man, knowing well that it was caught at last, would not have given some sort of a flip to its filmy form which would have said clearly to its imprisoned brother, the aura of Dr. O'Donnell: "Ta! ta! partner, you're on at last, all right!" If Dr. O'Donnell had given us some such reasonable proof as this, we would be more strongly drawn to his discovery.

Queries and Replies.

Wants Us to Do the Whole Thing.

To the Editor: Can you help me to determine a good product to plant somewhere in the Southwest (preferably southern California); also what particular section would be most suitable for the raising of that which you would advise? My intention is to find some agricultural product on which to specialize. I wish a crop of permanent nature (as orchard trees). I also desire advice on some product which would give a quick return while I am waiting on the more permanent one to mature and bear. I have not procured land yet, and am thinking seriously of trying to get government land, therefore you are free to give me the best location for the raising of that which you would suggest. I want a money making product and one which is not already overdone.—Investor, Los Angeles.

We regret that we are unable to answer your questions. The choice of crops depends quite as much upon the market demand and opportunity as it does upon the suitability of the soil and local climate. Choice of crops indeed involves almost the whole business of farming, and although we can sometimes give a man useful suggestions as to the growth of plants and the protection of plants from enemies, we cannot undertake to plan his farming business for him. He must form his own opinions as to what will be most marketable, and therefore profitable, if he succeeds in getting a good article for sale. A wise man at the East once said, "You can advise a man to do almost anything. You can even select a wife for him, but never commit the indiscretion of advising him what to grow to make money. That is a matter he has to determine for himself."

What Is Intensive Cultivation?

To the Editor: From whom can I receive instruction or information regarding intensive cultivation?—R. E. L., Chula Vista.

Intensive cultivation has, so far as we know, not been made the subject of any treatise or publication. Intensive cultivation means the use of a maximum amount of labor, fertilizers and water for the production of products of high market value. There is no better example of intensive cultivation in the world than is afforded by the practice of the best market gardeners and producers of small fruit. Next to them, on larger areas, would be the policies and methods of the citrus fruit growers of California. Intensive culture, then, is not a particular method or system, but consists in doing the best thing for maximum production of any product which is valuable enough to spend the large outlay which is required. Just how this cultivation should be done depends upon the nature of the product and the conditions of soil and climate in whatever locality intensive cultivation may be undertaken.

Beans in Hot Valleys.

To the Editor: I am writing to ask your advice about a bean crop. The very early bean crops of this section being all killed by frosts, they had to be planted over, thus making them late—the second planting being put in during April. Now this crop is growing very nicely, but is not taking on any beans scarcely—not even blooming but very little. We are all new settlers in this locality and are anxious to know whether we should plow up these beans and plant another crop or something else that will mature before frost, or will these beans that are now growing and looking so well put on and mature a full crop? They are the common pink beans?—Beginner, Stratford.

It is common for beans in the interior valley to avoid blooming or to make ineffective blooming during the hottest weather. It is frequent experience that bean plants which simply grow during this weather will make successful blossoms and make pods later in the season. Whether they will be fitted to go as far toward development as is desirable will depend upon whether you have sharp frosts early in the autumn or not. The autumn temperature usually delights the bean if there is moisture enough to advance the growth which they attain, but, of course, frost closes the career of the plant. We should say, as a rule, something may be expected later from beans which are now in good condition.

Burr Clover in California.

To the Editor: Have you made any detailed publication about burr clover? As I understand, it is used principally for green pasturage secured as a by-product of the barley field. We are in this State becoming very much interested in the growth of burr clover, especially medicago maculata. As I understand, the species of burr clover that is grown largely or entirely in California is medicago denticulata. Is this true or not?—Reader, North Carolina.

We have not published anything very detailed on burr clover. It was so common when this State was occupied by Americans that it was called California clover and supposed to be indigenous, but, of course, botanists soon put the public right on that question; but still we do not know which of the early explorers or the early Spanish settlers introduced the plant. It is, however, so well known that we have not undertaken publication about it more than to recommend it to newcomers as an exceedingly desirable winter-growing plant suitable for pasturage or for green manuring, and recently there has been quite a disposition to autumn sowing on orchard land to secure winter growth for plowing under in March, which is about as late in the season as it is safe to plow under green stuff without interfering with the clean summer cultivation which moisture conservation under our arid conditions requires. It is true that the medicago denticulata is the species which is most abundant in this State.

Potatoes on Heavy Land.

To the Editor: Will you please tell me if potatoes will grow well in adobe land, or partly adobe, that has not been used for seven years except for pasturing?—W. J. C., San Jose.

Although potatoes enjoy best of all a light loam in which they can readily expand, it is possible to get very good results on heavy land which has been used for pasturage for some years, providing the land is broken up early and deeply and harrowed well in advance of planting and thorough cultivation maintained while the crop is growing. The content of grass roots and manure which the land has received during its period of grazing tends to make the soil lighter and will also feed the plant well. For this reason better potatoes are had on heavy land after pasturage than could be had on the same land if continually used for grain or for some other crop which tended to reduce the amount of humus and to make the land more rebellious in cultivation, and we should say that you will get very good results if the crop is well grown.

Progress in Co-operative Fruit Marketing.

[The broadest account of the general effort toward fruit marketing through co-operative effort among growers in the various States of the Union has just been published as Bulletin 97 of the Missouri Experiment Station, the publication being prepared by W. H. Chandler, Assistant Horticulturist of the station. It is a very suggestive account of the width of the undertaking, and in this particular line we make selections from it for the edification of our readers.—EDITOR.]

We have secured the addresses of two hundred and fifty-seven associations in various parts of the country, not including sub-associations of the large exchanges like the California Fruit Growers' Exchange. Some of the associations are working on a small scale, but some of them are working on a very large scale and many of them have been very successful.

California Leads. — The greatest co-operative concern is the California Fruit Growers' Exchange, which markets citrus fruits. It is the central organization for sixteen sub-exchanges marketing for ninety-eight sub-associations in various parts of California. It has enabled the industry to overcome obstacles that many of the best-informed people of California think it would never have survived, and to develop until this season there was said to be 45,000 cars on the trees. An example of its excellent business management is seen in the fact that it marketed $58,000,000 worth of fruit and collected all except $318. For four years the average loss from bad accounts has been one cent on each $40 worth of sales. That it has worked to the best interest of the growers is seen by the fact that it has been operating for fifteen years or more, and yet eighty per cent of the growers, who control more than seventy per cent of the crop, still ship through it.

The Florida citrus growers have organized an exchange; and the Georgia peach growers have been co-operating for two years under an exchange that has been very beneficial to the growers.

Vegetable Selling. — In Texas the Southern Texas Truck Growers' Exchange has been so successful in marketing the crop of onions that while, in 1905, before the association was organized, there were only 400 carloads of onions shipped from that section and then the returns were so poor that there was little profit, in 1909 about 2500 carloads were shipped, and the manager said that if the returns had been pooled, every grower would have made money in spite of the very large crop.

Under the management of the Eastern Shore of Virginia Produce Exchange, the business of that section has increased until in the past year over a million barrels of Irish potatoes, about 800,000 barrels of sweet potatoes, besides quantities of berries, onions, and cabbage have been shipped, making a total business for the year of over $2,500,000; yet the Empire Produce Company of Elmira, N. Y., recalls the fact that before the organization of this association, it was unsafe to buy Virginia sweet potatoes because of the uncertainty of the pack.

The Peninsula Produce Exchange in Maryland has been very successful, bringing better returns to the growers, generally increasing the business, and giving a greater spirit of confidence and thereby increasing land value and general business stability.

The Apple Growers.—In Canada, especially in the Province of Ontario, there are about thirty-five co-operative associations, and while the apple industry in the province as a whole is rapidly declining, in the sections influenced by the successful growth of these associations it is very prosperous. This is especially true of the Norfolk Fruit Growers' Association. In ten years the yield from the orchards has been increased four or five times, though the orchards at the beginning of the association were about twenty years old and should have been at their best.

It will probably be admitted by all that the growers of the Northwest come as near to realizing the greatest possible returns from their fruit as any other section of the country, and they have such exceedingly well-managed associations as the Hood River Apple Growers' Union, Wenatchee Fruit Growers' Association, Rogue River Fruit Growers' Association, Salem Fruit Growers' Union, Eugene Fruit Growers' Association, and possibly others, while new ones are being organized, and there is an effort to get the whole Northwest organized under one selling management.

In Colorado.—Colorado also has a great reputation for its fruit and produce, and is generally under competent organization. It has such an association as the Grand Junction Fruit Growers' Association, one of the best in the country; Fruita Fruit and Produce Association; Surface Creek Fruit Growers' Association; North Fork Fruit Growers' Association; The Roaring Fork Potato Growers' Asociation; Holly Fruit Growers' Association; Manzanola Fruit Association; The Palisade Peach Growers' Association. There is just organized a new large association that will replace some of the above named.

Small Fruits.—In the cranberry business there are the National Fruit Exchange and the American Cranberry Association which market nearly all the crop, and have put the industry on a much more stable basis.

We do not have to go away from Missouri to see the great benefits of co-operation in marketing fruits. At Koshkonong the past year, the Koshkonong and Brandsville Fruit Growers' Association was organized and was very successful.

Probably no section has the strawberry business better organized than has Missouri. Of course, it is true that some sort of an organization is absolutely necessary to enable growers to ship strawberries in carload lots, and some Missouri independent associations have been more successful and better managed than most of the local associations to be found in other sections; while the Ozark Fruit Growers' Association, which markets the fruit for about twenty-five local associations, has been very successful indeed, bringing the price of strawberries for those associations that ship with it from about $1 net previous to its organizations in 1905, to more than $2.20 in 1910.

The association is working progressively to improve the standard of the berries shipped out and to get uniform packages and grades. The inspectors of the different local associations meet at Monett at the beginning of the season and have lessons and discussions on grading, thus hoping to have the same ideals prevail in grading the berries of all the local associations. There is also an efficient general inspector who visits all of the local associations as often as possible to encourage a uniform system of grading. It also keeps a set of men in the market to keep the management informed as to market conditions; to look after the growers' interests at the market end of the line; to make adjustments with the buyers; to look after the icing; and if a car cannot be sold before it should start rolling, to see that it is billed from some shipping center through which it must pass on to the place where it is later sold. Thus the Ozark does not wait for business to come to it, but it has its men in the market to go after the business, as well as to keep the association in personal touch with the market.

OF WHAT VALUE IS COVER-CROP NITROGEN.

To the Editor: "Of what value is the cover-crop nitrogen?" is a question often asked, and with no definite answer up to the present time, and this article is not intended as a final answer to this question. But at this season of the year we are seeking all the information we can get on cover crops, and any hint of an answer to this question should be put forth.

In the fall of 1909 this Station undertook the field work on the solution of this question. The first year's work did not give satisfactory results, owing to various experimental errors that have since been eliminated. This year's work seems to have some very promising figures in store, and it is certainly not out of place to anticipate these figures.

This experiment was commenced by surveying out seventeen plots 20 by 200 feet, side by side, and numbering them from 1 to 17. In the fall, about the first of September of each year, these plots have been sown to their respective cover crops following much the custom of cover-crop practice in the groves. The odd-numbered plots contained the leguminous cover crops, a different variety on each plot, while the even-numbered plots contained a non-leguminous crop, barley. In the spring, at the usual time for plowing under cover crops, these plots were plowed, turning the crops to a depth of about 9 inches with an 18-inch mouldboard plow. Annual non-leguminous garden crops were planted across these plots and account taken of the growth of each annual crop on each of these plots, with the point in view of determining the value to the soil of each of these cover crops. On half of the barley plots various amounts of nitrate of soda have been used, so as to be able to get these benefits in terms of nitrate of soda. In the summer of 1910, ten varieties of garden crops were planted, but trouble was experienced in growing so many varieties on so small an area, and besides, many of these crops did not respond well to the nitrate of soda. In the summer of 1911 three garden crops only were used.

These three crops represent the three parts of plant growth: First, the corn crop, of which the ear itself represents the influence of these various cover crops on the production of the fruit of the plant; second, the cabbage, which represents the effect of cover crops on the production of plant growth; third, the mangels, which represent the influence of the various cover crops on root development. Then, having the three parts of plant growth represented, and with no other information to draw on, is it not fair to conclude that whatever effect is produced on these garden crops will be produced on citrus groves? Our equipment is not great enough to undertake this experiment in the citrus groves at present, and, besides, the garden crops give quicker returns for the experiment.

No harvesting of these garden crops has been done up to the present time except two of the three varieties of cabbage used. Judging from the figures already obtained as well as the appearance of the remaining crops, we seem to have the following results: The figures used in expressing the yields of cover crops are calculated to the acre basis and are weights of the tops of the green crop cut at the surface of the ground.

The yield of the garden crops is not as good on plot 10, following barley, 12½ tons per acre, where 1080 pounds of nitrate of soda (162 pounds of nitrogen) has been used, as it is on either plot 11, following Tangier peas, 18 tons per acre, or plot 9, following Canadian field pea, 15½ tons per acre. This 1080 pounds of nitrate of soda on plot 10 is the highest amount of nitrate used on any of the barley plots. Plot 10 has slightly better garden crops than any leguminous cover-crop plot, except the two mentioned above. The garden crops following barley, where various amounts of nitrate of soda have been used, are quite consistent with the amounts of nitrate used.

Then rating the value of the various leguminous cover crops, judging from this one experiment and one year's result, I would place field peas (15½ tons) and Tangier peas (18 tons) on a part, followed by melilotus indicum (15½ tons) and fenugreek (12½ tons); then following these in order I would place lentils (15 tons), improved vetch (U. S. Dept. of Agr., S. P. I. 13410, 16 tons), burr clover (13 tons), and common vetch (12½ tons).

The reader must remember that he is not producing the yields of cover crops as have been given in this paper, for reasons that you are growing your cover crops in groves where onl yabout half the soil is producing cover crop, and it is not possible to be able to care for the crop on a commercial scale as has been done on these small plots. So do not deceive yourself into believing that the nitrogen in one acre of your cover crop is equivalent to 162 pounds of nitrogen applied

in some commercial form. Determine accurately what yield of cover crop you are producing, then Experiment Station work along these lines will be all the more valuable to you.

J. H. NORTON,
Chemsit in Charge.
University Citrus Station, Riverside.

CLEANING SEEDLINGS BEFORE PLANTING.

(By Mr. C. F. Lansing, Salem, Oregon, at the Annual Meeting of the Pacific Coast Association of Nurserymen at San Jose.)

Three years ago at North Yakima, Wash., when our association met there, I had a paper on the "Dipping of Seedlings Before Planting", and today am asked to give my experience along that line, with a paper on "The Value of Cleaning Seedlings Before Planting."

I still have the same opinion as at that time, and believe we can save ourselves much trouble by a thorough dipping of our seedlings before lining them out in the nursery rows. At that time the cleaning of the seedlings, with me, was in the experimental stage, but since then I can speak more of the good results and benefits derived from it.

After using the solution of lime and sulphur of different strengths, and getting over the scare of injury that might result from the use of too strong a mixture, I decided to use the same strength (ten to one) as we used in our winter spray for scale. Since then we have almost entirely done away with the woolly aphis on the apple roots, and believe it has partially, of not fully, overcome the hairy root as well. At least, we have had a great deal less of the hairy root since we began its use.

I selected from our apple seedlings about one hundred of the worst specimens of hairy root that I could find, and trimmed them close, and dipped them well, then planted them by themselves, with the object of a special test, and while I cannot say they were free from the disease, I know there were a large number of them that were good healthy-rooted trees.

I have long wondered if the hairy root was not to some extent the result of injury to the root by the woolly aphis, puncturing or gnawing the bark of the young plant which causes it to callous, and the result is a great number of small, fine roots. This idea may be contrary to most scientific investigations, but at any rate many of the seedlings that had hairy root before receiving the above treatment had none two years later when dug.

Another advantage in the cleaning of the seedlings before planting is that this solution acts as the first spraying and this, too, saves an extra trip over the field with the spraying outfit. The plants grow more luxuriantly early in the season, and are clean and healthy.

I would like to report as favorably on the treatment of pear seedlings as on the apple, but cannot; as it seems to have no effect on them, and the pear aphis thrives as well after the treatment as before.

What is the Australian Navel?

It occurs to us that we are likely to fall into confusion through the tendency in southern California to use the term "Australian Navel" to designate inferior types of fruit which are appearing in orchards supposed to be planted with trees grown from buds of the Washington Navel. It is, of course, true that the Australian is an inferior navel orange and was decided to be inferior as soon as the comparisons with the Washington were made, in the latter '70s, as we remember. But at that time the Australian was not thought to be so shifty as is now suggested. It was introduced by Lewis Wolfskill from Australia in 1874 as an established variety there, and more desirable than common seedlings, and it was so regarded at the first citrus fairs in southern California before the Washington Navel came into comparison with it and was seen to be superior. The confusion comes in with the use of the name "Australian" to indicate any bad thing in the Navel line, especially as the claim of Professor Paine of Redlands becomes more established that one can escape the "Australian" and approach the "Washington" by rational pruning which throws the tree from one variety into the other. We are very glad to receive from Professor Paine a personal letter on this subject which we suppose we abuse no confidence by giving to the public as follows:

PROF. PAINE'S LETTER.

To the Editor: I am taking the liberty of calling your attention to an article on "The Australian Navel Orange Tree" in the July 6 issue of the California Cultivator, which I am mailing you. The Mr. Dewey of Upland, whom I refer to in it, thinks there is a rapid tendency to reversion of what were regular Washington Navels to this inferior type, and I wrote the article to call attention of orchardists to his view, and to take another opportunity to invite attention to the open-top pruning method, which, by taking away sucker growth (even that which is quite old and large) keeps the Navel orange tree to its old, out-growing branches and gives a chance to grow new fruit spurs along such limbs, and puts an end to rank growth that might have any such tendency to reversion of type.

I am going to ask Dr. Coit of the Whittier Station, near by Upland, to find a time when he can go over there and see the operations—quite extensive there and in Ramona—and note the character of the limbs, for he is removing side limbs, too, that appear to him to tend the Australian type way, and watch the changes that are brought about.

If this matter interests you, and Dr. Coit is not too much engaged to observe this matter, I wish you would suggest to him to make observations, for that would be all that is necessary.

CHAS. R. PAINE.

Redlands.

PROF. PAINE'S REVIEW OF MR. DEWEY'S WORK.

The following is Prof. Paine's study of Mr. Dewey's experiments as cited in his letter:

By invitation of Chas. A. Dewey of Upland, I visited a few days ago orchards there in which he is working to transform the so-called Australian Navel orange trees to true Washington Navels.

The character of the former sort, seen here and there in a grove of the latter, is distinctively marked by greater dimensions both in height and breadth, and by more openness of the branches which extend upward obliquely, contrasting with the pendent tendency of the branches of the true navel orange tree. The foliage also is distinctive.

Progressive Deterioration.—A feature of many trees, supposedly of the regular navel type, he pointed out, was to have, in some cases, the topmost branches of the Australian type; in others, in addition to the modified top, an extension of this sort of branch and foliage to branches next below; again, other trees would show the change still lower down, and unless such change from the true type was arrested, the whole tree would become the well-known Australian orange tree, produced, not from bud variation in the original nursery form, but by deterioration in orchard growth from what was at first the regular desirable variety.

His contention is that this is the tendency of the Washington Navel orange tree. He finds that when observation of a certain orchard, for instance, is made, a limited, definite number of such inferior trees (Australian) may be found by anyone at all acquainted with orange culture; in these trees rebudding may be done and the tree be changed to the normal kind. Later, to the surprise of the orchardist, several other trees of the objectionable sort may be discovered, and after very careful observation to make sure that all are included, he rebuds the second lot; again, after a further interval, some Australians appear and he is forced to conclude that a change in the character of the trees is going on, not merely that change indicative of age, but an active, vigorous growth different from that which belongs to the Washington Navel, bearing fruit of an inferior quality.

Corrected by Pruning.—He was working at the time of my visit in an orchard of large old trees, rebudding those which were wholly Australians, and cutting out from other trees all those parts which had taken on the Australian type, having learned by long and close observation the features of branch and foliage indicative of the changed condition; sometimes it would seem to a bystander that he was destroying branches of the regular sort.

The deterioration from the Washington Navel to the Australian is brought about, he observes, by limbs growing upright or nearly so, originating as suckers on the trunk and growing above the pendent branches, such limbs ultimately dominating the tree.

His theory is, though I did not get an exact impression of it (and I mingle my own view with his to form a theory) that the upright strong-growing branches, by their leaves, elaborate a plant food of a peculiar quality, which, supplied to the other parts of the tree, changes them in wood and foliage, in the course of years, to a likeness of the upright growth of the so-called Australian Navel orange tree; unscientific, probably.

I have not myself observed such changes of type gradually proceeding, nor noted an increasing number of Australians from year to year; had I formed the habit, as I should have, of rebudding all trees of inferior fruiting qualities, I should be in a position to know personally the truth of this matter.

Sucker Growth Condemned.—This is true, however, as all orchardists know, that sucker growth, in the early years of its fruiting, especially, bears fruit of a thicker skin and coarser texture, corresponding with the rankness of the growth of the wood, and that such growth, if it comes from the trunk, becomes the strongest part of the tree and overhangs and dominates the proper fruiting wood; and, if it comes from a branch, it weakens and ultimately destroys that branch.

For the sake of maintaining high quality of fruit there is no doubt that such growth should be kept down, and that only pendent branches should constitute the tree to be at its best as a profitable fruit tree. To this end it is important that young orange trees should be allowed to increase in size chiefly by the slower formation of small fruiting branches instead of sucker growth, or even upright growth on the branches.

If due attention is given to these particulars in all stages of orange tree formation, such a condition as Mr. Dewey finds could not result, unless, as is commonly thought, the original bud, a mutation, is at the bottom of the tree form and character called Australian.

The highest type of the navel orange tree found by Mr. Shamel of the Department of Agriculture in the orchards of the National Orange Company at Riverside is composed wholly of pendent branches so growing and fruiting that the openness of the down-hanging limbs permits a large proportion of the fruit to form inside. [Mr. Shamel's work with oranges in Riverside is described in the PACIFIC RURAL PRESS of April 8 and June 24, 1911.—EDITOR.]

Suppressing Upright Growth.—To make an opening by way of the top into the interior of orange trees in order that growth of fruit wood may take place where long stretches of limbs in old trees have been bare, or the abiding place of dead brush, or the home of suckers, also has the effect of keeping in abeyance the vigorous upright growth which Mr. Dewey finds detrimental to the character of the tree as a whole and to its fruit.

On his own home lot in Upland he showed me trees which, he said, had the Australian tendency; these he had treated three years before, not by rebudding. These trees are now of the normal rounded form entirely free from growth of sucker origin. The tops, however, are entirely closed, and they are, in consequence, fruiting but little within.

Mr. Dewey's work in Upland and Pomona is quite extensive in altering trees, and of much interest, and worthy of investigation. If it teaches no other lesson that the value of regulating the growth of the branches so as to secure better quality of fruit, it is worth while.

COMMENDED TO DR. COIT.

[In accordance with Prof. Paine's request, we

commend the subject to Dr. Coit of the University Laboratory at Whittier, who is making a specialty of pomological and cultural questions in citrus culture. He can probably answer our question, "What is the Australian Navel?" and is interested in all relations of pruning to fruit character and qualities.—EDITOR.]

AGRICULTURAL REVIEW.

With the Fruit Men.

Stephen Rutherford, of Goleta, Santa Barbara county, is the author of the claim that spraying with sea-water, a solution of common salt, or solutions of bicarbonate of soda will check walnut blight and prevent injury to the nuts.

The Lindsay Fruit Association is increasing the capacity of its packing house by one-third, making it one of the largest in the State.

W. M. Hughes, of Madera, has sold his crop of Malaga grapes to a Fresno firm for $108 per acre on the vines.

To widen the information of Placer county ranchers concerning injurious insects, the Horticultural Commissioner is collecting and displaying at his office all insects which are likely to attack crops in his district.

County Horticultural Commissioner A. L. Rutherford, of Stanislaus, has sent out a warning against the powdery mildew of the grape, which he states is doing considerable damage to the vineyards in the county and is not being sulphured against sufficiently.

J. H. Leggett, of Oroville, will plant a large acreage to olives on dredged ground near his place, claiming that the fruit has given great satisfaction under similar conditions wherever tried.

The Chico Record estimates that the prune crop of the county was damaged 25% by the recent hot spell and that the total for the season will be but 50% of that of 1910.

The date of the Sebastopol Gravenstein Apple Show, on account of the late season, has been changed from August 14 to 21.

The first car of apples sent out by the Sebastopol Apple Growers' Union was sent to Butte, Montana, last Thursday.

The Western Apple Vinegar Company of Petaluma is to establish a branch factory at Sebastopol.

Some of the heaviest fruit shipments for several years are reported from Gilroy, Santa Clara county.

The Japanese of the Penryn, Placer county, section are organizing a union and will erect or lease a packing-house.

A wild, non-edible peach has been discovered by a rancher near Fallon, Nev., who is planning to use it as a stock for trees on non-irrigated land.

The first carload of apricot pits for the year was sent to Germany recently from Suisun, Solano county.

Reports of citrus shipments from Los Angeles county now in the hands of Commissioner A. R. Meserve, indicate that practically 10,000 cars of oranges and 1605 cars of lemons were shipped out of the county during the last fiscal year, bringing returns of approximately $5,000,000.

F. E. Foster and H. O. Davis are preparing to set out 1000 acres to almonds at Esparto, Yolo county, also a large acreage of alfalfa. A number of other ranchers near Esparto are to plant out almonds, as a result of the recent large returns from this crop.

Deciduous Fruit Shipments.

The following gives number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, July 28, 1911, as reported by the California Fruit Distributors:

Peaches—157½ cars. Shipments are now increasing and will continue to do so for the next week or ten days. Early Crawfords are nearly finished. The crop proved unexpectedly light. Very few straight cars have gone forward. Elbertas are being shipped in a small way and will be in good supply from the first of the week. The bulk of the peaches from California will be moved within the next twenty days. Fruit is of fine quality and satisfactory in every respect.

Plums—161½ cars. Plum shipments continue about stationary, there being a difference of only about four cars between this week's shipment and last. They will continue in about the same supply for another week, when shipments will probably decline. Diamond, Wickson, German, Sugar, with a few Kelsey, Splendor and Giant, constitute the principal varieties now being offered. We have never shipped better plums than are now being forwarded.

Pears—237¾ cars. This week's output is probably as large, and perhaps larger, than it will be at any other time during the season. The quality of the fruit is steadily improving and is now as good as can be expected. The greater portion is coming from the Sacramento river, but shipment has begun from Red Bluff and Suisun. The former reports a good crop, but Suisun will ship only about one-third of her usual quantity. Thrips has appeared in some sections and is denuding pear, plum, and cherry trees of their leaves. It will have no effect on the crop, with the possible exception of pears.

Grapes—40¼ cars. Early varieties of grapes are appearing in increasing quantities. The shipment from the northern part of the State is still very light, and consists almost entirely of Fontainbleau. Thompson's Seedless from an early section of Tulare county have sold in a small way during the week. Considerable shipments will go forward from Fresno and Tulare county during the next seven days. After that time supplies will be ample to meet all requirements. Thompson's Seedless and Malagas continue to go forward from the Imperial district, but owing to adverse weather conditions, future shipments from this district are problematical. Mildew has appeared in practically every section where grapes are grown. Prompt measures were taken to prevent its spread, and it is not expected that shipments will be affected to any considerable extent, probably not more than 10% at the outside.

Total shipments to July 31, 2551 cars; total shipments to same date in 1910, 4702 cars.

The Almond Outlook.

The California Almond Growers' Association report they have already sold a good third of their estimated shipments for this season at the prices originally fixed by them. Though these prices are from 3 to 5 cents higher than last year the trade generally seems satisfied that market conditions warrant them.

The latest information to the Association from Naples is to the effect that Bari almonds have advanced 12 shillings per 100 kilos and that the crop is only a third of an average one. Sicily reports a very short crop and high prices. In Spain the price on Tarragonas advanced from 45 shillings to 49 shillings over night upon receipt of the California Association's schedule of prices.

The Association this year will control about 60 per cent of the crop of the State. Previous to this season almonds have been sold by gross weight, and considerable dissatisfaction among buyers was caused by growers using the heaviest sacks they could obtain. This year the Association has adopted a standard sack weighing 17 ounces and almonds will be sold by net weight.

We quote the following on the almond situation from an exchange at Antioch:

"There was general rejoicing last year when it was learned that almonds brought such good prices, and many predicted it would be years before the growers could possibly secure equal returns. Nevertheless they will not only receive prices equal to those of 1910, but even greater than that remarkable record. Several reasons are assigned for this result, one being a general crop shortage throughout the State, and second, a greater demand for goods coming from the Eastern jobbers and the strength exerted by means of co-operation of the many associations, which must now be considered an important factor in the industry. Although some growers will not acknowledge the fact, it is true, nevertheless, that the associations have been the principal factors in enabling all those engaged in the industry to receive higher prices.

"The 1911 prices, which were set by members of the Almond Growers' Exchange which met in Sacramento July 15, were made known last week. They are as follows:

Nonpareils	18½c
I X L's	17½c
Ne Plus Ultras	16½c
Drakes	14½c
Languedocs	14½c

"There are now fourteen associations and all are reported to be in a flourishing condition.

"In order to provide a building for handling their crop, members of the

Double Orchard Profits

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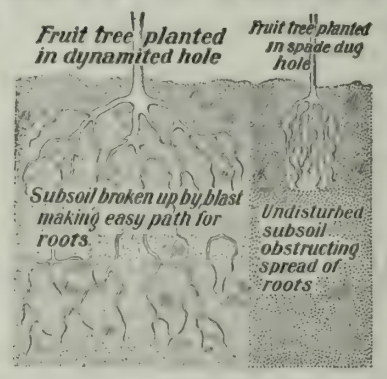
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6-year-old apple tree, planted with spade, in the same plot

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Store-keepers wanted in every town and village to take and forward orders for dynamite and blasting supplies. Not necessary to carry stock. Large sale possibilities. Write at once for our Dealer's Proposition.

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THE BIG STATE FAIR

Sacramento, August 26th to September 2nd, 1911

The program and arrangements now completed settle it that the State Fair this year will be the biggest and best ever held in California. Besides the largest industrial and live stock exhibits, the biggest purses and best races, the program includes:

MILITARY BANDS
CHORUS SINGING
NIGHTLY HORSE SHOW
THRILLING FIREWORKS
FAMOUS AVIATORS
AND DARING DAILY FEATS BY DARE-DEVIL COWBOYS FROM ALL OVER AMERICA

SPECIAL RATES ON ALL RAILROADS

Almond Growers' Association of Eastern Contra Costa County incorporated the Eastern Contra Costa County Almond Growers' Warehouse Company, capitalized at $5000. The concrete building located southeast of the depot at Oakley is rapidly nearing completion and will be ready for this season's crop."

Prices and Prospects.

Prices given by dried fruit houses in San Francisco for Wednesday, August 2, were as follows: Prunes, from 4¾ to a 5-cent basis, with some purchases in selected orchards at higher prices; peaches, 10 cents; raisins, 4½ to 4¾ cents in sweat boxes; Thompson's Seedless, 5½ cents; Sultanas, 5½ cents; apricots, 14 to 15 cents.

Many of the Kings county growers are holding peaches for 10½ cents per pound. A very large part of the crop in the San Joaquin has been bought up at 9½ cents, the North Ontario Packing Co. being the largest buyer.

Early contracts for fresh grapes near Lodi were made at $25 per ton for August deliveries and $18 per ton after that date, but prices are said to be somewhat higher since that time. The L. J. Lucas crop near Woodbridge was sold on the vines for $100 per acre.

The estimate of the hop production made by a Sacramento grower is as follows: California, 70,000 bales; Oregon, 85,000 bales; Washington, 30,000, and New York 30,000 to 35,000 bales. Offers of 25 cents per pound are said to have been refused and some sales made at that figure. Milton Wasserman, of Sonoma county, makes approximately the same estimate, although the figures are somewhat higher.

Fresno reports state that last week offers of 4½ cents were made for Sultanas and 5¼ to 5½ cents for Thompson's Seedless. An offer of 4⅝ cents for the Helm crop of raisins is said to have been made.

Owing to a short crop and the amount of fruit sold to canners or for fresh shipment only, a few hundred tons of apricots were dried in Winters and the Solano county fruit districts, although early in the season the estimates of dried fruit houses placed the probable output at as much as 1500 tons.

Tuscan clings in the lower San Joaquin are said to have been sold at $52.50 per ton.

H. A. Beekhuis, manager of the North Ontario Packing Co., in an exchange is reported to have stated that less than 2000 tons of dried peaches were left in the hands of growers. His estimate of the raisin crop is 45,000 tons, with a holdover from last year of 15,000 tons. Against this output there was produced in 1907 75,000 tons, in 1908 65,000 tons, in 1909 10,000 tons and in 1910 62,500 tons.

According to reports from Stanislaus county, offers of from $10 to $12 per ton have been made for black wine grapes.

Prunes at Five Cents.

A sudden rise in prices for prunes beginning last Saturday and continuing during this week has left prunes at a five cent basis, with a few sales at a still higher figure. The rise was due to heavy ordering from France and other European points, following the news that the crops in France, Bosnia and Servia were much poorer than had been expected.

Most of the sales for Europe have been of the larger sizes, although a number of the smaller grades have also been sold. On Monday and Tuesday of this week individual sales to European buyers of 40's to 90's were made at 5⅞ cents f. o. b. and 30's to 40's at 6¼ cents. Some of the high prices paid by packers were undoubtedly due to the necessity of covering sales, and there is a possibility that the high prices may not be maintained.

These reports and the European ordering caught a number of packers unprepared, and some buying at advanced prices was done to cover up sales for which no prunes had been obtained. As a consequence, most of the packers have raised their quotations. This week a number of growers have been asking 5½ and 5¾ cents, with a tendency on the part of packers to meet these figures.

General Agriculture.

A small amount of damage is being done in beet and corn fields around Pleasanton, Alameda county, by the aphis.

From 80 pounds of Oregon seed potatoes M. A. Ludwig of Ceres, Stanislaus county, has harvested a crop of 3000 pounds.

The cut worm has been doing some damage in the alfalfa fields of Standish, Lassen county.

Reports from Butte county indicate that the grain crops are considerably larger than in 1910, in spite of unfavorable prospects in the spring.

Estimates of the grain crop for Merced county place the production at only 85 per cent of that of a year ago.

Analysis of sugas beets raised in the Imperial valley made at the State university place the sugar content at from 17½ to 27 per cent. Beets from the Kloke ranch near Calexico have averaged 22 per cent at the factory in Glendale, Ariz.

An argument over raising bamboo and walnuts in Imperial county has been conducted in several southern California papers recently, owing to the suggestion that these crops be tried there. It is claimed that neither plant can stand the dry, hot atmosphere.

About 200 acres of alfalfa is being allowed to run to seed in San Pasquale valley, San Diego county, this season.

Harvesting of the rice crop on the Moulton lands in Coluso county will begin in a few days, and in case the size of the crop justifies it, a larger acreage will be put out next year.

Experimental crops of improved varieties of barley have been harvested on the Horst ranch in Yuba county and prove very satisfactory. The barley will be exhibited in Chicago and New York this fall by James Thompson of the U. S. Department of Agriculture, who has charge of the experiments.

A bulletin dealing with California white wheats has been issued by the College of Agriculture of the University of California. The bulletin treats mainly with the wheats from a milling rather than an agricultural standpoint, and includes the results of research work done by A. J. Gaumnitz. Among the topics discussed in the bulletin are: Kinds of wheat, chemical composition, methods of analysis, discussion of analysis of whole wheat, milling tests and baking tests. Prof. G. W. Shaw and A. J. Gaumnitz are the authors.

Miscellaneous.

Arrangements have been made for the erection of a building for the Farmers' Union at Valley View, Santa Clara county.

E. O. Child, assistant manager of the St. Francis Hotel, has arranged to enter the chicken raising business near Hayward, Alameda county.

Water rates of $1.25 per acre per annum in Fresno county, $1.75 in Merced and $2 in Stanislaus were recently fixed for the San Joaquin and Kings River Canal and Irrigation Company by the boards of supervisors of these counties and an appeal taken from the same by the company. As a result of the legal difficulties resulting from the litigation the formation of an independent irrigation district has been agitated.

Artesian water in good quantity has been struck on the Shaw ranch at Germantown, Glenn county.

Active work is being carried on against the Russian thistle in Monterey county under the direction of Horticultural Commissioner J. B. Hickman.

At a mass meeting of water users of Woodbridge, San Joaquin county, the offer of the Stockton & Mokelumne Canal Company to sell the water rights on the Mokelumne river dam and the system under it for $250,000 was refused.

A municipal forest to include four acres of eucalyptus trees is to be established at El Centro, Imperial county. Enough land will be planted later to make 40 acres of timber.

Army worms are reported to be plentiful in the vicinity of Mt. Shasta.

A shipment of ten tons of orange honey to Europe is being prepared at Porterville, Tulare county.

The manufacture of cotton seed oil from Imperial county seed has been commenced by the Imperial Valley Oil & Cotton Company. The company will have all of last year's seed as well as that of this year to work upon.

The erection of a cold storage plant at Petaluma as a method of governing prices is being agitated by poultry raisers and local business houses.

The Santa Barbara Poultry Association has started work upon the show to be held next January.

San Francisco capitalists are reported to have acquired water rights in Butte and Yuba counties and options on land in preparation to organizing a large irrigating company.

The Vanden farm of 1040 acres five miles north of Suisun, Solano county, has been purchased by capitalists for subdivision purposes.

The Farmers' Union of Fresno is collecting money to fight the "raisin seeder trust," claiming that sufficient evidence has been secured to carry the matter into the courts successfully.

A reclamation project of 20,000 has been arranged for in Sutter county, north of Grimes, tne land having been purchased by city capitalists.

The Happy Valley Land & Water Company has purchased the interests of the Piety Hill Mining Company and will develop the water rights and other property to form the foundation for an irrigating system to cover a large acreage.

A machine for labeling each orange in any pack is being used at the Chapman ranch at Fullerton, Orange county. The machine is a new invention and is being used for the first time.

The Santa Ana Co-operative Sugar Company has let a contract to the Dyer Company of Cincinnati for the construction of a 600-ton sugar factory three miles south of Santa Ana.

The French-American Wine Company has awarded the contract for the new winery at Ukiah.

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The cheapest and best system of irrigation.

An irrigation system absolutely independent of your neighbors.

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Co-Operative Efforts Among Farmers.

To the Editor: Agriculturists in this State are slowly adopting methods of co-operation which are proving for their material profit and betterment in every way. In quite a large number of rural communities well-organized societies are firmly established and our farmers are much more united and successful than in former years. Of all classes of our citizens, farmers are the slowest in adopting co-operative measures and plans for their welfare.

The Grange movement has done much in drawing our agriculturists together, and where these organizations have formed, or been instrumental in forming Rochdale stores, very gratifying success has attended their efforts, providing wisdom has been exercised by the management. Farmers are already saving to themselves thousands of dollars, and others of their brothers who are now supporting many middlemen might benefit themselves if they were so disposed.

Farmers' Insurance.—In sixteen counties in this State farmers have formed co-operative, or mutual, fire insurance societies and are profiting themselves to the extent of very large sums of money annually, by retaining the premiums formerly paid the regular insurance companies, at the same time insuring their property at proper valuation and well securing themselves in case of fire. Many localities are slow to take hold of this beneficial movement—willing to support thriving, wealthy, regular insurance companies. All our farmers must admit that fires on country estates are few and far between. From farming communities flows a constant stream of gold to the cities, where a great share of it is paid out for urban fires. This movement is no longer an experiment, and many a farmer who has not advantaged himself by helping himself, and his neighbor at the same time, has only himself to blame for his negligence.

University Efforts.—There is every good prospect for the holding of Farmers' Institutes throughout the State this fall and winter, under the auspices of the State University, a liberal appropriation for the purpose having been made by the last legislature. By the wise management of Prof. W. T. Clarke, who has these institutes in charge, they are annually gaining in popularity, the resulting good following their holding being fully demonstrated among the communities in which the meetings are held. Applications for the opening of these institutes are sent in to headquarters months before their holding, so greatly impressed have numbers of our farmers become with the monetary advantages that flow from valuable knowledge gained. At the same time, there are too many agriculturists who scorn book learning and all that pertains to scientific farming.

The demonstration train that has, of late, been traversing the State under the supervision of the State University, and greatly assisted by the Southern Pacific Railroad Company, is accomplishing untold good, sowing valuable seed, the benefits of which our farmers, orchardists, and poultrymen will abundantly reap in years to come. The rare good features of these displays are viewed by a very large number of the residents of our farming communities. Here in Santa Cruz, where last year the inspecting throng numbered some 300, the number tallied this season was more than double that number, and then there was complaint that too short a time was allotted for demonstration and inspection.

Poultry Growing.—One branch of agriculture that has not attained the prominence it should have long ago reached, is poultry culture. With countless localities within our borders magnificently adapted to this immense business, with many rare advantages of which we have almost a monopoly, we are so far behind the times that this State annually enriches several other sister commonwealths in the sum of millions of dollars—money that we might save to ourselves were we so disposed.

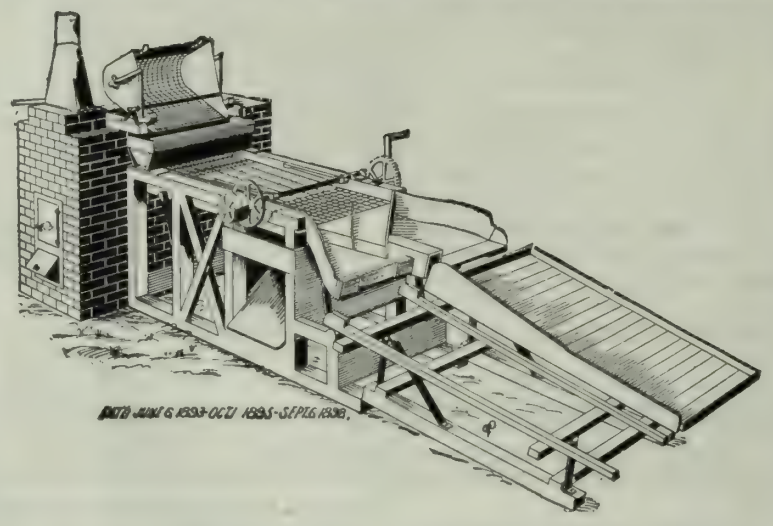
If we were wise enough we would greatly profit by the poultrymen and their helpers in Missouri, Kansas, and neighboring States, from which we are constantly importing large quantities of poultry produce. Is it not strange, that, with all our boasted advantages, we should fall so far behind in the procession? Missouri has a State Poultry Board, strenuously engaged in disseminating knowledge of up-to-date methods of poultry craft throughout that State. They are wisely doing what we of California ought to do, and that is giving instruction in theoretical and practical methods of raising poultry to grammar school pupils.

Sometimes statistics are found to be pleasant reading; again they are not. California imports about $3,000,000 worth of poultry products annually. Kansas, standing fifth among the States of the Union as to the production of poultry and eggs, but which State leads all others when the per capita value is considered, had a surplus last year of $46,000,000. Missouri claims poultry products for 1909 of the value of $45,902,655, and, so rapid has been the increase of the business during the last several years there, they expect it will amount to $100,000,000 in five years. If any of our poultrymen are desirous of knowing how some of the Eastern States manage upon which we in great measure depend for market poultry and eggs, let such write F. D. Coburn, the wide-awake secretary of the State Agricultural Society, at Topeka, Kansas. They will be immensely surprised at the high standing that State has achieved in all branches of agriculture.

Over the Southern Pacific railroad alone, from October, 1910, to March 31, 1911, there were received at San Francisco, from Eastern points, 361 tons of eggs, 820 tons of dressed poultry, and 349 tons of live poultry—imports for only six months. Large quantities of eggs and poultry were sent from States to the east to Los Angeles. That city, according to figures given the writer by the Chamber of Commerce, imports about 125,000 cases of eggs and about 25 cars of poultry during the year.

Wide-awake States to the east are alive to the importance of fostering and encouraging the poultry industry. New York has this year appropriated $90,000 for her poultry school. Connecticut about $50,000. Missouri, $31,200 for the poultry interests of that State, $15,000 to establish a new experimental station. Kansas is to spend a large sum for the advancement of knowledge of poultry raising, $2,000 for each of the next two years, not including printing. The manager of the division of poultry of the Experimental Station of that State, writes: "I doubt very much whether more than $1,000,000 worth of poultry and eggs is shipped every year from this State to California." Any Californian possessed of any State pride will say that that sum is quite sufficient to pay any one State; saying nothing of others near by, from which we receive weekly, if not

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The season is late this year, with more than even chances of poor drying weather, and a good prune dipping outfit may save several times its price. Needle boards, grading screens, and all extras carried in stock.

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Parties contemplating the planting of citrus groves this coming spring will do well to send for our prices soon, as there will evidently a a shortage of strictly first class stock. Write today for particulars, or, better still, pay us a visit so that we may be able to show you just what we have.

Our finely illustrated booklet, "Citrus Fruits," covering the industry from the seed to the market, mailed to any address on receipt of 25c in stamps.

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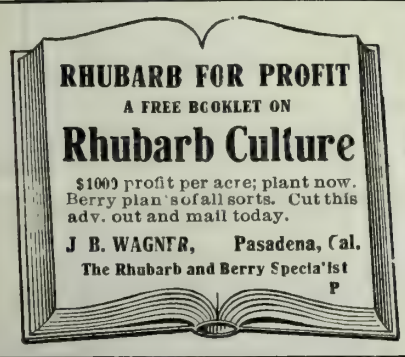
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Trial packets 15c each, 4 for 50c. Write for prices in quantity.

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FRUIT LADDER
Best Made
Durable, Practical and Cheapest on the Market. Send for Price List.
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All that its name implies. An up-to-date farmers organization extending over twenty-six States. California Divison now well established. Send for particulars State Secretary, Farmers Union, Box 48, Imperial, Cal.

daily, consignments of poultry products.

Unless legislators in the States mentioned were fully satisfied that they were acting wisely, they would not appropriate such large sums of money for the purpose named. Scores of other States are doing the same thing. California, the most favored State of all, has made the appropration of not a single dollar for the poultry experiment station at Petaluma. One must see the standing we have abroad. At the same time $182,344 was appropriated for the State Farm expenses at Davis and $60,000 for the study of plant diseases, viticultural investigations, Imperial county investigations, etc.

A. W. ROBINSON.

Santa Cruz.

[The poultry station at Petaluma was practically closed, so far as State aid was concerned, in 1909. It was continued for a time afterward by local contributors. It never had money enough to outfit it for satisfactory experimental work, nor to provide it with a staff of resident experimenters, and naturally the Petaluma people found it of little use. Poultry work is going on now in a very promising way on the University Farm at Davis.—EDITOR.]

NEW YORK ESTABLISHES APPLE GRADES BY LAW.

The following are some of the requirements just passed by the New York legislature and now in effect:

"No person or persons shall sell, offer or expose for sale apples, pears, or peaches as and for New York State grown apples, pears or peaches if they were not grown or produced within the State of New York; nor shall they brand or label the package or barrel containing such apples, pears or peaches as New York State apples, pears or peaches, if they were not grown or produced within the State of New York.

"The standard grade for apples which shall be shipped or delivered for shipment or which shall be sold or offered for sale shall be apples of one variety, which are well grown specimens, hand picked, of good color for the variety, of normal shape, practically free from insect and fungus injury, bruises and other defects except such as are necessarily caused in the operation of packing, or apples of one variety which are not more than 10 per cent below the foregoing specifications, are standard grade size A, if minimum size of apples is 2½ inches in transverse diameter; or are standard grade, size B, if the minimum size of the apples is 2¼ inches in transverse diameter; or are standard grade, size C, if the minmum size of the apples is 2 inches in transverse diameter.

"No person, firm or association shall misbrand apples as to their standard grade or otherwise. Apples in packages shall be deemed misbranded within the meaning of this act if the package bears any statement, design or device indicating that the apples contained therein are standard grade 'size A', 'size B', or 'size C,' as the case may be, and the apples do not conform to the requirements prescribed by this act for apples of the particular grade.

"If the package bears any statement, design, or device indicating that the apples contained therein are standard grade 'size A', 'size B,' or 'size C', as the case may be, and the package fails to bear also a statement of the name of the variety, the name of the locality where grown, and the name of the packer or the person by whose authority the apples were packed."

This law, so far as grades are concerned, is in accordance with the Lafean bill. It does not mean that all apples must be packed, marked and sold in this way. That is of course optional. But when it is sought to obtain the benefits of this act, and apples are sold as New York standard "A", "B" or "C", then the pack and marks must be according to the specifications of the law.

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GROUND SQUIRRELS, GOPHERS, also BORERS, ROOT APHIS, etc., on Fruit Trees

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IN
FUMIGATION CYANIDE

IS THE IMPORTANT CONSIDERATION

The best authorities unanimously agree that for the effectual generation of Hydrocyanic acid gas a Cyanide should not contain in excess of 1 per cent of Chloride of Sodium (common salt). A higher percentage of this ingredient materially reduces the available amount of gas by the process of decomposition.

It is well worth your while to verify this statement, and when in doubt as to the Sodium Chloride content of a Cyanide, have a reputable chemist furnish you an analysis. It may prove a good investment.

The Roessler & Hasslacher Chemical Co.'s Special Fumigating Cyanide of Potassium 98-99 per cent and Cyanide of Sodium 128-130 per cent is manufactured expressly for fumigating. Contains no excess of chloride of sodium. It generates quickly. Reliable, Efficient, Economical.

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CALIFORNIANS AT THE DRY-FARMING CONGRESS.

To the Editor: The writer, as a member of the executive committee, desires to call special attention to the meeting of the International Dry-Farming Congress, to be held at Colorado Springs, Colorado, October 16 to 20, inclusive. Inasmuch as a large proportion of the arable land of California must always be farmed under conditions of limited rainfall, it is extremely important that there should be a good representation from this State at the next congress. The movement is an international one, and representatives from all foreign countries having similar conditions will be well represented by official government delegates.

Every country in the world has a certain percentage of agricultural acreage for which there is either limited rainfall or limited moisture in other forms. To solve these problems is the work of this great co-operative congress, and you are urged to consider this convention of the utmost commercial and social importance to your country, commonwealth, and associates. The program will be devoted to discussing plans for rapid enlargement of the necessary agricultural educational propaganda; co-operative work between Nation, State, and farmer in developing a higher type of methods and production; exchanging reports between nations, States, and farmers, as to methods of overcoming problems in the conservation of moisture, soil fertility, and of breeding more drouth-resisting plants and fruits; studying the rebuilding of soils and overcoming of diseases of plant life, trees, and soils; enlargement of experimental methods; national and State legislation affecting the farmer from the standpoint of development and methods; immigration; the interests of the homesteader, etc.

The program will be so arranged that delegates may have ample opportunity to visit the exposition and other attractions. At least one evening will be devoted to amusement and two evenings to joint sessions of the Dry-Farming Congress and the Congress of Farm Women. The International Section will be addressed by scientists from many nations.

The live issues of the day in the agricultural world will be discussed by leading thinkers and experimentalists, and no feature of practical farming will be omitted in the arrangement of the sessions.

Technical matters will be treated in reports made to the congress by special committees appointed by the president of the congress to carry on investigations and to formulate future plans and advice for the benefit of members of this congress. Institute sessions will be arranged for in charge of various States each day.

An educational magazine is issued once each month by the Dry-Farming Congress. Hundreds of valuable articles by the world experts, by practical farmers and special writers are published throughout the year, and reports are given from hundreds of farmers through the statistical department. This magazine is sent to any address for one dollar per year.

This is one of the world's great movements, having in view the betterment of agricultural conditions, and California should be well represented.

G. W. Shaw,
Member of Executive Committee.
University of California, Berkeley.

THE OUTLOOK FOR TABLE GRAPES.

(Continued From Page 101.)

injured grapes the number is greater and the forms more active. If many broken grapes occur they should not be mixed with the sound grapes if the best wine is to be made.

"The best method for the separation of inferior grapes is the double picking. This may be done by furnishing each picker with two boxes, one for the sound grapes and the other for the rest. A better method, however, is to gather only the good grapes at first. The inferior grapes can then be made into a fair wine and at worst are useful as distilling material. If the grapes left are too few to repay a second picking, it is better to leave them and lose them completely than to mix them with the good grapes and make all the wine inferior.

"Grapes as they hang in the vineyard are usually clean, except in the vicinity of dusty roads or on vines pruned so low that the fruit rests on the soil. The most harmful forms of dirt are those to which grapes may be exposed after gathering. Grapes gathered in moldy, vinegar sour boxes, hauled in dirty wagons or cars and passed through dirty crushers, conveyors and presses may be so completely infected with injurious germs that it is impossible to obtain a good fermentation. The most injurious form of dirt is grapes, must or wine which have been allowed to become moldy or vinegar-sour."

The subject matter of the bulletin is divided up under the following headings: "The Nature of Wine," "The Biological Theory of Wine-Making," "Micro-Organisms Found on Grapes," "Micro-Organisms Found in Wine," and "Control of the Micro-Organisms."

A new dairy paper, The Valley Dairyman, is to be started by V. L. Reynolds of Corcoran, Kings county.

The National Creamery Butter Makers' Association has chosen Chicago for their annual convention, to be held next October during the time that the International Dairy Show is going on.

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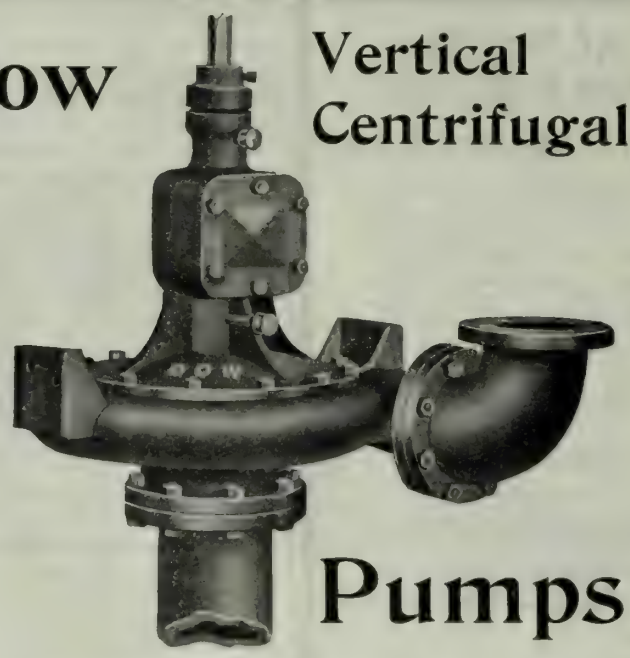
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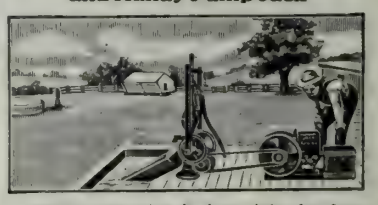


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Dodder in Alfalfa.

To the Editor: I am in trouble with that vicious weed "Dodder", and would like to ask a few questions. Is it an annual or a perennial; or, in other words, does it come every year from the seed? I have been a reader of the PRESS for nearly two years, and I do not remember seeing anything about dodder.

Last December I took a sample of seed and had it examined on purpose to avoid any trouble about weeds. The seed was fine and they said it was all right, but of course I do not blame them, for in a sample of a half pint there might not have been a single dodder seed. But all the same I have cut out eighty-five spots of dodder, and it has spread, since the seed was sown in April, over three feet. If it comes every year from the root, it is a hard thing to deal with, but if the root dies, and it comes every year from seed it can be got rid of quite easily.

Lodi, Cal. L. A. WOODBURY.

To the Editor: Will you please inform me as to the best way to get rid of "Dodder," known as "love vine"? I have a few small patches in my alfalfa field this spring. It came in last winter. Does it come from seed? It does not seem to have any root at all, as far as I can see. The pest came in this part of the valley very thick through the overflow from the creeks that come from the Santa Cruz mountains. Some fields are covered on the San Francisco road near Santa Clara and the side of the road is yellow now with it. SUBSCRIBER.

Sunnyvale.

We have fully expounded this matter in earlier issues, but doubtless many newer subscribers will be interested in a re-statement.

The vegetable parasite known as dodder is a species of Cuscuta. It grows from seed which is usually carried with the alfalfa seed. This seed sprouting in the ground produces a plant which soon attaches itself to the stem of the alfalfa, and when it has done that the stem leading to the ground perishes and the dodder lives after that as the true parasite, entering the tissue of the alfalfa and appropriating its juices to its own uses. When the dodder is first noticed the spot should be covered with straw and burned, so that the dodder would not have a chance to make new seed, and, as it is an annual plant, its continuation depends upon bearing seed. Some advocate spraying with kerosene and setting fire to the doddered spot. Sometimes the fire is not hot enough to kill the alfalfa roots, but the patch should be raked and new seed scattered. It is also claimed that harrowing both ways with a sharp-tooth harrow after cutting the alfalfa has a tendency to kill out dodder by destroying young plants which may be starting. Where the alfalfa is used for pasturage the cropping of the animals prevents seeding and in this way the plant is often stamped out. If, however, it has secured such a start, by being left alone for some time, that it cannot be checked by burning the seeds or by pasturing the field, there is nothing left to do but to plow up, turning under the old surface as deeply as possible and resowing with seed which is free from the dodder seed.

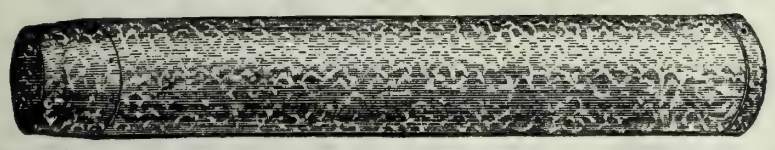
With reference to the removal of dodder seed from alfalfa, it must be said that there are two kinds of dodder. One has seed much smaller than the alfalfa seed and this can be separated readily by using a fine screen which will allow the dodder seed to fall through while it retains the alfalfa seed. Unfortunately, this method cannot be applied to another kind of dodder, which has a seed about equal in size to the dodder and we do not know of any way of cleaning alfalfa seed from this. If it appears, it should be fought from the start in one of the ways mentioned.

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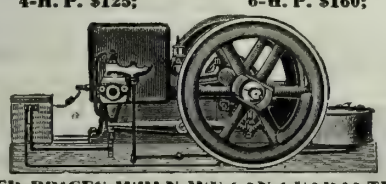
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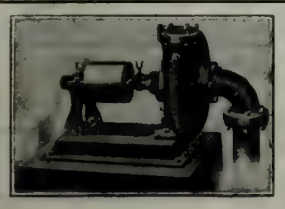
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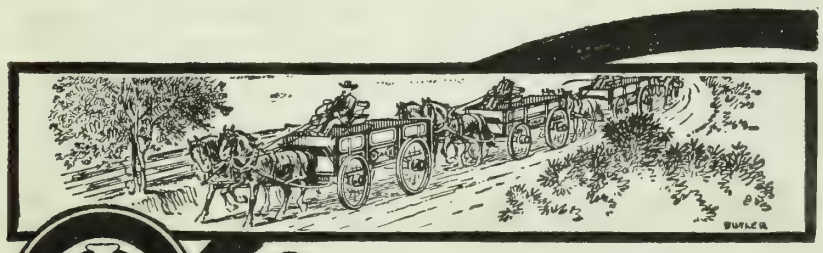
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The Outlook for Dairying.

Written for the Pacific Rural Press
By Mr. D. J. Whitney.

Prices for good dairy cows from 50 to 70 per cent higher than they were a few years ago and prices for dairy produce 12 or 15 per cent lower furnish the peculiar situation that confronts the dairyman and prospective dairyman at the present time. Viewed from all standpoints the dairy situation in this State is one of the most interesting that has existed for many years.

In spite of the discrepancy in prices new dairies are being started in all parts of the State, milkers command $10 a month more pay than five or ten years ago, creameries are being opened, cows imported from the East, dairymen who once knocked their calves on the head are now keeping them to increase their herds, and the alfalfa area is being extended as fast as water can be obtained for it.

A part of this development is unquestionably due to the favorable conditions in this State for dairying, where much sunshine, a mild climate and rich soil combine to make the production of milk greater and more easily secured than in the East. Possibly, also, a large part of the interest that is taken in dairying at the present time is due to the demand for cows, for everyone wants them, and what everybody wants must be good.

Importation Ceasing.—A few years ago it was commonly stated that California imported 60 per cent of the dairy and poultry produce consumed here, and this statement is made in some places even now. What percentage of the produce is imported now it is not possible to state accurately, but as far as high-grade butter is concerned it may be said that not only is there practically no importation, but the supply is fully equal to the demand and continually increasing. The only butter that is being imported is cooking butter, which is of such low grade that it cuts no figure at all in comparison with the class of butter produced in this State.

Practically all the butter produced in California is high quality, made in creameries with proper handling and sold for table use, while that imported is made on small ranches in the East and given in trade at the country grocery and can be used only for cooking. Whatever the percentage of Eastern dairy produce shipped here may be, it is composed almost entirely of this grade of butter, a similar grade of eggs and a heavier class of poultry than is produced in this State.

Alfalfa Makes the Change.—The change that has come over the dairy business in recent years has been due largely to the planting of alfalfa. While the great dairy counties were once along the coast, they are now in large part in the irrigated alfalfa growing districts. Not long ago Humboldt was the banner dairy county of the State, producing in the year ending September 30, 1905, 4,289,739 pounds of butter, besides large amounts of cheese and condensed milk. This production has continued and increased, but a still greater increase has taken place in the San Joaquin valley, where Stanislaus county, which in 1905 produced only 2,006,171 pounds of butter, last year produced 4,363,296 pounds, besides sending large amounts of milk and cream to the bay cities, either to be manufactured there or used in direct consumption. These figures are from the State Dairy Bereau reports and are of necessity partly estimates, though approximately correct.

The five counties of Fresno, Kings, Tulare, Merced and Stanislaus in 1905 produced only 9,137,000 pounds of butter, and five years later 16,450,000 pounds. It is possible that the figures of 1905 in all cases are too large, comparatively speaking, as the production for the whole State is only given as 44,961,047, and that of 1910 as 45,989,140 pounds. In 1898 the production for the whole State was only 23,691,439 pounds, showing a considerable increase to this date.

Prices Vary Less.—The increase in production has been accompanied by two changes, a more even production throughout the year on account of depending on irrigation and not rainfall for green feed, and a greater use of cold storage, which has had the same effect. Thus while prices used to vary in one year from 13 or 14 cents to as high a price above normal, the prices now are quite even. For instance, in 1910 the difference between the highest and lowest price for a week at a time was only 12 cents, the highest weekly price being 37.08 cents and the lowest 25.08.

Referring again to the increased production, another way of stating it is through the amount that is put on the market. From 1907 to 1910 the amounts that were sent to the San Francisco markets were 17,358,960, 13,832,820, 14,486,100 and 13,807,100 pounds, besides an undeterminable amount shipped direct from creamery to retailer or consumer, or made by some of the smaller creameries in the city itself. A part of this butter, it may be stated, is composed of imports.

Present Production Large.—In the first six months of this year a decided change in the amount put on the market is noticeable. By July 1, 11,318,800 pounds came into San Francisco, practically all of which, as previously stated, was of domestic manufacture, while in 1910 only 8,303,200 pounds were sent in during the same period, and since that time receipts have been almost double those during the same time in 1910. A part of this amount has had to go into cold storage for use later on, and although the amount thus disposed of has not been given out, it may be said that it is considerably in excess of that put away in 1910. A part of that butter had to be sold at a loss last season, owing to the amount of Eastern cooking butter imported which had to be sold. This year less of that has been purchased, and the dealers do not expect to lose money on this account.

Accompanying this greater production there have been lower prices. Since February prices have run consistently below those of a year before by from 3 to 5 cents per pound. Last year the lowest price for a week's average was 25.08 cents. This year that figure was reached late in March, and not until the latter part of July did it come even as high as 24 cents. One week it averaged only 20.75 cents; for four weeks it was between 21 and 22 cents; and nine weeks between 22 and 23 cents. The price of butter-fat has, of course, been several cents above these figures.

Prospective Markets.—These low prices are due to the fact that California is producing butter up to her capacity for consumption, and that exportation cannot be employed to dispose of the surplus so as to bring greater returns. Butter has long been sent to Alaska, the Northwest, Hawaii, and the Philippines, which, however, have taken about all that they may be expected to consume without a greater increase of population. The Northwest will take a considerable amount, but only at prices that make it unprofitable to import from the East.

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now $2 per hundred on butter between here and Chicago, which makes the freight about 2½c. per pound net. If it is found that the difference in the cost of production between here and the Middle West is greater than this amount, and in our favor, there will be room for as great a production as can be developed here. The Mississippi Valley, however, is producing about all the butter that is needed, and a market for ours will mean that we will have to undersell them in spite of freight rates. Considerable amounts of butter, however, have been sent East at times, especially when we had an early spring and they a late winter.

THE PANAMA CANAL.—One factor which may help prices is the Panama Canal. It is expected that instead of a $2 rate to Chicago, a $1 rate to the Atlantic seaboard may be obtained, in which case, provided an excessive local production keeps up, there will be a market for all the butter and dairy produce we can send away, but at prices not above those in the East. In other words, the day of high prices, according to indications as seen by the writer, appear to be over, except in case of a national shortage. The same view is expressed by many San Francisco dealers, whose opinions, however, on many things, vary as their numbers. All state that high prices, like those of 1910, which started the dairying boom, cannot be expected in the future.

ENCOURAGING FACTORS.—A market that will probably open soon is British Columbia, owing to the reciprocity treaty. In spite of a tariff, some butter has been sent up there this year, and with butter on the free list, but little will be sent up from Australia or New Zealand or over the Canadian Rockies, where the most of that consumed comes from now. The amount imported in western Canada is said by local dealers to be in the neighborhood of 7,000,000 pounds per annum, which, if furnished by California producers, would keep prices at a level, for a time at least, which would be of considerable help to the dairyman.

The recent hot spell in the East has hurt production there and will encourage shipment to some extent, as well as enable us to send some butter to markets previously supplied from there. Several times before California has appeared to produce a surplus of butter; and, through an increase of population or other cause, prices have kept up fairly well and may be expected to do so again, and the great immigration into the State now gives all indications of a steadily and rapidly increasing local market.

The production of cheese could be increased largely, and the opening of several condensed-milk plants recently, indicates that much milk might be consumed in that way.

PRESENT PRICES PROFITABLE.—In spite of the large production in recent months and prices that compare unfavorably with those of 1910, the returns from dairying are fully as good as those of many previous years, and even if exportation to Eastern markets has to be relied upon to take any surplus, there may be sufficient profit to justify a continual growth.

In the decade ending September 30, 1906, the average price of butter was only 24.17 cents per pound, prices for the second half of this period being somewhat higher than before. The high and low prices were 20.8 cents for 1896-97 and 27.8 cents for 1902-03. These figures were obtained by taking the prices in the different months and averaging them up, which would make the price too high by as much as 2 or 3 cents or even more; but as compared from year to year they are approximately correct.

In the four years following September 30, 1906, the prices have been 30.1, 27.8, 30.0, and 31.3 cents per pound, being calculated in the same way as those given above. The figures are furnished by tne State Dairy Bureau. It may be stated that a considerable increase in the production of butter took place in the years following 1903, before the era of exceptionally high prices, although the present rapid development appears to be due to the good markets of 1909 and 1910, when the relations of demand and supply were different than at present. It may also be noted that the average yearly prices for several of the years between 1896 and 1901 were but little, if any, higher than those that have been received this summer, when more butter was being produced than the market needed.

CALIFORNIA COW-TESTING ASSOCIATIONS.

Leroy Anderson, of the University College of Agriculture, Berkeley, has been appointed to look after the cow-testing association work in this State by Helmer Rabild, who is in charge of Dairy Farming Investigations of the U. S. Department of Agriculture. Mr. Rabild writes that he desires Professor Anderson to assume entire charge of the work in California. There are a few cow-testing associations in the State, and it is hoped that others may soon be organized in dairy sections where there are enough cows to warrant paying the services of a man to do the testing. The associations are growing in number and importance in the dairy sections of the Eastern States. Dairymen who are members of such associations are almost unanimous in their approval of the system and in the uniformly valuable results which they obtain in the way of information about their cows. If any dairymen or farmers' clubs desire to form a testing association, they ought to correspond with Professor Anderson, who will be glad to send them literature describing the associations, and he will visit them personally if it is possible for him to do so.

A cattle census for Glenn county, gathered through the assessor's office, shows that on the first Monday in March there were in the county 9769 cattle, 13,593 hogs, 2925 mules, 2692 horses, 113,917 sheep, 1295 goats and 30,672 chickens.

Horse Owners! Use

GOMBAULT'S



Caustic Balsam

A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all linaments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish*

Every bottle sold is warranted to give satisfaction Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.

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NO HOOF=NO HORSE

Especially is the dry season in this section very hard on hoofs. If you have a horse with a bad foot caused by tender, brittle, hard or contracted hoofs, split hoofs, quarter cracks, mud fever, scratches, corns, cracked heels or grease heels, send 16 cents postage and we will send you a 50c package of ESHELMAN'S WOOL FAT HOOF HEALER, and if satisfactory, send us the 50 cents. If not, write us to that effect, and you need pay nothing. We take all the risk, you just try it. Send for it today, or send for folder with many testimonials of big horsemen, vets and others.

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SHOULD BE IN EVERY HOME AS A SAFE-GUARD AGAINST SORE THROAT, SWELLINGS, SPRAINS, RHEUMATISM, NEURALGIA, STIFF JOINTS, LAMENESS, STOMACH CRAMPS, DIARRHOEA, Etc.

THE STOCKMAN'S STAND-BY FOR SUCCESS IN VETERINARY USES

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PROTEIN EXCEEDING 44%

For Cattle, Poultry and all Farm Animals

Will double your milk, cream and egg supply.

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Cutter's Anthrax and Blackleg Vaccines

are given the preference by 80 per cent of California stockmen because they give better results than others do.

Write for Prices, Testimonials and our New Booklet on Anthrax and Blackleg

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FOR SALE

A Jersey bull calf sired by Ravachol's Romulus 74652; dam Blue Fox's Golden Rosebay 209372; half sister of Noble of Oakland's that recently sold at Cooper's 1911 sale for $15,000.

T. B. PURVINE, Petaluma, Cal.
R. F. D. No. 4, Box 152.



HERCULES HARNESS SADDLES HORSE COLLARS

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Industry Harness is to look for the Hercules stamp Made by W. DAVIS & SONS, San Francisco, Cal. Your Dealer has our Catalogue

ALTA VISTA HERD OF IMPORTED GUERNSEYS

OWNED BY

CHAS. G. LATHROP, Stanford University, Cal.

From above herd I offer for sale a few choice bull calves from such sires and grand sires as

IMP. LORD KITCHENER—11369

Winner of the grand champion prize at Sacramento State Fairs 1909-1910, and

IMP. RAYMOND OF THE PREEL—11353

Winner of the first prize 1906, Island of Guernsey.

For further particulars write to above address. Inspection solicited.

DAIRY NOTES.

F. W. Andreasen, secretary of the State Dairy Bureau, has appointed C. A. Peairs and Dick Lipscomb, of Tulare county, inspectors of the Bureau, to enforce the provisions of the State dairy law. Messrs. Peairs and Lipscomb had already received their appointment as county inspectors by the supervisors of Tulare county and will be paid with county funds. The new county dairy ordinance, however, provides for the enforcement of the State law, and the new inspectors will have the same duties as State inspectors, but will not work outside of the county. Secretary Andreasen made a trip to Tulare county this week to introduce the new inspectors to their duties. New score-cards have been prepared by Secretary Andreasen for all State inspectors. The cards provide for entirely separate scoring of both dairies and creameries for equipment and methods, so that a dairy with nothing but absolutely essential equipment may yet score 100 per cent for methods of handling milk. Secretary Andreasen states that the inspectors are reporting much better conditions in nearly all parts of the State than was the rule only a short time ago, and that hearty support of their work is usually given by dairymen and the general public wherever they work.

A creamery company has been organized at Quincy, Modoc county, and the erection of a plant will be commenced at once.

Dairymen in the vicinity of Goshen, Tulare county, are organizing a co-operative creamery.

The John Offutt cheese factory near Petaluma has closed down for the season.

Col. D. H. Bryant, State dairy inspector, who has been working in San Jose recently, reports that a large amount of underweight butter is on the market there. In accordance with the rules of the Dairy Bureau, no prosecutions will be made until the second offense.

Dr. C. A. Poage, of Colusa, has purchased the Holstein bull Vreeman of Granville from A. W. Morris of Woodland. Dr. Poage expects to purchase a number of registered heifers and build up a herd of blooded Holstein stock.

Dr. Leroy Anderson, of the University of California, has been appointed to have charge of the cow-testing association work in this State by Helmer Rabild of the U. S. Department of Agriculture, and head of the dairy farming investigations.

Alex. Chapdelaine, of Woodbridge, San Joaquin county, is erecting a large dairy barn and alfalfa-meal mill. He will increase his dairy herd until it numbers 150 head.

LIVE STOCK NOTES.

An outbreak of glanders which resulted in the destruction of 17 horses has been checked by Deputy State Veterinarian Guldager, near Hanford. The disease was discovered two weeks ago, and it is thought that all horses infected in the district have been killed. A number of isolated cases have also been discovered in various parts of Kings and Tulare counties and the diseased animals killed. According to the provisions of a State law, all outbreaks of the disease are to be reported to the State Veterinarian at once and the diseased animals destroyed, as glanders is extremely infectious. Since the law went into effect and the first clean up was made, there has been much less of this disease than before, and the recent outbreak is one of the largest found for some time.

A number of hogs of DeWitt & Harrison, of Antioch, Contra Costa county, recently died of cholera. The other animals were vaccinated at once and it is thought that the disease has been checked.

H. P. Eakle, of Woodland, shipped last week 21 Shropshire bucks to a sheep-raiser of Madera county. He has also sold to C. N. Farnsworth of Colusa seven young bucks, and D. A. Bell, of Red Bluff, 14 others, to head their flocks.

Joseph Levy, of San Francisco, has been purchasing a number of heavy draft horses in Salinas valley.

William Bollina, of Honolulu, has been buying mules for the islands in the vicinity of Hayward and lower Alameda county.

H. O. Davis and P. R. Peterson, of Sites, Colusa county, have added a number of thoroughbred hogs to their stock.

Biddle & Russell, of Hanford, in one shipment last week, sent out hogs to the value of $6700.

A number of sheep of Charles Ward of Oroville have been killed by eating poisonous weeds.

HORSES AND CATTLE.

N. H. LOCKE CO., Lockeford, Cal., are offering registered Jersey bulls and bull calves of the choicest Island and American breeding, from prize winners and big producers; also a carload of unregistered Jersey cows, and a car of Jersey heifers, unregistered.

JOHN LYNCH, breeder of Registered Short-horns; milk strain. High class stock. First-class dairy breeding. Smooth cattle. Best pedigree. P. O. Box 321, Petaluma, Cal.

PURE-BRED SHORT-HORNS, Poland-China hogs, and Shropshire sheep. Roselawn Stock Farm, Woodland, Cal.

A. W. MORRIS & SONS, Woodland, Cal.—Importers and breeders registered Holsteins.

STEVENSON & WAGNER, Newman, Cal.—Holstein-Fresian bulls, heifers for sale.

HENRY WHEATLEY, Napa, Cal.—Breeder and importer of Shires and Percherons.

THOROUGHBRED SHROPSHIRE SHEEP, both sexes. S. H. Fountain, importer and breeder, Dixon, Cal.

SWINE

DESIRABLE YOUNG HOLSTEIN COWS, cheap, for immediate sale; pedigreed Guernsey cows, heifers and a fine young bull, all of the Yeksa strain. Office, Bellavista Stock Ranch, 503 First National Bank Bldg., Berkeley, Cal.

FOUR OAKS STOCK CO., breeders of Berkshire and Hampshire hogs and Importer Hampshire Down sheep. Woodland, Cal.

POLAND CHINA HOGS; Barred Rocks and Black Minorca poultry; young stock and eggs for sale. M. Bassett, Hanford, Cal.

ENTERPRISE STOCK FARM, Woodland, Cal. Short-horns, Shropshire rams, Duroc-Jersey swine and collie puppies.

THOROUGHBRED MULEFOOT AND BERKSHIRE HOGS. California Hog & Land Co., Calistoga.

GEO. V. BECKMAN, Lodi, San Joaquin Co. Cal. Registered Poland-China Hogs, both sexes.

G. A. MURPHY, Perkins, Cal. Breeder of Champion Herd of Berkshires; also Short-horns.

KNOB HILL STOCK FARM—Reg. Poland-China swine. A. M. Henry, Farmington.

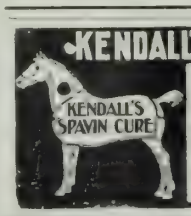
BERKSHIRE AND POLAND-CHINA HOGS. Both sexes. C. A. Stowe, Stockton, Cal.

STUDARUS & CUNNINGHAM, Mills, Cal Registered O. I. C. swine

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroughbred Berkshires.

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POULTRY DEPARTMENT.

Conducted By M. RUSSELL JAMES.

POULTRY NOTES.

CHANGE THE HEN.—A writer in the Poultry Journal of that town solves the problem for the Petaluma poultrymen in regard to the low market quotations on eggs and poultry for the past several months, thus: "Change the breed of fowls."

Which reminds us of the story of the young city reporter who was sent out into the country to get farm items for his paper. Among the chunks of rural wisdom garnered up was the following:

"After a hen has set upon a clutch of eggs for three weeks, if they show no signs of hatching it is a good plan to put them under a fresh hen."

THE NINTH AUSTRALIAN LAYING COMPETITION.—The report of the last annual competition at Hawksbury Agricultural College, New South Wales, has reached this country. There were 100 pens of hens in this competition, and 25 pens of ducks.

The best record in both the one and two-year competitions was won by a pen of White Leghorns, being 1324 eggs for the first year and 2369 eggs for the two years, or an average per hen, for the six hens, of 220⅔ eggs for the first year, and 174 and one-sixth eggs the second year. The three-year competition was won by a pen of Black Orpingtons, with a total of 3047 eggs for the three years.

The duck competition was won by the Indian Runners, the winning pen of six ducks laying 1278 eggs the first year, and 2464 eggs in the two years, being an average per duck of 213 eggs the first year and 197⅓ eggs the second year. Unfortunately, the pen of Runners which might have been the winner was destroyed one week before the end of the first nine months. The wonderful reputation of these ducks reached the ears of a sly Australian fox, who gathered in the whole six ducks in sampling their quality. This pen had laid 1195 eggs in the nine months, but as those months covered the most of the laying season, it is a question whether it would have greatly exceeded the record made by the present winner.

All eggs were sold in the regular market in Sydney, and after deducting cost of feed and marketing, left a profit of slightly more than $2 per fowl. Prof. Thompson points out that while old hens are productive, they cease to be profitable, and the profits of the competition were cut down because of the fact that but 40 of the pens were made up of pullets, the profits having been figured on the whole lot, which included 20 pens in their second competition and 10 pens in their third. The ducks also reduced the average profit, as they eat more than hens and their eggs bring a lower average price in Australia than do those of hens.

There was also an experimental test carried on in the feeding of dry and wet mash. The average egg-production of the dry-mash pens was 147.5 per hen, while that of the wet-mash pens was 181.8.

POULTRY IN THE WEST AND SOUTHWEST.—The Queen incubator man tells in Poultry Culture of a trip in those sections. He found Texas an empire in itself and alive to the growing poultry interests, and predicts that it will be the big poultry-producing State of the Union. In California he found a large number of people devoting their whole time to poultry raising, and making it pay, the sole income of family after family coming from chickens. In Petaluma he reached the center of the chicken business and the home of the White Leghorn, with its acres and acres of white beauties that lay thousands of dozens of eggs.

He says that there is not much chance for an incubator man to get business in Petaluma, as one mammoth hatchery does the hatching for the entire community, the poultry raisers taking their hatching eggs to the hatchery and buying back what chicks they want. (This will be news to Petaluma, with its dozens of hatcheries, not to mention the big ranches that do their own hatching and many of them selling thousands of day-old chicks besides.)

He concludes his account by saying. "While all along the way I found much to interest an incubator man, yet I must give the poultry raisers of California, Ore-

LESS THAN 2 CENTS a year
For Oil and Repairs

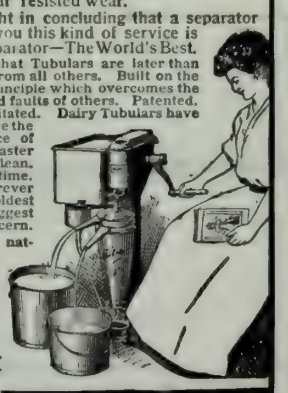
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SHARPLES
Tubular Cream Separator

has recently finished work equal to 100 years' service in a five to eight cow dairy. Total cost for oil and repairs only one dollar and fifteen cents. Less than two cents per year. Write for free, illustrated account and see how the parts of this Tubular resisted wear.

You are right in concluding that a separator which gives you this kind of service is the quality separator—The World's Best.

Remember that Tubulars are later than and different from all others. Built on the only known principle which overcomes the many parts and faults of others. Patented. Cannot be imitated. Dairy Tubulars have no disks. Twice the skimming force of others. Skim faster and twice as clean. Wear a lifetime. Guaranteed forever by America's oldest and world's biggest separator concern.

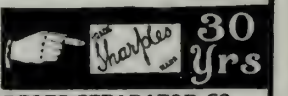


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2335-ACRE RANCH
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PRICE, $18 PER ACRE

EASY TERMS.

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gon, and Washington credit for being ahead of the poultry people in many sections of the country. Of course, location and climate have much to do with this situation, but the folks out in the Pacific Coast country surely know how to make the most of their opportunities."

THE SPARROW A GERM CARRIER.—A dispatch from Kansas says that while the State Board of Health has declared the house-fly dangerous to the public, nothing has been said about the sparrow in this connection. Though no special investigation has yet been made, the health officers believe that, in addition to being a nuisance, the English sparrow is a menace to health. The sparrow is dangerous for the same reason that the fly is dangerous. He carries germs of filth and disease. The next swatting campaign in Kansas may be directed against the sparrow.

It has been said that nothing goes these days unless it has "germs" in it—or on it. That the sparrow defiles our premises, filches our poultry feed, destroys our garden truck, pecks our choice fruit, wears our nevres to frazzlings, and drives us to profanity, avails little with the powers that be. But it will be a blue day for Mr. Sparrow when Dr. Blue hales him into his laboratory and detects him trafficking in "germs."

QUESTIONS AND ANSWERS.

SIZE IN BROWN LEGHORNS.—Mrs. E. B., of Yuba City, asks: "Will you kindly tell me where I can procure Brown Leghorn cockerels? They must be large for the breed. I made the mistake of not looking to the size of my breeders, consequently the birds are very small, though very fine layers. Please don't refer me to any of the ads. in the poultry papers. I sent to three of them. The birds were scrubby and not true to color, white showing largely in the wings. You speak of guessing at the sex of baby chicks by examining the comb. Does the comb extending far back on the head denote the male, or vice versa? If I could determine that point, I would gladly give every cockerel to anyone who would accept them, because they are always raised at a loss."

There being no weight clause in the Standard for Leghorns, fanciers in their efforts to excel in the difficult color requirements of the Brown Leghorn have neglected size, until, as one fancier expressed it, "females of this breed are seen in the show pen of such moderate size as to tempt one to call them Bantams." My first experience in fancy poultry was with the Brown Leghorn. The stock was direct from the East. The hens were as large as the largest White Leghorn and laid a pure white egg of large size. I remember one hen in particular. She was the largest of my hatch, but unusually alert and sprightly in her expression and motions, and much lighter in color than the Browns of today. As a rustler and layer she was a wonder. In the many different breeds I have handled since then, I have never seen her superior and hardly her equal. But that was twenty-five years ago. The Browns of today are smaller, richer in color, and more perfectly stippled and penciled, perhaps, but as a rule lay smaller eggs of a less chalky white.

In "The Leghorns," published by the Reliable Poultry Journal Co., T. F. McGrew, one of our foremost authorities on pure-bred poultry, says on this subject:

"One feature most deserving of attention in this breed is size. Our standard allows but six points out of one hundred for the size or weight section in our American or Asiatic breeds, but for the Mediterranean class we allow ten points, or one-tenth of the whole scale of points If size is of so much more importance in a Brown Leghorn than a Brahma, why has it been so neglected, or is it to be supposed that size with Leghorns means small size?

"This feature of the general make-up of the Leghorn should have our first attention, and by care in selecting the very largest females only as breeders, we can build up the size and add vigor to the constitution, so giving them renewed power for egg-production. Brown Leghorn females should at least weight 5½ pounds. We have seen birds of good quality weigh as follows: males, 7 pounds; females, 6½ pounds. Such Leghorns are a credit to their race, and should be encouraged on all sides. The method to follow to improve the size of our Brown Leghorns is to use as breeders the largest hens obtainable, as the greater size comes largely from the female. By selecting the largest hens we have the advantage of botn size and maturity. The full round breast and the development of abdomen is a feature of the greatest importance in a Leghorn. In selecting hens to advance or increase the size, pay special attention to these sections and do not select the short-coupled hens. There cannot at this time be any possible danger of having them too long in body. Another great help to increase size is to hatch them early and feed for bone and size, the greatest growth possible should be obtained during the first four months. Their natural tendency is to lay early; many of them lay at five months old, and for this very reason they should be fed for size prior to this time. Those that make the largest growth will most likely be slower to lay. These should be selected for future breeders to improve size."

The comb extends farther up on the male baby chick than on the female. On the latter when the chick is first hatched the comb usually does not extend much above the beak.

RED BALL BRAND

Manhattan

HORSE CATTLE AND POULTRY FOOD

Increases the power of endurance of the HORSE.
Cows yield more and richer MILK.
Stock takes on more weight—more BEEF.
Chickens produce more EGGS.
Is invaluable when weaning foals, calves, lambs and shoats.

BOOKLET MAILED FREE. ALL DEALERS.

If your yards were equipped with the **Norwich Automatic Exerciser and Feeder** you would be amazed at the **saving of feed, saving in labor, improvement in your flock** and **increase in egg production,** and would wonder how you ever ran your yards without it. It costs nothing to prove our claims.

CIRCULAR FREE. AGENTS WANTED.

NORWICH AUTOMATIC EXERCISER AND FEEDER FOR CHICKENS

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149 CALIFORNIA ST.
SAN FRANCISCO
SOLE DISTRIBUTORS

So that it will keep fresh and wholesome, we take out 30% of water. ALL the nutritious and essential properties remain in

CROLEY'S GROUND GREEN BONE.

Feed some to your chickens NOW and reap the benefit in the Fall when eggs are worth real money. Write for circular and sample. Free.

GEO. H. CROLEY CO.,
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629 Brannan St., San Francisco.

POULTRY.

IF YOU COMMENCE FEEDING CROLEY'S Ground Green Bone NOW, you will be benefited in the fall when eggs are high. Write for circular and sample. Geo. H. Croley Co., 629 Brannan St., San Francisco.

S. C. B. MINORCA EGGS for hatching at $6 per 100; can fill large orders; 12 yards large beautiful hens, excellent layers. Black Beauty Poultry Yards, Dixon, Cal.

OAKLAND POULTRY YARDS, 149D, California St., San Francisco.—Est. 40 years. Standard bred poultry. White Orpingtons, R. I. Reds, Brd. Rocks, White Leghorns

MY FAMOUS S. C. WHITE LEGHORN baby chicks, I am NOW prepared to ship on mail orders, present or future delivery. Carl Stange, 1409 Silver Ave., S. F.

IF INTERESTED IN INCUBATORS or how to feed, write for our free Catalog. PETALUMA INCUBATOR CO., Petaluma. California.

CHICKENS, DUCKS, GEESE, GUINEAS. Pea fowl and eggs. Address Wm. A French, 545 W. Park St., Stockton, Cal.

WAYSIDE YARDS—A few settings from special S. C. White Leghorn matings, at $5 for 30. Carl Gregory, Petaluma, Cal.

FREE BOOK—"Poultry Feeding for Profit," on application to Coulson Co. Petaluma, Cal., Box P.

WHITE LEGHORNS—Chicks, eggs, cockerels. Fine stock. Reasonable. O. B Morris, Lodi, Cal.

BUFF ORPINGTONS—Mr. and Mrs. W. S Sullivan, 25 Market St., Agnew, Santa Clara County, Cal.

BRONZE Turkeys and Eggs. Ed Hart Clements, Cal. Large size, good plumage, early maturity.

TWIN OAKS FARM—W. H. Bissell, Proprietor, Livermore, Cal.—Buff, White Orpington.

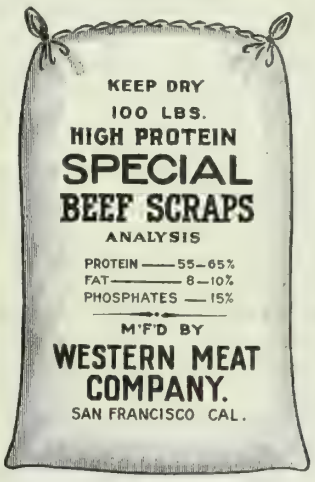
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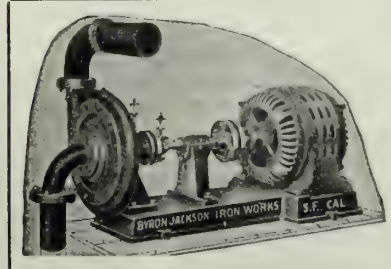
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The Home Circle.

Discontent.

Formed of the elemental fierce unrest
That seethes forever in the human breast,
Coeval with the race of man and I.
I seem a curse from which he fain would fly;
And in his efforts to escape from me
He pits his might against immensity,
And bends the laws of nature to his will;
Yet I shall goad him ever on until
He solves the problem of infinity
And read the meaning of life's mystery.
Then when he rests on heights as yet untrod,
And learns that he, himself, is part of God,
He'll know that I first taught him to aspire—
That I, the curse, impelled him from the mire.—John E. Dolsen in Nautilus.

Summer Beverages.

The good housekeeper will make careful provision, when fruit is plentiful, for a variety of healthful, non-alcoholic beverages, to be used throughout the year, as need be, but particularly in the thirsty days of spring and summer, before fruit matures.

Fruit Juices Without Sugar.—Almost any fruit juice is easily and profitably canned without sugar. The safe way is to cook the fruit thoroughly with a small portion of water to "start" it safely, mashing it as it cooks, and straining through a flannel or cheesecloth one-cornered bag, or a very fine sieve. The juice is then brought to the boil and canned at boiling heat. Grapes, apples, cherries, berries, peaches, plums and pineapples may all be treated in this way. Some women make very little jelly in the fall, prefering to prepare all juices in the foregoing manner and making up the jelly in small quantities as needed.

We do not drink enough, doctors tell us. And it is certain we do not drink sufficiently of the healthful liquids nature so bountifully provides. The heated blood and sluggish liver of "dog days" need no better drug than that prepared in the goblet of the grape, the cup of the lemon, or hidden away behind the ruddy cheek of berries. Ice water, iced tea and coffee, with the sodas and "sundaes" galore, are to be deplored for the real harm they do to the stomach. Thirsty we are and thirst should be legitimately quenched. To that end let us consider some special thirst quenchers.

First of all comes water, cool and clean. If the well is not in perfect condition from its bottom up and around about it for a wide radius, then your family is being deprived of a divine right—the right of the chief "pure food"—water. Nothing in the well but its gravelly or pebbly bottom; nothing able to get into or fall into the well; nothing on the ground anywnere near the well, save sun-drenched earth on which no water from the skies—or the kitchen!—is permitted to stand; given this, you are rich.

Lemonade.—Little need be said of this common and delicious beverage, save that if possible, more of it should be used. Rich lemon syrups are quite popular, but lemons, freshly squeezed, are a hundred per cent more wholesome and less expensive. Lemonade can always be varied by the addition of other juices and most delicious combinations secured. Grape jelly dissolved in boiling water and blended with enough lemon to give sharpness is excellent. A spicy apple, peeled and cored, and put through the fruit grinder and added to a glass of cold lemonade is delicious. Dyspeptics have found great relief in abandoning tea and coffee and substituting water to which lemon juice has been added in the proportion of one-third of a lemon to each glass of water.

A Handy Kitchen Cooler.

Those who have no cellar, and find it difficult to procure ice, will find this cooler very helpful during the hot days:

Make a frame of 1x2-inch strips, 4 or 5 feet high, 3 or 4 feet wide and 18 inches deep. Fit in the top a galvanized iron pan 4 inches deep. This you can procure, made to order, for about 70 cents.

About one foot from the floor fit a sheet of galvanized iron or tin, and between top and bottom put in two or three shelves made of thin slats or wire screening.

Make a door to open on one side with a small catch. Cover door and sides with burlap, stretched well and tacked.

Have strips of woolen cloth, the width of sides and ends, and long enough that one end may be in the pan of water and extend about half-way down the sides of cover.

Place the cooler in the open air or in a draft—always in the shade—and fill the top pan with water three or four times a day.

This makes a good milk and butter cooler, or for any food that is likely to sour. The hotter the weather the more rapidly evaporation takes place and the cooler the interior.

The burlap sides should be kept moist all the time by keeping plenty of water in the pan.—Farm Progress.

Apple Delicacies for Harvest Season.

Apple Dumplings.—One pint flour, one-half teaspoon salt, one and one-half teaspoons baking powder, one tablespoon of good lard. Stir all together and mix with sweet milk as soft as can be handled. Have six apples ready, pare and cut in quarters and with a pound baking powder can cut your dough and place in four quarters of the apple in center; put the end downward in a shallow pan; cover the apple dumplings with sugar and cinnamon and place a piece of butter on each. Then pour a cup of boiling water over them and bake forty minutes. The butter on each dumpling should be the size of a nut.

Apple Custard.—Pare and slice thin (but leave in as large pieces as you can get them) two or three apples, according to size. Line a deep pie pan with crust, not too rich; put two or three layers of sliced apples over crust, sprinkle evenly over apples one and one-half teaspoons of flour, then on top of flour one-half teacup sugar, or enough to sweeten apples if very tart. Take fork and mix flour and sugar together as well as you can without disturbing apples. Next cut thin slices of butter and lay about on top of sugar; lastly add nearly one cup of good creamy sweet milk. Bake in a moderately hot oven.

A most delicious salad that anyone can have now in this time of fruit, is made by adding to three cups of lemon jelly, two cups of seeded white grapes. If you do not use individual molds put your gelatin to set in a narrow pan, so that when turned out it can be cut into nice slices to serve on lettuce leaves. Serve with mayonaise dressing.

"A sense of responsibility not only holds one in check, but tends to develop what is good in him. Men of worth are what they are because they have been put upon their mettle."

There is no higher wisdom than this: Live one day at a time and do your work the best you can, and be kind—and be kind.—Elbert Hubbard.

The change in the sentiment of the poems devoted to the fly is feelingly expressed in the following verses, quoted from the poem of a St. Louis poet:

"I yearn to get up early Sunday morn,
Fresh from a daisy sleep, and join the wife
Out in the kitchen, and with courage born
Of grave necessity, snuff out the life
Of all the flies within out little flat;
To grab a towel and swat 'round each room—
I know no greater joy in life than that,
And will not ere I hear the crack of doom.

"O, cry of hope! O, sentence master-made!
O, word omnipotent! I love to roll
You round and round in this intense crusade
To make musca domestica pay toll!
To swash, to swipe, to land upon, to swat,
To sting, to breeze, to soak it, I shall try.
O, insect with transparent wings, has not
It dawned upon you, you've become too fly?"

Sweet Cucumber Pickles.

Could some one tell me just how the bought cucumber pickles are made, as I think them far better than what we make. They are a little sweet and have such a good taste. When I sweeten them as much as I like they shrivel and are no good. A. R.

Put cucumbers in cold weak brine (1½ cup salt to one gallon water) one day and night. Take out, dry on cloth. To one gallon vinegar add two cups sugar, nearly one ounce mixed spice. Heat these all boiling hot. Put in pickles and let boil up once. Put in cans immediately, and pour the hot vinegar over them. They are nice and sweet, and will keep a long time, till eaten. These will not shrivel if you follow directions. One gallon vinegar will cover two gallons cucumbers.

A very attractive and appetizing salad is made by combining a quart of highly seasoned stewed tomatoes, after straining, with half a box of gelatin. Add a little onion to the tomatoes, and some cooks use horseradish as well. A very good substitute for individual molds is granite gem pans. When the mixture is ready to be removed from the pans, hold for a moment over the spout of the teakettle, being careful not to melt it. Turn out on a cake board covered with paper and then lift each mold of gelatin carefully onto a lettuce leaf.

Blackberry Cordial.—Squeeze blackberries enough to make a quart of juice, add to it a pound of loaf sugar and let it dissolve, heating slowly. Add to it one teaspoonful of cloves, cinnamon and nutmeg. Boil it all together twenty minutes. On removing from the fire, add a wineglassful of brandy. Put in bottles while hot, and seal. Use a teaspoonful for a glassful of iced water.

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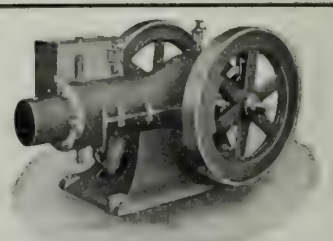
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As soon as you have done it;
Forget the praise that falls on you
The moment you have won it;
Forget the slander that you hear
Before you can repeat it;
Forget each slight, each spite, each sneer,
Wherever you may meet it.

Remember every kindness done
To you, whate'er its measure;
Remember praise by others won,
And pass it on with pleasure;
Remember every promise made
And keep it to the letter;
Remember those who lend you aid,
And be a grateful debtor.

—Anon.

Poultry Courses for Young Folks.

DESCRIPTION OF BREEDS.

Blue Andalusians.—Like the Black Minorca, this breed of fowl resulted from crosses of the Black Spanish and the common English fowls in very early days. The name would indicate that the original Spanish stock came from Andalusia. The Blue Andalusian is a pretty fowl, and should appeal to our young folks, for it wears our country's colors in the clear red of its comb and wattles, the pure white of its earlobes, and the slaty blue of its plumage. It is a little larger than the Leghorn, and occupies the place between that breed and the Minorca, the standard weight being 6 pounds for cock and 5 pounds for hen. The comb is larger than the Leghorn comb, but not so large as that of the Minorca. The plumage is slaty blue, laced with a darker shade of blue, and with glistening blue-black on the neck, back, wings and tail of the male, and on these portions of the female a darker shade of blue; shanks and toes are a leaden blue.

The Blue Andalusians are hardy fowls and the chicks may be easily raised and mature early into wonderful layers of large white eggs. So much stamina and excellence does this breed possess that even a strain of its blood will grade up a common flock of hens, and anyone who has a "blue hen" in the flock will attest to its hardiness and worth. It is singular that flocks of this breed are not more common; for it is an ideal fowl except on two points: It has the white skin and dark legs that are unpopular in our markets, and it is difficult to breed true to color, the tendency being to revert back to the black color of its early ancestors.

Mottled Anconas.—This breed is often classed with the Leghorns because of its conforming more nearly in size and shape with the Leghorn, and having a yellow beak and yellow shanks mottled with black; but it belongs to the Spanish family and has the same origin as the Black Minorca and Blue Andalusian, and, like those breeds, was the common fowl of the dooryard until later years, when the fancier took them in hand and bred them to a standard type in color, markings, and form. The plumage of the Ancona should be a bottle-green, each feather tipped with white and evenly mottled throughout. Anconas mature early and are excellent layers of white eggs.

SUMMARY.

The Mediterranean class of chickens originated in Italy and Spain and is made up of five breeds and thirteen varieties. The fowls of this class are small or medium in size, graceful and compact in shape, and active, energetic and sprightly in habit. They are practically non-setters, prolific layers of large white eggs, and comprise the most noted egg breeds among chickens.

A Rancher's Fight With Wolves.

At the present day we do not often hear of such a thrilling fight for life with a pack of wolves as occurred last April in Cedar Canyon, Wyoming. Al Hinton, a rancher living just across the State line in Colorado, was searching for a bunch of cattle which had strayed into the mountains. He carried a double-barreled shotgun, but had only one round of ammunition.

Tired and unsuccessful, he gave up the search late in the afternoon and turned back. He had gone but a little way on the homeward route when he heard the howling of wolves. At that dismal and blood-curdling sound, echoed through the canyon, he hurried through the underbrush at the best sprint he could make, but the pack rapidly gained on him. When the wolves came in sight, he turned and fired, killing the leader. "But this did not stop them," he says, "and after a race of another hundred yards or so I fired again, killing two of the beasts. This stopped them for a few minutes. I don't know whether or not they ate the dead animals, but it was only a few minutes till they were after me again.

"I brained one wolf with the club end of my gun, and then began a life-and-death struggle to reach the end of the canyon with the brutes nipping at my heels, tearing my clothes, and occasionally getting into my flesh with their fangs. I was almost a goner when I reached the end of the canyon and ran out onto the prairie. And there a short distance away was a man in a buggy drawn by two horses. I yelled. He waited. I jumped in just as the wolf pack broke from the woods.

"We drove as rapidly as the horses could travel, but the wolves soon caught up with us, and were snapping and biting at the horses. The homesteader had been to town for provisions and had a quarter of beef in his buggy. We threw that to the wolves and they stopped to devour it, and while they were fighting over that we made good our escape."

Mr. Hinton's arms, legs and body were badly scarred from the fangs of the wolves, and he was confined to his bed under the care of a surgeon for several days.

Small But Wonderful Tillers of the Soil.

That so insignificant a creature as the earthworm should be a valuable assistant to the agriculturist is not generally known by our young folks, nor by some folks not so young. Next time you bait your hook with an angleworm, remember that it is one of the billions of small but wonderful tillers of the soil which help to make it productive to man.

As tillers of the soil earthworms constitute a great army. It is estimated that there are fifty-four thousand worms in each acre of garden ground and about half that number in cornfields. Nine burrows or worm holes are usually found in two square feet of garden soil. It is further computed that in all cultivated lands in which worms are able to live, no less than ten tons of earth are brought to the surface in each acre by the worms each year. Worm burrows are frequently found extending for five or six feet down below the surface.

Since they feed largely upon vegetable matter, and since various acids which are called humic are generated by the digestion of such matter, worms must affect the quality of the soil to that extent; for the humic acids play a far more important part in the disintegration of rocks and the production of proper soil than does carbonic acid, itself known to be a powerful agent. The tillage of worms is thus chemical as well as mechanical in its effect upon the soil.

Training Girls to Be Farmers' Wives —and Farmers.

The Agricultural College of the University of Missouri will offer special courses in technical training for girls for the first time this fall, says a dispatch to the Globe-Democrat. She need not study field crops, and she will not have to learn to pitch hay and plant corn, though some of the theories of crop rotation and soil preservation will be taught her, in case she should marry a farmer who doesn't know these things. Poultry, dairying, gardening, forestry, and farm management will be among the courses the girls can enter. In addition, all work in home economics will count toward the degree in agriculture. The degree of bachelor of science in agriculture will be conferred on women who have completed the women's agricultural course. Thus does farming become "co-ed," and a heavy influx of women into the college is predicted.

Beginning this fall the Agricultural College will admit high school graduates to its courses. The effect of this, it is thought, will be to divert large numbers into agriculture, which is just now offering the best opportunities of any professional field. Practically every graduate in agriculture is either teaching in some college, has a Government or State position, is manager of some large farming concern, has entered agricultural journalism or is running a farm profitably.

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SAN FRANCISCO, CALIFORNIA

THE MARKETS.

San Francisco, August 2, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

This market remains very dull, with considerable divergence in the views of buyers and sellers. The tendency is downward, and it is hardly possible to get over $1.40 for New Club, though most offerings are so far held for higher figures. A heavy export movement is expected in the North this fall. Growers in some parts of the San Joaquin are offered $1.25 for new wheat, but are in no hurry to sell at this price.

California Club, new	$1.35	@1.40
Sonora	Nominal	
White Australian	1.55	@1.65
Northern Club	Nominal	
Northern Bluestem	1.65	@1.70
Northern Red	1.55	@1.65

BARLEY.

The movement is increasing, under a heavy demand. A large foreign cargo left a few days ago, and from now on an active export movement is expected. Brewing barley is also in very strong demand in the North and East. Prices are no higher except on feed, which is moving well both locally and in the country.

Brewing and Shipping	$1.52½	@1.55
Choice Feed, per ctl	1.30	@1.35
Common Feed	1.22½	@1.27½

OATS.

No further change is noted in this grain. Offerings are not excessive, but the local demand is light and there is no buying of any consequence.

Red Feed	$1.30	@1.40
Gray	Nominal	
White	Nominal	
Black Feed	1.20	@1.50

CORN.

Prices here are not quotably lower, but some decline has occurred in the East, and the market is very weak at the present level. The local movement is limited.

Cal. Small Yellow	$1.75	@1.80
Eastern Yellow		1.70
Eastern White		1.70

RYE.

The local demand is very light, and in the absence of trading values are largely nominal, though there is a little stock on the market.

Rye, per ctl	$1.55	@1.65

BEANS.

General conditions remain much the same as before. Bayos are a little lower, with considerable competition from imported stock, supplies of which are ample. Blackeyes show another rather sharp advance, and are very strong, the supply being of small proportions. Pink beans are also a little higher, but other descriptions are quoted as before. A few new horse beans have appeared, and are offered at lower prices, but the former quotation still stands on old stock. There is no heavy movement in any line. Local dealers still maintain their bearish attitude on lima beans, but an active movement is reported for July from the southern California producing district, and there is still considerable time to dispose of the remaining supply. Dealers cite the large crop in prospect as a reason for their attitude, but the country has demonstrated its ability to absorb any crop produced in California. The Association, it is announced, will book no further orders for new limas until prices are named.

Bayos, per ctl	$3.75	@4.00
Blackeyes	6.50	@6.75
Cranberry Beans	3.75	@4.00
Garvanzos	2.85	@3.25
Horse Beans	3.25	@3.50
Small Whites	3.50	@3.60
Large Whites	3.40	@3.50
Limas	6.00	@6.20
Pea		4.25
Pink	4.90	@5.10
Red Kidneys	6.25	@6.50

SEEDS.

The seed market is dull and feature less, with no demand of any consequence, and prices are largely nominal.

Alfalfa	Nominal
Broomcorn Seed, per ton	$25.00
Brown Mustard, per lb	5½c
Canary	3½@ 4 c
Hemp	3½@ 4 c
Millet	3 @ 3½c
Timothy	Nominal
Yellow Mustard	5¾c
Dried Peas, per ctl	3.75@ 4.00

FLOUR.

There is no change in prices here, although Northern export prices are lower. The local export movement is larger than usual, and heavy orders from the Orient have been received by the Northern mills.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.60	@4.80

Hay and Feedstuffs.

HAY.

Arrivals of hay in San Francisco continue heavy, being almost as large as last week. There has occasionally been some congestion in the hands of dealers, but prices have been pretty steadily maintained at the recent advance, and the increasing firmness of the market is inducing the larger consumers to get into the market on a large scale for their season's supply. The arrivals have accordingly been disposed of without any great difficulty. Buying of hay in the country is hardly as active as last week, but there is still quite a large movement. City prices are still too low to afford much profit, but all the outside markets are holding quite firm. The Oregon hay crop is very heavy this year. Alfalfa hay is hardly as active as usual at this season, and some dealers are apparently trying to run down the price.

Choice Wheat	$13.50@14.50
Good Wheat Hay	11.50@13.00
Other Grade Wheat	8.00@11.50
Wheat and Oats	8.00@13.00
Tame Oats	8.00@14.00
Wild Oats	7.00@10.50
Alfalfa	8.00@11.50
Stock Hay	5.00@ 7.00
Straw, per bale	35@ 55c

FEEDSTUFFS.

Rolled barley is held a little higher, in sympathy with the raw grain. Cracked corn is rather easy, but no lower. All lines are in good demand.

Alfalfa Meal, per ton	$16.00@18.00
Bran, per ton	28.00@29.00
Cocoanut Cake or Meal	26.50@27.00
Cracked Corn	38.00@39.00
Middlings	34.00@36.00
Mixed Feeds	28.00@30.00
Rolled Barley	28.00@29.00
Rolled Oats	28.00@30.00
Shorts	28.50@31.00

Garden Truck.

VEGETABLES.

Prices on general garden truck continue weak, many descriptions being lower, with abundant supplies. Onions are offered freely, and with very little demand outside of the local routine trade prices are lower. The cheap garlic offered last week is about cleaned up, and prices are a little stronger. Tomatoes have been arriving steadily in large quantities, and while the demand has increased materially, prices are still lower. Green peas are a little lower, and string beans are again in oversupply, being hard to sell at 1c. Green limas are also much lower than last week. Green corn, eggplant and green peppers are all plentiful and cheap.

Onions: Yellow, ctl	$ 0.90	@ 1.00
Garlic, per lb	3½	@ 5c
Green Peas, per sack	1.25	@ 1.75
Tomatoes, per box	40	@ 65c
Cucumbers, per box	50	@ 75c
Cabbage	90c	@ 1.00
Carrots, per sack		1.00
Cauliflower, per doz		50c
String Beans, per lb	1	@ 4c
Lima Beans, per lb	3	@ 3½c
Summer Squash, per box	40	@ 60c
Okra, per box	1.00	@ 1.25
Green Corn, per sack	75c	@ 1.50
Eggplant, per box	75c	@ 1.00
Green Peppers, per box	40	@ 75c

POTATOES.

There is not much feature to the local market, but there has been an unusually heavy demand for shipment for the last week, and prices are firmly maintained. Choice stock in boxes is a little higher. Sweets are not yet very plentiful, and are firm as last quoted.

River Whites	$ 1.50	@ 1.85
Sweet Potatoes, per lb	5	@ 6c

Dairy Produce.

POULTRY.

Little change is noted in either prices or conditions. Arrivals of Eastern stock continue about the same as for some time past, and only good fat chickens of local production find any demand, ordinary stock being hard to sell. There seems to be some demand for spring turkeys, and it is believed that about 30 to 35c. can be secured for fat young stock.

Large Broilers	$ 3.00	@ 3.50
Small Broilers	2.00	@ 2.50
Fryers	4.50	@ 5.50
Hens, extra	8.00	@ 9.00
Hens, large	5.50	@ 6.50
Small Hens	4.00	@ 4.50
Old Roosters	4.00	@ 5.00
Young Roosters	6.00	@ 7.50
Young Roosters, full grown	8.00	@ 9.00
Squabs	2.00	@ 2.50
Geese, per pair		2.00
Ducks	4.50	@ 7.00
Turkeys, live, per lb	Nominal	

BUTTER.

Extras have been steadily held through the week at 25c., the figure last quoted, standing a little higher than the average of last week. A good shipping demand is keeping the market well cleaned out. Firsts show a little advance, the lower grades remaining as before.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	25	25	25	25	25	25
Prime Firsts	23½	23½	23½	23½	24	24
Firsts	23	23	23	23	23	23
Seconds	21½	21½	21½	21½	21½	21½
Packing Stock	20	20	20	20	20	20

EGGS.

The egg market continues to advance, with steadily diminishing arrivals and smaller production. The advance, however, is confined to extras, prime firsts, and selected pullets.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed
Extras	27½	28	2o½	28½	29½	30
Prime Firsts	24	24	25	25	25	26
Firsts	23	23	23	23	23	23
Seconds	19½	19½	19½	19½	19½	19½
Selected Pullets	23	23	23½	24	25	25
Eastern	16½	16½	16½	16½	16½	16½

CHEESE.

There is little feature in flats, but Y. A.'s are scare and have been sharply advanced. Monterey cheese is unchanged, being plentiful and hard to move even at present prices.

Fanc California Flats, per lb	13½c
Storage	14 c
Firsts	12½c
New Young Americas, fancy	16 c
Monterey or Jack Cheese	11@12 c

Deciduous Fruits.

FRESH FRUITS.

Numerous changes in prices are noted, many descriptions being higher than last week. About the only new article in the market is seedless grapes, which are now moving freely, and bring very fair prices. Other grapes are considerably lower. All descriptions of berries are a little higher, but the movement is not especially heavy. Watermelons are unchanged, being pretty steadily held, with a good demand, while cantaloupes show a rather wider range of prices. River stock brings the best figure. Fancy apples are considerably lower, owing to increased offerings in the local market, and some ordinary fruit is offered as low as 75c. Apricots are cleaning up very well at former prices, and peaches are also steady, with a good demand. Plums are a little higher, and figs are also bringing better prices, as arrivals are limited. Bartlett pears are very strong and some very ordinary stock is bringing good prices. Dryers are getting considerable bulk stock, however, around $25 per ton. Canners are bidding up to $60 per ton for apricots, but are unable to get any large lots in the local market.

Watermelons, per doz	$ 1.50	@ 3.00
Cantaloupes, standard crate	1.00	@ 3.00
Raspberries, chest	5.00	@ 8.00
Loganberries, chest	3.50	@ 4.50
Blackberries, chest	3.50	@ .500
Strawberries—		
Longworth, chest	7.00	@ 9.00
Large varieties, chest	4.50	@ 8.00
Apples—		
Fancy Gravensteins, box	$ 1.75	@ 2.00
Other varieties	1.25	@ 1.75
Apricots, crate	.85	@ 1.10
Apricots, box	60	@ 75c
Peaches, lug box	1.00	@ 1.50
Small box	50	@ 75c
Plums, box	50	@ 85c
Nectarines, box	1.00	@ 1.25
Figs, box, double layer	1.75	@ 2.25
Pears, Bartlett, box	1.50	@ 1.75
Other varieties	65	@ 85c
Grapes, Malaga, crate	85c	@ 1.00
Seedless	1.00	@ 1.50

Dried Fruits.

Developments are now coming rapidly in the dried fruit market, with some changes nearly every day. The only changes of late have been in an upward direction, and the growers who have been holding out for good prices are justified by present quotations. Dealers throughout the country seem to have waked up to the fact that there is a real shortage in many lines, and that prices are more likely to advance than to decline as the season advances. They are accordingly buying on quite a large scale, and European buyers are also coming out with some large inquiries, making offers which justify the packers in making a general advance. The shortage of the Eastern apple crop is becoming more apparent, and with increasing demands a further advance has been made on California stock. Apricots are also a shade higher. Figs are unchanged, but quite a lot have been contracted at quotations, and it is anticipated that the crop will be readily cleaned up. Peaches are firm and in very fair demand at the late advance. The most sensational change has come in prunes, which have jumped about 1c., owing to a heavy buying movement both in the East and in Europe, and reports of severe damage to the European crops. The new offers have brought out considerable business, but the extent to which the new crop has been contracted is not very well known. Raisins are sharing in the general advance, as both jobbers and packers are taking a livelier interest. The old crop is about out of the market, and conditions for the new crop are considered very favorable.

Evap. Apples, 1911, per lb	9½@10 c
Apricots	14½@15 c
Figs, new crop	5 @ 7½c
Peaches, new crop	10¼@11 c
Prunes, 4-size basis, new crop contracts	5¼@ 5½c
Pears, new crop	12 @13 c
Raisins—	
Loose Muscatels, in sweatbox	4½@ 5 c
1911 crop	4½@ 5 c
Thompson Seedless	5 @ 5½c
Seedless Sultanas	4¾@ 5 c

Citrus Fruits.

Oranges are still going East from California at the rate of about 50 cars daily, and lemons about 30 cars. The total shipments of citrus fruits to July 30, for the season, were 40,276 cars, of which 34,461 cars were oranges, and 5815 cars were lemons. Up to the same date last year the total citrus shipments were 23,460 cars.

Eastern auction markets are holding their own nicely, though lemons are not bringing the high prices of two weeks ago. In New York on Monday, July 31, valencia oranges averaged from $3.90 to $5.40 per box. Sweets brought $2.70 and St. Michaels $2.75, while lemons sold from $2 to $3. At Boston the same day valencias averaged from $3.75 to $4.70, and lemons $3.45 to $3.95. At Philadelphia valencias sold for $3.55 to $4.90, and lemons $2.10 to $2.85 per box.

Citrus goods do not receive very much attention in the San Francisco market at present, trading being mostly of a routine character. Valencia oranges and grapefruit, however, are firmly held at an advance.

Lemons	$ 2.00	@ 6.00
Valencias, choice to fancy	3.25	@ 4.00
Grapefruit	2.25	@ 3.25
Limes	6.50	@ 7.00

Nuts, Honey, Hops, Etc.

NUTS.

It is reported here that buyers are rather slow to take up new almonds at the prices asked, though some business is being done. Eastern buyers are endeavoring to get imported stock, but the California crop is expected to move off without difficulty as the season advances. Walnuts are scarce and nominal.

Almonds, 1911 crop—	
Nonpareils	18½c
I X L	17¼c
Ne Plus Ultra	16½c
Drakes	14½c
Languedoc	14½c
Hardshells	8 @ 8½c
Walnuts—Softshell, No. 1	15 c
Standard	14½c
Softshell, No. 2	11 c
Budded	17½c

HONEY.

Local trade is quiet. The crop is turning out rather better than was expected in some places, but the production is still light and the high prices are steadily held.

New Extracted, White, per lb.	8	@	8½c
Comb, White	13	@	15 c

BEESWAX.

Prices are about as before, with very little trading. There is not much demand at the moment, and new wax is not yet coming in.

Light	28	@	32 c
Dark	23	@	26 c

HOPS.

Old stock is little more than nominal, as there is practically none left on the market. New crop is very firmly held, with contracts being made all along the Coast at top prices. European reports indicate an unusual shortage both in England and Germany.

Hops, 1910 crop	25	@	30 c
1911 crop	24	@	26 c

Live Stock.

LIVE STOCK.

Hogs again show a little advance, but stock is beginning to arrive in larger quantity, and the situation is a little easier. Some very ordinary stock is selling up to 6½c. Other descriptions of live stock are unchanged, but beef and mutton are tending downward, as arrivals of both descriptions are keeping even with current demands. Dressed mutton and lamb are a little lower.

Gross weight:			
Steers: No. 1	5	@	5¼c
No. 2	4¾	@	5 c
Cows and Heifers: No. 1			4¼c
No. 2			4 c
Bulls and Stags	2	@	3 c
Calves: Light	6½	@	6¾c
Medium	6	@	6¼c
Hogs: Grain-fed, heavy			7 c
150 to 250 lbs			7¼c
100 to 150 lbs	7¼	@	7⅝c
Small prime wethers	4	@	4½c
Large prime wethers	4	@	4½c
Ewes	3½	@	3¾c
Lambs	5	@	5¼c

DRESSED MEAT.

Steers			8½c
Cows			7½c
Heifers			7½c
Veal, large	9½	@	10½c
Mutton: Wethers	8	@	8½c
Ewes	7	@	7½c
Lambs	10	@	10½c
Hogs, dressed	10½	@	11½c

WOOL.

The market is in a condition of suspense, values being rather uncertain, and trading delayed by the tariff situation. A considerable proportion of the California spring clip, however, has been sold for about the range of values quoted.

Spring Clip—			
Choice Southern, Year's staple	10	@	12½c
7 months	8	@	11 c
Lambs, spring	8	@	10 c
Northern, year's staple	14	@	16 c

HIDES.

There is no new feature in this department, the market being firm and active as for some time past, with all prices unchanged.

Heavy Steers, over 56 lbs			12½c
Medium			11½c
Light Steers, under 48 lbs.			11 c
Heavy Cows, over 50 lbs			11 c
Light Cows, 30 to 50 lbs			10 c
Kip			13 c
Veal	16	@	16½c
Calf			16½c
Dry—			
Dry Hides	18	@	19 c
Dry Bulls			16 c
Dry Kip, 10 to 15	18	@	19 c
Dry Veal, 5 to 10			20 c
Dry Calf, 7 down	23	@	24 c
Sheep Skins—			
Long Wools	$ 1.00	@	1.25
Medium Wool, 6 to 9 mos	75	@	90c
Short Wool, 3 to 6 mos	40	@	65c
Lambs	35	@	60c

HORSES.

Recent sales have been of small consequence, offerings of desirable stock being rather infrequent. Some stock from other States has been sold of late, and prices realized were fairly good. Heavy stock, of course, is wanted more than anything else, but anything over 1300 lbs. finds a fair local demand. Ordinary stock is hard to sell.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	190@240
Wagon Horses, 1250 to 1350 lbs.	140@180
Delivery Horses, 1050 to 1250	100@125
Desirable Farm Mares	100@125
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

SPECIAL DECIDUOUS MARKET REPORT.

Sacramento, Cal., July 31, 1911.

There has been some change in the situation, the shipments from the State being somewhat heavier, especially on pears, than in previous week. The Bartlett pear shipments are at their height and will continue so until about Thursday; consequently some of the Eastern markets have eased off, owing to the heavy arrivals, but in no case have the sales been unprofitable to the shipper.

There has been a little lull in the peach shipments, owing to the lateness of the Elbertas, which ought to have been in a week ago, but will not commence to move until this week. We expect a good market on this variety and look for the same to hold up at least for three weeks, as Arkansas, which is now shipping to New York, will be practically out of the way.

Plums are holding their own, the demand keeping pace with the supply.

Early Malagas from the Imperial valley have brought the highest prices in the history of the State, one car bringing more money than was ever realized for a car of grapes shipped from California. We look for high prices on all Fresno stock and good-colored, well-keeping Tokays from the San Joaquin valley, but indications are that mildew is liable to have a serious effect upon some of the grapes in the vicinity of Lodi.

The total shipments from California are, at the present time, nearly 2000 cars short of last year's shipments, and we look for a furtner decrease before the season is over.

Cannery stock is moving at good prices, Bartletts bringing from $50 to $55 per ton and cling peaches from $40 to $50. We look for markets on all varieties to remain firm throughout the season, with an occasional slump, which might be caused by increased offerings, but, taken as a whole, the situation gives every indication of promising results.

The markets averaged as follows for the past week:

New York—Ogon, $1.15@2.25; Wickson, $1.30@3.12½; Climax, $1.45@1.75; Tragedy, $1.05@2.35; Abundance, $1.30@1.55; Burbank, $1.05@2.00; Crawford peaches, $1.20@1.90; St. John, $1.05@1.95; Bartlett, $2.20@5.25; P. Duane, $1.00@1.70; Cal. Red, $1.45@2.25; Figs, 80c.; Thompson's Seedless, $1.30@3.25; Malaga grapes, $2.37@4.00.

Chicago—Wickson, $1.60@2.50; Tragedy, $1.80@2.10; Burbanks, $1.65@1.85; Royal apricots, $0.65@1.25; Crawfords, $1.30@1.50; Elbertas, $1.35@1.70; Hales, $1.10; St. John, $1.25@1.50; Sugar Prunes, $1.50@1.90; Bartletts, $2.45@2.65; Cal. Red, $1.50@2.00; Moorpark apricots, $0.90@1.70; Malaga grapes B. P., $3.05@3.15; Cluster, $4.00@4.05; Thompson's Seedless, $3.15; Chalcot plums, $1.55@1.70; Washington, $1.35; Kelsey Japan, $1.45; Satsuma, $1.50@1.70; Bradshaw, $1.60; Mamie Ross peaches, $0.80@1.00; Fontainbleau, $0.50@1.00.

Boston—Wickson, $1.35@2.60; Climax, $1.35@1.75; Tragedy, $1.50@2.00; Burbanks, $1.45@1.75; Crawfords, $1.25@1.65, Triumph, $1.10@1.30; Hale, $1.00@1.40; St. John, $1.30@2.30; Bartletts, $2.30@3.25; Cal. Reds, $1.40@1.80; Thompson's Seedless, $1.80@2.05.

St. Louis—Wickson $1.75; Tragedy, $2.00@2.10; Burbank, $1.25@1.65; Crawfords, $1.05; St. John, $1.05; Sugar prunes, $1.50@1.85; Bartletts, $2.45@2.65; Sugar pears, $1.50@1.55; P. Duane, $1.00@1.30; Cal. Reds, $1.40@1.55; Malagas, $1.85@1.90; Clusters, $2.30@2.75; Red Astrachan apples, 75@80c.

Philadelphia — Wickson, $1.85@2.05; Tragedy, $1.30@2.00; Burbank, $1.30@1.80; St. John, $1.20@1.35; Bartlett, $2.60@3.15; P. Duane, $1.45@1.50; Cal. Reds, $1.50@1.90; Malaga Clusterettes, $2.25@2.85; Clusters, $3.90.

The meeting of the State Grange will be held at Visalia this October.

"ENGINEERING ON THE FARM"
SENT FREE
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Postal Telegraph Bldg., San Francisco

PUBLISHER'S DEPARTMENT.

This week we move to our new location at No. 420 Market street, San Francisco. We are fitting up nice quarters there, and when you are in the city call and see us.

Last week we went over the 100 mark again for new subscribers—the exact number being 117. We are trying to do better this week, even if we do move.

Several new advertisements in this issue of the PACIFIC RURAL PRESS. As our subscription list grows we notice that the advertising patronage also gains, so that altogether we feel as though we were getting our share of what is coming. The new offices on Market street will give us more room to handle the business properly and also to receive callers. We will be pleased to have you call and see us at any time, and when writing to us please address all mail to 420 Market street.

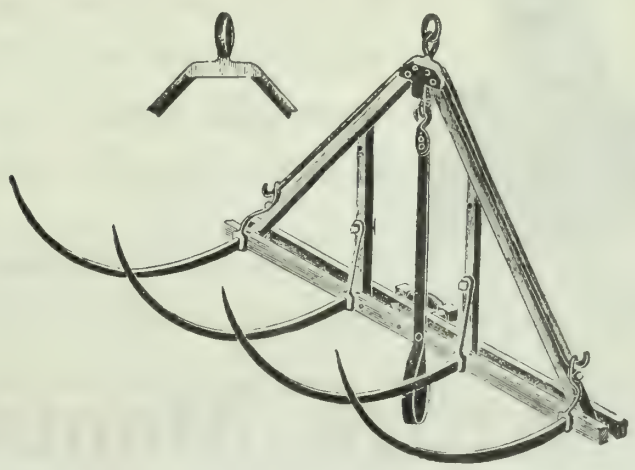
Exchanges from Stanislaus county say that the Arekalian Bros. are contracting for melons at $5 per ton until August 15.

The Fresno Scraper



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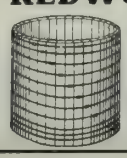
3 ft., 3½ ft., 4 ft., 4½ ft. with four tines each
5 " 5½ " 6 " " six " "

Forks weigh from 35 to 60 lbs. each, according to size.

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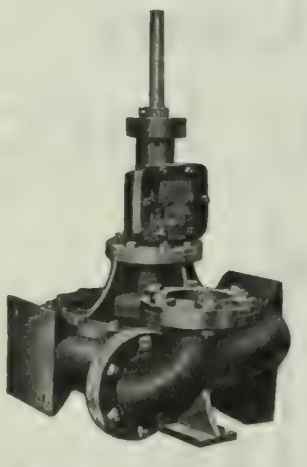
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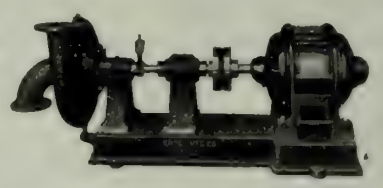
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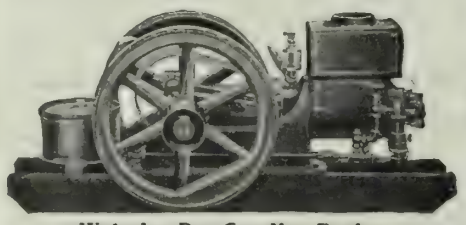
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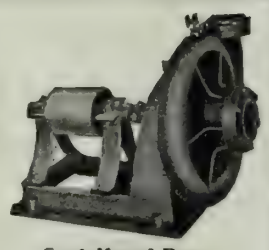
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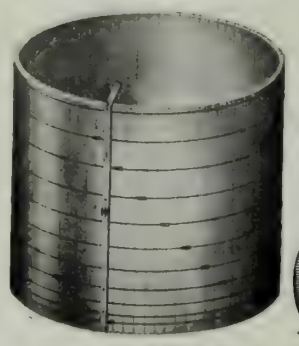


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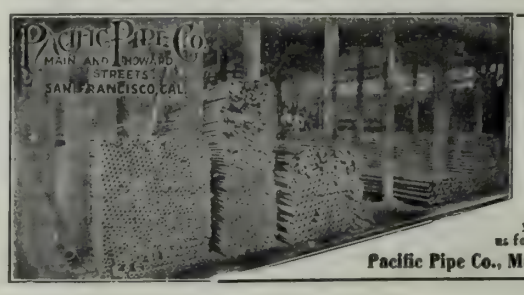
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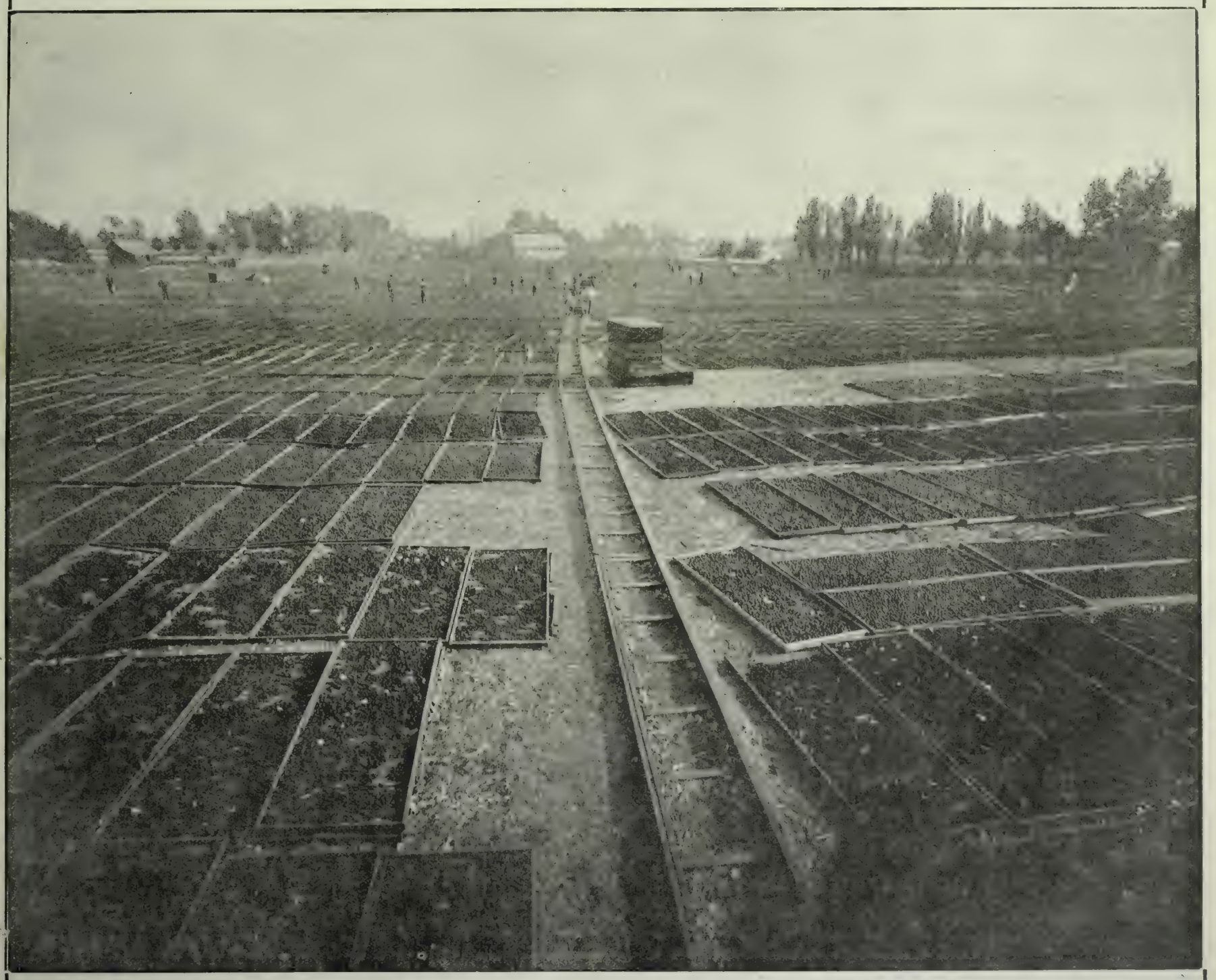
Vol. LXXXII. No. 7. SAN FRANCISCO, SATURDAY, AUGUST 12, 1911. Forty-first Year.

Prudential Points About Prunes.

How many prunes there will be in California this year has not been definitely determined, and probably will not be until the crop is made. It seems clear enough that there will not be too many, and, that being the case, we hope there will be a good round total of them to sell at a good price, for that will be the world's appreciation of prunes this year. This being the case, it is more comfortable to speak and to listen to exhortation for prune improvement than it would be in a year of very large crop and low prices.

In the first place, California is in the prune business to sell prunes well, not merely to make a great weight of them—though even that is pleasant to talk about in connection with the great fruit-producing capacity of the State. Manifestly, then, it is proper that all in the prune interest should give heed to the production of better prunes than the average output of the State now is. If the quality should be much improved it would make ours profitable when the world is full of prunes; it might also be strongly claimed that if the average were notably improved, as it certainly might be, the world never would be full. The American people are now holding prunes in higher place as a staple food than they ever have done in the past. Owing to the prune propaganda which has been steadily maintained by the passenger traffic department of the Southern Pacific railway and by the trade organizations in the prune districts, people are coming to know prunes better and to esteem them more highly. Instead of being remanded to cut-rate boarding schools and boarding houses, they now appear on the menu cards of the best hotels, clubs, dining cars and other exalted places, whence the best spread house tables are apt to take suggestions of what is socially well thought of and dietetically desirable. From such points of vantage any food material attains expanding popularity. The permanence of such popularity will, however, be always conditioned upon quality and upon uniformity of it. To get good prunes in a high place and then to get poor prunes to teach the home lesson with, brings the teacher to scorn and the prune to banishment. That there can be such a thing as prunes uniformly good has been proven to our personal satisfaction by the quality we have found for several years on the dining cars of the Southern Pacific. They evidently know

(*Continued on Page 130.*)



The Way California Sunshine Prunes are Made—Processing and Packing Houses in the Background.

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E. J. WICKSON - - - - - - - Editor
FRANK HONEYWELL - - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Aug. 8, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.05	.05	.12	62	52
Red Bluff	00	00	00	98	60
Sacramento	00	00	00	88	52
San Francisco	00	T	.01	60	50
San Jose	00	00	.01	78	50
Fresno	00	00	00	98	56
Independence	00	.10	00	94	56
San Luis Obispo	00	00	.03	72	50
Los Angeles	00	00	00	78	58
San Diego	00	.11	00	70	62

The Week.

We wish we could get very angry without losing our temper, for we would like to write a paragraph or two about the relations of politics to industry. The present relations of these two things are fit to arouse righteous indignation on the part of producers, but we cannot embody righteous indignation in writing: it is too godlike a humor for us—we have to get humanly mad and cross and lose all our stock in His image. Therefore we must avoid the subject, except an indulgence in a single reflection. The greatest thing in the world, from Washington outward, seems now to be the presidential election of 1912. To this end everyone is now being reformed or is reforming somebody else. The old and quite stable relation of one great party to the principle of protection to American industry has apparently disappeared, and all parties known to us are tumbling over each other to make consumers believe that they are the great agencies which will enable them to buy more cheaply, but none gives a moment's attention to considering what the consumer will have to buy with. It is the heyday of doctrinaires and economic theorists who are trying to make the American people believe that it is a grander thing to be a small part of the great world than to be a self-sufficient and prosperous national entity, so that they may have a chance to experiment with their theories at the people's expense. This great fallacy is taking such a hold upon the masses that all political parties are trying to get an underhold upon it for their own purposes—forgetting that the last party which drew breath upon it was killed so soon that it hardly knew that it had lived. All this comes about, it seems to us, from trying to make political capital out of an issue which ought not to be in politics at all. Protection to American industries and development of them by protection is no more a political question than patriotism is: in fact, protection is merely the economic phase of patriotism. All parties should place it in their foundations and view it only as a basic principle—established, fundamental, axiomatic. Let them then contend as best they may over the proper distribution of wealth, the relations of individuals and corporations and whatever machinery for human equalization they see fit, but not strike at the foundation of wealth in the industries themselves, in their ignorance or thirst for political mastery.

The other day there was a conference between committees of the United States Senate and the House of Representatives on what the changes in the tariff should be, but no agreement was reached. The Senate representatives held "that it is impossible to go lower and hold any of the progressive Republicans and that it is better for the Democrats to take half a loaf than to get nothing in the way of tariff bread." And so both parties are making the tariff merely a political football, trying to score in the presidential game of 1912. Our object in allusion to the matter is to exhort Californians not to forget that our leading industries are largely conditioned upon protection and exhort them to make every effort, which seems promising, to prevent their uncovering and their subjection to unequal competition with foreign products made at less cost chiefly because American laborers cannot and ought not to live on the scale of foreign peasantry. This consideration seems to weigh naught so long as there are votes to get by demagoguery—and that is why we are quite sure that we cannot get angry without losing our temper.

What Is Being Done for Agriculture in France.

While Americans are thus making sport of producing industries which are endangered by competition with cheaper foreign products, what a contrast there is also in the way agricultural production is encouraged at home and abroad. Our national and state governments do generously for research and education in agriculture, but they leave the producer to provide his own capital or hire it at the high interest which private capitalists demand. They have to make their own way against competitors who are subsidized by their Government which undertakes to furnish capital without interest to the Bank of France, and this bank loans it to associations of producers for a small charge (which must not exceed two per cent) for long periods, even up to 25 years. This money, made available for this purpose by the law of 1897, was forty million francs and an annual sum of seven million francs thereafter. This is only a proper recognition of the national obligation to those who produce food upon which the people live, but it has two relations which work injustice to American producers who, except as protected by the tariff, are brought into competition with these subsidized products: first, it makes it practically impossible for them to live and meet the labor-cost prevailing in this country, even if they are operating with their own capital: second, it makes it financially impossible to compensate hired capital, which has to be well paid in this country, in competition with almost free governmental capital abroad which is available for the same products. Now, for the sake of being a part of the great world, instead of an independent and prosperous nation, the producers of this country are to be sacrificed by the politicians because they wish to outstrip each other in capturing consumers' votes. Will they endure it? Not for long. The political trap seems to be now set so that it will catch 'em as going Republicans or coming Democrats. If the present attitude of the majority of both organizations toward the tariff is maintained, California can invoke a plague on both their houses.

Something Like This in England.

Of course, France is not alone in promoting agriculture by loans at little cost to borrowers. Many countries on the continent of Europe are doing something in this line, but are less interesting to us in this connection because we are not menaced by their export products; still, as indicating a governmental attitude toward agricultural production, all such undertakings are significant. England has a parliamentary proceeding pending for the organization of a National Land Bank for making advances for the purchase of agricultural land and for development of agricultural industry and authorized to advance money on the security of land (including buildings and equipment) purchased under the act, and to make advances for all purposes in respect of or in connection with land so purchased. It is contemplated that the bank shall have a share-capital of twenty-five million dollars and authorized to borrow, by the creation of debentures guaranteed by the British treasury, to an amount of 125 million dollars at interest not exceeding 3½%. Of course, Mr. Bull does not indulge in the sensational ecstasy of free interest as the French do—that is not to be expected in his latitude—but it is almost free when compared with the rates which west-American producers have to pay to finance their productive enterprises. And this is done to embody a purpose which is becoming more general throughout England, which is to make it easier for the man who desires to engage in farming in a small way to acquire land, to properly plant and stock it, and equip it with necessary machinery.

Do We Desire Subsidized Agriculture?

We do not wish to discuss the desirability of such subsidizing of agriculture at this time. It is not an American way. American agriculture has made its own way, from the first land clearing on the Atlantic Coast to the last fruit planting on the shores of the Pacific. The result is an American farming population which has been the main force in national development and progress from the beginning until now: an independent, self-reliant agency, creating its own wealth and giving wealth to others—the strength of the country in morals, patriotism, and enterprise. American farming is an enterprise proceeding upon its own initiative westward and scattering eastward untold millions in the form of interest upon the capital which it has borrowed from prosperous people in older-settled portions of the country. Of course, producers of such character and capacity do not need subsidy as it is doled out to the peasantry of European countries: possibly they would be injured by it in the essential quality of their citizenship and enterprise. But we are very sure of one thing, and that is that it is the clearest injustice to those who have developed the country in this way to bring their products into ruinous competition with products made by people who do need subsidizing, and that is just what it means to remove protective restrictions which force such people to meet our producers upon the basis of similar commercial vantages. As between the East and the West in this country, it is proper that the East should buy of the West which has enriched it by using its idle capital and by giving it opportunities for manufacture and trade unrivaled in the world. The newer States of the farther West need protection for their unique production in orchard, vineyard, field, and forest, and no political party should be allowed to trade upon such needs by trying to convince people that the higher cost of living is due to protection to American industry. It is demagoguery and political trickery, for it has been clearly demonstrated by decades of experience that prosperity proceeds from an adequate protective policy, and prosperity makes easy buying. It has also been demonstrated that the hardest cost of living and in many cases act-

ually the highest monetary cost thereof, has come when we have handicapped our own productions by competition with the cheap labor and cheap living of other countries.

The Lemon Not a Paramount Issue.

The prominence given to the lemon in current tariff discussions may lead many people, even many Californians, to think that it is only that fruit which is to be squeezed. The undue prominence of the lemon is explained by the fact that the duty on lemons was increased by the last Congress and emphasized by the fact that the railways foolishly tried to advance rates so that the increased value would come to them. It was so unwise that really some one ought to be punished for it; but it is important to know that practically all our fruits are endangered by the sensational proposition in the House of Representatives to put the lemon on the free list and to put it in a schedule which is commonly known as the "farmers' free list" is most dangerous of all. It is not the farmers who are working against American fruit crops. It is the lemon importers who gave the lemon this twist, because they do not want the three or four million dollars' worth of lemons which they wish to sell in this country displaced by the home product. The great danger is that if the free-traders can win a case against the lemon, it will be all the easier to uncover the orange, the prune, the raisin, and dried fruits generally, which are worth fifty millions annually as produced in California, and are produced because protection against foreign fruits of the same kinds has enabled the building of American enterprises with them. Don't laugh at the plight of the lemon: it is too sad an exponent of the danger to our greater productions as things are now running. And to think that Californians are now cavorting around politically with people who are working for political mastery along lines which threaten disaster to our greatest State industries. But one may say: "it is only politics." That is true, in a way, but Californians ought to retain their presence of mind in the midst even of politics and see to it that no one gets an idea that California can be carried politically in opposition to the prosperity and progress of her industries.

Queries and Replies.

Breaking Up Valley Land.

To the Editor: We have a tract of land situated about seven miles west of Wheatland, a part of which we wish to set out in trees and vines, another portion in alfalfa, and cultivate on strictly scientific principles. May we trouble you for a little information, as we desire to start right? We have an abundance of artesian water, heavy red soil, which I do not believe has ever been overflowed. The land was planted in wheat several years ago. For the past seven years it has been used as a sheep pasture. I do not think it was ever plowed deeper than six inches. Will you suggest a method for preparing the ground? Is it best to plow now, and how deep? What is the best time for planting trees, oranges, walnuts, etc.? Also the best time for planting alfalfa seed? What kind of trees and vines thrive best in this locality? What kind of fertilizer would you suggest for trees and what kind of vines?—Owner, Oakland.

We doubt if you could break up the land which you speak of at this time of the year to advantage unless you have a steam plowing outfit. In that case it might be desirable to plow in advance of the rain to a depth of ten or twelve inches, leaving the land rough to receive early rains, and then cross-plow and work down into shape for irrigation and planting. There is nothing that can be planted to advantage at this time of the year unless the land has been previously brought into shape for irrigation.

All kinds of deciduous fruit trees are best planted from December to February, and citrus trees usually during March and April, after the soil has become somewhat warm. If the land is not in a frosty situation, alfalfa can be sown as soon as you get the land in shape in the fall. If not sown early, it is usual to wait until the heavy frosts are over in February and somewhat later than that if the situation is particularly frosty. Nearly all kinds of fruits ought to succeed on such land if well cultivated and irrigated, unless it should be too heavy to dispose of surplus moisture well. In that case, pears, prunes, and various kinds of plums on the plum root are most likely to succeed. Other fruits on the peach and almond root are apt to get into trouble on land which retains too much water during the winter time. Walnuts on the California black walnut root are likely to be satisfactory, and the Franquette walnut is the variety which is at present most popular for valley planting.

Before undertaking much investment in this line, if the problem were ours, we should give a good deal of attention to the examination of orchard planting on similar lands in the same region, endeavoring to learn by observation and the records of local experience which fruits were most profitable as well as most productive.

Growing Pigs on Roots and Barley.

To the Editor: I desire to make a little experiment in hog raising on my farm near Ben Lomond. I do not think that we can raise either Kaffir corn, Egyptian corn or common field corn in that section on account of cold nights. We can raise all kinds of root crops, such as carrots, sugar beets, rutabagas, etc., and cow peas and pumpkins do wonderfully well. Now what several farmers in that section would like to know is: Will hogs do well on that kind of diet, especially if given a little barley with it.—D. D. B., Santa Cruz.

The plants that you mention are good for hog feeding and can be used to advantage with a little barley as you suggest. None of these plants are, however, rich in protein as alfalfa and the other clovers are. The reason why we get such a rapid and satisfactory growth of young hogs in California is due to the fact that they are largely kept on alfalfa and rapid growth is the product of a sufficient protein content in the fodder. Peas, both common field peas and cow peas do possess this element, and if you find it convenient to grow them they will serve as a substitute for the other legumes such as alfalfa. If you are feeding skimmilk, which is rich in protein, roots and grain will go well with that.

Fruit Spur Enlargements Not Parasitic.

To the Editor: I have taken the liberty to send you some Ben Davis twigs with swellings where they have borne fruit. I got into a discussion with a prominent fruit man about the cause of these swellings. His contention that they are caused by the larva of some insect, and that the fact that Ben Davis and Gano apples show swellings more than most varieties is due to those kinds being acceptable host plants for the insect seems to me rather far fetched and improbable. However, he made a bet that his contention was right and agreed to accept yourself as the judge.—Reader, Summerland, B. C.

The enlargements which you send are not due to insects' work. They are regularly encountered on some varieties of apples and pears and are caused by growth processes wholly apart from parasitic causes.

Almond Seedlings.

To the Editor: I have been told that almond trees raised from seed, no matter waht kind of seed planted, will produce bitter almonds. Is this a fact? Any information on this subject will be appreciated.—Subscriber, Ceres.

It is not a fact. The majority will probably be hard shell, sweet and bitter, but others will be soft shell, medium shell, paper shell, and everything else you ever heard of in the almond line. The almond has the sport'est kind of seedlings.

That Irrepressible Corn-Ear Worm.

To the Editor: Hearing that the California lady-bird eats eggs of the corn worm, I liberated some thousands of them (Hippodami convergens) in a patch of sweet corn while still very young, before tasseling. The insects fairly swarmed over the plants, but the corn worm is as bad as it can be, although no corn has been raised before in the neighborhood. An early trap crop is recommended, but with several broods of corn worm in a season I hardly see how the pest can be more than reduced by such a crop, which would be expensive, anyway. Do you know of a better way to reduce the corn worm, or do you know of any one working on the problem?—H. C. T., Hollywood.

We know no satisfactory treatment, and quite an elaborate set of experiments by the University entomologists yielded nothing satisfactory. We are not informed of present undertakings, but would like to hear of them.

Artichokes and Okra.

To the Editor: Would you kindly give any information on the growth of globe artichokes and okra. Do they require much care (water or cultivation) and is the market demand very great? I should like to know prices they bring in San Francisco and vicinity.—Anxious Enquirer, Sunset City.

Methods of growing were given in full in the Pacific Rural Press of January 8 and January 15 and July 9, 1910, and are included in our book, "Cailfornia Vegetables in Garden and Field." They are not difficult to grow, but must have moisture enough to be thrifty. They are in good but not great demand and prices fluctuate considerably, according to available supplies. The globe artichoke is the more profitable of the two and the better to give particular attention to.

That Florida Long-Keeping Orange.

To the Editor: In your issue of May 13 is an account of a long-keeping orange called the "Lue Gun Gong." The report seems so favorable that I would be glad if you could say if the trees of this variety are obtainable from your California citrus nurserymen.—Albert O. Pike, Clairville, Hectorville, South Australia.

This new variety was reported as being exhibited in Florida. Before it is likely to be propagated in this State it will have to undergo local tests to determine desirability. If any one can supply Mr. Pike, let him be so advised by letter.

Fall Sowing of Alfalfa.

To the Editor: I own land near Colusa, one mile from the Sacramento river. It is not under irrigation. I contracted to have it planted to alfalfa. After having it plowed and buying 1500 pounds of seed, the parties claimed the north wind blew so hard that it made the land, or the top of the land, too dry to plant, and they put in corn. Now after the corn comes off would it be possible this fall to plow and put in the alfalfa, as I have this seed and would like to use it.—Reader, Canal Zone.

If the rains come early and the ground is moistened deeply enough to carry the plant to a good fall growth such early sowing is desirable. If the fall is dry late and there is not enough time for such a growth before frosts it would be better to wait and sow the crop in February or March, as the character of the season warrants.

The Japanese and the Fruit Industry.

To the Editor: Some days ago there appeared in the Sacramento Bee a news item from a correspondent at Penryn, to the effect that the fruit industry here was passing into the hands of Japanese and that they were about to "build big packing houses."

This was copied by San Francisco and Oakland papers, and elsewhere probably. There was absolutely no foundation in fact whatever for the item.

I sent a communication to the Bee on the subject, asking them to publish it either as a news item, or communication over my signature, but they have not done so. I inclose a copy. They may publish it later, but in any event, if agreeable to you, I would like to have the PACIFIC RURAL PRESS publish the article, which explains the situation as to labor and employment of Japanese, and is sufficient, I believe, to offset the impression that the industry is going into the hands of the Orientals. H. E. BUTLER.

Penryn.

Mr. Butler's Communication.

The following is the communication to which Mr. Butler refers, in answer to the misleading statement which has unfortunately secured wide publication:

Editor Bee: The item from Penryn in the Bee of July 24, and copied in the San Francisco papers under big headlines, in regard to Japanese getting control of the fruit industry was decidedly misleading. If the Japanese intend to "build big packing houses," no one here seems to have heard of it.

Labor conditions in this district are no different from other fruit sections of the State. Oriental help has been about the only kind available for orchard work for some time past, and has been used here the same as at other places. So far as the Japanese having control of the industry is concerned, it is no greater than the one-year leases gives them. They could be replaced, if it were desired, by tenants of other nationalities, whenever the owners of the orchards elect.

As a matter of fact, some of the orchards are now leased to Swedes and Italians, who are very successful fruit growers. None of the orchards here are owned by Japanese, except one or two small holdings for berry growing.

The leases in this district are virtually labor agreements. Formerly the Japanese worked by the day, but this was gradually changed, a number of years ago, to payment to one boss of a share of the crop, from which arrangement evolved the present leasing system.

These leases are practically all alike in the district, and are on what is known as a share basis. The Japanese tenant agrees to perform the work of the orchard and harvest the fruit for half of the proceeds resulting from the sael of the crop. By the terms of the lease the owner reserves a general supervision of the work and packing of the fruit, etc., and controls the marketing of the fruit. Few owners have been short-sighted enough to lease under any other terms.

The Penryn district has some of the very finest deciduous orchards in California, and so far as their going out of the control of the owners is concerned, it is ridiculous.

Standard rules for packing fruit were made and adopted by the Placer County Growers and Shippers' Association in 1910 and have been in force since. These were subscribed to by every fruit buyer and shipper in the county, and by most of the orchard owners. These rules were not favorably received by some of the tenants at first, but it should certainly be said, in justice to them, that the most intelligent and successful among them recognize the advantage of packing only good fruit, and have lived up to the rules.

On the other hand, some, as stated, objected to the inspection of their fruit by county inspectors, and it was undoubtedly their threats to market their fruit packed in any way they saw fit, and not subject to standard rules, that gave rise to the report that they intended to build packing houses of their own. Such an enterprise would hardly be undertaken by Japanese, or by any other class of people, unless they owned the orchards or controlled them by long leases, which is not the case here and probably never will be.

Penryn. H. E. BUTLER.

We consider Mr. Butler's communication a frank statement of the facts, and therefore take pleasure in publishing it. We regret that there is in some quarters a disposition to be misled by prejudice to such an extent that great injustice is done to owners of horticultural property incidentally in the expression of dislike of Oriental labor. We have nothing to say against such dislike—that is a matter which every one must decide upon for himself. So far as liking goes, we know that many, perhaps most, owners of orchard property would not employ Orientals or lease to them if they could find other people whom they could use to the advantage of their investments and enterprises. There are many cases and places where this cannot be done at the present time and the employment of the Oriental seems the only way to proceed. If those who indulge in free condemnation would give as much time to helpful suggestions as to how a satisfactory and responsive supply of white laborers and tenants can be secured, more would be accomplished, and probably no one would be more glad that the growers who are now so freely scolded and misrepresented.

There is one phase of the labor supply question which is not often mentioned, and yet in some parts of the State it is a real issue, and that is the superior physical health of the Oriental under trying conditions. For example, in parts of the State where malarial conditions prevail, the Oriental is notably more resistant and therefore able to pursue work with greater regularity and effectiveness. This is generally overlooked in current discussions, and, of course, in most places is absent as a factor of the situation, but we know that in other places it is a real issue, and the occurrence of malaria becomes a most important factor in labor conditions. In such locations the Japanese and Chinese seem to be about the only labor immune to this disease, and growers have found it next to impossible to keep white help. It is a fact that whole families have come into malarial places, to work in the fruit, and all have been sick with malaria at the same time, within a short time after arrival. As soon as well enough, they would leave. It is widely acknowledged that white women and girls are by far the best help in the packing houses, and in a well equipped orchard packing house the work is both agreeable and profitable. But even with such advantages, until malaria is controlled it looks very much as thought growers would have to depend on Japanese and Chinese. Under these circumstances, experience has shown that the most practical method is leasing for short terms, and, in fact, this is the only way this labor can be secured in some districts now—that is, as a rule.

Critics often claim that white labor could be had if employers would provide for them better. This is often true, but it also looks as though not only better ranch accommodations, but community efforts to annihilate mosquitos and flies would be necessary in some parts of the State.—EDITOR.]

THE PEREGRINE PEACH.

To the Editor: I am sending you a sample of the Peregrine peach. This is a variety I obtained from England some years ago and have fruited it for several seasons. Its time of ripening is best explained by saying that it follows immediately after Hale's Early; in fact, the first of these are ripe while the last of the Hale's Early are still on the trees. The quality and color and size of the peach will speak for itself. The tree is particularly vigorous and foliage very large.

You, no doubt, are aware that many years ago Mr. James Shinn, myself and others imported peaches from England and other European countries, but they have all been discarded as unsuited for California conditions. This variety, however, seems to fill the bill, as it is the handsomest peach that I have ever seen. It originated with Thomas Rivers & Sons, of England, who also sent out the Grand Duke plum, Black Diamond, Emperor, Czar, and dozens of others, both plums, peaches, and nectarines, which are considered the best commercial fruits, both in Europe and this country at the present time. I should like your opinion of it.

LEONARD COATES.

Morgan Hill.

[We are very glad indeed to see this peach. It does not strike us as handsomer than a well-grown Hale's Early, although it does seem to have a little richer look, and in this respect is perhaps the handsomest of the greenish-yellow class of early peaches. Its blushes may also be brighter than Hale's as they run. But if it were no handsomer than Hale's, it would still be very desirable on account of its later ripening, for it would lengthen the Hale season and still keep ahead of the early yellow freestones. It should obviously receive attention in the early fruit-shipping districts.—EDITOR.]

NEW CHERRIES BY MR. BURBANK.

We have had the pleasure of examining two new late cherries by Mr. Luther Burbank of Santa Rosa and which he has temporarily named "Late Napoleon" and "South Giant." Late Napoleon is of the Royal Ann or Napoleon Bigarreau type and probably of that ancestry from the name Mr. Burbank gives it. The advantage of a later variety of this class is obvious, especially as it embodies the commercial characters which make Royal Ann our leading variety.

South Giant is also notable. The fruits run large, averaging over an inch in diameter as they are picked from the tree by the basketful. The stone is the smallest yet for any large cherry; the tree is a tremendous grower and bearer, and in quality it is exceptionally good. It appears to be larger, better in quality, as good a keeper and has a smaller stone than any of the popular black cherries such as Bing, Lambert, Black Republican, Black Tartarian, etc. It is without doubt a seedling of the Early Burbank, as Mr. Burbank planted no other black cherry seed that season. The Early Burbank proved an exceedingly good early black cherry and he desired to see its progeny. South Giant justifies his expectations.

Mr. Burbank writes us that he has submitted these cherries widely, and they have made a "ten-strike" from Washington, D. C., to Seattle, and from Louisiana to Minnesota, everyone being pleased with them. From his own observations of the bearing he says: "The trees are enormous and never-failing bearers. The fruit never cracks and, as you will see, is superlative for canning or shipping and is not bad to take fresh."

CAPRI FIGS WHICH HOLD ON.

To the Editor: We have a very interesting capri fig tree, inasmuch as it ripens its profichi after all other trees have dropped this crop.

Beginning about the 20th of July, it continues to ripen till about the 10th of August, or later, which makes it particularly valuable for caprifying the Mammoni or summer crop, which

is often late in coming on, and sometimes does not come out in time to take the blastophaga or fig wasp from the profichi crop.

This tree is very large, and of dense foliage. The profichi are very large, sometimes three inches in diameter, by two and three-fourths inches long. The fig wasp is well established in this tree, and it is not known where it came from.

We consider this a very interesting tree, and valuable on account of its lateness and for the abundant crop of mamme or winter crop it carries. TRIBBLE BROS.

Elk Grove.

[This is very interesting. We commend a study of the tree and its behavior to Mr. G. P. Rixford, who, as our readers already know, is making a special study of advanced fig problems in this State.—EDITOR.]

KILLING ENGLISH SPARROWS.

To the Editor: We are bothered with English sparrows to a considerable extent, in the vicinity of Burlingame. They eat our peaches, plums and apricots as soon as they commence to ripen and turn color, damaging a large part of the fruit if not watched constantly. We have a small place, but if agreeable wish you would answer through the columns of your paper how we can rid ourselves of this pest. P. C. H.

San Francisco.

[The warfare against the English sparrow was discussed in detail in the PACIFIC RURAL PRESS of March 18, 1911. The breaking up of the nesting places, which are generally near or on the buildings is about the best way to get rid of them, and the domestic cats will help you greatly if you can help them reach the eaves, cornices, etc., by ladders which they readily accept. Our home cats had them nearly destroyed when the cute rascals discovered that the cats could not get into the head of a tall Canary Island date palm, and they are nesting there waiting for us to think out how to reach them. A free use of a shotgun with small bird shot is the best way we know to keep them out of the fruit trees. The article to which we refer discusses poisoning, but we have never been able to work it very well.—EDITOR.]

Orange Handling and the Surety of Market Value.

(By Mr. A. V. Stubenrauch, in a bulletin of the U. S. Bureau of Plant Industry.)

Following the work of the Bureau of Plant Industry in investigating the causes of decay in California oranges begun by G. Harold Powell in 1904 and continued through five successive seasons, there was a very general improvement in the system of handling and marketing citrus fruits in California, and the losses from decay were effectively checked or reduced to a negligible minimum. During the early part of the present season, however, many shipments of navel oranges from California showed heavy decay from blue mold, and the conditions which were responsible for this seemed to be due to a number of factors acting singly or in combination.

The season was an unusual one in many respects. The crop was the largest in the history of the industry; the season was most unfavorable for handling, frequent rains interrupting picking operations and making ideal conditions for the development of blue mold; thus the labor was pushed to the limit in the groves and in the packing-houses. Under these conditions it is not surprising that the standard of handling was lowered; moreover, it is more than probable that the fruit was unusually tender and that it was unable to withstand the kind of handling given under ordinary circumstances.

Early in the season a bulletin was issued by Mr. Powell, now secretary and manager of the Citrus Protective League of California, calling attention to some of the measures which should be observed in preventing decay. In February the League requested the Department of Agriculture to delegate a representative of the staff of the Bureau of Plant Industry to make a detailed study of the handling methods practiced by the growers during the season, with a view to determining the relation between the treatment given the fruit and the occurrence of the decay.

How the Work Was Done.—The work was planned along lines similar to those followed in the earlier investigations of the Bureau—a determination of the percentages of mechanical injuries in the various packing-houses, a study of the relation of these injuries to the occurrence of blue-mold decay, and the investigation of the effect of various house-handling methods, washing, brushing, and packing without any special cleaning treatment, all furnishing data for a comparison of the behavior of fruit very carefully by the Bureau investigators with the same fruit handled under ordinary commercial conditions.

Mechanical Injuries.—A count of mechanically injured fruit in many packing-houses showed sufficiently high percentages of injuries to account for the greater part, if not all, of the loss from decay. A very decided increase over recent seasons in the occurrence of mechanically injured fruit was found in most of the packing-houses examined; in fact, the increase in percentages of mechanically injured fruit in houses which had been doing good work in previous seasons was surprising and significant, indicating a serious letting down in the standard of handling. The average injury in the different houses examined ranged from 4.8% to as high as 53.6%. The injuries made by individual pickers were as high as 85%. Most of the injuries consisted of clipper cuts, but there were large numbers of abrasions of various kinds, gravel punctures, scratches, etc.

Loose and projecting nails in the field boxes were found to be a frequent source of injury. In one instance it was found that nearly half of the field boxes in use by a large grower were defective in this respect and were injuring a large proportion of the fruit. These boxes had been in use during the entire season, and although an inspector was employed who was supposed to look after the careful handling of the fruit, he failed to observe the defective boxes.

The condition of the clippers in use was also found to be the cause of considerable injury. On one large place, which prides itself on its careful handling methods and where a system of inspection has been developed, the clippers were found to be in such condition that it was almost impossible to make a close, smooth cut without injuring the fruit. In this instance continuous sharpening of the clippers had worn them down to sharp points which projected in such a way that the slightest touch slit the skin of the orange, resulting in clipper cuts which, although small and apparently insignificant, were ideal places for the development of blue mold. This fact completely escaped the inspector, who had been in the habit of looking only for ordinary defects. This instance shows the necessity for constant vigilance on the part of inspectors, foremen of picking gangs, and managers of packing-houses. It is necessary to be always on the lookout for the unusual and the exceptional, as small details are frequently of the greatest importance. The factors have been so often referred to that further repetition might seem unnecessary, but the experiences and observations of the work of the past season show that they cannot be too strongly emphasized. They are likely to be overlooked unless all concerned with the handling of the fruit are constantly on the alert.

Natural Defects.—There were unusually high percentages of naturally defective fruits. Early in the season many oranges were affected with black rot, and the proportion of "splits" at the navel end of the fruit was unusually large. There is a direct connection between the occurrence of these defective fruits and blue-mold decay after the fruit is packed. Fruits affected with black rot are weakened, and the broken-down tissues become easily infected with blue mold. The "splits" may be considered as being in the same category with mechanical injuries. Many of the "splits" are too small to be detected in the grading, and many affected oranges are packed into the boxes.

The indications are that wither-tip (Colletotrichum gloeosporioides) was prevalent in some of the districts. It was impracticable to make systematic determinations or counts of fruits infected with the disease. In some instances the characteristic spots of wither-tip developed in the packed fruit and blue mold almost invariably followed.

These disease factors are not mentioned here as explanations of the occurrence of the heavy blue-mold decay during the season of 1910-11; they are cited to indicate that they were not overlooked in outlining the scope of the work.

While a certain portion of the decay in transit was undoubtedly due to the causes mentioned, which were in a large measure beyond the control of the grower, the picking gang foreman, and the packing-house manager, the investigations made show that by far the greater proportion of the decay was due to mechanical injuries as a result of poor handling. The data obtained amply demonstrate that even in such unfavorable seasons as the present one oranges can be handled in the grove and the packing-house with sufficient care to insure their sound condition on arrival at market. In a season like the one just closing, it is doubly important to handle the fruit with unusual care in order to avoid injury to the tender skin. Special precautions are necessary in unusually unfavorable seasons if a high standard and a reputation for soundness are to be maintained.

Packing Experiments.—Handling and packing experiments designed to make a direct comparison of fruit very carefully handled with the same kind of fruit handled under ordinary commercial conditions were made. In most of these experiments the actual picking, grading, handling and packing of the fruit were done by the Bureau investigators. Some packing of the carefully picked and handled fruit was done by an experienced packer working under the direct supervision of the Bureau representatives. A comparison of carefully handled brushed and unbrushed fruit with commercially handled brushed fruit was made, and also a comparison of carefully handled washed fruit with commercially handled washed fruit. The work was carried on in 25 different packing-houses, and in all 49 experimental series of fruit were prepared. The data which have been obtained, therefore, cover a wide range of conditions and are sufficiently comprehensive to serve as a safe basis for deduction. In all of the experiments the results were clear cut and consistent throughout and showed a definite relation between the kind of handling given the fruit and the occurrences of decay. The fruit was all packed and held two weeks in the packing-houses, and the percentages of decay in the various lots were determiens by actual count.

A FINE LEMON PACKING HOUSE.

San Dimas, Los Angeles county, claims the distinction of having the largest exclusive lemon packing house in the world. The floor space is 284,600 square feet. The capacity of the house is 225 cars, thus making it possible to store the fruit for weeks or months, as the demand may be, at an even and low temperature. The location is ideal, being the center of a lemon district extending over a radius of 10 miles.

The industry has increased to such an extent that, during the past few months the floor space has been enlarged by one-third, and the prospects from the newly-planted groves and those just coming into bearing indicate that another increase will become necessary in the near future. All machinery is of the most modern type and the methods of handling the fruit insure its reaching the market, in all parts of the United States, in the best possible condition. All picking is under the packing house management. After the fruit leaves the washer, it is never again touched by ungloved hands until it reaches the consumer.

AGRICULTURAL REVIEW.

With the Fruit Men.

Experiments made with lime water as a spray for the pear thrips were brought to a close this week when pears from trees thus treated were harvested. Trees treated this way by the county entomologist of Santa Clara county on the ranch of W. C. Bogen yielded several times as much fruit as did trees in the rest of the block. The spray, which can be used for prunes as well as pears, was composed of 80 pounds of lime to 100 gallons of water and applied very liberally.

The Mt. Diablo Olive Oil & Canning Co. has been formed at Concord to handle the olives raised in that section.

Fruit picking is now going along at full blast in Feather river orchards, canning fruit being shipped to Gridley.

Two shipments of lemons containing purple scale were held up by Horticultural Commissioner A. G. Schulz of Tulare recently. The purple scale has not become established in the citrus district of Tulare county, and special efforts are being made to keep it out.

About 850 acres of the former Cobb place at Dunnigan, Yolo county, is to be put out to almonds by a San Francisco company which recently purchased the place.

Sheriff W. W. Collins, of Visalia, is setting out several hundred valencias and C. E. Maescher of Exeter as many more navels.

The Apple Growers' Association of Eel River valley is preparing to market its crop for the season. A number of offers have been received for the whole crop.

French investigations, the results of which have recently been made public, seem to show that bees are of much benefit and no injury to vineyards, while the contrary is true for wasps.

In the monthly report of Horticultural Commissioner Schell of Fresno county it is stated that mites and red spiders are doing great injury to the shade trees of Fresno. Commissioner Schell states that large numbers of Cryptolaeumus montroziere, the parasite of the citrus mealy bug, have been liberated in the county recently.

Hon. John D. Dennis, formerly lord mayor of London, has been visiting the Pajaro valley to make arrangements for handling that part of the crop which will be sent to England.

George W. Sill has entered an exhibit of Pajaro valley apples at the convention of the International Apple Shippers' Association, which convened at Detroit, Michigan, this week.

Packers' estimates of the coming raisin crop made in Fresno recently were as follows: Muscats, 60% of normal, of which one-fourth are already sold, and Thompson's Seedless and Sultanas, 40%.

Shipments of Tokay grapes from Lodi are expected to begin about August 25, and Black Prince August 18.

Indications are good for a heavy crop of olives in the vicinity of Oroville.

The American Apple Exposition Association, which will hold an exhibition in Denver next November, has sent out invitations to growers and packers to send exhibits to the show.

Horticultural Commissioner Cundiff of Riverside reports that a parasite of the scutillista has practically cleaned up orange groves where the red spider has been plentiful around Corona. It is a new thing for thi sparasite to do a great deal of damage to this pest.

A number of vineyardists near Gridley, Butte county, have contracted their crops of Thompson's Seedless to Eager, Miller & Co., of Yuba City, at $23 per ton.

A bulletin has been issued by State Horticultural Commissioner Jeffrey giving all quarantine laws and orders operative in this State, together with related data.

E. M. Ehrhorn, superintendent of the entomological department of the Hawaiian Board of Horticulture, and formerly deputy horticultural commissioner in this State, has returned to California to consult with local officials and entomologists regarding co-operation in the work at both places.

Prices and Prospects.

The Dried Fruit Association of Orang county, which controls a large part of the apricots of the county, is holding for 15c. per pound. But little movement among bean buyers is reported, and a number of the growers of the county have pooled their crops with the Lima Bean Growers' Association of Ventura.

A sale of 600 bales of the coming crop of hops was made in Santa Rosa recently at 30c. per pound.

Several hay men of Livermore valley, Alameda county, received $15 per ton for hay last week.

Canneries have taken a large part of the apricots of Riverside and Los Angeles counties, paying from $60 to $65 per ton for the fresh fruit. Pits are sold for $37.50 per ton. Some growers have been asking $80 per ton for fruit, or about the same as 18c. per pound dried.

The first five cars of table grapes sent from the Coachella valley East netted nearly $3000 per car. The table grape shipments from this valley and Imperial county are now almost over.

Emirzian Brothers, of Fresno county, last week sold their 1910 and 1911 Muscats for 4¾ cents, blanket price. A number of sales of Faherzagoes, used mainly in the mincemeat trade, were also made recently at 3¾ cents.

Offers of 10½c. for season contracts on evaporated apples are reported from Sebastopol. One sale at 15c. per pound for spot delivery is also reported.

The Napa County Poultry Association will this afternoon, August 12, consider the proposition of handling all eggs of members through some one company, and bids for the same have been called for.

Cadenasso Brothers, of Madison, Yolo county, are to sell their grapes direct this year. They will ship over 6000 boxes.

Two trade papers this week give great attention to the size of the apple crop throughout the country. Being connected with the buyers' side of the market, there appears to be a tendency to make the crop appear rather large, although the estimates, as a rule, run quite close to those of the Government, which were made before the hot spell struck the East. Estimates, as a rule, are to the effect that the crop will be light, though larger than that of 1910. Private reports received at this office show that there has been some drop since the papers referred to went to press. One packer gives the output of Western States as follows: Colorado, 5000 cars; California, 4000; Washington, 3500; and Idaho, Oregon, and New Mexico each 1000 cars. Prices for Gravensteins here are $2 to $2.25 to the grower. Some contracts of Alexanders at $1.75 nave been made. In the Wenatchee valley, Washington, pears are expected to sell at $1.50 per box net, and apples at a substantial increase over 1910.

Holding for Twenty Cents.

A correspondent from Santa Clara county writes: "The apricot crop is about closed up here, some few remaining around the bottom of trees, and the cool



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weather retarding the ripening of such. Apricots shrunk much more than last year in drying, which will cut some figure in reducing a crop already very light. Any growers I have spoken with say they will hold for 20 cents or better.

"Buyers have not been actively trying to buy apricots yet, as I know here, as they know, that growers' ideas generally are for prices more in keeping with the scarcity of the crop, which is even lighter than many thought before harvesting.

"Peaches are scarcer than many hoped for, also. I understand $66 per ton for Tuscans has been paid. One firm is paying $40 for any variety of freestones, taking crop run for "pie-fruit". I think not many have sold their dried peaches, though some have done so at 10 cents.

"The prune situation here as to crop is about the same as before. The situation is sized up in what a commission drummer who is not interested in prunes told me yesterday: "There are quite a number of orchards that have a good crop, but as many more that are light.' A good many have sold at a 5 and 5¼-cent basis. Others hold for 5½ and 6 cents and up. The former think it is a pretty good price, anyway, and the latter think conditions entitle them to something better."

Raisin Imports and Exports.

The raisin situation as regards imports and exports continues highly satisfactory, the exports of California especially show a wonderful increase and constitute a record.

In 1884 the imported raisins amounted to no less than 53,000,000 pounds, with exports of California raisins nil. Only four years ago we imported 9,927,000 pounds and exported 4,720,000 pounds. For the year ending June 30, 1911, the imports were only 2,479,000 pounds, while the exports of California raisins amounted to 18,659,000 pounds, an increase of 10,133,000 pounds over the year before, which until then was the largest in the history of the industry.

Fruit Prices Strong.

The sudden demand for prunes which was reported in the last issue of the PACIFIC RURAL PRESS appears to be keeping up and a number of sales made at even higher prices than were being given then. The prevailing price to the grower at present appears to be 5½ cents, even the buyers stating that the demand at these figures is good.

Of the sales by fruit houses to date it is reported that about 75% have been made to European buyers and only 25% to American markets. It is said tnat the dried-fruit houses have sold about all the prunes they have on hand or contracted for and will have to buy all that tehy sell in the future. A number of the large sales in this country have been made in Chicago, and it appears unlikely that they will refuse to pay in coming months what they have paid now. In fact, a party in very close touch with the dried-fruit markets claims that prunes will go to 6 cents in a short time and remain there.

Buyers state that 80% of the crop has been contracted for, and, if so, it seems likely that prices will remain at least as high a figure as at present, while there is a possibility of prices falling somewhat, if a large part remain in growers' hands after the markets have been fairly well supplied.

Prices for other dried fruits appear to be enjoying equally favorable conditions. Apricots, according to some of the San Francisco buyers, are bringing 15½ to 16 cents, while others state that from 14 to 15 cents is all that is being paid, and the market is weak at that. From the same sources the prices for peaches are given as 10 to 10½ cents, the largest part of the crop being sold. About all of the San Joaquin valley apricots are said to be sold, and 80% of the crop in northern California, while in southern California but little selling has been done.

Prices for raisins are given as follows: Thompsons, 5½ to 6c.; Sultanas, 5c.; and Muscats in sweatbox, 4½ to 4⅞c. Dried-apple contracts are made at 10 to 10¼c. The market for almost all dried friut is strong.

General Agriculture.

An exchange from Orange county states that all the celery in the peat-land section will be planted by August 10, and will include about 2000 acres.

Large shipments of cantaloupes and peaches have been sent out for the last two weeks in Merced county. From Atwater, Owen Brothers have been shipping two carloads daily. Early Crawfords and Elbertas have been forming the bulk of the shipments. The first sweet potatoes of the season brought 4 cents per pound in the field. Shipments of Malaga and Thompsons will commence August 15. Some Sultanas are going out now.

Coats & Williams are said to be harvesting 20 sacks of barley to the acre on their ranch at Tulare.

The cotton crop of California for July 25 is quoted by the U. S. Crop Reporting Board at 99% of normal condition, while for the whole country the average condition is only 89.1%. The ten-year average is 79.4%.

A new variety of cantaloupe, the "Van Buskirk's Netted Rock King," is being marketed for the first time by Turlock growers. H. Van Buskirk, of Rocky Ford, Colorado, who originated the variety and furnished the seed to the growers, is attending to the marketing of the crop.

A tomato canning planning is projected at Planada, Merced county.

In the Montezuma Hills section of Solano county the yield of wheat is running at from 12 to 15 sacks per acre, larger and of better quality than for several years past.

Charles DeRose, of Dunnigan, harvested 23 sacks of wheat per acre this year from land planted the past two years to sugar beets. As a rule, through the Sacramento valley the crop is larger than last year, though in a few places less is being harvested. It is claimed that the quality is very good and the percentage of gluten higher tnan for several years past, owing in large part to a better selection of seed.

Miscellaneous.

Between 20 and 30 new wells are to be sunk on the Spalding ranch, south of Willows, Glenn county, this year. Seventeen wells are already in working condition, and 800 acres ready to be put into alfalfa in the fall. A large part of the 11,000 acres of the ranch will be set out has proved exceptionally satisfactory for soil and climate there.

The syphon for tne Butte county canal to take water under the Cherokee canal, near Biggs, has been completed. It is 500 feet long and has a carrying capacity of 250 feet per second.

A poultry show is to be held in connection with the Butte county fair, to be held fro mSeptember 26 to 30.

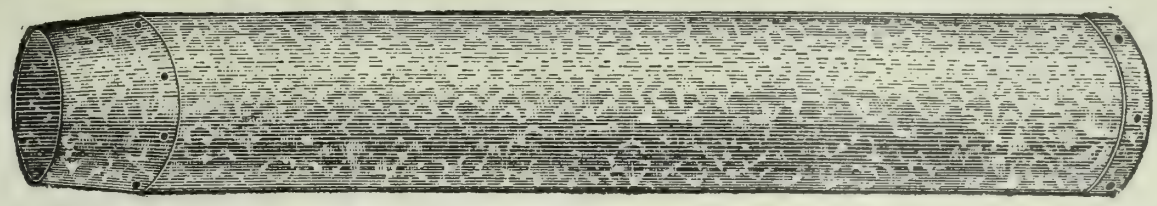
S. Forbes, of Biggs, Butte county, has ordered a cane mill and will manufacture sorghum syrup from sorghum grown on his place this fall.

There will be no vintage festival in St. Helena this fall, as all attempts to establish the custom have been abandoned. The grape growers of Napa county have into this crop when tne wells are finished. Some Italian alfalfa, which the management has been experimenting with, organized to work with the newly formed Grape Growers' Association of California. The Napa county growers and winemakers signed the agreement to contribute funds as follows: Grape growers, 5c. per ton for each ton grown; winemakers, 10c. per ton on every ton of grapes crushed.

Ranchers belonging to the Gridley Farmers' Union are pooling their crops this year and claim to be getting larger returns from their fruit and produce on this account.

Members of the Apple Annual Association and the Pajaro Valley Poultry Association are to make a tour of the apple and poultry districts north of the bay the latter part of this month and will visit the Gravenstein Apple Show at Sebastopol.

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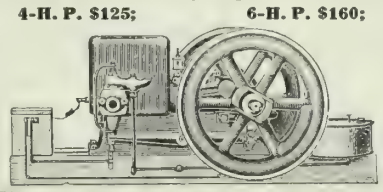
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5000 "	2.50	25,000 "	2.30

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1000 Lots,	$2.55	10,000 Lots,	$2.20
5000 "	2.30	25,000 "	2.10

One-Half Pound Baskets, Not Ventilated

1000 Lots,	$1.75	10,000 Lots,	$1.65
5000 "	1.75	25,000 "	1.60
		50,000 Lots,	$1.50

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California's Wonderful Rival in Grape Growing.

[California grape growers will be interested to read an account of the promise of grape growing in New Mexico and an exhortation to invest therein on the basis of the wonderful profits in grape growing in this State. The article is interesting because it does convey good descriptions of planting, if one desires to undertake it in a very thorough way, and it is very complimentary to California—for its own purposes. It will be interesting reading for a hot day.—EDITOR.]

It has been about five years since Pecos valley grape culture was first begun, and its growth is now on a sure basis, but because of the more immediate returns from alfalfa and other crops, until the past year grape culture has received but scant attention; but last year and the new year now in have seen a great growth in grape culture, so much so, in fact, that several solid carloads of grape vines have been imported through Pecos from California for culture. A large acreage is being planted this year and the State Irrigated Experimental Farm near Pecos is making exhaustive investigations and experimentations in their culture, so much so that fourteen different varieties are being planted this year.

PLANS FOR PLANTING.—In laying out vineyards in the Pecos valley—and the Pecos valley bids fair to become one of the great grape and currant countries of the world—the rows should be made to run as nearly north and south as possible if the vines are to be trained on a trellis, but if only stakes are to be used, which seems to be the best plan here, the rows may be run in any direction. By running the rows north and south, all the fruiting parts of the vines have nearly the same sun exposure, while the fruit, main stem, and roots are shaded and protected during the hottest part of the day. Protection of the soil from washing is of great importance, and the direction of the rows for any method of training should be made to conform to the slope of the ground. In preparing the ground it should be plowed very deeply, as no loosening of the subsoil is possible after the vines are planted. An excellent plan is to plow the ground in "lands" the width of the rows, making the "dead furrows" come where the vines are to be planted and then running the plow through them several times so as to break up the subsoil to a good depth. It will be really better if all the ground is subsoiled and the work done several weeks or even months in advance of the actual planting, so that the soil may gather all possible moisture. Just before planting, the soil should be plowed two or three times, reversing the "lands" so as to make the ridge come where the furrow was. There should be left at least three to four feet of loose soil where the vines are planted, thus affording the roots ample room for growing, besides doing much to insure them against suffering from drouth.

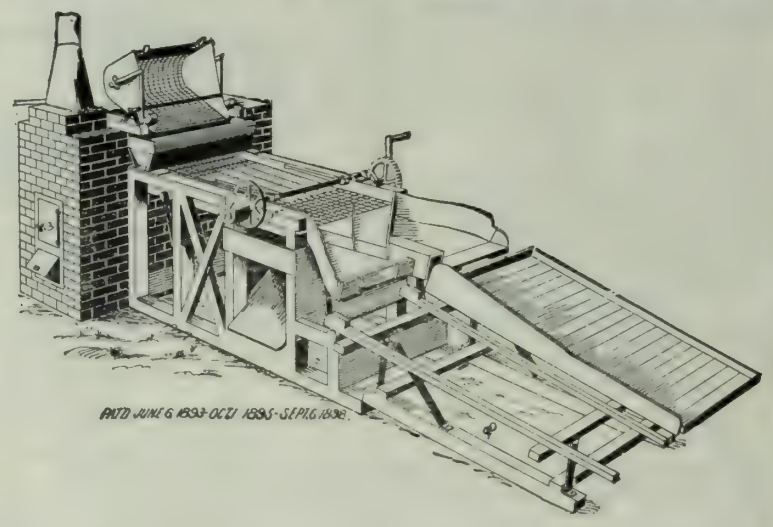
The distance between the rows should be about ten feet, and the distance between each plant about the same, or say eight to ten feet, making ten plants to every 100 square feet of cultivated surface. [It looks to us more like 1000 sq. ft.] In fact, 12 feet apart is none too far with the hardier varieties. Only strong one-year-old vines should be used for planting. The holes in which the vines are planted should be of sufficient size to give room for the roots to spread out in their natural positions, say 15 to 21 inches in diameter, and deep enough to allow the vines to be set about two inches deeper than they grow in nursery rows. Where they can be secured, it is beneficial to put a few pounds of bones in the bottom of each hole and cover them with a little soil before the vines are planted. [There must be a good many bones in New Mexico.] No otner fertilizer need be used at the time of planting.

The tops of the vines should be cut back two or three inches. In planting, the holes should be filled with the finest and richest soils. The beauty of grape culture is that it needs no special cultivation beyond that necessary to keep the vines free from weeds and all the cultivation given should be shallow. Ordinarily the first working in the spring—and they should be planted in February or March—should be done with a one-horse turning plow. For the latter workings there is nothing better than an ordinary five-toothed cultivator. Fertilizer is not generally needed in the Pecos valley; in fact, the use of it is rare, but where it is used it should contain a large proportion of potash, with relatively smaller amounts of phosphoric acid and nitrogen. The vines should then be well taken care of and the fruit appearing the second year culled and the vines not allowed to bear until the third year.

WONDERFUL FIGURES.—There are now probably 3000 acres of grapes in cultivation in the whole Pecos valley, producing crops valued at about $825 per acre. The grapes generally used are one of the following varieties: Tokay, Malaga, Black Hamburg, Rose of Peru, Thompson Seedless, and Muscat, Alexandria, all of which are profuse where properly handled in Pecos valley vineyards. Lands cultivated to vineyards should increase almost in geometrical ratio and such is the case already. For what is land worth that will produce $825 worth of grapes per annum per acre—not an exaggerated output by any means. In California this is about a normal average, and here in the Pecos valley is hardly an average in the attempts and successes so far made. Each normal healthy vine will produce in Pecos valley vineyards about 75 to 125 pounds of grapes per annum, and there are about 440 vines to the acre, making an acre production normally about 33,000 to 55,000 pounds, which at the extremely low average of 2½ cents per pound to the producer nets him $825 to $1375 per acre gross on his crop. The lands in the shallow water belts of the Pecos valley are nearly all adapted to this class of grape culture, and it staggers the imagination to think of what the country will produce when only a fraction of its available lands shall have been planted in grapes.

[It surely is staggering to think of it! Perhaps the writer can bear it better when he reflects that the figures he gives for California returns from vineyards as they run are about ten times too high and he probably will be able to carry the profits made from Pecos valley planting without staggering.—EDITOR.]

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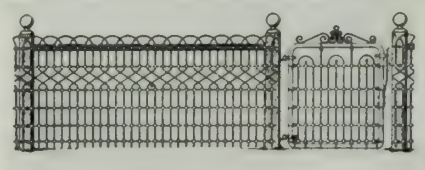


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SEARCHING THE WEST FOR POTASH.

To the Editor: Your letter to Prof. Whitney transmitting a sample of something suspected of being potash mineral has been referred to me. I presume your correspondent saw some printed notice regarding Mr. Free's work in the West last spring.

Congress has given us a special appropriation to further investigations in this country as to the fertilizer recourses, with special reference to possible sources of potash, and we are working on this matter as vigorously as possible, and, among other things, have been looking into the possibility of finding deposits high in potash in desert basins.

Mr. Free was working on this problem in New Mexico and around the Indio region, southern California. We are contemplating taking up this work again in the near future, and in that event Mr. Free will call upon you when he goes West, before going to the field.

It is possible that I may have the pleasure of calling on you myself this fall, though the condition of the work here makes it somewhat uncertain as to when I shall go West.

We will, of course, be glad to make an examination of the material submitted by your subscriber and reply directly to him.

FRANK T. CAMERON.

Bureau of Soils, U. S. Dept. Agr., Washington.

WAYS WITH MORNING GLORY.

To the Editor: In a recent visit to Watsonville, R. S. Tuttle, of that place, informed me that he had practically eradicated the morning glory on a small patch of ground by covering it with a thick layer of apple waste from the vinegar factory. He gave the credit to the apple waste on the ground that it smothered the weed, rather than to any other killing qualities it possessed.

In my own observation I have noticed that the morning glory flourishes best in loose, well pulverized soil, such as is furnished when the method of eradication by cultivation is practiced, and it has occurred to me that the work of cultivation might be saved by puddling the soil in some way, or packing it close when wet and leaving it to the growth of grass and weeds for one season. Several patches in adobe which were bad a few years ago are now almost gone, and nothing was done to stop them except to let the grass grow without cultivation.

Would be glad to know if packing or puddling the soil has ever been tried, and with what success? J. W.

These are interesting propositions. Who can give experience on them?

STORING POTATOES AND ONIONS.

To the Editor: Would you kindly advise me as to the most practical method of storing and keeping small quantities of potatoes and onions, so as to avoid, as much as possible, the tendency of these vegetables to sprout and decay, without resorting to cold storage?

Guerneville. OLD SUBSCRIBER.

Readers can help us and many readers no doubt by describing what they have devised in this line and found satisfactory. A cool, rather dry place is desirable. Who has secured this and how?

The first conviction under the new State dairy law for selling short-weight butter was made in San Francisco last week. The case was appealed on the ground that the act was unconstitutional and will be fought out in higher courts.

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A New Arsenical for Spraying.

Written for the PACIFIC RURAL PRESS
By Mr. D. J. WHITNEY.

A new arsenical which can be made as cheaply as any other arsenical used, doing a minimum amount of injury to the foliage and having an extremely poisonous effect upon insects, has been discovered by W. H. Volck, horticultural commissioner of Santa Cruz and Monterey counties, as near as can be seen through the results of recent sprayings. The new insecticide is zinc arsenite, which seems to be sufficiently effective to supplant in large part paris green and lead arsenate as insect poisons.

The value of all these substances lies in the arsenic present. Pure arsenic, however, cannot be used on account of the fact that it dissolves so readily in water and burns the leaves of the trees. In paris green the arsenic is combined with copper and in lead arsenate with lead, in zinc arsenite with zinc, all of which are very slightly soluble in water. The ortho or basic form of lead arsenate is practically insoluble in water, while the others dissolve to a slight extent. In moist climates near the coast, where fogs often come up it is necessary to have a very insoluble form of arsenic, while in dry climates other forms can be used without injury, which accounts for the existence of the different poisons.

The fact that they dissolve but slightly in water has made all less poisonous than the same amount of pure arsenic would be, as the substances ordinarily dissolve but little more in the stomach of the insects than in pure water. This was true of the tussock caterpiller to a very great extent, as the basic lead arsenate especially would pass through the caterpillers without doing injury.

It was the search for some substance that would not dissolve on the leaf, but would dissolve in the digestive tract of these caterpillers that lead to the discovery of the zinc arsenite. Contrary to the general chemical rule, the zinc combined with the form of arsenic known as the "ite" so as to form a more insoluble substance than the "ate," with which lead combines. This also means that more arsenic is present than would otherwise be the case.

On testing this substance on the caterpillers, it was found that although it was practically insoluble in water, in the stomach of the caterpillers it would readily dissolve with as deadly effect as could be desired. For the tussock caterpillers it is found that three or four pounds of the zinc arsenite to 100 gallons of water is sufficient, while a little more than that of lead arsenate is necessary, although on account of its greater solubility it may still be necessary to use the basic form of the lead arsenate in some places to prevent burning, as this has not been entirely worked out yet.

The first tests of zinc arsenite were made in 1907, when success with laboratory experiments was obtained. The next year enough material was made in the laboratory to try out on a small piece of orchard, where its poisonous properties were proved, although the foliage was burned a little. Nothing was done in 1909, but in 1910 and 1911 samples were sent out as far East as Colorado for ordinary orchard work, and considerable spraying done in the Pajaro valley, with extremely satisfactory results.

The zinc arsenite is more insoluble than any arsenical except the basic form of the lead arsenate, and possibly may be used in every place where that has been used up to this time, as so much less needs to be applied to the trees. The cost also should be less, as the zinc with which the arsenic is combined is comparatively inexpensive, and carries about 40 per cent of arsenic, while lead arsenate carries only about 25 per cent.

PRUDENTIAL POINTS ABOUT PRUNES.

(Continued From Page 121.)

how to buy better than we do, because our purchases from grocers of good reputation have brought us everything, good, bad and indifferent—which teaches us that grocers do not buy prunes well, either through ignorance or greed. The dining car prunes, according to our experience, are wonderfully uniform—good size, well grown, fleshy and tender, well processed. They are not cooked to our taste; the juice is too syrupy and the flavoring too high, but the prunes are good and would have a better flavor if held closer to nature. This is, however, a step farther into the culinary art than we are qualified to go. All this, however, convinces us that what the American people utlitamtely do with prunes will depend more upon the prunes themselves than upon anything else.

We have heard and read that in Europe, where we must sell prunes largely if we are to profitably use our producing capacity, the fate of California prunes will be directly determined by their quality, for that will fix the class which will buy them. If they are good enough to please the upper-class buyers, there will be a large call for them—even in France, where the half-cooked French prune has its own field, while ours, with sunshine curing, is different and superior for cooking purposes. California prunes in Europe will be high priced—if they are good enough. We cannot compete with Servia, Bosner and the rest in cheap prunes, and we shall not be compelled to unless ours should be as bad as theirs.

It is evident, then, that the California output of prunes must be uniformly better, that more pride be taken in the product by many producers and that standardization with inspection and the establishment of grades which determine something more than size should be introduced. A reader of the RURAL who is himself a producer of high-class prunes and finds it not only satisfactory but profitable to go to extra trouble and cost to produce them, recently suggested a movement toward standardization of dried as well as fresh fruits, and he is certainly right. Poor prunes not only depress themselves; they injure the whole product. In his communication which we recently published he laid particular emphasis upon rinsing after dipping. That is a question which those who know more about processing prunes than we do should discuss and agree upon. Our observation is that rinsing is a thing which people can easily deceive themselves about. Those who are still using primitive appliances and duck the baskets first into the lye and then into a barrel of what was probably at first fresh water, will continue the process until it does not matter much whether the lye or the rinse is used first, for both become equally foul, alkaline and cool. The result is, of course, a bad prune, though in a discussion the maker would declare for the rinsing. There would be a great improvement of the process if very many would provide themselves with up-to-date dipping machinery, use it intelligently and be conscientious about renewal of the lye tank and constant displacement of foul water from the rinser. If this is not done, we can see how a rinser could make a better prune than a non-rinser, for a man who does not rinse well has nothing over one who does not rinse at all.

We would not therefore make the quality of the finished prune dependent upon the rinsing. It occurs to us there is very much more in it. To get a good prune in the box one must first grow a good prune on the tree, and many trees because of unthrift, lack of plant food in the soil, irregularity of moisture and largely the lack of it when the fruit makes its final rush for size and sugar, are not able to finish their season's work well. Besides, even when such things are all right for a properly pruned tree with a reasonable burden of fruit, they may not be right at all for a tree which, for lack of pruning, has too much fruit, too little interior heat and light and gives to the grower, when he finally whales it off with a club, a lot of imperfect fruit which even the best processing in the world cannot make good.

Probably nothing but standardization which passes not only upon size, but upon texture and flesh, richness and truth of flavor and upon freedom from slabs and other forms of vice in prunes, will compass all the improvements which are desirable. Exhortations only reach the conscientious; actual low grading by authority is the only teacher for the careless and the ignorant. We earnestly desire to take up the subject for free and frank discussion in our columns. We would like to hear from anyone who has an observation or a conviction on the subject. Such discussion will be very timely and interesting and, we think, influential.

Mr. Fruit Grower:

This is the first of a series of little talks addressed directly to you relative to your business and ours. Both are intimately related, more so than many of you perhaps imagine, hence it will be the duty of these little talks to explain to you our mutual interests and relationships. They will appear regularly in Pacific Rural Press. Will you please watch for them and read them.

P. S.—Any suggestions relative to improving methods of packing, shipping and selling fruit will always be glady received by us.

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The California Deciduous Fruit Crop.

The estimate we print in this issue of part of the deciduous fruit crop shows peaches, prunes, and apples to be relatively the same as a month ago. The grape crop will be much better than was reported earlier in the season. Evidently the damage by frost was not so bad as was thought early in April, and while many vineyards were hurt, yet the average for the State will be fairly good. There is no doubt but that the raisin crop will be short, but table grapes will be plentiful and wine grapes a fair yield.

Prunes will be short as indicated in our columns for the past several weeks. The estimates made of the total crop for the State run from 130 to 150 million pounds. Prices have been advancing steadily, owing to the fact that there is no hold-over crop, and the further fact that the European crop is short, so that prices are now stated to be from 5¼ to 5½ cent basis. Peaches are also a fair crop and prices very high; for either shipping, drying or canning the demand is good. Apples are only a fair crop, with most of the fruit now on the trees reported sold.

COUNTIES	Peach Trees in Bearing	% of Full Crop	Prune Trees in Bearing	% of Full Crop	Apple Trees in Bearing	% of Full Crop	Acres in Table Grapes	% of Full Crop	Acres in Raisin Grapes	% of Full Crop	Acres in Wine Grapes	% of Full Crop
Alameda	84,000	75	154,600	75	55,200	50	2,300		14		.....	
Butte	133,638	90	84,405	85	12,137	70	25	65	1,500	75	20	
Colusa	13,000	50	92,500	65	6,500	75	300		44		200	
Contra Costa	28,200	60	54,220	70	8,000	90	1,105	80	20		3,740	80
El Dorado	110,000	80	124,000	25	32,000	80	200	80	87,560	50	2,000	
Fresno	3,270,000	50	83,000	75	20,000	90	2,340	75	.....		18,500	75
Kern	50,000		4,100		12,000		.....		9,397		.....	
Kings	386,200	75	6,860	50	500		.....	75	.....		138	
Lake	5,829		29,622		9,872		48		7,167		265	
Los Angeles	218,720	75	61,710		135,150		81		4,325	50	625	
Madera	70,000	40	.....		11,000	60	135		.....		2,500	75
Mendocino	10,000	100	20,000	25	2,000	50	250	100	500		1,000	100
Merced	148,401		1,525		4,500		475		.....		2,000	
Monterey	9,500	100	3,350		70,000	85	150	100	.....		20	
Napa	107,880	25	91,180	90	45,000	80	.....	75	.....		11,270	80
Nevada	12,760	20	5,800	50	12,270	50	210	80	225		550	100
Orange	38,350		17,320		12,795		.....		.....		365	
Placer	994,250	60	20,465	50	19,480		1,765	80	73		3,110	80
Riverside	45,293		22,138		5,087		311		447		2,000	
Sacramento	65,000	90	100,000	100	16,000		6,500	95	290		13,000	95
San Benito	15,000	100	125,000	100	17,000	80	25		.....		150	
San Bernardino	8,250	80	2,800	10	22,680	75	749	95	2,938	80	540	80
San Diego	8,760	80	3,240		20,200	100	1,500	100	3,200	95	18,170	100
San Joaquin	235,130	50	47,815	75	20,500	40	18,278	80	.....	80	.....	100
Santa Barbara	6,325	80	1,250	60	9,450	120	8,526	95	.....		7,650	80
Santa Clara	592,500	30	5,257,900	50	17,200		417		.....		3,700	
Santa Cruz	10,594	80	99,096		590,878	75	249	75	.....		1,304	
Shasta	44,000		87,500		15,000		100		250		650	
Solano	490,600		465,000		3,450		495		.....		16,440	
Sonoma	28,670	95	588,040	100	229,120	75	650	80	.....		2,150	
Stanislaus	50,410		7,190		4,372		162		1,238	80	395	75
Sutter	130,854	50	39,922	60	4,700		130	75	330		590	
Tehama	679,400	30	115,700	40	18,650	20	100		175		2,500	90
Tulare	348,170		137,935		13,320		5,825		13,570		3,719	
Ventura	7,800		19,000		8,100		.....		.....		.....	
Yolo	11,000	80	130,000	60	800		200	80	1,500	77	3,300	80
Yuba	69,555	80	5,055	50	7,250	40	.....	70	.....	70	.....	70

FOR BEGINNERS IN APPLE PACKING.

To the Editor: In the preparing of a good apple pack, one of the most necessary things to have is a sure and quick method of grading the fruit for size; so for the use of such readers of the PACIFIC RURAL PRESS as may wish to improve their pack I give the method of making a simple piece of apparatus for this purpose.

Take an ordinary piece of box wood with even grain, about 15 inches long and 10 wide. Cleats may be nailed on each end to prevent splitting, and a small handle nailed to the middle. With an extension bit, bore two holes, one on each side of the handle, the first 2¼ inches and the second 2½ inches in diameter. The whole thing can be made in ten or fifteen minutes, or even less.

All apples that can pass through the small hole are usually too small to pack and should be used as culls. Those going through one hole but not the other should be packed by themselves, while those too big to fit into the larger hole, but less than three inches in diameter, compose another pack. Apples more than three inches in diameter go into another division.

By using this board practically as many apples can be handled as can be without other grading than such as is given by ordinary unaided judgment as to size. With five minutes' practice a packer can usually tell at once what hole to fit an apple into, and after a little more practice only those which are near the size of those belonging in another pack need to be fitted at all.

The benefit that comes from using some such device as this is very great, as apples of even size and snugly packed will command a much higher price than others of equally good quality which are of uneven size and poorly packed. W.

DODDER AGAIN.

To the Editor: We have discovered in our alfalfa a weed or vine that a neighbor calls "dodder" or "love vine," and he says it will kill all the alfalfa if not destroyed. He advised putting straw on and burning, which I did. Is there any better way to get rid of it, and will burning it get rid of it? What is the nature of the plant, and how long does it take it to go to seed, or will it seed when five crops are cut in one season? Can it be scattered over the ranch by the manure or will it seed after being put in the mow? Will it destroy grain and other plants as well as alfalfa? How can one detect the seed so as to guard against it when buying alfalfa seed? W. H. HEMENWAY.

Lodi.

[You will doubtless have noticed the comments on dodder in our last issue which reached you after the above was written. In addition thereto, we may say that dodder will always watch its chance to make a few seed and will make them low down and escape the mower. For this reason burning in spots or close pasturing is prescribed. The seed can be scattered in the manure if the plant has a chance to make any, and a good top growth of it would probably finish maturing some seed in the mow. The only chance to subdue the plant is to tackle it low down and tackle it quick. The plant does not attack field crops generally. Different species of it choose their own host plants. There is one species which injures flax considerably. Common grains, so far as we know, are not doddered.—EDITOR.]

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Future for California Dairies.

To the Editor: The days of prophecy are long past, and the only, but very limited way, by which we can look into the future is by comparing present conditions with the years that are past, and whose history is well known.

The recent rather low prices for butter may have started some faint hearts to trembling with the thought that the dairy business was being overdone, and soon would be ruined. To such these lines are especially addressed, though others may read them if they care to.

During the past 50 years the writer has seen good butter sold as low as 5 cents per pound and as high as $1 per pound, for just about the same kind of goods. And during all of this half-century, at intervals of only a few months, some alarmist would be shouting that the dairy industry was about all in, and some timid farmer would quit milking his cows because he fancied that it did not pay, though in truth he had never had any very correct or even approximate ideas as to whether any or all of his cows made or lost him money. In fact, there is always a certain class of farmers who never really know whether they are keeping cows or the cows are keeping them and their families. These are always the first to cry failure. During this same time the country has grown to many times its former size, while transportation facilities have contracted it until North, South, East, and West are practically one; and San Francisco is now no farther from New York than Chicago was then. While the population has greatly increased, the proportion of those who do or will milk cows has nowhere kept up with the gross increase in mere numbers. As has been well and truly said heretofore, "All the babies that are born drink milk, while only half of the calves born give milk." All over the land the town and city population has increased, while in most of the States the farm-dwellers have actually decreased at every succeeding census. In California, by immigration and otherwise, the increase has been great, but nearly all have gone to the cities and towns. Here, as elsewhere, the cry of "Back to the land" has been loud and long, but the most of those who started on the journey seem to have brought up in some village or city, and very few have ever got to a seat on a milk-stool.

More Consumers, Fewer Producers.—While the prices of dairy products have varied somewhat during the time just considered, mostly on account of monetary stress and changes, the trend has been steadily and almost continuously upward, and though packing-house interests have generously (?) tried to help the poor teat-puller out with that fraud which they call "poor man's butter." This is a very correct name for the stuff, for anyone will indeed be poor, both physically and financially, who greases his bread with it for any considerable time.

The building and perfecting of the large cold-storage plants has also had a great influence on the market—generally a steadying effect beneficial to all, though sometimes resulting in speculation and so-called corners.

Thus judging the future in the light of the past, we can see no good reason why the prospects for dairying here are not extra good. While this increase of consumers over producers is and will ever be apparent all over the world, in no place will it be as marked as in California. The average immigrant to this State, from now on, is generally past his prime, and nine times out of ten he comes here to rest, or, as many of them express it, "to take things easy." He wants to raise fruit, generally oranges or lemons, or anything but "pull teats." Often he has more than enough of that in the hard and frigid Northeast. The tendency of all business today is toward specialization, and he is no exception to the trend, and therefore buys butter or goes without, and milks a tin cow with a can opener, as thousands do. This is often best, and in fact the only thing that hundreds can do, as it does not pay to milk cows anywhere, unless one makes a business of it, doing it right, with the right kind of cows. This will tend to make more and still more consumers, and a still better chance for those who make a specialty of dairying. But the dairyman of the future, either here or anywhere else, must know his cows. The time for milking any female animal of the genus "bos", and counting her as a cow, and as one of a dairy herd, has gone by, if it ever existed, which is very doubtful. The cow of the future must show a profit as a milk or butter producer or pass to the cannery. To prove her profit or loss, the future dairyman must be, to some extent, a bookkeeper as well as a teat-puller.

Weigh and Test.—The average dairyman always shys at anything of this kind, with the idea that it costs too much, although he probably knows as little about the actual expense to be incurred as he does about the cost of running a steamboat or freight train on the railroad. On a basis of 15 cents per hour for the actual time used, several of the experiment stations have proved that an ordinary herd of about 20 can be tested for $1 per cow per year, and my own experience for several years shows that it is even less than that.

The benefit is so great that no one who has ever tried it will ever go back to the old haphazard way. The means and mode of doing this may be told later, if anyone desires it. At the present price of beef there can be no reason for keeping a cow that does not pay her way.

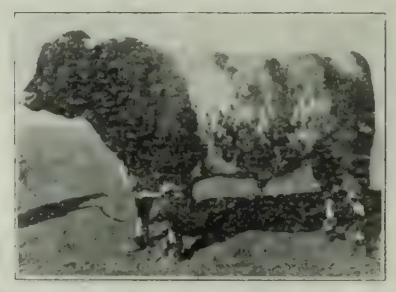
For the first time since the big stock yards at Chicago were built, "she-stock", as it is called in trade parlance, has lately hold as high, or even higher than beef steers. It may not be quite that way here yet, but it must come, and that very soon. Another thing that will tend to make dairying more of a profession is that dread disease, tuberculosis. The dairy herd of the future must be free from any taint of disease. And though doctors disagree as to whether bovine tuberculosis is the same as the human "great white plague," all agree that both are contagious diseases, and all future dairymen, of even average intelligence, will be very cautious of buying cows in the stockyards, or anywhere that he can find them.

The Nation and many of the States refuse to admit cows that have not been tuberculin tested, hence there will ever be a better and constantly improving prospect for the dairyman who raises his own registered cows, and by constant care and watchfulness keeps them free from disease.

What is known as certified milk will be the rule rather than the exception, as it now it is; and the dairyman of the future who will read, think, and be alive to the lessons of the years as they roll past, cannot fail to make a grand success of dairying here in this State of many advantages and few disadvantages. Some will fail, but they will be the scrub dairyman, with scrub cows, of unknown value or power of production. In short, there will be two classes of dairymen in the future, even more than in the past, and it is for the man himself to say which class he will join.

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See what Dr. Creely says:

Dear Sir:—In answer to yours of the 7th inst., will state that I have closely watched the animals under my charge and will say that horses on which your preparation is used are more susceptible to our medicines and treatments, make more rapid recoveries and are working, while others with less serious attacks are perhaps convalescing. It is a rare thing to find an animal subject to colic while using your Food. It may not be policy on my part to recommend a Food which is a detriment to our profession, but from my own experience it pays to give an honest opinion. We may lose on the individual case, but in the long run I make up what is lost ten times over again.

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SAN FRANCISCO

ALL DEALERS

More Work for Mules.

Written for the PACIFIC RURAL PRESS
By MR. D. J. WHITNEY.

Two things have happened within the past few weeks which should have a considerable effect upon the demand for horses and mules within a short time, but apparently without effect upon prices so far as can be seen at present.

The first is the appointment of the State board which is to have charge of the building of the $18,000,000 highway, and the second is the selection of a site for the Panama-Pacific Exposition. Both of these call for an immense amount of grading, hauling, and other heavy work for which horses and mules are essential, and the work must be done without drawing away too largely animals used in other construction work throughout the State.

The work on both of these projects must be begun and largely completed before many months have gone by. On the fair site all streets and road work will have to be practically completed before material can be hauled to its proper position or building started and the same thing is true regarding the foundation of all exposition buildings. How much work will be required it is impossible to say before plans are completed and the engineers have made surveys and calculations, but it is safe to say that a considerable part of the $17,500,000 to be spent will go toward mule and horse hire.

With the State highways a considerably larger portion will go the same way, as very little grading can be done without horses and mules, and the hauling of material will furnish a large part of what is left of the total expense.

There is not in the State now sufficient animals to do anything but a small part of this work without taking them away from other productive work, and importation will make up the deficiency. At the present time there is neither enough of a demand to bring out a good supply, nor enough of a supply to break prices, prices being at about the same figure as two years ago, with a dull market.

It must be remembered, however, that this work will not continue for a very long period, for as the grading for the exposition must be largely completed before other work starts and other work must be started long before 1915, there will be a good deal more horseflesh, or rather mule flesh, in the city than there is any local demand for. The same thing is true on the State road work, as this will probably be completed long before a young mule would live out a very large part of his working career.

These same facts will indicate that there would be no advantage in breeding now so as to take advantage of this demand, as all the work will be completed by the time that the foal of next spring is ready to go into harness.

What the rise in price for animals should be it is hard to say, although, since it will be necessary to bring in animals from other States, it is safe to say that it will equal the transportation charges and then some, though perhaps not a very great amount.

UNIVERSITY BUTTER-SCORING CONTEST.

The following is the report of the Fourth Entry, third year, scored August 1, 1911, at the University Farm, Davis, California, as prepared by Mr. Leon M. Davis:

The bad effects of hot weather were plainly shown in the butter which was sent in to the fourth scoring of the California Butter Contest. The number of entries received however, shows that the participating buttermakers are not quitters, but are determined to stay with the Contest, regardless of a lack of ideal conditions.

The scores, as placed by Mr. W. B. Thurston, Federal Dairyman, and members of the University Dairy Department, were as follows:

No.	Creamery and Location.	Score.
11	Suisun	94
16	Salinas	93½
3	University Farm, Davis	93
13	Laton Co-operative	93
9	Cottonwood	92½
20	Grizzly Bluff	92
14	Dairyman's Co-op., Tulare	91½
7	California Polytechnic School. San Luis Obispo	91
19	Glenn County Cold Storage and Creamery Co., Willows	91
15	Visalia Co-opeartive	91
8	Ceres	90½
2	Santa Rosa	90½
6	Santa Ysabel, Paso Robles	90
17	Bay View, Napa	90
10	Unnamed	89½
18	do	89½
5	do	89
4	do	88½
1	do	88½
12	do	88½

AN EASEMENT IN BLOAT.

To the Editor: It does not seem to be generally known that to put a bridle on a cow or put a stick in her mouth and tie tightly with a string or strap up over her head, so as to keep her jaws working, will relieve bloat. We have given common soda and salt with good results to our milk cows. Take a whip and run her around the corral, after giving the soda. This treatment causes the wind to pass off.

Continued use of castor oil rubbed on cow's teats after milking will cure warts. Last, but not least, the Cottrell system for condensing sulphur fumes at Coram was not a success, and the smelter has been closed indefinitely by the Farmers' Association. M. M. GIBSON.

Redding.

WHEAT AND BARLEY FOR FEEDING.

To the Editor: What is the difference in the feeding value of wheat and barley for hogs and horses? Wouldn't rolled wheat be better for horse feed than rolled barley? Wheat can be bought here for the same price as barley. READER.

There is very little difference in the chemical composition of wheat and barley. In their physical condition there is much difference, chiefly because of the adhering chaff of the barley, which makes it more digestible because it separates the starchy mass and enables the gastric juice to work upon the particles more readily and quickly. Oats also have this character. This is very important in the case of horses, which can quickly be put out of condition by feeding wheat. For hogs and chickens it makes much less difference, and the absence of the chaff gives a greater amount of nutritive matter to the ton, so that wheat is worth more at the same ton price. But look out about giving horses too much wheat.

A Wild West celebration, including a reunion of stockmen and cowboys, is planned for the week beginning September 15 at Bakersfield.

A horse and a pig on the ranch of F. A. Shackford, near Visalia, were recently attacked by rabies and had to be killed.

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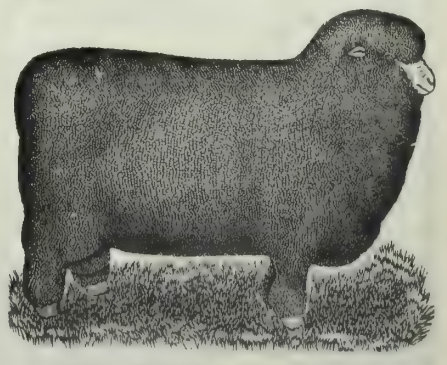
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A. W. MORRIS & SONS, Woodland, Cal.—Importers and breeders registered Holsteins.

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THE STOCKMAN'S STAND-BY FOR SUCCESS IN VETERINARY USES

IT DOES THE WORK.

DAIRY NOTES.

Receipts of dairy produce into San Francisco continue to show a substantial increase over those of July of former years. Last month 1,954,300 pounds of butter came into the city market, compared with 1,219,000 pounds in July, 1910, and 2,391,500 pounds in June, 1911. The decrease in receipts as compared with June is reflected in the higher prices that are being obtained. In the week ending July 6 the average price of butter was 22 cents and receipts 593,700 pounds, while for the week ending August 3 the receipts were only 336,700 pounds and the average price a fraction over 25 cents. With eggs, 1,558,290 dozen were received, against 1,634,886 of the previous month and 1,182,776 for July, 1910. The prices at the first of the month and at the end differed by about 5 cents, and receipts were approximately the same. The receipts of cheese were 1,269,600 pounds for July, 1911, 1,185,100 pounds for July, 1910, and 1,100,200 pounds for June, 1911. A large part of this cheese was imported from the East, while only the poorer grades of eggs and butter came from outside of this State.

Prices of milch cows in Chicago markets are given as follows in a Chicago trade paper: Below medium, $30 to $37.50, average to $45; fairly good to very good cows, $45 to $50; extra choice, $55; and only fancy-bred cows above that figure. Pirces here, as is well known, have run from 50 to 100 per cent above those figures in recent sales.

Menke & Co., of San Francisco, who recently purchased the Towne ranch below Bakersfield, are stocking up with Holsteins.

Reis Brothers, of Vallejo, who recently purchased the J. C. Money farm near Oakville, are to conduct a certified dairy on the place.

F. W. Andreasen, of the State Dairy Bureau, has returned from a visit to Tulare county and reports that the condition of dairies there is much better than in previous years.

The Modesto Board of Trade has taken up the proposition of having a condensed-milk factory opened at that place, and plans for the same are being made by a large company now in that business.

R. M. Osborne, of San Luis Obispo county, is to establish a creamery at Malin, in the Klamath country. Members of the Farmers' Union of that place are sending for a number of Holstein cows to add to their herds.

Los Angeles capitalists are reported to be contemplating the establishment of an extensive dairy ranch on the Packard place near Ensenada, Lower California. The products of the ranch are to be marketed at San Diego and Los Angeles.

The Pennant dairy ranch of 100 acres, a short distance below Sacramento, has been leased, with 400 head of cattle and all equipment, to Dr. F. J. Weldon and J. F. Heenan. W. A. Forbes, who stocked the dairy, has given up the management of the place to enter the importing business, and will buy and ship high-class dairy cows from the East for persons who do not want to go East themselves, are inexperienced in the shipping business or wish less than car lots.

2335-ACRE RANCH FOR SALE

We have a Stock Ranch of 2335 Acres, three running streams, two barns, two houses, well fenced, rolling hills, good soil, about 1500 acres tillable, and has produced as high as eighteen sacks of wheat per acre. Four miles southwest of Dunnigan, Yolo County.

PRICE, $18 PER ACRE

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Yolo County, - Cal.

LIVE STOCK NOTES.

E. A. Palm, of Yolo county, has purchased 8200 acres of land near Red Bluff from J. A. McRay for use as a cattle ranch.

Chas. Kimble, of Hanford, shipped a carload of Rambouillet bucks to Winslow, Ariz., last week.

The fall shearing of sheep has begun in Colusa county.

Charles Brown, of Clio, Plumas county, lost 60 sheep in the last few weeks through bears, four of which have been killed by the herders.

HONEY PRODUCERS ORGANIZING.

Mr. W. S. Rather, of Hemet, Riverside county, gives to Gleanings a note of local organization: The bee-keepers of this valley formed an association to be known as the Hemet Valley Bee-keepers' Association, and nearly all the bee-men in this end of the county have joined or signified their intention of so doing. The officers elected for the first year were as follows: C. J. Davidson, president; W. S. Rather, secretary; W. B. Tripp, treasurer. There were also elected five directors, as follows: J. A. St. John, W. H. Densmore, W. B. Tripp, C. J. Davidson, and Charles Sims. Rather Brothers, of Hemet, were chosen as business agents.

This is regarded as a wise step by the bee-keepers, for the reason that for years they have acted individually in the sale of their honey, generally selling to the first buyer who came along and told them of the immense crops that were being made from Maine to Texas, and how cheap the article would be next week as soon as the real conditions became known, etc.

Realizing the importance of organization to get the best results from their labor, and also realizing the fact that the raising of bees and the making of honey and beeswax in this section of the country is growing each year, and would in the near future, if it does not already, cut some figure in the price of honey in California, they have decided to pool their interests, accumulate their output in one place, and advertise to the world the fact that we raise the best and purest honey to be found in our country, and endeavor to create a market for it, especially in the East.

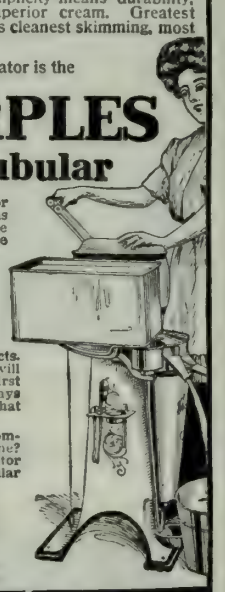
The business managers are making every effort to reach the responsible buyers and have already received an offer of 7 cents per pound for the entire season's output. Last year all of our honey was sold at 5¾ cents. Our neighbors in the Imperial valley got 6 cents for their product, which is believed to be less desirable. They were organized, but we were not.

THE WORLD'S BEST Cream Separator

is bound to be simplest and have the greatest skimming force. Simplicity means durability, ease of cleaning, superior cream. Greatest skimming force means cleanest skimming, most butter.

The only simple separator is the

SHARPLES Dairy Tubular



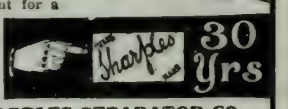
It contains no disks or other contraptions. It has twice the skimming force of others, and therefore skims faster and twice as clean. Wears a lifetime. Guaranteed forever by America's oldest and world's biggest separator concern.

These are simple, plain, easily proven facts. If you heed them, you will get a Tubular in the first place. It repeatedly pays for itself by saving what others lose.

Why bother with any complicated or cheap machine? You don't want a separator that the patented Tubular put out of date over ten years ago. The fact that others have finally bought Tubulars means "Finally a Tubular" for you.

You can arrange with our local agent for a free trial.

Other separators taken in exchange for Tubulars. Write for catalog 151.



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Los Altos Stock Farm, established for breeding with a choice selection of pure-bred, imported, registered stallions and mares with pedigrees running into the best blood lines. All of the big draft type, first class in every way. Some of the stallions and mares reach a ton in weight.

Now ready for sale, a few selected, coming three-year-old and one coming four-year-old stallions. All registered. These colts are fine in conformation, size, bone, and disposition, and give great promise. They can be seen at the barn near the station at Los Altos.

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Ranches at Los Altos and near Mt. View.

Cows Give 262 lbs. More Milk Daily

After substituting a part of their regular feed with Proteina, says a leading dairyman. ¶ Unequalled for Cows, Calves and Poultry, and fed at a comparative low cost.



46% PROTEIN - 10% FAT



Proteina is concentrated from the Soy Bean and contains 33⅓ more Protein. The U. S. Agricultural Dept. says: "A bushel of Soy beans is at least twice as valuable for feed as a bushel of corn." ¶ POULTRY MEN FIND PROTEINA BETTER THAN BEEF SCRAPS FOR LAYING HENS. Write for signed letters from Poultrymen and Dairymen.

Proteina SOY BEAN **OIL MEAL**

MANUFACTURED BY PACIFIC OIL MILLS SEATTLE

SOLD BY DEALERS OR PACIFIC OIL MILLS, SEATTLE.

POULTRY DEPARTMENT.

Conducted By M. RUSSELL JAMES.

EXTERMINATING POULTRY VERMIN.

In considering the common species of vermin which prey upon domestic fowls we have found that they differ in anatomy and habits; consequently different methods are required in their destruction. For instance, most species of body lice breathe through the pores of the skin, and may be put out of business by fine dust filling those air tubes; mites, fleas and their sort are not built in that way, but find their most congenial breeding places in filthy dust.

COMMON DELUSIONS.

There are quite a few delusions about poultry vermin which work to the advantage of those pests. Among these are the belief that certain substances or odors will drive them away and keep them away without further effort on the part of the care-taker; that hanging perches will do the trick, or in other words that the hen can leave the blood-thirsty crowd on the walls and floors and rest at her ease on the suspended roost; and again that no vermin can live and multiply in cleanliness and sunlight. There are more to the same effect, and if they could be depended upon it would make the way easier for both the poultry and the poultryman.

Scattering certain substances of pungent odor about the poultry quarters has no effect upon this class of vermin. I have seen mites crawling over moth balls placed in the hen nests to scare them off. Suspending the perches may complicate matters for the mites, but they will be in at the feast, even if a little late; in fact, they annoy the fowls both day and night in badly infested quarters, while the nests of both laying and sitting hens are their favorite resorts. Cleanliness and sunlight are strong and necessary factors in exterminating vermin. The Maine Experiment Station says, "Cleanliness, fresh air and sunlight are cheap and effective preventatives," and so said we when we first tackled the poultry business; but experience has taught us that even this powerful trio must be supplemented by a frequent application of some strong insecticide. In short, in fighting vermin there can be no compromise; we must smite them "hip and thigh," and keep everlastingly on their trail.

TREATMENT FOR LICE.

The lice which live and breed on poultry are commonly distinguished as body lice and head lice. The former are small active vermin which infest all parts of the fowl's body and breed prodigiously. It has been estimated that in eight weeks' time one louse may father, grandfather and great-grandfather 125,000 descendants. These lice do not suck the blood, but eat the roots of the feathers and the scales of the skin, causing great irritation and restlessness to their host. Sometimes they are found in the nests among the cast-off feathers upon which they can subsist a long while.

To destroy these lice frequent applications of good insect powder are effective. Care must be taken to use a powder not injurious to the eyes of the fowl. One of the best for the purpoes is Persian insect powder, also known as buhach. This powder loses its virtue if exposed to the air or kept too long. In buying, get it from dealers who are likely to have it fresh and strong. The reliable poultry houses also keep good lice powders.

In applying, the powder should be worked well into the roots of the feathers, especially about the neck, rump, between the thighs, under the wings, and the fluffy feathers of the fowl; after which it is well to wrap a sack closely about the bird for a few minutes that the powder may do its perfect work. All sitters should have a thorough treatment for lice a day or two before the proper eggs are placed under them; and again after hatching, the chicks being previously put in a warm basket and liberally sprinkled with insect powder.

HEAD LICE.—These are large gray lice and true blood-suckers. They are not active like the body lice, but fasten themselves on the head, throat and rump of fowls and may be mistaken for pin-feathers. They much prefer the tender chick, and if present will leave the mother hen and locate on the chicks as soon as hatched. They thrust their long bills through the skin into the blood vessels and literally sap the life of the helpless chick, causing the death of thousands yearly.

To combat these lice some good salve is necessary. A mixture of one part sassafras to six parts sweet oil comes highly recommended; also carbolated vaseline. But whatever is used must be used in moderation and applied with care. To have the feathers stuck up with any kind of grease will kill the chick. To my notion, the very best thing to use is coal oil. It cleans instead of soiling and sticking up the feathers and down. A bit of soft clean sponge or cloth should be squeezed out of the coal oil and lightly applied where needed. Coal oil is perfectly harmless on the most delicate skin so long as the air is not excluded before the strength is evaporated, otherwise it will blister where it comes in contact with the flesh.

Supply small chicks as well as larger ones and mature fowls with good dusting places, that are kept clean, mellow and slightly damp. Even tiny chicks will dust and wallow daily in such spots.

All lazy, dumpish or ailing fowls are lice breeders and should be eliminated from the flock. With clean premises, proper dusting places, well-balanced rations and healthy stock there will be little trouble from lice unless the flock comes in contact with lousy fowls. In buying new stock it should be a hard and fast rule always to quarantine the birds and give them a thorough treatment for lice.

Next week we shall consider the still more formidable pest, the mite family.

POULTRY.

IF YOU COMMENCE FEEDING CROLEY'S Ground Green Bone NOW, you will be benefited in the fall when eggs are high. Write for circular and sample. Geo. H. Croley Co., 629 Brannan St., San Francisco.

DAY-OLD CHICKS—Barred Rocks and White Leghorn chicks, good laying strains; order early for fall delivery and avoid delay. Fairmount Hatchery, Box 29 B, R. F. D., Santa Cruz, California.

S. C. B. MINORCA EGGS for hatching at $6 per 100; can fill large orders; 12 yards large beautiful hens, excellent layers. Black Beauty Poultry Yards, Dixon, Cal.

OAKLAND POULTRY YARDS, 149D, California St., San Francisco.—Est. 40 years. Standard bred poultry. White Orpingtons. R. I. Reds, Brd. Rocks. White Leghorns.

MY FAMOUS S. C. WHITE LEGHORN baby chicks, I am NOW prepared to ship on mail orders, present or future delivery. Carl Stange, 1409 Silver Ave., S. F.

YOUNG FAWN AND WHITE INDIAN Runner drakes for sale, from a great egg-laying strain. F. L. Merrill, Fairfield, California.

IF INTERESTED IN INCUBATORS or how to feed, write for our free Catalog. PETALUMA INCUBATOR CO., Petaluma, California.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea fowl and eggs. Address Wm. A French, 545 W. Park St., Stockton, Cal.

WAYSIDE YARDS—A few settings from special S. C. White Leghorn matings, at $5 for 30. Carl Gregory, Petaluma, Cal.

FREE BOOK—"Poultry Feeding for Profit," on application to Coulson Co., Petaluma, Cal., Box P.

WHITE LEGHORNS—Chicks, eggs, cockerels. Fine stock. Reasonable. O. B Morris, Lodi, Cal.

BUFF ORPINGTONS—Mr. and Mrs. W. S Sullivan, 25 Market St., Agnew, Santa Clara County, Cal.

BRONZE Turkeys and Eggs. Ed Hart Clements, Cal. Large size, good plumage, early maturity.

TWIN OAKS FARM—W. H. Bissell, Proprietor, Livermore, Cal.—Buff, White Orpington.

HATCHING EGGS—White Leghorns. Circular 164. A. H. Gregory, Fruitvale, Cal.

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SURPLUS STOCK FOR SALE

1200 Pullets	May Hatching
1000 Pullets	June Hatching
500 Pullets	July Hatching
200 Cockerels	
50 Aylesbury Ducks	

Will hold for purchaser until five months old, if desired. Orders booked for eggs next season's hatching. Correspondence solicited. Visitors welcome.

R. N. FOSTER, Manager

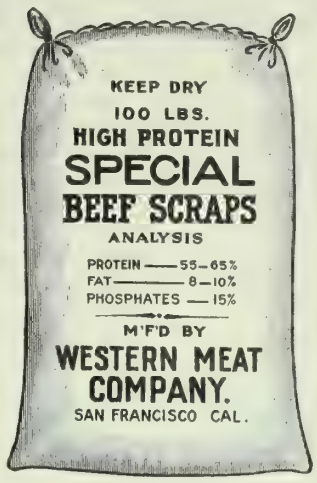
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If your dealer cannot supply you, write us, and we will send you samples and prices.



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Feed some to your chickens NOW and reap the benefit in the Fall when eggs are worth real money. Write for circular and sample. Free.

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WOULD the well-known poultry writer, J. C. Clipp use the expression: "I am in love with your machine"?

WOULD the Great River Home Poultry Yards of Perrysburg, Ohio, run on the most scientific methods known in Poultry Culture, equip their entire plant, and thousands of poultry-men all over the country use the

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If it were not the greatest grain and labor-saving device ever introduced in the poultry business?

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The Home Circle.

Thanksgiving Street.

If you live in Grumpy Hollow where the days are dark and long,
If you hear the voice of singing and you hanker for the song;
You may have a home that's waiting where the storm-gusts never beat—
On the sunny side of living—on Thanksgiving's quiet street.

Do not plant too long about it, nor think of "what they'll say";
If you live in Grumpy Hollow, it's moving time today;
There are lips to bid you welcome, there are friends you'll like to meet,
There's a song that you'll be singing when you reach Thanksgiving street.

What if you have some "personals" of discontent and gloom,
They're not worth the taking with you, do not give them luggage room;
But take each tender blossom from the rose of love besprent,
And give them home-abiding in the house they call Content.

If you live in Grumpy Hollow, and beyond you, range on range,
The hills of Hope rise sunward, and you're pining for the change,
Start out today—this morning!—while the heart of you is sweet,
And you shall know by sunset that you've found Thanksgiving street.

—Farm Stock Home.

Little Jim.

EDWIN CHASE.

Little Jim was born in a Florence Crittenden Home one Christmas eve while the city's thousands were rejoicing in the happy memory of another child born in an humble place, long, long ago.

The Crittenden babies have no fathers to speak of, so of course little Jim had none. But that wasn't his fault, nor was it alone the fault of his pretty mother.

But all the Crittenden babies have mothers, just as other babies do, and, oh, how quickly their time flies! Why, it was only like the little space between two Sundays until the mother of Jim had to go out into the big, busy world to earn a living for him.

And that is how she came to operate the telephone in a great hotel for the rich, and how after awhile she met and was married to a fine man who didn't know Jim.

Then they went away to another city where they lived in a beautiful house, while little Jim staid to be a Crittenden baby at so much a month.

But all the time Jim's mother wanted him. She dreamed of his head in its own nest on her bosom, of his little fist tucked under her chin. She guessed he must be learning to talk, and was sure of what must be his first word. She knew he must be getting pearly teeth in his rose of a mouth, and that his breath on her cheek would have the sweetness of violets. He was her own baby, her own little man child, and she wanted him, wanted him, wanted him.

And so it was that she lied for him.

"Why, my dear, are you so unhappy," asked her husband one day.

"Because," she replied, "a friend of mine died lately and left her dear little baby boy motherless. Oh, it is awful, whatever shall I do?"

"Do! Why, that's easy. Go and get the child," said the man. "Go at once and get him."

And she went immediately.

But when she returned a few days later little Jim was still left to be a Crittenden baby. "They had made other arrangements," she said to her husband.

But the truth was the woman was afraid of Jim. "If I take him," she thought, "Dave will understand it all. And he must not. No, no, no, my husband must not see baby Jim."

Little Jim was indeed a sweet miniature of his mother. He even smiled in her own quaint way. His eyes, his hair, all his features, and the very chirp of his baby voice, were as hers.

"I dare not take him, I dare not: I cannot have him," wept the mother of little Jim, with an aching heart.

And for some reason the stork did not come to the handsome house she lived in, but staid away on the dykes of Holland, or wherever he hides when in obstinate moods. "O he will not trust me again," thought the unhappy woman, as on a Christmas eve the city's thousands were rejoicing once more.

Now it was on this very day that her husband went away on errands of business which would take him, he said, to several cities. Soon thereafter, in just a day or two, there came a letter from him. It said, "Hurrah, little one, I've got a baby, a whopping big boy. Of course you want him! Get a bunk ready, and mind you, he's got to sleep in my room. I've got to have him. Buy a cow, or a dairy, or a flock of goats. The kid is a Napoleon or a U. S. Grant, or a regular little Funston for milk. Takes everything before him. We're coming right along."

Then wrote the mother of Jim immediately: "Dave, I don't want another baby. I only want my——'

But she destroyed the words and wrote with more care: "I wouldn't like to disappoint you, Dave, dear, but I hardly feel that we should adopt a child now. I think, may be, if we wait a little longer——"

There was however, no chance to wait longer. A messenger came with a telegram which said, all careless of grammar: "Hurrah, little one, we will be there in an hour. Him and me and a nurse."

And within the hour they came, the baby, the man, and the nurse.

"Isn't it perfectly marvelous," remarked the man before any other could speak, "just marvelous, little wife, how much that kid is like you? Look at him. Turn him all 'round. See that hair, those eyes, that mouth. Tickle him once and see that smile! Perfect image, I say, and that's what flabergasted me at first sight and why I wouldn't part with him for the U. S. Mints—all of 'em combined. How'd I come by him? Why, I was asked to help support a place where they keep a bunch of such little fellows, and when I went out to see it for myself there he was. Then I saw how fine he would fit in your arms, and in my heart, too, Lucy, and so I arranged to bring him along with me. Ain't he a beauty? I say Nature was an artist when she got up that kid, don't you, little one? What you going to call him?"

Well, yes, the woman might have fainted or cried out, but she did neither. Instead of that she replied in a level voice. "What name do you like. Shall we call him David, after you?"

"Naw," negatived the man with emphasis, "Dave is no good for his style. I kind o' like Jim. That was his name where he came from, or James, I suppose, and that will do for us here."

Then was the child placed in its own fair haven, the mother's arms, while those arms long weary with emptiness, were soothed and rested with a burden long desired.

Boys' Bean-Growing Contest.

We are glad to learn that the boys of southern California brought off a successful bean-growing contest last season. The contest was organized by the Polytechnic School at San Luis Obispo, and on lines similar to those of the famous boys' corn-growing contests of the South and Middle West.

Under the rules of the contest the preparation of the ground, planting of the seed, cultivation and growing of the crop, harvesting and cleaning of the beans, were all done by the boy himself. At planting time the school sent out to boys who agreed to the conditions of the contest, one-half pound each of three different kinds of beans—small whites, large whites, and pinks.

The judging of the crops of beans raised took place at the Agricultural Fair held at San Luis Obispo last October. Of the twenty boys who entered the contest, Willie W. Wood, of Arroyo Grande, was the champion. He exhibited 420 pounds of beans grown from one and one-half pounds of seed.

Orchids for California.

California for long has held a reputation for a climate in which the best kind of fruits and vegetables can be produced, and during the past year its supremacy in the production of a radically different kind of plant, the orchid, has also been demonstrated. The mild and sunny climate where growth could continue during all seasons of the year has to some extent prevented the use of glass in growing plants and vegetables, but hothouse experts have come to see that the climate good for outside growth also was good for hothouse work.

Only a year ago, on a tract of land near San Mateo, there was a crop of hay and the frame of two greenhouses; while there is now a row of houses and orchids to the value of more than $40,000 under them. This was done by the MacRorie-McLaren company, with the help of the California climate, and in spite of the fact that California is at one end of the occidental world, so to speak, instead of near the center, as a location on the Atlantic coast would be. Shipments come and go at all times in the year to all parts of the world in a way that could not be done in any other place.

Orchids are produced both for sale as plants and as cut flowers. There are 1500 varieties in the collection, and five collectors are continually sending in more from all parts of the tropics. The plants cannot be profitably propagated under cultivation, and the collectors are relied upon for all new stock. Orchids, it is understood, are grown in many other parts of the State under similar conditions, although not to as great an extent as in the San Mateo houses.

In their natural conditions, orchids grow on trees or cliffs with the head downward and the roots gathering in moisture from the air above, as a small amount of water gathering in the crown of the plant rots it and brings about its death.

In the hothouse, however, it is found more convenient to grow them crowns up in hanging baskets which are dipped in water every other day. This irrigating costs $20 a week in only one house, which contains 12,000 plants.

The orchid is an extremely delicate plant when growing, as it requires a moist atmosphere and an evenly warm temperature. When dormant, however, a plant can endure any temperature above freezing, which it is not likely to meet under ordinary transportation conditions in California, but would meet on the Atlantic coast. The less amount of sunshine in winter also works against them. In fact, orchids grown under glass here grow to better perfection than under natural conditions, as there they are subject to the attacks of various insects which do not exist here or can be protected against.

The growing of these plants under glass differs in one important particular from the growing of other cut flowers. With other flowers the aim is usually to have the blooming come out of season, and to make the growth when the plants are ordinarily dormant, and have them dormant in the usual blossoming time. With orchids, however, any attempt to influence the plant by changes of temperature results in killing them, and it has to be perfect conditions or no flowers or plants either.

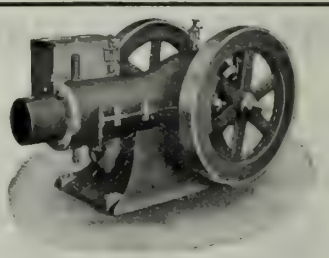
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OUR YOUNG FOLKS' DEPARTMENT.

Conducted By M. Russell James

Poultry Course for Young Folks.

CLASS IV.—ENGLISH.

Dorkings.—This breed of fowl is old enough to be classed among the ancients. It is accurately described in the works of the Roman writers of two thousand years ago as a breed of fowls common in Rome at that time. The conclusion is that this breed of fowls was taken to the British Isle by the Romans. The name was taken from a very old town, Dorking in Sussex, which tnough of small importance in a general way was the leading poultry and game market in those early days. Tradition and worth have endeared this breed to the English heart and the Dorkings are more generally kept than any other breeds among the English peasantry. Dorking blood has also been used in producing many of our popular breeds.

As layers the Dorkings do not excel, but as a market fowl they have no superior. Their flesh is white and of very delicate texture and the breast is broad and deep. The body is compact, the legs short and the feet are provided with an extra toe. They are good sitters and mothers.

Silver Gray Dorking.—This is considered the handsomest of the three varieties, with plumage of silvery white and greenish black, shanks and toes white. Standard weight, cock 8 pounds, hen 6½ pounds. This is a newer variety and was porduced by crossing the Silver Gray Game on the Colored Dorking.

White Dorking.—This variety has pure white plumage throughout and a rose comb, while the other varieties have a single upright comb. It is also smallest in size, the standard weight being 7½ pounds for cock and 6 pounds for hen.

Colored Dorking.—The plumage is of several colors—black, dark slate, white and light straw on the male and dark brown or black slightly mixed with gray on the female. This is the heaviest of the Dorkings, the cock weighing 9 pounds and the hen 7 pounds.

The Redcaps.—This is another old English breed. The name comes from the large rose comb which covers the head like a red cap. If the comb is not even and correct in shape it disfigures the bird. This breed is somewhat on the order of the Leghorn. It is a fine layer of white, but not pure-white, eggs, matures early and is practically a non-sitter. The plumage is red, black and brown. On the wing bows each feather ends with a bluish-black spangle the shape of a half-moon. The standard weight is 7½ pounds for cock and 6 pounds for hen.

On the Mississippi.

(Not many of our young folks have more than a book acquaintance with the "Fathers of Waters," that grand river which rises in the sparkling lakes of Northern Minnesota and flows 3200 miles through the richest valley in the world to meet the encircling oceans at the Gulf of Mexico. Perhaps the following incident of one of its periodic overflows of fifty years ago may make them better acquainted.)

"Now, my boy, I'm trusting the mother and baby sisters to you. It is mighty bad that I must leave home at this time with mother sick and the river on the rampage; but the work at O'Fallen is at a stage where I must be on hand. Oh, yes; I know that you will be faithful and brave, but you must be more; you must have your wits about you and be able to act in an emergency!"

Mr. Russell tightened the reins and drove through the bars which his son had just lowered. He was a millwright and working in the city which had been the home of the family until the previous summer when they had removed to their present quarters, a cottage and grounds near the banks of the Mississippi, a few miles below St. Louis. The building occupied an elevation on the hilly land well back from the river which Mr. Russell had been assured was above the high-water mark. Still a feeling of anxiety possessed him as he drove along the river road and noted the encroaching waters gaining one vantage point after another over the land.

"Remember, Jim," he called back, "that I hold you responsible!"

"Aye, aye, sir," returned the boy cheerily, raising his hat in parting salute. His father drove rapidly away and Jim put up the bars and went whistling toward the house. He did not underestimate the responsibility placed upon him; he simply felt equal to it. Boys of fifteen are apt to feel equal to most things.

"Mother," he cried gaily, as he entered the house, "you must be extra careful of yourself, for father is going to hold me responsible for you and the kiddies."

The sick mother gave him a smile of fond pride. "I shall be up in a day or two, Jamie," she said. "Here is 'Ria waiting to be dressed."

Jim opened his arms and the two-year-old fairy sprang into them with a shout of joy; then four-year-old Katie came to have her clothes fastened and her shoes tied, and altogether Jim was a busy boy. It was nearly noon before he was through with the morning's work and free to look about a bit as he much desired to do. His mother was resting quietly and he took Katie and 'Ria out on the sloping lawn in front of the house to roll over the soft grass and hunt buttercups and violets.

It was June and the very air was fragrant with the wild rose and locust blooms. After their life in the city, the children could not get enough of the freshness of nature, the beauty of the flowers, the music and companionship of the birds, and the freedom of out doors. Near the house was a great cottonwood tree, a very king among the trees in bigness. This was a sort of gymnasium for the boy. He had learned to climb to its lofty top and to perform some really astonishing feats among its branches, much to his mother's nervous terror. But the father, who had spent three years before the mast in his early youth, declared that the way to keep a whole head and limbs was to learn how to use them, and he spent much time in teaching his son the wonderful tricks which sailor folk know. Today Jim climbed the tree for a different purpose. He wished to note the rising of the river. From his perch in the apex he could see for miles in all directions.

He gave a low whistle as he saw how fast the turbid waters were spreading. Everywhere the water was creeping, creeping upon the land like a gray wolf upon its prey. A little shiver ran up Jim's spine as he gazed. "Well, it has never come this high and it can't reach us," he said aloud, and he climbed down from the tree, whistling up his courage meanwhile.

Two days passed and the still advancing waters were now lapping at the foot of the hill upon which stood the little cottage. But Jim was hopeful and merry, for the mother was able to be up and around.

They were out on the lawn watching the red glow of sunset across the turbid waters, while the babies gaily chased the white butterflies over the green slope. A dread of the coming night was in the hearts of mother and son.

"Wall, it's getting close on ter you!"

Mrs. Russell turned quickly and saw the welcome face of a neighbor who lived a mile further on. He had come in from town by the upper road and was on his way home. "O, Mr. Wilson, do you think there is any danger here?" she asked, anxiously.

"'Cording to precedent, no; but the old Mississippi is might uncertain, 'specially every seventh year; and this is the year for his big jamboree. Reports from the upper country is awful. Downpours and freshets on the Ohio and the Missouri booming and all the little rivers gone plum crazy."

"My husband will surely know of it in the city and come for us in case danger."

"Wall, I think myself that he'd better get you outer here tomorrow. Anyway, I'll drive down in the morning and see how things go with you," concluded the neighbor as he started up his horses.

The team was soon out of sight down the shadowy road. Jim, noticing his mother's wistful look after the disappearing neighbor, put his arm around her shoulder while he said briskly: "Guess we'd better get ready to move, mother mine."

(Continued Next Week.)

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THE MARKETS.

San Francisco, Aug. 9, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Local trading is almost entirely of a jobbing nature, but business has picked up considerably during the week, and quite a strong demand is coming out all along the Coast. California Club has advanced sharply, and holders are firm in their views. There is an upward tendency in other descriptions, some of the Northern grades being higher.

California Club	$1.40	@1.50
Sonora	Nominal	
White Australian	1.55	@1.65
Northern Club		1.45
Northern Bluestem	1.65	@1.70
Northern Red	1.60	@1.65

BARLEY.

The demand continues extremely active for all grades, both locally and for shipment. Supplies in the country are rapidly being concentrated at shipping points. Feed has again advanced in this market, and a price of $1.35 is reported in the San Joaquin district. Brewing grain is firm, but is quoted as before.

Brewing and Shipping	$1.52½	@1.55
Choice Feed, per ctl	1.35	@1.37½
Common Feed	1.25	@1.30

OATS.

Supplies are gradually decreasing, with a steady though moderate demand. Prices are a little higher on both red and black oats. There is now some inquiry for seed oats, quotations on which will probably be established in a week or two.

Red Feed	$1.40	@1.45
Gray	Nominal	
White	Nominal	
Black Feed	1.35	@1.55

CORN.

Prices stand about as before, but the market is weak. There is very little movement of any description locally, arrivals of Eastern stock being light, as usual.

Cal. Small Yellow	$1.75	@1.80
Eastern Yellow		1.70
Eastern White		1.70

RYE.

Offerings in this market continue small, and largely of undesirable stock. There is little demand, and quotations are practically nominal.

Rye, per ctl	$1.55	@1.65

BEANS.

Prices stand precisely as before, except for a sharp decline on horse beans, which are pressed for sale in some quarters with little demand. As the new crop will be coming out before long, the market is rather nervous and unsettled, though there is little new in the situation. Nothing is in very active demand at the moment, but stocks are gradually diminishing, and do not appear to be unduly large for this time of year. It is reported that the old crop limas in the hands of the Association have been entirely cleaned up, the last shipment, consisting of five cars, having been sent to New York about the first of the month. There is still some stock in dealers' hands, but this is closely held, and will easily be cleaned up before any new stock appears. The principal demand of late has been in the Middle West, which absorbed a large quantity last month. Conditions are favorable to a very heavy production. Local buyers are taking a conservative attitude toward the new crop.

Bayos, per ctl	$3.75	@4.00
Blackeyes	6.50	@6.75
Cranberry Beans	3.75	@4.00
Garvanzos	2.85	@3.25
Horse Beans	2.50	@2.75
Small Whites	3.50	@3.60
Large Whites	3.40	@3.50
Limas	6.00	@6.20
Pea		4.25
Pink	4.90	@5.10
Red Kidneys	6.25	@6.50

SEEDS.

Canary is quoted a little higher. There is no movement of anything at present except in a small jobbing way, and in the absence of trading most prices stand nominally as before.

Alfalfa	Nominal
Broomcorn Seed, per ton	$25.00
Brown Mustard, per lb	5½c
Canary	3¾@ 4¼c
Hemp	3½@ 4 c
Millet	3 @ 3½c
Timothy	Nominal
Yellow Mustard	5¾c
Dried Peas, per ctl	3.75@ 4.00

FLOUR.

The export movement continues active along the Coast, and local buying is of very fair proportions. Prices are firmly held at the former level.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.60	@4.80

Hay and Feedstuffs.

HAY.

Arrivals have decreased very slightly, but are still so large as to cause some difficulty in handling. Buying for local interests in the country is now of small proportions, as dealers have pretty well filled their immediate requirements, and the heavy purchases of the last few weeks have cleaned up most of the offerings in the principal producing districts. Business here, however, continues active, and prices are higher on several descriptions, with a strong undertone to the market. Some crops are still to be disposed of in localities which lack storage facilities, but as soon as this stock is out of the way a further advance is expected. The crop around Pleasanton has been pretty well sold out at prices around $11 to $13 for choice, and $9 for volunteer. Alfalfa remains quiet locally, as prices along the river are considered high.

Choice Wheat	$14.00@15.00
Good Wheat Hay	12.00@13.50
Other Grade Wheat	8.00@11.50
Wheat and Oats	8.00@13.00
Tame Oats	8.00@14.00
Wild Oats	7.00@11.00
Alfalfa	8.00@12.00
Stock Hay	5.00@ 7.00
Straw, per bale	35@ 55c

FEEDSTUFFS.

Rolled barley has again advanced, and the inside quotations on rolled oats and shorts are also higher. Otherwise there is no change, general conditions remaining about as before.

Alfalfa Meal, per ton	$16.00@18.00
Bran, per ton	28.00@29.00
Cocoanut Cake or Meal	26.50@27.00
Cracked Corn	38.00@39.00
Middlings	34.00@36.00
Mixed Feeds	28.00@30.00
Rolled Barley	29.00@30.00
Rolled Oats	29.00@30.00
Shorts	29.50@31.00

Garden Truck.

VEGETABLES.

Onions have not received much attention of late, as the local trade is well supplied and there is not much outside demand. The market is accordingly weak, with a further decline in prices. Other lines of vegetables, for the most part, are rather easy, a sarrivals have been heavy, and offerings in some lines have not cleaned up very weel from day to day. Green peas and string and lima beans, however, are doing a little better just now, and tomatoes are also slightly higher. Cucumbers, however, are quite plentiful, with a little reduction in prices. Green corn is arriving in large quantities, and while there is a lively demand it is impossible to obtain the top figure last quoted. Eggplant is extremely plentiful, and has declined sharply, while summer squash and green peppers are weak. Carrots also are quoted lower.

Onions: Yellow, ctl	75@	90c
Garlic, per lb	3½@	5c
Green Peas, per sack	$ 1.50@	2.00
Tomatoes, per box	50@	75c
Cucumbers, per box	50@	65c
Cabbage	90c@	1.00
Carrots, per sack		75c
Cauliflower, per doz		50c
String Beans, per lb	2@	4c
Lima Beans, per lb	3@	4c
Summer Squash, per box	35@	50c
Okra, per box	1.00@	1.25
Green Corn, per sack	75c@	1.25
Eggplant, per box	50@	75c
Green Peppers, per box	35@	75c

POTATOES.

Prices on river stock are well maintained at the former level, as surplus offerings are kept cleaned up by a good shipping demand. Sweet potatoes are unchanged, offerings being rather light.

River Whites	$ 1.50@	1.85
Sweet Potatoes, per lb	5@	6c

Dairy Produce.

POULTRY.

Values stand about as before, though the market is in a little better condition for some classes of stock. Eastern chickens are still plentiful, and show a larger proportion of young stock, but offerings from nearby points are small.

Large Broilers	$ 3.00@	3.50
Small Broilers	2.00@	2.50
Fryers	4.50@	5.50
Hens, extra	8.00@	9.00
Hens, large	5.50@	6.50
Small Hens	4.00@	4.50
Old Roosters	4.00@	5.00
Young Roosters	6.00@	7.50
Young Roosters, full grown	8.00@	9.00
Squabs	2.00@	2.50
Geese, per pair		2.00
Ducks	4.50@	7.00
Turkeys, live, per lb	Nominal	

BUTTER.

Packing stock is unchanged, but all other lines are quoted at a material advance over last week. Extras are only steady at the present figure, but the general situation is favorable. Some storage stock is offered at 27c., but 25c. is the highest bid so far.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	.25½	26	26	26	26	26½
Prime Firsts	.24	24½	24½	24½	24½	24½
Firsts	.23	23½	23½	23½	23½	24
Seconds	.22	22	22	22	22	22
Packing Stock	.20	20	20	20	20	20

EGGS.

The market is extremely firm, extras having advanced steadily all week, although other grades are quoted as before. Arrivals are not especially heavy at present, and with a continued demand for shipment, supplies for the local trade are light. Storage stock is beginning to come out, selling on the street around 28c.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	.31	31½	31½	33	33½	34
Prime Firsts	.26	26	26	26	..	..
Firsts	.24	24	24	24	24	24
Seconds	.19½	19½	19½	19½	19½	19½
Selected Pullets	.25	25	25	25	25	25½
Eastern	.16½	16	16	16	16	16

CHEESE.

Local flats are a little stronger this week, Y. A.s remaining as before. Monterey cheese will not bring over 11c. for the best lots, and there is a great deal offering that is hard to sell at 10c.

Fancy California Flats, per lb	14	c
Storage	14	c
Firsts	13	c
New Young Americas, fancy	16	c
Monterey or Jack Cheese	10@11	c

Deciduous Fruits.

FRESH FRUITS.

While a number of lines of fruit are a little lower than last week, arrivals in general are still of moderate proportions, and values are well maintained for this time of year. Watermelons are a little easier, shipments from producing centres having increased of late, while cantaloupes are a little stronger. Nutmeg melons are plentiful, but bring very fair prices. Raspberries are higher, and other berries, though lower than last week, still bring very fair prices. A few huckleberries are coming in. Apples are steadily held, but are quiet, as few buyers are willing to pay the prices asked. Bartlett pears are extremely strong at former quotations, with a heavy demand from canners and Eastern shippers. Plums, nectarines, and figs are easier, with heavier offerings, but all arrivals find a ready demand. Apricots and peaches are a little easier for bulk stock, but small packages are in good demand at firm values. Grapes so far receive little attention, and prices are lower.

Watermelons, per doz	$ 1.50@	2.50
Cantaloupes, standard crate	2.25@	3.00
Nutmegs, box	75c@	1.00
Raspberries, chest	7.00@	10.00
Loganberries, chest	3.00@	6.00
Blackberries, chest	3.00@	5.00
Strawberries, chest	4.50@	7.00
Huckleberries, lb	15@	20c
Large varieties, chest	4.50@	8.00
Apples—		
Fancy Gravensteins, box	$ 1.75@	2.00
Choice	75c@	1.25
Other varieties	1.25@	1.75
Apricots, crate	75c@	1.00
Apricots, box	60@	75c
Peaches, lug box	75c@	1.25
Small box	50@	75c
Plums, box	50@	75c
Nectarines, box	75c@	1.25
Figs, box, double layer	1.50@	2.25
Pears, Bartlett, box	1.50@	1.75
Other varieties	65@	85c
Grapes—		
Seedless	1.00@	1.35
Other varieties	75c@	1.00

Dried Fruits.

The dried-fruit market has been extremely active for the last week, the movement extending to practically every line. Most descriptions have been in strong demand for export, and sales to foreign interests have been so heavy as to arouse the jobbing trade in this country to the urgent necessity of providing for their requirements. New York reports indicate but moderate interest there, but buyers throughout the Middle West have been extremely active. There is increasing competition among packers to obtain supplies, causing several further advances. Many growers, however, were satisfied with the prices offered last week, and large quantities have changed hands. The general shortage of evaporated apples is causing increased firmness, with a slight advance, and with the available stock of apricots rapidly cleaning up offers of 16c. are made for choice stock. Peaches and urpunes stand as before. Offerings of peaches are light, and some growers are holding their prunes for 6c., though there is quite a heavy movement at the present figure. General anxiety has been caused by reports of European shortage. Old and new raisins are held at the same figure, and the old stock is rapidly cleaning up. There is also a considerable movement of 1911 raisins, but there is little doubt that large quantities will be held back for a further advance. Seedless raisins are extremely strong, and Thompsons are quoted higher, but so far comparatively little is coming out at the present figure. The New York Journal of Commerce says: "Despite the assertion of some factors that this year's crop of California prunes will approximate to 200,000,000 pounds, the fact seems to be that the available supply is not as great as the bear faction would make it. The bull faction has been immensely helped by the demand from Europe, which has attained to almost unprecedented proportions during the last few days because of the great damage, as reported, to the French crop by excessive heat, following a prolonged period of dry weather. The French crop, it is said in reports received by operators here, has shrunken from the original estimates of some 50,000 tons to a figure not much over two-thirds of this, and some estimates of the Bosnian-Servian crop are also dropping."

Evap. Apples, 1911, per lb	10@	10¼c
Apricots	15 @	16 c
Figs, new crop	5 @	7½c
Peaches, new crop	10¼@	11 c
Prunes, 4-size basis, new crop contracts	5¼@	5½c
Pears, new crop	12 @	13 c
Raisins—		
Loose Muscatels, in sweatbox	4¾@	5 c
Thompson's Seedless	5½@	6 c
Seedless Sultanas	4¾@	5 c

Citrus Fruits.

Possibly owing to the decline in prices in the Eastern markets, lemon shipments have been lighter than usual. From the high prices of three weeks ago the fall has been tremendous. Where the markets were buying briskly at from $5 to $6 per box, now the price averages from $2.65 to $3.60. At least that is what the New York auction paid on Monday of this week.

Oranges are holding up nicely and shipments are as usual for this season. The Eastern auctions on Monday, August 7, paid from $2.75 to $4.60 for valencias. Grapefruit sold for $1.10 to $1.60 per box.

Total shipments of citrus fruits from California for the season to August 6 were 40,738 cars, of which 34,853 cars were oranges, and 5885 cars were lemons.

Arrivals of Valencia oranges at San Francisco are ample for trade requirements, though not especialyy heavy. There is little feature to the market on any citrus fruits at present, prices remaining as before on all lines.

Lemons	$ 2.00@	6.00
Valencias, choice to fancy	3.25@	4.00
Grapefruit	2.25@	3.25
Limes	6.50@	7.00

Nuts, Honey, Hops, Etc.

NUTS.

Almonds remain rather quiet, spot stocks being light, while buyers in general are maintaing a conservative attitude in regard to the new crop. There is every prospect, however, that the new quotations will be well maintained. Walnuts are scarce and nominal, with very little spot stock to be had.

Almonds, 1911 crop—	
Nonpareils	18½c
I X L	17¼c

Ne Plus Ultra		16½c
Drakes		14½c
Languedoc		14½c
Hardshells	8	@ 8½c
Walnuts—Softshell, No. 1		15 c
Standard		14½c
Softshell, No. 2		11 c
Budded		17½c

HONEY.

The San Francisco market remains quiet, with prices unchanged. There is a fair movement in producing districts, prices being about as before in most sections. The Dinuba bee-keepers are asking 6c., but few buyers are willing to pay over 5¾c.

New Extracted, White, per lb.	8	@ 8½c
Comb, White	13	@15 c

BEESWAX.

So far there has been no movement of any consequence, and in the absence of trading, prices are nominally as before.

Light	28	@32 c
Dark	23	@26 c

HOPS.

Buyers are again actively in the field, and some of the heaviest purchases on record are reported in Sonoma county, in which 30c. has been paid for new crop. Offers of 32½c. are reported, but as far as is known at present, no sales have been closed at this figure.

Hops, 1910 crop	30	@32½c
1911 crop	28	@32½c

Live Stock.

LIVE STOCK.

No changes of any consequence are noted. Hogs are still rather scarce, but there is no strong demand, and the top quotation of last week has been shaded. Sheep are also a little easier, with liberal supplies.

Gross weight:		
Steers: No. 1	5	@ 5¼c
No. 2	4¾	@ 5 c
Cows and Heifers: No. 1		4¼c
No. 2		4 c
Bulls and Stags	2	@ 3 c
Calves: Light	6½	@ 6¾c
Medium	6	@ 6¼c
Hogs: Grain-fed, heavy		7 c
150 to 250 lbs		7¼c
100 to 150 lbs		7¼c
Small prime wethers	4	@ 4¼c
Large prime wethers	4	@ 4¼c
Ewes	3½	@ 3¾c
Lambs	5	@ 5¼c

DRESSED MEAT.

Steers		8½c
Cows		7½c
Heifers		7½c
Veal, large	10	@11 c
Mutton: Wethers	8	@ 8½c
Ewes	7	@ 8 c
Lambs	10	@10½c
Hogs, dressed	10½	@11½c

WOOL.

Prices are unchanged, and largely nominal, as buyers are limiting their operations in view of the uncertain outlook. Shearing is now in progress around Colusa, but so far no sales are perodted in that district.

Spring Clip—		
Choice Southern, Year's staple	10	@12½c
7 months	8	@11 c
Lambs, spring	8	@10 c
Northern, year's staple	14	@16 c

HIDES.

Prices are not very well established at the moment. Dry nides remain firm, while some descriptions of salted hides are a little easier than for some time past.

Heavy Steers, over 56 lbs		12 c
Medium		11½c
Light Steers, under 48 lbs.		11 c
Heavy Cows, over 50 lbs		11 c
Light Cows, 30 to 50 lbs		10 c
Kip		12 c
Veal		16½c
Calf		16½c
Dry—		
Dry Hides	18	@19 c
Dry Bulls		16 c
Dry Kip, 10 to 15	18	@19 c
Dry Veal, 5 to 10		20 c
Dry Calf, 7 down	23	@24 c
Sheep Skins—		
Long Wools	$ 1.00	@ 1.25
Medium Wool, 6 to 9 mos	75	@ 90c
Short Wool, 3 to 6 mos	40	@ 65c
Lambs	35	@ 60c

HORSES.

The general range of prices remains about as before, though most classes of stock find no great demand locally. There has been a little more demand for wagon horses than for some time past, recent offerings finding a ready sale at very fair prices, but otherwise there is little feature to the market.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	190@240
Wagon Horses, 1250 to 1350 lbs.	140@180
Delivery Horses, 1050 to 1250	100@125
Desirable Farm Mares	100@125
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

SPECIAL DECIDUOUS MARKET REPORT.

Sacramento, August 5, 1911.

The following gives number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, August 4, 1911, as reported by California Fruit Distributors:

Peaches—376¼ cars. Peach shipments show a gain of over 100X since last week. They will probably continue in about the same volume for the week to come, after which they will begin to decline. Elbertas is the variety most largely going forward at the present time, although there are a considerable number of Crawfords and Fosters still moving. Late Crawfords and Susquehannas will soon be in evidence. The bulk of the crop will be moved by the 20th. Peaches now going forward ahe of fine quality.

Plums—112¾ cars. Alreaay a considerable decline is noticeable in volume of shipments, and this will be greater as time goes on. It is probable that the movement for the coming week will not be more than 75 or 80 cars, after which time there will be very small quantities available. Wicksons are now nearly done, German, Sugar, Kelsey, Splendor, Giant, Gros, and a few Grand Dukes constituting the leading varieties.

Pears—349 cars. It is believed that this week marks the heaviest movement of pears for the season. Snipments have already begun to decline slightly in the Sacramento river district and will continue to do so until the close of the season. Not many are going forward from Suisun at the present time but shipments from that point and from Vacaville will be considerable next week.

Grapes—124¾ cars. A heavy increase is noted in the shipment of this fruit. The principal varieties are Thompson's Seedless and Malaga from the Fresno district. A few Rose of Peru, Muscat, and Tokay are being forwarded from the Vacaville and Winters district. Tokay shipments will cut no figure for another week, after which time they should be in fairly good supply from the early districts. Grapes are of unusually good quality this season. Mildew has been quite prevalent in practically every section where table grapes are grown. Having been promptly treated, it will have but small effect on the crop.

Weather conditions continue very favorable.

Total shipments from California up to August 8 were 3661 cars, as against 5611 cars to the same date last season.

At the New York auction on Monday, August 7, 52 cars were sold. Demand was moderate and prices a shade lower. Bartlett pears sold at $1.90@2.15; Crawford peaches, 90c@$1.30; Wickson plums, $1.35; Elberta peaches, $1.15@1.55; Thompson's Seedless, $1.75@2.15; Malagas, $1.60@2.90; Decker peaches, $1.30; Foster peaches, $1.15@1.20; Tragedy prunes, $1.35; Purple Duane plums, $1; Sugar plums, $1.10@1.30; German plums, $1.65; Wheatland peaches, $1.30.

At the Chicago market 19 cars were sold. The market was weak, and the weather very hot and sultry. Malaga grapes sold at $1.35@2; Elberta peaches, $1@1.05; Thompson's Seedless, $1.40@1.70; Bartlett pears, $1.80@2.25; German plums, $1.70@1.80; Crawford peaches, 80@95c; Sugar prunes, $1.20@1.35.

FAIR AND SHOW FIXTURES.

Sebastopol, Cal.—Gravenstein Apple Show. Aug. 21 to 26.

Sacramento, Cal.—California State Fair. Aug. 26 to Sept. 2.

Hanford, Cal.—Kings County Fair, Sept. 25 to 28.

Fresno, Cal.—Fresno County Fair. Oct. 3 to 7.

San Jose, Cal.—Santa Clara Valley Poultry Show. Oct. 6 to 9.

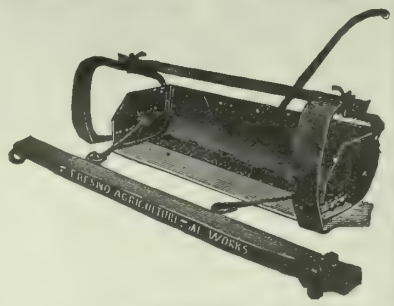
Stockton, Cal.—San Joaquin Poultry Association Poultry Show. Nov. 7 to 11.

Oakland, Cal.—Alameda County Poultry Association. Nov. 21 to 27.

Petaluma, Cal.—Petaluma Poultry Association. Dec. 6 to 9.

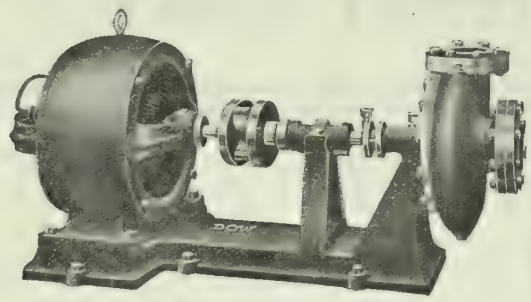
Turlock, Cal.—Annual Melon Carnival. Aug. 24 and 25.

The Fresno Scraper



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DOW PUMPS

pump more water with less power and maintain their capacity longer than any other pump.

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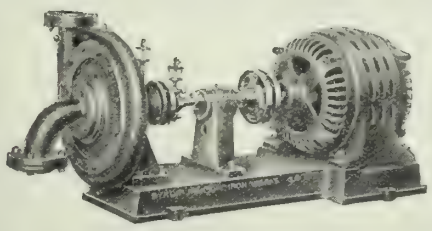
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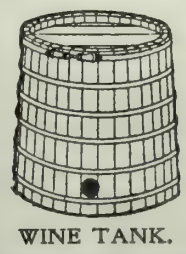
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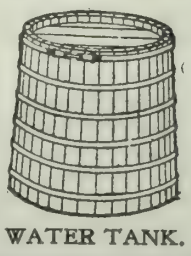
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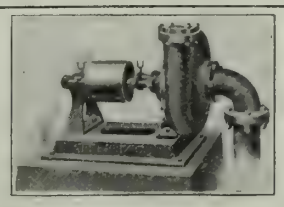


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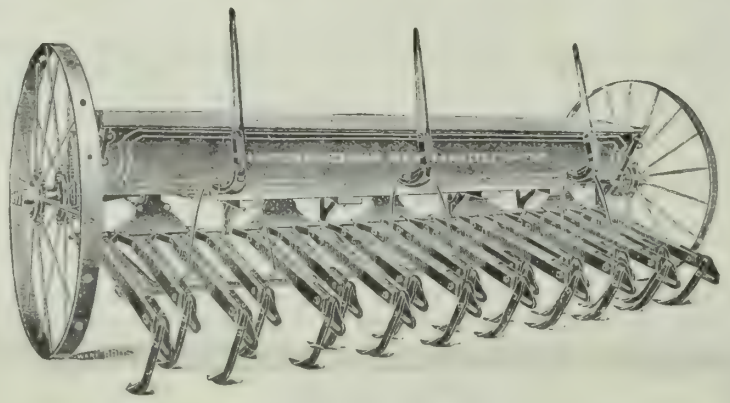
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The Gorham Seeder distributes evenly and regularly all kinds of grain, alfalfa, flax, and other small seeds from the same box, without cracking them.

The Seeding Device consists of a series of seed-wheels or droppers, placed two feet apart and attached to a shaft that runs through the center of the box. To each of the seed-wheels five cups are attached; each wheel enclosed by partitions on either side, that are open at the bottom to admit the grain to the wheel. When the seed-wheels revolve, the cups are drawn upward through the grain, each taking a given quantity, and, as it passes round, pours it on the beveled surfaces in front of the cup, deflecting the seed into receivers on either side, where it runs in a continuous stream upon the Scatterer below.

The flat Scatterer is a distinct feature not found on other seeders. It receives the grain from the seed-wheel, distributes it equally over the land, yet is so arranged that straw and other substances will feed without clogging.

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A given quantity of grain properly sown and cultivated will produce five times the amount sown broadcast without any cultivation. Observation has taught the intelligent farmer that a thorough seed-bed must be prepared and the seed evenly distributed over it to insure a good crop.

The Gorham saves time and labor, sows more evenly, prepares the ground more thoroughly, and costs less for repairs than any of the so-called seeders and cultivators on the market.

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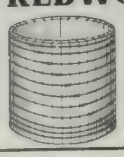
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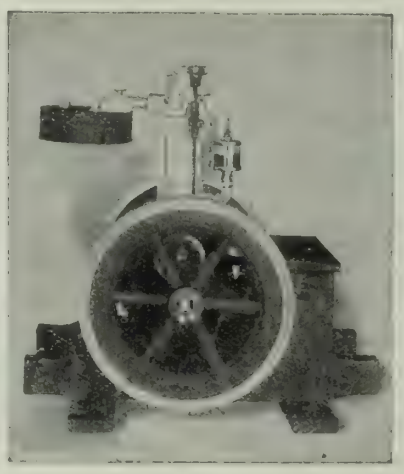
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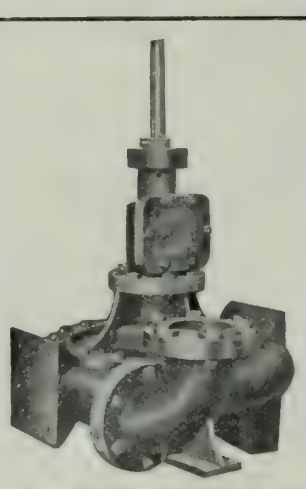
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engine, and unlike other small and low priced engines is **FULLY GUARANTEED** the same as any other of the well known **Z-S** engines from 2 to 30 Horsepower. Being a belt driver, it can be used for a variety of uses. **IT IS ALWAYS ON THE JOB** doing **TWO MEN'S** work with a **BOY'S HELP** at 10 cents per day. Write us for list of eight pump combinations sold with the **PURITAN.**

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THE PACIFIC RURAL PRESS

Vol. LXXXII. No. 8. SAN FRANCISCO, SATURDAY, AUGUST 19, 1911. Forty-first Year.

The Raisin Outlook.

Written for the PACIFIC RURAL PRESS by Mr. D. J. WHITNEY.

In a year of small crops and high prices, raisin growers appear to be affected as favorably, from an ecomonic aspect, as the growers of any other crop, and while last year the problem for a part of the time was how to dispose of the crop, the problem this year is, How high are the prices going? and how long will they remain there?

The raisin season is being preceded by one of the most interesting years that growers have ever experienced. With prices opening at about 3 cents, going begging at 2 cents later in the season, and the crop being sold at better than 4½ cents at the close, there being no legitimate reason for any radical change of price at any time—this is a résumé of the season of 1910-1911.

The Coming Crop.—The coming crop, it is universally admitted, owing to the April frosts, will be very small, and it is to these frosts that thanks are due, not only for the high prices of this year's raisins, but also for those of 1910. The extensive cutting-back of the Muscats was practically offset by the new shoots, which will give a good second, or intermediate, crop. The loss in the San Joaquin, where the bulk of the crop is produced, will be from 30 to 40 per cent, a few claiming more and a few less loss. The seedless grapes, owing to their inability to bear a second crop for the year, have been harder hit and will produce only 30 to 40 per cent of normal. This will be still further reduced by the fact that a large part are being sold fresh, owing to the high prices that fresh fruit is bringing, and consequently will not be dried. On the other hand, a few Feherzagos may be dried instead of sold to the wineries, but this is not expected to cut any figure that will affect other raisins.

Amount of Holdover.—The third part of the supplies that can affect prices is the portion of the 1910 crop remaining unsold. While about 25,000 tons of these raisins remained unsold in January with prices of only 2 cents being offered, they are now in great demand at 4½ and 4¾ cents, with only enough to supply the market until the new crop comes in. The estimates of this vary from 10,000 to less than 5,000 tons. There appears to be but few in the growers' hands, and the desire of the packers to obtain them is evidence that they have no great amount in stock.

What the Occasion Demands.—The need of the occasion is a proper realization of conditions by both grower and packer. The grower should know what he is justified in asking for his raisins, and when he gets his price, to take it without holding on for a half-cent higher all the time, and the packer should be confronted by the fact that he cannot break the price by refusing to come through with a decent offer. The knowledge that the crop is so short that it has to be sold, if prices are at all reasonable, ought to bring this realization to everybody.

With the apparent impossibility of concerted action among growers, it is perhaps safe to say that the formation of several big pools by representative growers would do more good than anything else likely to be done at present, and the success of pools where tried would justify this, even without result. The example of the managers of the pools should keep independent growers from selling too low and prevent them from asking prices higher than the packer would give.

Effect of Stable Prices.—It is safe to say that a stable price, neither too high nor too low, would be more acceptable to the packers than the demoralized condition existing in ordinary years, when every person holds off for fear of losing out, giving an opportunity for speculation, hurting the industry and everybody connected with it. That a fair price and the knowledge that there will be no chance for price-cutting will make sales, seems self-evident, from the fact that the packers are now glad to buy, at present high prices, the same goods they were reluctant to buy for half as much this winter, there having been no chance for either increase or decrease of the supply, except by ordinary consumption. In other words, as long as it was apparent that the goods had to be sold, they were sold, and at prices double those secured when the outlook was doubtful.

Knowledge of Conditions a Solution.—As a result of this fact, it is evident that a full knowledge of conditions that were to be met every year would define prices within reasonable limits sufficiently to reduce ordinary uncertainty with its resulting ill effects. There is no real reason for very low prices for several years yet, as the consumption is sufficient to take all that can be readily produced. This can be seen from the amount consumed during the past twelve months. In August, 1910, there were 25,000 tons, more or less, on hand, to which was added about 56,000 tons new crop. These 56,000 tons and the 25,000 tons are all gone, except a bare sufficiency to keep the market supplied until fresh raisins come in, making a consumption as great as the production

(*Continued on Page 159.*)



In the Fresno Raisin Vineyards the Low Pruned Vines Cover the Ground With Verdure.

Pacific Rural Press

Issued Every Week at 420 Market Street, San Francisco.

TWO DOLLARS PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Aug. 15, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.02	.07	.14	62	50
Red Bluff	00	00	00	90	58
Sacramento	00	00	00	84	50
San Francisco	00	T	.01	62	50
San Jose	00	00	.02	72	44
Fresno	00	T	00	96	58
Independence	00	.10	00	94	50
San Luis Obispo	00	T	.03	80	42
Los Angeles	00	T	00	84	56
San Diego	00	.12	00	76	58

The Week.

In the improvement of our journal we are now endeavoring to place a little more emphasis, as intelligently as we may be able, upon the commercial aspects of our California agricultural industries. This is, of course, not a new effort in kind, though it may grow to be somewhat new in intensity. One of the first things which this writer did on his arrival in California in 1875 was to attend a meeting held under the auspices of the California State Grange to ascertain what could be done to promote the sale of California fruit products at the East, and the inspiration of that assembly has, ever since that date, been at work drawing our interest to subject in all the phases of development which it has assumed. In one way the anticipations of that early day have been vastly more than realized, for no one then dreamed of such value as is now brought into California from fruits and fruit products sold at a distance: in another way, early anticipations have been but meagerly realized, for it was then thought that it would be much easier to organize growers into durable and effective associations than to produce the products for the disposition of which organization seemed then desirable. The fact, now clearly demonstrated, is that it is much easier to grow good fruit than to sell it rationally and well. Therefore, we intend to undertake rather more in the future on the commercial side, though we have never consciously neglected it.

California Experience in Marketing Organizations.

We wish some able economist would write a book upon co-operative organization for product selling, disclosing to date the measures of success realized and the immeasurable and unexpected failures incurred. A very important analytical and historical study of the subject was set forth by Mr. Edward F. Adams in his book "The Modern Farmer" published in 1899, but that was a year in which the projectors and promoters of such organizations had the flush of anticipation upon their high brows, and it could not, of course, explain the condition of their lofty fronts when overspread with the pallor of defeat, nor can one discern from it whence and wherefore that defeat, except that we may be assured that it has been in accordance with principles therein laid down. What we need is an up-to-date exposition of the facts of experience and their connection in each case with the principles which determined them. Oh, that we had such a book! It would take an acute, energetic, and qualified person a year to determine the facts and adequately explain them—so great has been the number of our co-operative undertakings and the variety of their methods and fragmentary or partial successes. And though this be true, it is also true, as we printed in the PACIFIC RURAL PRESS of August 5, from the mouth of an unprejudiced and careful student, that the California Fruit Growers' Exchange, which has to do with the marketing of citrus fruits, is the greatest co-operative concern of its kind in the country. Is it not rather strange that California should have at the same time the most conspicuous successes and the most colossal failures in the same line of effort? Perhaps it is not strange: perhaps it is but a proof of the principle of duality in the universe which constantly besets mankind—God on the throne, man on the footstool, and the devil in the basement. Possibly the reason why there is most of success and of failure here is because Californians have suffered most and undertaken most in remedy: remedies in excess of their strength.

Have We Undertaken Too Much?

Speaking of undertakings, have they been too great for our understanding and ability? On the whole, yes. The California Fruit Growers' Exchange is our greatest work, they say—too great even for duplication by ourselves? It seems so. It is probably true that there is no other throng of fruit growers in the State who can carry themselves into a merger to the extent the citrus growers have and stay there long enough to be counted. Of course, the citrus growers, as a class, have had more business experience and more experience in all kinds of commercial and professional undertakings which required delegation of powers and concentration of capital. They knew before they grew an orange, or many of them did, that the way to make an individual strong is to rob him of his individuality: that the way to make him powerful industrially is to knock him in the head as an independent producer. Of course, men who have not learned this cannot be merged, and those who undertook to organize the prune growers and the raisin growers found the heads of their constituents too hard for the weight of the pole-axes which they could wield. So far as the character of these constituencies went then, for intelligence and for will to have their skulls cracked, the great enterprises which failed undertook too much. Did they undertake too much also in the way of fixing prices and controlling product? We apprehend that they did. The citrus growers' exchange, if we are not mistaken, never undertook to fix a price except by way of intelligent distribution: they have always been in the market to sell oranges and lemons at whatever buyers would pay at the time for the visible supply. Even when they handled less than 40% of the product, they saved themselves from the dictation of the buyers: they killed shipments on commission later: they widened distribution: they multiplied carload points. Now that they have, as reputed, 90% of the growers and 70% of the product in their hands, they still have no idea of controlling prices, except as increased demand controls them, and they are spending hundreds of thousands of dollars in the extension of this effort through fashionable advertising, which the times demand. This sounds easy, but it is not easy. It is impossible, unless the handling of the product from the tree through the packing-house into the cars and to the consumer is concentrated in a few hands. And yet it is easy in a way—when the individual goes away back and sits down. But the great lights that failed undertook control of the product before they had control of the producers, and they hoped to sell the product at a price arbitrarily fixed before they had any experience in distribution. It seems to us that they undertook too much with both producers and product for the times in which they tried to act wisely and effectively.

Well, What of That?

Effective co-operation will come in all lines of fruit selling, or of other farm produce, for that matter, just as soon as producers are ready to co-operate, and not before. No Moses can lead to the promised land except through a long period of hardship in the wilderness. Many Moseses have led into the wilderness, and there the people now are, groping and suffering. All the authoritiies say that education must bring them out on the other side. But what can this generation do for itself? Must it die in the wilderness as did those people who went out with the first Moses and from whose nostrils no fragrant manna or other perfume of desert flora could drive the aroma of the flesh pots of Egypt? We believe that education, literally construed, can be made to help at once. For education is "the act of drawing out", and popular education we take to mean, for the sake of this argument, a popular drawing out—or, in other words, drawing out the people; drawing them out from their individual darkness, selfishness, sham independence, and fragmentary knowledge into the light of mutual trust, generous impulse, cordial co-operation and assembled wisdom. These are rather high-sounding words and as innocent of efficiency as any others unless it should occur to some how easily this can all be done—and to this end we indulge in reminiscence:

Before we came to California in 1875, as aforesaid, we were interested with the export cheesemakers of central New York. This cheese was made at first in private dairies and was hauled into railway towns on certain days, bought by local dealers, and shipped to New York City. Soon some of it began to go to Liverpool and London, and it soon appeared that England would take much larger quantities if of more regular and uniform quality. This could be best secured by enlarging the dairies so that large volumes of milk could be handled by those who could make the best cheese, and the co-operative cheese-factories arose and multiplied. The product then became too large to haul to railway towns to sell out of wagons, and the local dealers seemed a useless intervention, and so the New York buyers began to visit the factories and buy in quantities from the shelves of the curing-rooms. Of course, the market was always blue with them, and the managers of the factories soon found that all they knew was what they could read in papers several days old or what the buyers pleased to tell them. So they took occasion as they could to ride a circuit and try to post each other on what cheese should be worth from the seller's point of view. A little later it became clear that it would be easier for them all to come to a central point than to be chasing each other around a great circle. Notice was given to the buyers that the salesmen would be at one place at a certain day to sell cheese. The buyers themselves had become weary of country riding to the factories, so they agreed to meet the salesmen and to buy on their guaranties of the goods being standard with a little better price for anything which would justify a fancy mark. The result was that nearly the whole output of the district, amounting to millions of boxes a year, was sold at regular market days: buyers were satisfied as to quality, and

sellers knew to the moment what the distant demand and price and the local supply were. Both producers and buyers took membership in the simple organization which was effected; small fees were charged for membership which yielded money for telegrams and other market information, and the producers felt that they were selling on something like the same basis of knowledge that their associates were buying. Meantime, the factorymen, being drawn together, did many things for the development and improvement of their industry which they would never have been able to do except for the strength, suggestion, and inspiration of their constant association.

A Similar Proposition in Fresno.

Those who read the interesting article on our first page concerning the raisin industry will be reminded of the frantic efforts at organization for selling purposes which raisin producers have put forth during the last decade and more. Perhaps some of the hints we have given of reasons why such efforts have failed may have some connection with their experience. At all events, they have had an eventful experience and are at the present time quite unorganized. It occurs to us that a suggestion of a simple Exchange for bringing growers together for discussion, trade, or for any other interesting purpose, may serve as a basis for later co-operative action which will include whatever is desirable to bring the current selling of raisins and the rational promotive and protective expenses of the industry upon a sound basis of general participation. We believe that such an organization may serve a most important educational purpose as well as be directly and practically useful to producers. It will be an application of our improved definition of popular education—a drawing out of the people to do whatever is good for them and their industry. We are glad to see that a proposition to this end by Mr. W. R. Nutting, of Fresno, is attracting much attention and receiving favorable comment in the local journals. If it should work out in any such way as did the dairy exchange to which we have alluded, it would certainly be a splendid agency to promote trading on a basis of equal information, and would in time have power to do many things which the prosperity of the industry requires. It would, above all, perhaps, teach growers to know each other and to act together, which is the secret of success in great undertakings and from lack of which the greatest failures and disappointments have resulted. With the good outlook for raisin trade, which Mr. Whitney describes in his article, it would seem to be a most favorable time for undertaking such a simple and elemental organization as is now proposed.

Have We Not Suffered Enough?

There are a lot of conditions continually arising to work hardship and loss which would be prevented if growers would do any little thing for their own protection—if some of them would do a little thinking, even that would help. We are thinking particularly of the melon condition in the San Joaquin valley, where a lot of people took to this crop because some dealers advertised that they would contract for melons at a certain price. Those who were wise entered into contract and are, we presume, getting what they expected, but a lot of other people thought they had a good tip in this advertising and did not make contracts, but planted all the same. This, of course, places a large part of the product entirely at the mercy of the buyers—providing many take the tip without the contract. We understand many have done so, and we hear of considerable quantities which cannot be sold at the cost of the crates which contain them. It is, of course, perfectly legitimate for the dealers to advertise contracts and to make them, and they are not under any obligation to buy except to cover their contracts, but it is inexpressibly sad to see the results as they currently work out. So long, of course, as people will plant melons on the chance of selling them to local buyers and shippers, they are in danger of disaster which they would readily avoid by organization which would enable them to sell more or advise them to plant less. How can we help to bring our production upon a safer and more profitable basis? That is what we sincerely desire to do and are willing to work toward that end. Who will tell us what we can do to advantage just at this time?

Queries and Replies.

Poisoning Birds.

To the Editor: I have a ranch in the Sonoma hills. The wild birds are something terrible. They have about eaten up our cherries and apricot crops. Please advise me as to how to poison them suddenly and how to apply it, etc., or any other method that will save the fruit.—Owner, San Francisco.

A formula which is used for a bird poison is as follows: Dissolve an ounce of strychnine in about two quarts of boiling water and then stir in about half a bushel of wheat; then mix a small amount of flour and powdered sugar together and stir in to the wheat until it has taken up all the moisture. This material can then be put out in small amounts, out of the reach of domestic animals, in places most likely to be visited by the birds. Some use the poisoned water, placing it convenient for them to drink. We must advise you, however, that it is not easy to poison birds, especially those which come in to destroy a fruit crop and in the abundance of the fruit pay very little attention to the other foods which contain poison. Still you may like to experiment with the poisoning method.

Fruit is most easily protected by free use of shotguns with bird shot, many birds being killed and many more being driven away by the shooting. Still it must be admitted that all methods against birds are rather unsatisfactory in places where many of them are gathered together on small acreages of ripening fruit.

Some More Glorious Figures.

To the Editor: Could you tell me what is near the highest price per acre that fruit land planted to fruit usually brings in California? And what is about the estimated worth of the product of an acre of such each year? A fellow just returned from California was telling me last week that land was selling in California for $5000 per acre planted to plums, prunes, etc. I would like to know the truth in regard to it.—Enquirer, Iowa.

There have been sales of improved orchard properties, including quite extensive buildings, however, as high as $4000 or $5000 per acre. We do not know what is the highest price for which an acre-yield of fruit has ever been sold. Somewhere between one or two thousand dollars, perhaps, but of course all such figures do not represent the ordinary run of values or of returns. If you should divide your informant's figures by ten you would come uearer to the truth and still be on the upward side of it, probably.

Bean Aphis—Peach Re-heading.

To the Editor: There seems to be a pest of aphides on the horse beans in this vicinity. Can you tell us what we can do to get rid of them or to avoid them in future? I am a little afraid it is too late to remedy the crop now, but would it hurt stock—horses or pigs—to feed the beans to them at once? I have never known such a pest on any beans before. I have a peach tree, grown from seed, about 40 years old. There are two young shoots I have let grow, intending to cut off the old tree in hope that the new growth would bear and become a good bearing tree. Is it likely to?—Grower, San Gregorio.

In order to fight apple aphis on the young plants which they infest, it is necessary to begin very early to spray, and to spray frequently, so that the insect may not have an opportunity to exercise its wonderful power of reproduction. Several simple remedies against aphis are kerosene emulsion, tobacco extract, soap solutions, etc. The abundance of these pests is conditioned largely upon the weather. They multiply most rapidly during cool, cloudy days and nights and are often almost annihilated by a few days of high heat. Possibly their occurrence this year is due to the lower temperature which has prevailed in most parts of the State during this summer.

The new shoots of your peach tree will bear well and be long lived and satisfactory if the old stem from which they emerged is not allowed to decay. Cut away the old parts quite near the new shoots and paint the wound with ordinary lead oil paint, rather thick, and using only enough to cover the wound well without running down upon the bark. The peach tree is generally benefited by giving it a new top in this way.

Red Spider and the Almond.

To the Editor: I am sending you leaves picked from an almond tree; will you please let me know if they are affected with the yellow mite. "California Fruits" gives as treatment a sulphur spray, is there any danger of hurting the crop now on trees with this spray. Are the yellow mites responsible for the nuts breaking open as per sample I am sending.—C. W. L., Neenach.

There is some mite work on the foliage which should have been checked, as soon as seen, by sulphuring. The size and thinness of the leaves indicate, however, that it is a shortage of moisture or other soil trouble which prevents the trees from making a stronger growth. This is also the cause of the abnormal high coloring and premature opening of the hulls, as there does not seem to be mites enough to fully account for these troubles.

Seed Farm Refuse as a Fertilizer.

To the Editor: Can you give me any information as to whether cleanings from sweet peas or all kinds of seeds grown on a seed farm would be of any value as a fertilizer on sandy loam soil for an orchard? This has been in a pile for three years or more, and I can get it for the hauling. There are a hundred loads or more of it and not very far to haul.—Reader, San Juan.

It would be worth more on a heavy soil, because the danger of drying out would be less and the surety of reduction to humus greater. To get the highest value from such stuff it should be composted with water and turning in heaps, but that would occasion expense beyond value probably, unless it could be composted with manure for market garden purposes. In your case we should consider the hauling good work for idle teams and would spread the stuff rather thinly to be covered in with fall plowing, so that its decay could be promoted during the rainy season.

Sulphur Not Changeable.

To the Editor: Is the sulphur that a grower has had on hand for a year fit to sulphur grape vines with for oidium? Has it the strength it ought to have?—Reader, Dinuba.

It is all right unless it has become compacted by moisture so as to be lumpy and not distribute well. It does not change in quality by age.

University Station Work in Southern California.

In accordance with the law establishing the Southern California Pathological Laboratory and Citrus Experiment Station of the University, Director E. J. Wickson submitted for the approval of President Wheeler and for adoption by the Board of Regents the following outline of work for the fiscal year 1911-12, which was adopted by the Regents at their meeting on August 8.

1. We shall proceed to secure the new and extended facilities for work generously made by the legislature of 1911, to wit:

(a) Purchase of land and erection of buildings at the Riverside Citrus Experiment Station, etc.	$25,000
(b) Enlargement of laboratory at Whittier	4,000
(c) Heating furnace for laboratory at Whittier	400
(d) Barn and workshop for laboratory at Whittier	1,000
(e) Laboratory equipment at Whittier	2,000

These sums are in addition to the customary legislative appropriation for maintenance and will provide greatly needed opportunities for developing undertakings now in progress and for taking up some new lines.

2. As a branch of the work of the Southern California Pathological Laboratory and Citrus Experiment Station of the University, the legislature of 1911 appropriated $15,000 for two years for the extension of research and experiment in the Imperial valley. This was made on the basis of satisfactory service rendered under the appropriation of $6000 by the legislature of 1909, of which the results have been published. This extended study of the peculiar agricultural conditions and problems of the Colorado river district will begin at once.

3. Work will be continued upon the "brown spot of the orange" in an endeavor to obtain further knowledge in regard to the cause and means of control of this very obscure and troublesome disease.

4. Investigation will be carried on upon a considerable scale in connection with the various more obscure diseases causing the deterioration of lemons. Such troubles as the "red rot," "black spot," "pitting" and other similar effects upon the rind of the fruit will receive attention. Also certain fungus decays which are not yet thoroughly understood, particularly those caused by the so-called "cottony fungus" of the form known as "gray rot."

5. Our investigations concerning the English walnut, which have gone on for several years, will be continued, particularly along the line of developing and testing new varieties. In this work the object has been to obtain varieties more or less immune to the walnut blight and also having desirable commercial qualities.

6. Other plant disease investigations will take up the matter of vegetable diseases, particularly those affecting the tomato, sweet potato and watermelon. All of these crops are troubled with serious and destructive pests.

7. Study will be continued upon the "crown gall," one of the most serious diseases affecting fruit trees in this State. Such work will consist both in the study of the organism causing the trouble and its relation to various trees, and also work from the nurseryman's standpoint in connection with the possibility and feasibility of growing trees immune to these diseases.

8. In entomology, work will be continued along the line of special studies upon citrus tree insects.

9. In Pomology considerable work is under way in connection with improving fruit varieties by selection, particularly in the case of citrus fruits, and also in introducing and propagating desirable new fruits for southern California.

10. Investigations are also being conducted upon the life history of our citrus fruits in connection with various questions affecting the development and nature of the fruit. It is proposed, during the coming year, to commence a special investigation of the relation of the citrus tree to soil conditions as affecting the health of the tree and the production of the fruit. This study will be carried on partly from the standpoint of the soil and partly from that of the tree. It will therefore involve the services on the one hand of the soil chemist, physicist and bacteriologist and on the other hand that of the plant physiologist.

11. There will also be continued soil investigations already under way in regard to soil fertility and treatment. This concludes the list of specific subjects of investigation, but in addition to these the Southern California Station will continue as in the past to carry on a large amount of other work of a routine or general nature in the way of minor investigations, field studies and examinations and handling of correspondence.

WALNUTS AND ALMONDS.

To the Editor: I am planning on planting about 20 acres of my ranch to walnuts. There seems to be a difference of opinion among my neighbors as to the best way to start. I cannot afford the grafted trees, much as I would like to. So I have thought seriously of sprouting the black walnuts, as per your book, "California Fruits," and planting the sprouted nut out in the orchard. Some claim this is the logical way to do, as the tap root is never disturbed. If I should do this very early in the spring of 1912, could I bud them in the fall of 1912? About what year would this plan bring me my first crop if I bud to Franquette and Mayette buds? Do you think this plan advisable? I will appreciate any suggestions.

I have about 30 acres of almonds and some of the trees now are beginning to shed their foliage. Many of them are quite yellow, although the nuts still hold on and are in fairly good shape, although ripening fast. I must tell you first that the orchard has not been plowed or pruned for three or four years until I came on it this spring and managed to get it plowed one way only and have cultivated it three or four times this season. Some of the trees look splendid, while the very next tree will look sickly. The soil is light, sandy, rolling. I was making arrangements for a dressing of stable manure for the orchard when I was told that the soil was so light that the moisture would not stay in it long enough to rot the manure. Then I began to look into commercial fertilizers, but find that almond fertilizing has not been practiced to a very great extent.

I would like to have you suggest something to help me out. Which fertilizer is best to use? The stable manure is the cheapest, of course. Possibly a good pruning, plowing and cultivation will be all that is necessary. The trees are eight or ten years old. OWNER.

Brentwood.

[It is possible to plant the nuts in place and graft the seedlings which make sufficient growth the first summer and during the fall and spring, but it is usually better to allow the seedlings to grow two or three years in place before grafting, because grafting is much easier in well hardened wood than in the seedling. That the claim that there is much advantage in growing the tap root in place is very doubtful. All things considered, it is better to grow your seedlings in the nursery, where they can be cultivated and watered with much less expense, and plant out in permanent places at one or two years old.

Your almond trees are evidently suffering from lack of moisture which would be retained by cultivation. It is, of course, possible that the trees have become unthrifty through neglect or for lack of sufficient plant food. An application of stable manure would be very desirable, although in the case of light soils it should be applied at the beginning of the rainy season, allowed to leach out by the rains, and worked in during the winter plowing. So long as you have stable manure available there is no reason for giving attention to commercial fertilizers (which are, however, as good for almonds as for any other trees), but do not apply stable manure in the spring, because it will have a tendency to cause the soil to dry out too much during the fall and summer. In the restoration of the orchard, pruning out weak and dead wood should be given attention. Such a course of treatment as you propose would work a great advantage in the condition of the trees, and they are of the age when such treatment would be most salutary.—EDITOR.]

PEAR-RINGS CAUSED BY FREEZING.

To the Editor: The accompanying photograph illustrates a blemish of the Bartlett pear, the cause of which has, so far as I know, never been definitely settled. This is the so-called "ring around the pear," which is of quite general occurrence during certain seasons and is often the cause of



The Frost Ring on the Pear.

considerable loss to the quality and selling price of the fruit. This blemish consists of a scabby ring of surface tissue, sometimes extending uniformly around the pear, or again occurring only on one side or part way around the fruit. The effect somewhat resembles that of pear scab, but it is quite distinct from the latter and is easily distinguished by one familiar with scab. The scab fungus, Fusicladium pirinum, is never found in connection with the trouble which we are describing, although it may occur simultaneously with it.

Observations during the present season have established clearly that this ring around the pear is a frost effect occurring when the fruit is very young. During the past spring immense damage was caused to fruit crops all over the central and northern part of California by late frosts, and as an after-effect of this these ringed pears have been quite abundant. The surface tissue of the young fruit is slightly frozen just back of the petals of the flower and such pears as are not affected severely enough to cause them to fall, go on developing until they reach the condition shown in the photograph. The growth of the tissue under the frozen ring is retarded and the developing fruit becomes constricted at this point.

RALPH E. SMITH.

University of California, Berkeley.

HINTS ON SUMMER PRUNING OF APPLES.

Prof. W. H. Wicks, horticulturist of the Idaho Experiment Station, gives the following notes on summer pruning of the apple tree: "Much has been said in regard to summer pruning of fruit trees in the Pacific Northwest, but as a matter of fact very few of our orchardists actually do summer pruning to any great extent. Theoretically most people think it a very desirable thing, but, like other practical phases of fruit growing, it requires definite ideas and some experience.

"After the orchardist has made a careful inspection of his trees he will find some growing too fast in proportion to the amount of fruit

borne, while the reverse of this will be noticed on certain trees. Pruning while the tree is dormant, or winter prnning, as it is termed, causes the tree to produce wood the following season in proportion to the amount removed at this time. Summer pruning—that is, pruning during the growing season, about July or the first of August —causes the tree to send its energies to the formation of fruit spurs and fruit.

"The Experiment Station at Moscow, Idaho, is conducting a pruning experiment in order to collect accurate data on this subject. The orchard in which this work is being done is now six years old, and, while the results obtained so far are in no way conclusive, they are very suggestive. The two varieties used in this experiment are Wagner and Jonathan. The Wagner trees which have been summer-pruned have yielded practically twice as much as winter-pruned; while the Jonathan has given about one-third higher yield in favor of summer pruning.

"Summer pruning gives an opportunity to thin out the tree for the benefit of the present crop. It is now time for the orchardists to be watching for the formation of terminal buds if summer pruning is practiced. Pruning before these buds have been formed will cause a second growth to start, which is not desired."

NATURAL PROPS FOR FRUIT TREES.

To the Editor: The twining together of small shoots from adjoining branches of apple trees so as to form a bridge between the two that will become a support for a heavy crop of fruit is a practice that is but little known in this State, but has been tried with considerable success in the Pajaro valley. Soon after the leaders of the tree are well formed and side shoots are long enough to meet and overlap somewhat, two shoots about eighteen inches or two feet above the trunk are twined together so that they will grow into one, forming a bridge that will prevent splitting, no matter how heavy a load is borne.

The four or five main branches are thus tied together, each to the ones nearest. No shoots are allowed to grow from the connecting link formed, although it continues to grow and thicken as the tree increases in size. This forms a solid head to the trees and saves a large part of the propping that is necessary when each branch is unconnected with the others. Propping of the small branches above this bridge still has to be done.

It is also claimed by growers who practice this system that the strength of the tree is more evenly distributed than when each branch is by itself, as weakness on one side of the tree is overcome by sap flowing through the bridge from the stronger parts.

This system of training trees is practiced mainly with the Bellefleurs, as they are in more danger of breaking under a heavy load than the pippins. It could, however, be employed with any variety of tree. It was first used in Europe in making pear hedges, where the twigs from adjoining bushes were so twined together that a solid fence was formed from one end of the hedge to the other. D. J. W.

WHAT NEGLECTED FIGS MAY DO.

To the Editor: Possibly you may be interested to know the following facts as to what the white Adriatic fig will do when left all alone.

In 1893 I visited California, and, in keeping with the fashion at the time, was swept off my feet and bought a mile square of land before I got away. My intention was to plant it at once. I had planted 20 acres to figs when Grover Cleveland begun to develop his historic and highly spectacular administration of reforms. In less than sixty days he had reformed me out of about $40 000, the funds I had intended to use in my planting.

Being unwilling to ornament my purchase with a mortgage, I simply quit—renting my ground for a sheep pasture. The gentle sheep held undisputed possession until the advent of the Western Pacific, when I found there was so much disturbance I sent a man out to investigate. He reported that the figs were "all there"; that they had made an enormous growth, with a spread of over thirty feet, and were loaded with the finest fruit he ever saw. I am advised the fruit now nearing harvest is worth $1500. These trees have never had any irrigation, cultivation or care whatever. They are on a knoll about eighty feet higher than Feather river, near Oroville, Butte county. It is red foothill soil from thirty to sixty feet deep.

Chicago, Ill. E. S. WEEDEN.

GROWING FRUIT TREES ON DREDGE TAILINGS.

Mr. J. H. Leggett, of Oroville, reports favorably upon the continuation of his experiment in growing fruit trees on the cobbles and gravel thrown out by the gold dredges working in the Feather river and its adjacent bank lands. Mr. Leggett states that after the rock crusher has leveled his land he proposes to plant the entire tract in olives, which, it has been demonstrated, thrive remarkably well upon the dredged soil.

"A lazy man's way to grow fruit, with a capitalist's return," is the way in which Mr. Leggett describes fruit growing upon dredged land. To begin with, there is no plowing to be done, for in mining the dredge has literally plowed it for a depth of 40 feet. Neither are there weeds to be hoed, for weeds do not thrive on a surface area of clean-washed gravel and cobbles. The amount of irrigation, too, is reduced to the minimum, for Mr. Leggett's experience has shown him that the trees require but one per cent of the irrigation required by the ordinary method.

[We do not get this statement from Mr. Leggett. It looks to us as though the irrigation needs were minimized almost to the vanishing point. We shall probably know more on this subject later.—EDITOR.]

Citrus Fruit Insects in California.

Prof. H. J. Quale of the University of California has just prepared a publication which appears as Bulletin 214 of the Experiment Station at Berkeley. It shows high quality scientific work serving a most important practical purpose. In his introductory paragraphs Prof. Quayle presents general facts of striking public interest, as follows:

What Pests Cost.—That insect pests are one of the important factors in the citrus fruit industry of southern California is shown by the fact that more than half a million dollars is expended annually in their control. This amount includes only what is actually expended in fumigation and spraying, and does not take into consideration the loss of fruit from improperly treated trees or trees not treated at all. The cost of fumigation in one county alone amounts to $200,000 annually. Furthermore, each county maintains a horticultural commissioner, and many of them a corps of inspectors, primarily on account of insect enemies, who are charged with the quarantine and inspection work, the cost of which in some of the counties may run as high as $25,000 anually. That all of this vigilance is necessary seems to be warranted from the thirty years' experience of the most important citrus fruit section of the United States.

It has been estimated that the average cost of fumigation per tree, taking the whole of the whole of the citrus belt, amounts to about 30 or 40 cents, which means an expense of approximately $30 to $40 per acre, and this is done on an average about every other year. This is intensive insect fighting, but when the improved market value of the fruit is considered it is money judiciously spent with such a valuable crop as the orange or lemon.

The Citrus Districts.—Commercial citrus culture in California is confined to seven counties south of the Tehachapi mountain range, namely, Santa Barbara, Ventura, Los Angeles, Orange, Riverside, San Bernardino and San Diego; and the two counties north of this range, namely, Tulare in the upper San Joaquin valley, and Butte in the upper Sacramento valley. The southern counties form a section contiguous to the coast line, and which has a coast climate, excepting Riverside-Redlands district, which approaches the interior conditions on account of its distance from the ocean (60 to 75 miles), without being separated by a well-defined natural barrier. The San Joaquin and Sacramento valley citrus districts have the typically interior climate, which is characterized by hotter summers than that of the more equable coast counties.

Climates and Insects.—These general climatic differences appear to account for the differences in the insect pests, not only of the northern and southern sections, but also within the latter section itself, since even here there is a wide range of variation. However, it is not safe to speak too confidently of the influence of climate on insect distribution. Time has changed a number of ideas to correspond with the facts as they exist today. It had been asserted that California need have no fear of the citrus white fly, yet this pest got a fairly good foothold in a part of the State least suited to it, according to theory. It was also held that the black scale would not exist in the Riverside section, yet it occurs there and attacks citrus trees. Likewise, the purple was supposed not to become a pest in arid California, and, if it did become established, it would be limited to a narrower range than its distribution at the present time indicates.

In general, however, it may be said that the black scale thrives best in sections near the coast, as shown by its prevalence in the citrus belt from Santa Barbara to San Diego, and also on deciduous trees in the coast counties of the north. The interior valley citrus sections are not troubled with the black scale, though it may occur there on such plants as the olive and oleander. The purple scale, thus far, is limited to the coast counties, occurring with the black, but not of such wide distribution. The red and yellow scales occur both near the coast and in the interior, though they are considered the more typical scales of the warmer interior sections.

Pests Are Worst.—Aside from the scale insects mentioned, the next most general citrus tree pests are to be found among the spiders and mites. The Florida red spider and the six-spotted mite are widely distributed, while the silver mite of the lemon is restricted to a limited section in San Diego county. The mealy bug has become a rather serious pest in certain limited sections in Ventura and San Diego counties, and also smaller infestations in other counties. The soft brown, cottony cushion, and a few other scales sometimes occur in considerable numbers over small areas, but are not usually considered permanent pests. A species of thrips has recently come into prominence as a pest in the San Joaquin section. The orange tortrix is the only insect that burrows into the orange itself to any extent, and this fortunately has not become a very important pest thus far. Other insects which attack the fruit occasionally are grasshoppers, katydids and cutworms. Other biting insects attacking the leaves only are Fuller's rose beetle and the common Diabrotica.

A couple of dozen species will thus cover all the insects of economic importance attacking citrus trees in California, and of these, practically all of the control work is directed against but four of the scale insects, the black (Saissetia oleae Bern.), the red (Chrysomphalus aurantii Mask.), the yellow (Chrysomphalus aurantii var. citrinis Coq.) and the purple (Lepidosaphes beckii Newm.). The present publication is intended to give a popular account of all those species likely to be considered of economic importance, together with their chief attendant parasites or enemies. This includes a discussion of their life history and habits, mainly, since the principal reliance for control, which is fumigation, is discussed in separate publications from the California Station and also the Department at Washington. A brief outline of spraying and fumigation is, however, appended which gives the essential facts for these operations. The control of those pests which are not handled by fumigation or spraying is given in the discussion of each species.

Prof. Quayle, during the progress of his work, was resident at the University Laboratory at Whittier and gave much time to orchard studies in southern California.

AGRICULTURAL REVIEW.

With the Fruit Men.

That the disease of the grape known as "little leaf" is due to climatic reasons rather than to poor soil or bacterial cause is the opinion of Prof. Frederic T. Bioletti, viticulturist of the University of California, after investigating conditions in the San Joaquin valley from Modesto to Porterville. Prof. Bioletti examined into conditions, and although investigations will be continued, was unable to find any other reason than climate that could cause the disease to develop.

Reductions in freight rates from Florida fruit shipping points to Eastern markets was ordered this week by the Interstate Commerce Commission.

That the California olive crop will be very heavy this year and the fruit of large size is the statement made by T. E. Dutton of Oroville.

About 40,000 cans of peaches are being run through the C. F. C. A. cannery at Marysville.

In the monthly report of Horticultural Commissioner Gallaway of Sonoma county he states that good crops of most fruits are expected, although the grape crop is injured to a certain extent by the phylloxera. The hop production will also be below normal, though larger than was thought some time ago. Apples and pears are above the average in quality, owing largely to proper spraying. An energetic campaign against weeds, especially John son grass, is recommended.

A yield of 50 tons of peaches is being secured on a ten-acre orchard of three-year-old trees belonging to S. H. Schmidt of Selma. Last year the trees bore 25 tons.

In the monthly report of Commissioner C. W. Beers of Santa Barbara county he says that a large crop of walnuts will be gathered, the blight having done but little damage. In a few cases the parasite of the aphis appears to have been very effective. Parasites on scale insects have also been effective in the county. Apricots and peaches are said to be below normal in both quantity and quality, al though other fruits are bearing very well.

Henry Gundelfinger and brother are setting out 80 acres to oranges and grapes in the Stone Corral district of Fresno county.

Almond picking has begun in Glenn county, where the crop is short, though of good quality.

At a meeting of the Tulare county hor ticultural commission last Saturday the presence of brown rot on grapes around Tulare and Exeter was reported. Red spider was also reported plentiful in some places on deciduous trees.

According to Commissioner Earle Mills of Butte county, the olive knot, which had threatened to do great injury to the trees some time ago, had been practically eradicated.

The apple crop of the Oak Glen district of Los Angeles county is larger this year than last.

The pear crop is reported to be falling in different sections and picking is to begin very soon.

The first straight car of plums ever shipped from Vacaville by one grower was sent out by Col. W. S. Killingsworth August 10.

Malagas are bringing about $40 per ton to the grower in Fresno county, accord ing to recent reports, and Thompsons $35 to $37 for fresh shipment. Shipping of Malagas will not be at its height until the latter part of the week and the first of next. Some difficulty has been found with Malagas by growers having the grapes picked too soon.

A heavy production of melons and cool weather for the consumer have broken the market, and growers with large crops are suffering. In Imperial county the limit of profitable production was approached too closely for comfort under the present system of distribution, although the market held up, and to avoid a similar condition next season Brawley growers are trying to have one firm handle all the crop, so that a large production can be accompanied by a wider distribution and better profits.

Ten carloads of grapes were shipped from Brawley this season, each carload selling for $2000 or better.

The Sebastopol Berry Growers' Union has shipped 20 carloads of berries into the Middle West this season.

The first car of fruit sold in New York this season from Dinuba brought $2257 gross, or $157.23 for every ton. Thompsons brought $3 and $3.25, peaches $1.75 and plums $2.

According to the latest crop report of the U. S. Department of Agriculture, prices on August 1, 1911, as compared with August 1, 1910, were in part as fol lows: Potatoes, 109.6% higher, hay, 29.9% higher; barley, 26.7% higher; butter, 8.8%; eggs, 11.9% and wheat 16.4X lower. Crop conditions for this State were given at 102.5 of average.

Most of the hay around Standish, Lassen county, has been contracted for to San Francisco dealers at from $7 to $9 per ton, high freight charges being re sponsible for the low prices.

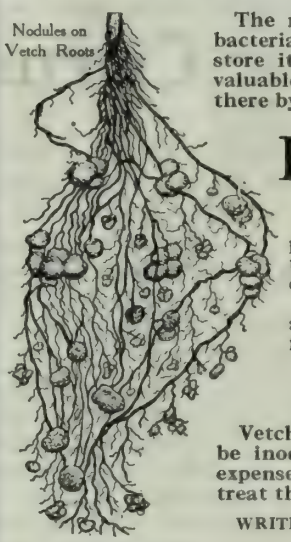
California Fruit Shipments.

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, August 11, 1911, as reported by the California Fruit Distributors:

Peaches (393½ cars)—This report shows a slight gain over last week. It is expected that the next seven days, however, will show a heavy decrease. Elbertas from the San Joaquin valley are about cleaned up. A few are still going from Placer county districts. Late Crawfords Susquehannas and Mary's Choice are being offered. There will be comparatively few peaches shipped from California after next week.

Plums (133 cars)—Movement of this fruit is considerably heavier than expected one week ago. It probably will decline materially during the next seven days. All plums now going forward are particularly fine and are of the same varieties as enumerated last week. Diamonds are more largely in evidence and Giant and Grand Duke are becoming more plentiful.

Fertilize With Air



The nodules on these roots are colonies of bacteria that suck the nitrogen from the air and store it in the plant, which then becomes a valuable fertilizer. The bacteria were placed there by inoculating the seed with

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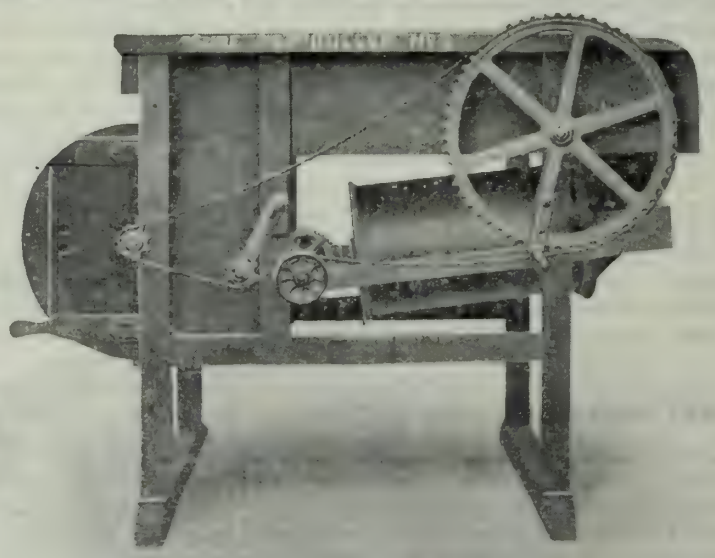
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More about this work next week.

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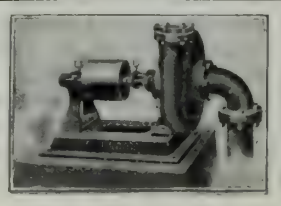


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Mention Rural Press.

Pears (358½ cars)—Contrary to expectations there were about nine cars more pears shipped during the past seven days than in the previous week. Shipments from the river have declined and it is expected that the heavy movement is now completed. Increased shipments from other localities are expected to make up for this decline.

Grapes (145¾ cars)—These figures show a slight increase over last week. The principal varieties now going forward are the same as last week, consisting mainly of Thompson Seedless and Malaga. A few cars of black grapes have been shipped and Tokays are more in evidence every day from the early sections, although the quantity now moving is very small. The cool weather we have been having for the past ten days does not hasten the ripening of the Tokay, although it improves it in color.

Prices and Prospects.

The market for dried fruit still continues strong and the small amount still remaining in the growers' hands leads to the belief that there will be but little chance for a fall and some for a rise. Few of the packers have any large amount on hand or contracted for that are not already sold, and there is no fear of their being overstocked at the end of the season, which will prevent any great downward tendency. Heavy ordering from Europe still continues.

Prunes seem to be nearly all bought, only about 10% being in the growers' hands, while bids and sales are made on a 5½-cent basis. A 6-cent basis is looked for before the crop is closed up.

Very few apricots are being sold at 15 cents, the figure packers are bidding, as the growers generally are holding for higher prices. Peaches are about all sold, with 10⅛ cents the latest figure.

Apples are in demand at 10¼ to 10½ cents and pears are bringing 2 cents more per pound. A large amount of windfalls occurring recently has increased the supply of this fruit.

For Muscats 4¾ cents in the sweatbox is offered, with a tendency of the buyer toward holding off if the bids are not accepted. A few sales are reported, however, at 4⅞ and 5 cents. Thompson's have been contracted for at 6¼, which seems to be a fixed price now, and Sultanas at 5 and 5¼ cents. Rumors of a large European crop appear to be not justified and neither Spain nor Asia Minor is going to have a crop that will be appreciably larger than that of 1910, according to advices received by local brokers. The European crop in other fruits is very short, and it would appear unlikely that the raisin grapes would bear heavier than usual.

Two Apple Shows.

The directors of the Watsonville Apple Annual are making special efforts this year to obtain exhibits of apples from all parts of the State for their show, which will be held from October 9 to 14. Last year other counties made an exceptionally fine showing, in spite of the fact that many exhibits were sent on short notice, and this year even better success is expected. The show is attended by many apple buyers from all parts of the world, as well as by the general public, and has proved to be of great assistance in developing markets and introducing prospective ranchers to good apple land.

The Sebastopol Apple Show, which will open Monday, will be much larger than last year, and great interest is being displayed in it. The Gravenstein apple is the principal variety, but other kinds of apples in large numbers are displayed, and exhibits have been sent in from many districts.

General Agriculture.

Several reports of the presence of the alfalfa weevil in Fresno county have been investigated by Horticultural Commissioner F. C. Schnell and found to be without foundation.

A. Henning of Jacinto, Glenn county, is exhibiting stalks of corn 15 feet high, grown on unirrigated land.

The Horticultural Commission of Yolo county has requested the Board of Supervisors to pass an ordinance declaring the star thistle a weed and making it unlawful to permit it to go to seed on public or private property.

Hop picking has begun on the hop fields near Wheatland, where a large crop is being harvested.

Horticultural Commissioner Bishop of Orange county is organizing work against the Johnson grass in the county.

The Reedley, Fresno county, melon crop, which was reported to be suffering from the melon blight, has proved to be larger and of better quality than ever before, the blight doing practically no damage.

The second crop of alfalfa around Standish has been badly hurt by cutworms, but future crops are expected to be brought on by irrigation.

Arrangements are being made with ranchers at Lovelock, Nevada, for the planting of a large sugar beet acreage, as the erection of a beet-sugar factory is projected at that place.

Miscellaneous.

The directors of the Kings County Fair Association have arranged for a canvas pavilion to seat 1000 persons for the coming fair. Arrangements for the fair are now being made.

Residents of Concord, Contra Costa county, are planning for an agricultural fair for next fall.

At a recent meeting of irrigators of the West Side at Newman, Stanislaus county, it was voted to establish a Wright Irrigation district if the differences with the canal company at present supplying water could not be adjusted satisfactorily.

A poultry show will be held by the Nevada Poultry Raisers' Association at Reno next month.

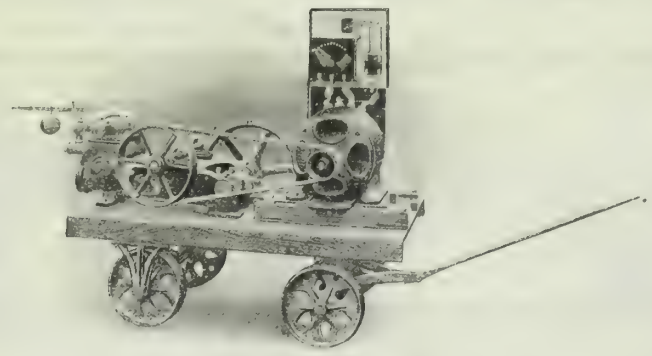
The Orange County Poultry, Pigeon and Pet Stock Association is to hold a poultry show at Santa Ana on December 27, 28 and 29 of this year.

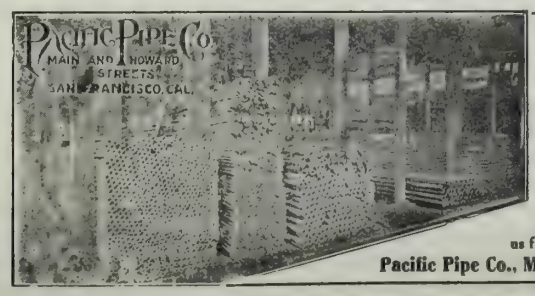
The installation of a pump at the artesian well on the Weidler & Adams ranch at Spa, Kings county, has increased the flow of water from 37 miner's inches to 150 inches. Half a section of the ranch is to be seeded to alfalfa this fall.

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Hints on Farm Bookkeeping.

We do not scold our readers very often for the lack of farm bookkeping, although we have no doubt that many of them need it. It is probable, however, that the general average of farm bookkeeping is much higher in California than in other States because so many have come to farming from previous business experience. Still some may be helped by a few hints which we find in the London Farm and Home, by Prof. James Long, who has had much experience on the commercial side of English farming. He writes:

A Simple System.—Let us see what is really needed in keeping a farm account in the simplest form. A cash book should be made to order, with as many columns as the farmer chooses to provide, if he wishes to know at any time precisely what he has received for various products of the farm. Let us suppose that he keeps horses, cattle, sheep, and pigs, and grows corn and hay for sale. He can, if he prefers it, provide one column for each of these items on the credit side, so that when a sum of money is received for a horse, some bullocks, or some pigs, or for corn or hay, he can enter the item under the particular heading or headings, as the case may be. Another column would be provided for the total sum received, and, lastly, a column for the amount of money banked. On the opposite side of the cash book there may be similar columns provided for items of expenditure, such as feeding stuffs, manures, seeds, and wages, and last of all a column headed "various," under which smaller items or those not provided for may be arranged for the total sum, as in many instances sums of money would be paid for materials which would not require a separate column. On each page there would be a column for the date, followed by a wider column for the name of the purchaser or the person to whom the money was paid. As it is important to keep a ledger for the entry of goods sold on credit or materials purchased, there should be a smaller column on the cash book giving the page of the ledger, so that by looking at the figures the ledger could be referred to without the slightest difficulty. A smaller column would be provided in the ledger for the page of the cash book. The ledger should have an index for the name of individuals or firms who have entries within. It should be kept upon the single entry system, which is sufficient for all purposes, and provided with columns for the date, the nature of the goods sold or purchased, for the page of the cash book, and the amount involved.

I am a strong advocate for the use of the day book, in which every item in relation to accounts is set down as a sale is effected or a purchase made. The details from this book can be entered in the ledger or the cash book at the end of the day. A farmer selling fifty quarters of oats at eighteen shillings a quarter will enter the transaction in the day book, and when he transfers the particulars to the ledger he will open the account by selecting a page, placing the name and address of the buyer at the top, and transferring the details from the cash book, calculating the total amount due and placing it in the money column; he will then cross his pen through the item in the day book, adding the page in the ledger in which one entry has been made. If this system is carefully followed the condition of each amount, whether in relation to the sale of goods, to the sale of stock or corn, or the purchase of cake or manure, or whatever it may be, will be quickly seen by reference to the ledger, with the help of the index. Where running accounts are kept with any given tradesman who sends in his goods from time to time together with the bill, the details of the bill should be entered directly in the ledger, so that when the invoice arrives at the end of the month or the quarter, or whatever term is arranged upon for payment, it can be checked by references to the ledger. When the account is paid—as it always should be—by check, which is a great help in keeping accounts accurately, the entry may be made into the cash book from the counterfoil, and finally into the ledger, and the account immediately squared.

A Labor Book.—There should be a few pages in the ledger headed "Labor Account," in which the total sum paid weekly should be entered from time to time. The labor book should be provided with a variety of columns, each page being applicable to a single week. The first column would be the date for each particular day, the second for the name of the workman, and the others for the kinds of work performed by each individual, which will be found extremely useful as a reference from time to time. These columns may be headed in accordance with the wishes of the farmer, as plowing, harrowing, drilling, hay-making, harvest work, lifting potatoes or roots, and so on, the last column provided being for the wages paid, the total sum being added up at the end of each week and posted in the ledger. I kept a book of this character for many years, and found it extremely useful. There are some books intended for farmers' use on the market, which are provided with pages not only for each week for labor, but for particulars relating to breeding stock, columns being arranged for the names of the animals, or the variety, their date of service, and details of their pedigree, while at the end of the book space is provided for the entry of each week in the year of the sums paid for labor. It is of extreme importance, where good stock is kept on the farm, to enter details as to the breed, the particulars of the sire and dam, and their pedigrees, with such remarks as may suffice to identify the animals, which may be of special use in the case of the sale.

A Plot Book.—There is, however, another book which I would suggest that every farmer should make a point of keeping. I refer to what is termed a "plot book." This should be sufficiently large in size, and into it may be pasted a diagram showing each field upon the farm, with its name, its area, and its various cultivations. Reference to this book from time to time will help the farmer to realize precisely what has been done with it in the past, and thus enable him to learn what to attempt to do with it in the future. The quantity of seed sown per acre is an important item, together with, if these can be obtained, the weight of the crop realized; the various plowings and cultivations should be entered, together with the measures used and the dates, and the condition of the crop from time to time. I need scarcely say that every man who keeps a plot book will enter in its pages such remarks as he feels will interest himself and help him to do good work in the future. I have seen this plot book applied to a large estate with great success, and believe it to be one of the most requisite additions to the accounts kept by the farmer. It tells him more than could possibly told by memory or by his men.

Texas fever has been found in Kansas City and a quarantine established by both State and Federal authorities.

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Beekeeping for Women.

In her recent address at the Field Day for Beekeepers at the Massachusetts Agricultural, Mrs. A. B. Comstock of Cornell University spoke as follows: I have said something about what a woman can get out of beekeeping, and I will turn my attention for a moment to those things she does get out of it.

I have watched with interest several women who were successful beekeepers. Once a man said to another, "I have not met with success in my work," and the other answered, "No one ever meets success. If we ever get it we must overtake it." That is what these women have done. They have overtaken success by fair effort, but they did not become breathless meanwhile. Some years they clear a fairly good income, and are very happy over the money earned in a work so interesting and agreeable. This income varies from twenty-five to two or three hundred dollars per year, depending upon the season and the size of the apiary. I have never had a personal acquaintance with a woman who was making her living and supporting her family by beekeeping, although I have heard of several who do this. In the case of my acquaintances, beekeeping is a blessed avocation, and I believe that as such it fulfills its highest benefit to women.

It is true that in our farming communities the women get too little of the life-giving air of the out of doors. The city boarder comes and stays outdoors all day swinging in the hammock or taking long tramps over the hills; and she sleeps outdoors at night if possible. But this proceeding seems hardly decent in the country community where I was born and reared. It seems idle to waste one's days in a hammock, and it seems almost scandalous for a woman to be able to walk ten miles. The farmer's wife spends most of her days indoors, and her nights in a bedroom where drafts are not allowed. (By the way, how much she ought to learn by watching the work of the bees in setting up drafts through the hive with their fanning wings!) It is only because there are some duties which invariably call the women of the farm house out of doors that keeps them alive. I have often thought that the unhandy well, four or five yards from the kitchen door, has saved the lives of the women who work in the house.

Now, beekeeping gives the women of the farm home a reason for being out of doors, and at just the season when the world is most beautiful. Moreover, the apiary is always in a pleasant place. One thing which always holds my attention is that, however unattractive the surroundings of the farm house, the bees have a pleasant corner in the orchard, or in some other partly sunny spot. Whether they know it or not, the women of the farm home who care for the bees get some good air and some good healthy outdoor labor, and meanwhile they are not troubled with insomnia. How many a country wife has wondered and resented during her sleepless hours the sound and perfect sleep of her husband when the only reason for this difference lay in the fact that his work was in the open air and hers in the stuffy house.

Then there is another and even more fundamental reason for beekeeping as a woman's interest. I would prescribe as a means for preserving sanity and sound nerves to the wives and mothers of this country that they each have some avocation which may be pursued steadfastly, even though interruptedly, and that it should be quite apart from household duties. Such a work clears the mind and temper of tangles. It is like the shadow of a rock in a weary land. Half the worries of life crawl away out of sight the moment we really drop them; and often, if we find them again, they seem to have shrunken. There is something nerve exhausting about the daily treadmill of household drudgery. It always wears on the same nerves; the collar of the housework harness always chafes on the same sore spot. An avocation gives a chance to throw off the collar and give the collar-galls a chance to cool and heal; and beekeeping is one of the sanest, sweetest and easiest of these nerve-healing avocations. It is worse than useless for a women to carry the irritation engendered in the hot kitchen into the apiary, for no living creature is more sensitive to an irritable frame of mind than is the bee; and her way of showing her consciousness of it surely makes the punishment fit the crime. A bee cannot be scolded, spanked nor kicked. The only way to deal with her is to keep the spirit calm and peaceful, the temper self-controlled and equable; and thus it is that the mere work with bees becomes a means of grace.

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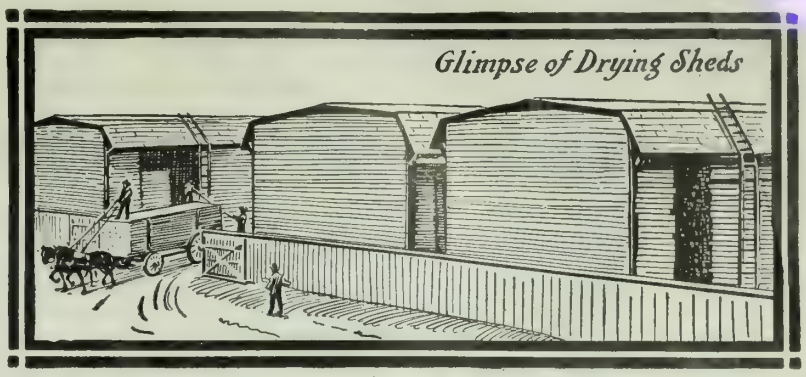
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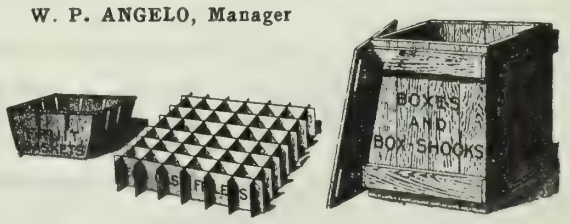
I H C Service Bureau

The Bureau is a center where the best ways of doing things on the farm, and data relating to its development, are collected and distributed free to every one interested in agriculture. Every available source of information will be used in answering questions on all farm subjects. If the questions are sent to the I H C Service Bureau, they will receive prompt attention.

PACIFIC BASKET AND BARREL CO.

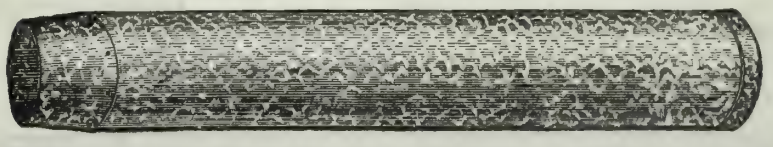
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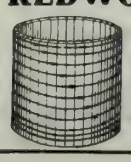


This cut illustrates our special pipe made for surface irrigation. We have a circular which gives the construction of same with prices and fully explains its use, which we will cheerfully mail you if something modern and economical appeals to you.

We also manufactnre all fittings for the pipe, such as ells, tees, and gates. Address all inquiries to Dept. A.

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We also manufacture Metal Roofing, Conductor Pipe, Eave Troughs, etc.

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I deal direct with the consumer. If I had agents to sell my product it would mean that I must add to my price as much as the agents' commission would be. My lumber is brought direct from the forest. Latest improved machinery. Up-to-date methods. Redwood Tanks, Picking Boxes, Peach Boxes, Drying Trays, Egg Cases. A tank 5 ft. diameter, 2½ ft. deep, $7.50. A tank 6 ft. diameter, 2½ ft. deep, $10.50. Large stock of tanks of various sizes in stock. Anything made to order on short notice. Spraying tanks.

R. F. WILSON, 447 W. Main St., Stockton, Cal.

The New California Stallion Law.

Farmers who employ service from public stallions or jacks can learn much about the animals which are offered to them because of the requirements of the new law entitled, An act to regulate the public services of stallions and jacks in the State of California. (Approved May 1, 1911.)

We take from this law the sections which cover the points which the patrons of public stallions are most interested in:

Section 1. Every association, person, firm or corporation standing or offering any stallion or jack for public service in this State shall cause the name, description and pedigree of such stallion or jack to be enrolled by a stallion registration board hereinafter provided for, and secure a license from said board, as provided in section 3 of this act. All enrollment and verification of pedigree shall be done in the office of the secretary of the California State Board of Agriculture. All license certificates for stallions or jacks issued under this act shall thereupon be presented to and recorded by the county recorder of the county or counties in which said stallion or jack is used for public service.

Sec. 4. The presence of any one of the following named diseases shall disqualify a stallion or jack for public service, and the examining or inspecting veterinarian is hereby duly authorized to refuse to give an affidavit of soundness to the owner of such stallions or jacks affected with any one or more of the diseases herein specified in a transmissible or hereditary form, and the examining or inspecting veterinarian shall so report the same to the secretary of the stallion registration board.

Laryngeal hemiplegia (roaring or whistling); pulmonary emphysema (heaves, broken wind); chorea (St Vitus' dance, crampiness, shivering, stringhalt); bone spavin; ringbone; sidebone, navicular disease; osteoporosis; curb, when accompanied with faulty conformation of hock; glanders, farcy; maladie du coit; urethral gleet; mange; or any contagious or infectious disease, and the said board is hereby authorized to refuse its certificate of enrollment for any stallion or jack affected with any one of the diseases herein above mentioned and to revoke the previously issued enrollment certificate of any stallion or jack found on subsequent examination and investigation to be so affected.

Sec. 6. The owner of any stallion or jack used for public service in this State shall post and keep affixed, during the entire breeding season, copies of the license certificate of such stallion or jack, issued under the provisions of this act, in a conspicuous place, both within and upon the outside of the main door leading to every stable or building where the said stallion or jack is used for public service.

Each bill and poster and each newspaper advertisement shall show the enrollment certificate number, and state whether it reads "pure-bred," "grade," "cross-bred," "non standard bred" or "mongrel," and it shall be illegal to print or advertise any misleading reference to the breeding of said stallion or jack, his dam or his sire.

Sec. 9. Every stallion or jack for which a license has been issued shall be exempt from further examination, unless from later developments it becomes known, and a complaint is filed, certified to by three men, one of whom shall be licensed veterinarian, that said stallion or jack has some hereditary, contagious, or infectious disease, which was not evident at the time of previous examination. When such complaint is made, and a request for examination is asked, such complaint shall be filed with the secretary of the California stallion registration board, who shall have another examination made, but the owner of the stallion or jack shall have the right to select a veterinarian legally qualified to practice as such in this State, to act with such examining veterinarian, and in case these two shall fail to agree upon a verdict or decision these two veterinarians shall appoint a third qualified veterinarian, with the consent and approval of said board and owner, who shall act as referee therein, and the decision of said referee shall be final. If such complaint is found to be correct it shall be reported to the secretary, who shall revoke the licence in force; provided, that the owner of any stallion used for public service in this State shall have a lien on all colts sired by said stallion for the service fee for a period of one year from the date of the foaling of said colt, as now provided by law.

Sec. 12. This act shall take effect and be in force on August 1st, 1911.

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CREAM SEPARATOR
Is Easiest to Wash and Lasts Longest
SHARPLES
Dairy Tubular Separators

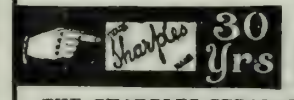
are the only separators without disks or contraptions – the only simple separators. They have twice the skimming force of others. Skim faster. Skim twice as clean. Repeatedly pay for themselves by saving what others lose.

A Dairy Tubular recently finished work equal to 100 years service in a five to eight cow dairy. The total cost for oil and repairs was only $1.15. Write for illustrated account telling all about it.



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2335-ACRE RANCH
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We have a Stock Ranch of 2335 Acres, three running streams, two barns, two houses, well fenced, rolling hills, good soil, about 1500 acres tillable, and has produced as high as eighteen sacks of wheat per acre. Four miles southwest of Dunnigan, Yolo County.

PRICE, $18 PER ACRE
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August 21st to 28th Inclusive

FARE $1.70 ROUND TRIP

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THE BIG STATE FAIR

Sacramento, August 26th to September 2nd, 1911

The program and arrangements now completed settle it that the State Fair this year will be the biggest and best ever held in California. Besides the largest industrial and live stock exhibits, the biggest purses and best races, the program includes:

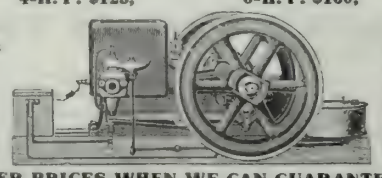
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FAMOUS AVIATORS
AND DARING DAILY FEATS BY DARE-DEVIL COWBOYS FROM ALL OVER AMERICA

SPECIAL RATES ON ALL RAILROADS

WITTE DISTILLATE ENGINES
The Best General Utility Engine on the Market

2-H. P. $75; 4-H. P. $125; 6-H. P. $160; 8-H. P. $225.

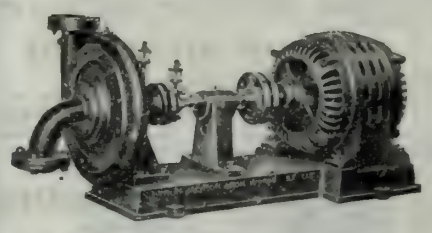
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An up-to-date engine; snappy, vigorous and powerful. Simple, reliable and durable.

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Patented Automatic Water Balance Irrigation Pump, direct-connected to electric motor; self-operating; ideal; will require no attention.

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Electric motors and centrifugal pumps make an ideal combination for irrigation work.

A Byron Jackson pump direct connected to an electric motor is self operating, and requires no attention.

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DAIRYING AND AGRICULTURE IN PLUMAS COUNTY.

To the Editor: After riding in the cars for four hours through the deep-winding canyon of the Feather river, it is a rare treat to look over the pine-tree tops into the green pastures of the American valley.

Although not large, we found that it affords ample room for some 35 or 40 prosperous farms, also for the town of Quincy, the county seat of Plumas county, which, by the way, is a great rendezvous for campers and hunters. On investigation, we found some fruit and grain, but as the chief industry is dairying, naturally their chief crop is hay. Timothy and alfalfa are grand crops here, three to four tons of timothy per acre being the average on one ranch we visited, which sells for $10 to $12 per ton in the loose state. They get crops of alfalfa by irrigating, which usually yields for the two crops between four and five tons to the acre, and, as railroad transportation is high, they realize a much better price than farmers in the lower valleys, as this product is nearly all consumed in nearby mountain towns. Although an ideal summer climate with its altitude of 4000 feet, they have very severe winters (last winter they had six feet of snow at one time); it necessarily follows that the major portion of the hay crop is fed during the long winters to their dairy stock.

Although the stock is not bred up to the highest efficiency, it is considered the most profitable business, as their products strike good markets, and by keeping up the quality, they have little competition.

Butter-fat is the principal product, this being shipped to distant creameries; although we found one model home creamery located at the Thompson ranch, which is leased by B. F. Pauly. There is also a co-operative dairy company being formed which will commence operations soon. Here they have an abundance of fine spring water which they use for their motive power, refrigeration, and is also a big factor in their sanitary conditions.

Although the vegetable and poultry industries in this region of early and late frosts have been neglected heretofore, several are contemplating going into these lines more, as these products find a ready market at good prices.

With regret we left this beautiful valley to visit Sierra valley, which also lies in Plumas county. Here we found a much larger valley occupied principally by Swiss dairymen, who are very successful, as they also reach good markets and have much larger ranches than their Quincy neighbors. Here we found some fine wheat growing, still green on August 5. It is estimated to go twenty sacks to the acre, which is a very good yield for this region. Beckwith is the principal town in this valley, and, though small, is very prosperous.

CORRESPONDENT.

DAIRY NOTES.

Dr. George Gordon, live stock inspector for Kings county, in a report to the supervisors, states that milk-houses will be erected on all dairies in the county within a month. He states that there appears to be a belief among some dairymen that the inspection will be discontinued soon and that they are making fewer improvements as a result. Notices of required improvements have been served on such dairymen, and arrests are expected to follow if conditions are not remedied.

The Kings County Dairymen's Association has been completely organized and the following directors elected: J. W. Guilberson, E. G. Sellers, A. F. Nunes, C. A. Stephens, George Farmer, J. M. McClellan, A. G. Borges, M. Reyes, and M. A. Thomas. A Diarymen's Protective Association has also been formed for northern San Joaquin county, the meeting being held in Lodi recently and the following officers elected: A. S. Laselle, president; J. M. White, vice-president; E. E. Ferdun, secretary-treasurer; Sherman Mowry, A. M. Harshner, and Joseph Fitzgerald, trustees. Meetings will be held on the first Wednesday in November, February, and May.

A number of Swiss dairymen have been visiting Imperial valley recently with the idea of settling there if prospects are favorable.

George A. Enos, of the Laurel Dairy at San Luis Obispo, has just completed a 90-ton silo, which he will fill with corn fodder and alfalfa.

A new alfalfa mill is being built at the Stevenson Colony, Stanislaus county. It will have a capacity of 30 tons per day.

A butter-fat contest is to be held at the West Side fair to be held at Newman, Stanislaus county, September 7 to 9, with nearly $200 in prizes for cows giving the greatest amount of butter-fat during the three days of the contest. The cows will be divided into two sections, aged cows and heifers.

The new plant of the Gridley Produce & Canning Co. turned out its first butter last week.

C. J. Bevins, recently appointed by the Los Angeles Board of Health to inspect dairies in Tulare county that supply Los Angeles with fresh milk and cream, has sent out notices to all dairies in the county giving notice of the requirements of the ordinance under which he works. The State inspectors at work in the county are finding some difficulty in getting dairymen to install apparatus to cool cream.

Warrants against ten dairymen have been issued by San Francisco courts for watering milk supplied to city markets.

HOGS AND AFALFA.

To the Editor: I would like to ask your opinion as to whether it would be profitable to raise hogs where I have alfalfa pasture, but no facilities for raising grain. I will have to buy my grain and will have no feed whatever except alfalfa. Can hogs be raised profitably in this way?

Alameda. J. S. H.

They surely can, and are. Some hogs never get anything but alfalfa and some dry roughage like grain or bean-straw for a tonic. You can probably buy the grain for finishing near by, if you need it, and thus rule out the cost of handling and transportation to a minimum.

LIVE STOCK NOTES.

The famous Rancho Del Olso, near Sacramento, has been closed up with the shipment of 14 brood mares to Kentucky. This is the next to the last of a number of famous stock farms which flourished in this State when the racing industry was at its height.

John McGlinchey, president of the Stockmen's Protective Association of Alameda County, reports a number of small fires recently in the hills in the south of the county, all of which were extinguished without doing great damage.

William Carruthers, formerly flockmaster of the Howard Cattle Co. at Newman, is looking after the herds of Dr. Macomber of Latrobe, Cal.

Hume F. Spencer, live stock inspector of Santa Barbara county, has completed an inspection of the quarantined districts in his territory and finds that the Texas cattle tick is apparently eradicated there.

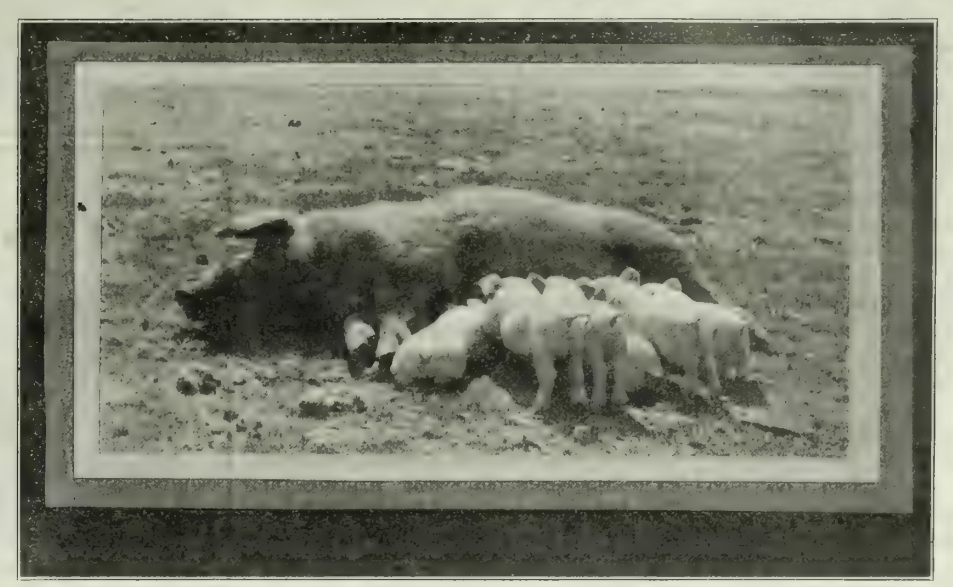
H. P. Eakle, of Woodland, has sold a number of Shropshire bucks to H. G. Sinclair of Sonoma county.

The suitability of the climate of Imperial valley for sheep raising is shown with a flock of sheep owned by Wiley M. Weaver and L. A. Heydlouff, of Mesquite Lake. In their flock are lambs seven months old weighing 110 pounds.

The quarantine for hog cholera on the Thomas Smith ranch at Lakeside, Kings county, has been raised. Hog cholera has also been found on the ranch of B. L. Barney near Hanford, but no quarantine established.

MANHATTAN STOCK FOOD
(RED BALL BRAND)

Time means Nothing to the Hog



Time means Money to the Hog Raiser

Manhattan Stock Food Fattens Quick. Is a Rapid MEAT MAKER.
A LITTLE OF THIS FOOD
enables stall-fed animals, whether horses, cows, bulls, pigs, sheep or poultry to ASSIMILATE ALL their hay, grain and other food by properly digesting it; thus their feed not alone fills them up but
BUILDS THEM UP.
Commence with a little at weaning time. There will be no sickness and you will be many pounds of pork ahead.
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150 Head Registered Shropshire Bucks
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N. H. LOCKE CO., Lockeford, Cal., are offering registered Jersey bulls and bull calves of the choicest Island and American breeding, from prize winners and big producers; also a carload of unregistered Jersey cows, and a car of Jersey heifers, unregistered.

JOHN LYNCH, breeder of Registered Short-horns; milk strain. High class stock. First-class dairy breeding. Smooth cattle. Best pedigree. P. O. Box 321, Petaluma, Cal.

PURE-BRED SHORT-HORNS, Poland-China hogs, and Shropshire sheep. Roselawn Stock Farm, Woodland, Cal.

A. W. MORRIS & SONS, Woodland, Cal.—Importers and breeders registered Holsteins.

STEVENSON & WAGNER, Newman, Cal.—Holstein-Fresian bulls, heifers for sale.

SWINE

FOUR OAKS STOCK CO., breeders of Berkshire and Hampshire hogs and Importer Hampshire Down sheep. Woodland, Cal.

POLAND CHINA HOGS; Barred Rocks and Black Minorca poultry; young stock and eggs for sale. M. Bassett, Hanford, Cal.

ENTERPRISE STOCK FARM, Woodland, Cal.—Short-horns, Shropshire rams, Duroc-Jersey swine and collie puppies.

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BERKSHIRE AND POLAND-CHINA HOGS. Both sexes. C. A. Stowe, Stockton, Cal.

STUDARUS & CUNNINGHAM, Mills, Cal Registered O. I. C. swine.

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroughbred Berkshires.

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What the Census Says About Uncle Sam's Flocks.

Statistics relative to sheep and lambs reported on farms and ranges for the United States, by States and geographic divisions, at the thirtieth decennial census, April 15, 1910, are contained in an official statement just issued by Acting Director Falkner. It is based on tabular summaries prepared under the direction of Dr. Le Grand Powers, chief statistician for agriculture in the Bureau of the Census. The figures are preliminary and subject to slight revision later, when a few others farms, whose returns are now incomplete, are included in the final tables.

Number of Sheep and Lambs, 1910 and 1900.—In summing up the results, Acting Director Falkner states that, for the country as a whole, there was no material change in the sheep industry in the ten years between 1900 and 1910.

The total number of sheep and lambs in the United States reported for 1910 was 51,638,590, made up of 29,707,000 ewes, 7,148,366 rams and wethers, 12,168,278 lambs, and 2,614,946 sheep and lambs not classified by age or sex in the 1910 reports. In 1900 the total number reported was 61,503,713, comprising 31,857,652 ewes, 7,995,315 rams and wethers, and 21,650,746 lambs.

Increases and Decreases by Geographic Divisions.—The very slight decrease in the total number of wool-producing sheep was not uniform for all parts of the United States. The total number reported for the North Atlantic division was 1,566,033 in 1910, as compared with 2,533,579 in 1900, a decrease of approximately 1,000,000, distributed throughout all the States in that area. The South Atlantic division reported 1,552,284 in 1910, as compared with 1,706,199 in 1900, a decrease of about 154,000; the South Central division 3,165,905, against 3,328,848 in 1900, a decrease of about 163,000; the North Central division, 10,069,451 in 1910, as compared with 10,055,721, an increase of about 14,000; and the Western division 23,116,639 in 1910, against 22,228,620, and increase of nearly 1,000,000. The total change in the South Atlantic, South Central and North Central divisions, therefore, was almost negligible and not at all uniform. A group of States, comprising Maryland, Virginia, Tennessee, Kentucky, Ohio, Illinois, Minnesota, Iowa, Missouri and Kansas shows increases, where the States north and south of this central group show decreases. In the Western division, Colorado, California and Washington show slight decreases; Utah a decrease of nearly 1,000,000, and New Mexico a loss of 400,000. The other States show material increases.

Number of Wool-Producing Sheep by States.—In the North Atlantic division the number of wool-producing sheep reported for Maine was 149,934 in 1910 and 252,213 in 1900; New Hampshire, 31,201 in 1910 and 65,318 in 1900; Massachusetts, 22,672 in 1910 and 33,869 in 1900; Rhode Island, 4206 in 1910 and 6629 in 1900; Connecticut, 14,043 in 1910 and 23,021 in 1900; New York, 605,655 in 1910 and 984,516 in 1900; New Jersey, 16,593 in 1910 and 26,363 in 1900; and Pennsylvania, 637,369 in 1910 and 959,483 in 1900.

In the South Atlantic division the number of wool-producing sheep reported for Delaware was 4415 in 1916 and 6964 in 1900; Maryland, 126,251 in 1910 and 111,520 in 1900; District of Columbia, none; Virginia, 437,988 in 1910 and 392,125 in 1900; West Virginia, 564,378 in 1910 and 572,739 in 1900; North Carolina, 139,884 in 1910 and 208,812 in 1900; South Carolina, 28,024 in 1910 and 52,436 in 1900; Georgia, 154,442 in 1910 and 258,894 in 1900; and Florida, 96,900 in 1910 and 102,709 in 1900.

In the South Central division the number of wool-producing sheep reported for Kentucky was 776,894 in 1910 and 716,158 in 1900; Tennessee, 470,478 in 1910 and 307,804 in 1900; Alabama, 111,183 in 1910 aand 229,298 in 1900; Mississippi, 156,506 in 1910 and 236,470 in 1900; Louisiana, 140,242 in 1910 and 169,234 in 1900; Texas, 1,364,554 in 1910 and 1,439,940 in 1900; Oklahoma, 48,766 in 1910 and 61,183 in 1900; and Arkansas, 97,282 in 1910 and 168,761 in 1900.

In the North Central division the number of wool-producing sheep reported for Ohio was 2,892,272 in 1910 and 2,648,250 in 1900; Indiana, 812,427 in 1910 and 1,010,648 in 1900; Illinois, 661,484 in 1910 and 629150 in 1900; Michigan, 1,545,241 in 1910 and 1,625,930 in 1900; Wisconsin, 628,539 in 1910 and 986,212 in 1900; Minnesota, 452,043 in 1910 and 359,328 in 1900; Iowa, 769,917 in 1910 and 657,868 in 1900; Missouri, 1,114,216 in 1910 and 663,703 in 1900; North Daktota, 239,114 in 1910 and 451,437 in 1900; South Dakota, 502,[illegible]5 in 1910 and 507,338 in 1900; Nebraska, 245,195 in 1910 and 335,950 in 1900; and Kansas, 206,498 in 1910 and 179,907 in 1900.

In the Western division the number of wool-producing sheep reported for Montana was 4,978,963 in 1910 and 4,215,214 in 1900; Wyoming, 4,676,206 in 1910 and 3,327,185 in 1900; New Mexico, 2,931,201 in 1910 and 3,333,743 in 1900; Arizona, 843,383 in 1910 and 668,485 in 1900; Utah, 1,670,890 in 1910 and 2,553,134 in 1900; Nevada 810,973 in 1910 and 568,251 in 1900; Idaho, 2,160,029 in 1910 and 1,965,467 in 1900; Washington, 308,862 in 1910 and 558,022 in 1900; Oregon, 1,982,552 in 1910 and 1,961,355 in 1900; and California, 1,440,532 in 1910 and 1,724,968 in 1900.

Number of Farms Reporting Sheep.—Although the number of mature sheep decreased very slightly during the decade, the number of farms reporting sheep decreased from 763,518 to 608,363, which is 155,155, or 20 per cent. The decrease in the number of farms in the North Atlantic States was at practically the same rate as the decrease in the number of mature sheep, leaving the average number of sheep per farm approximately 21 at both periods.

In the South Atlantic division, however, there was a decrease of practically 30,000 in the number of farms reporting, with only a slight decrease in the number of sheep. In 1900 the number of mature sheep per farm in that group of States was 16, whereas in 1910 the average number per farm had increased to 20.

In the South Central division the number of farms fell off about 44,000, which is a much greater relative decrease than that in the number of sheep. In 1900 the average number of sheep per farm was 22, whereas in 1910 it was about 29.

In the North Central division both the number of farms and the number of mature sheep increased slightly, the number of sheep per farm being about 29 at each census period.

In the Western division the increase in the number of farms corresponds very closely to the increase in number of sheep; the average number of sheep per farm reporting being approximately 900 at each of the censuses.

Wool.—The number of fleeces of wool and the total weight of the wool clip for 1909 has not yet been completely tabulated. The average weight per fleece for a group of sixteen States already tabulated is 7.4 pounds. In 1900 the average weight per fleece for these States was 6.8 pounds, and for the entire United States 6.3 pounds. If the average weight for the entire United States for 1909 is 7.4 pounds, the aggregate weight of wool shorn in that year, including that clipped from the sheep on farms and in cities at the date of enumeration, and that shorn from sheep afterward slaughtered in the spring of 1910, before the date of enumeration, will be approximately 296,000,000 pounds, while, if the average weight for the farms of the country is only 7 pounds, the weight of the farm clip will not greatly differ from that returned by the census of 1900, or about 277,000,000 pounds.

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400 Blacow Roberts Glide French Merino and 100 Pure Bred Shropshire Rams

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Live Stock at the State Fair.

To the Editor: The announcement of Secretary Telfer of the State Agricultural Society that the live stock entries at the State Fair this year will be greatly in excess of all previous years and that their character as well as number indicates a most prosperous condition of the stock industry, will be welcomed by everyone interested in this very important department of the State's industries. While it is true that in the old days of the open range California possessed more cattle and sheep than she does today, the quality and value of all stock have greatly improved, stimulated by higher prices and necessitated by the restriction of the range. Alfalfa, in place of wild grasses and shrubs, now feeds our stock, and they carry much more good meat and fat than they did fifteen or twenty years ago. The total value of California's live stock at the opening of the year was greater than ever before in her history, being nearly $122,500,000, which is over 40 per cent higher than five years ago.

It is in the dairy stock particularly that the greatest progress is found, and here, perhaps, lies the greatest promise of prosperity in the future. The number of milk cows reported in 1905 was 390,000, and by the first of the present year the number had increased to 500,000, a gain of 29 per cent. Values have grown at a still more rapid pace, and we find the total valuation of dairy cows has grown from $13,000,000 five years ago to $24,000,000 in 1910, a gain of 77 per cent. Beef cattle, while they have declined somewhat in numbers, are still above the million mark, and are now worth $25,000,000, a gain of 26 per cent. Sheep, too, notwithstanding a considerable loss in numbers, have increased in value since 1905 to the extent of 18 per cent. Horses, despite the advent of the electric car and the automobile, now number 425,000, against about 400,000 five years ago, and the total value is now nearly $50,000,000, or $19,000,000 more than in 1905.

The live stock entries at the State Fair fully reflect the above conditions. There will be greater numbers, greater variety, and higher excellence in every class. There will be over a hundred head of the cream of the State's dairy stock; Jerseys, Guernseys and Holsteins, and 135 head, by the latest count, of beef cattle. The State University Farm School at Davis will be on hand, as in the past years, with good representatives of all farm stock and the students will engage in the judging, matching their sharp wits with the experience of the older experts. The Davis School's dairy herd has been strengthened by some fine animals during the past year, and this will be one of the most interesting features for the young farmer.

The larger purses hung up this year for the track events, as well as the liberal special prizes for exhibit horses, have attracted an unusually high class of horses, and attendants at the State Fair of 1911 will find the old days of the turf restored when they see the fast ones lined up before the judges at the agricultural park's mile track.

The leading entries in the horse and cattle classes (competitive), so far as received (and more are coming in daily), are as follows:

HORSES.—O. A. Bianchi, Sacramento; L. H. Todhunter, Sacramento; W. Parsons, Salinas; Mrs. Frank Burke, Turlock; E. D. Diggs, Stockton; O. D. Payne, Woodland; Charles R. Marley, Woodland; Dana Perkins, Rocklin; S. U. Mitchell, Sacramento; S. Christenson, San Francisco; H. S. Maddison, Sacramento; Crouch & Sons, Sacramento; White & Terry, Sacramento; A. Bridgeford, San Francisco; Dr. U. D. Hamlin, Oakland; McLoughlin Bros., Oakland; J. E. Dickinson, Fresno; Revel L. English, Chino; J. E. Emlay, Marysville; James T. Ragsdale, Merced; Mrs. E. W. Scripps, Miramar; William Bond, Newark; L. A. Hall, San Jose; O. P. Jenkins, Leland Stanford University.

SHORT-HORNS.—J. H. Glide, Dixon; Howard Cattle Co., San Francisco; T. B. Gibson, Woodland; T. S. Glide, Davis.

HEREFORD.—Simon Newman Co., Newman Co., Newman; University of Nevada, Reno.

ANGUS.—T. B. Gibson, Woodland; Univirsity of Nevada.

RED POLLED.—R. R. Cartwright, Modesto.

DEVONS.—U. G. Strader, Ceres; Mrs. Jennie Strader, Ceres.

HOLSTEIN-FRIESIAN.—Leland Stanford University; University of Nevada, Reno; M. M. Holdridge, San Jose; A. W. Morris & Son, Woodland; McAlister & Son, Chino; A. B. Kendall, Modesto.

GUERNSEYS.—Charles G. Lathrop, Stanford University.

JERSEYS.—W. J. Hacket, Ceres; N. H. Locke & Co., Lockeford; Guy H. Miller, Modesto; J. B. & J. E. Thorpe, Stockton.

The N. H. Locke Co., the University of Nevada and others have also several entries in the fat-stock class.

The University of California will exhibit, not in competition, three beef breeds and two dairy breeds; three breeds of sheep and three breeds of hogs.

SHEEP.—T. S. Glide, Davis, Fr. Merino; J. G. S. Hubbard, Corvallis, Ore., Southdown and Cotswolds; University of Nevada, Dorset and Cheviot; Bishop Bros., San Ramon, Snropshires; E. A. Bridgeford, San Francisco, Shropshires; Ed. Schoel, Albany, Ore., Hampshires; C. P. Bailey & Sons, San Jose, Persian; John B. Stump, Monmouth, Ore., Cotswolds and Lincolns; M. S. Woodcock, Carvallis, Ore., Lincolns.

Messrs. Bailey, Stump and Woodcock also exhibit Angoras.

HOGS.—A. B. Humphrey, Mayhew, Berkshires; Harry L. Murphy, Perkins, Berkshires; G. A. Murphy, Perkins, Berkshires; James Voorhees, Fresno, Berkshires; T. L. Levey, Ripon, Berkshires; P. H. Murphy, Perkins, Poland-China; Chinas and Berkshires; Wendell Cleveland, Gresham, Oregon, Essex; M. Bassett, Hanford, Poland-Chinas; Gilt-Edge Stock Farm, Sacramento, Poland-China and Mule-Foot; J. K. Frazer, Albany, Ore., Duroc-Jersey; George W. McGuire, Albany, Ore., Duroc-Jersey; Kennedy Bros., Merced, Duroc-Jersey; Four Oaks Stock Farm, Woodland, Hampshires and Berkshires; Ed. Schoel, Albany, Ore., Chester White; R. A. Marsh, Albany, Ore., Chester White; M. M. Holdridge, San Jose, Chester White.

The poultry entries will not all be in before August 18, but the indications are that they will largely exceed those of last year. JOHN T. BRAMHALL.

Sacramento.

HUMBOLDT COUNTY NOTES.

To the Editor: Owing to so much heavy fog and fine rain, haying and harvesting are kept back a good deal this summer, both around Rohnerville and Ferndale. There has been more fog this summer than for a good many years. The cow peas are being damaged also, by being kept wet most of the time: the part of the vine resting on the ground becomes mouldy and sour, so that the cattle only eat a little of the top.

Guernsey stock is being tried out with a good deal of success around Ferndale. The dairymen are finding out that the cows give milk longer, and more of it, than the Jerseys, and that they are not as nervous; also that the calves are stronger and healthier than the Jersey calves.

The wonderful fertility of Humboldt county soil was shown to me the other day when Charles A. Carr, of Rohnerville, took me out to a piece of oats that had averaged about two tons to the acre. He said that it was the fifty-second crop that he had cut from the same piece of ground without putting on a bit of fertilizer. I asked him what he thought it would produce if he had sown a cover crop and plowed it under once and a while. He said that he thought it would do all right, but that he had never thought much about it.

The cherry and small fruit crop around Rohnerville and Hydesville were good this season, many of the patches of strawberries paying over $300 to the acre.

Ferndale. D. L. SCHRADER.

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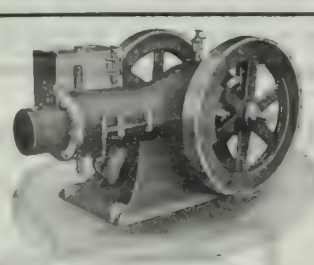
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POULTRY DEPARTMENT.

Conducted By M. RUSSELL JAMES.

EXTERMINATING POULTRY VERMIN.

MITES.—The red mite is a veritable terror. Small in itself, in the aggregate it can kill the largest fowl, and where the stables and cattle sheds become infested, will cause the hair to fall off in large patches from cows, horses or other stock. It will attack man with equal ferocity when it gets on him, and though it doesn't like the taste of him well enough to remain with him, it gives him a taste of what the poor fowls must suffer when he allows the poultry quarters to become infested with these terrors. The extent to which this class of vermin is allowed to prey upon poultry in backyards and among the flocks of those farmers who give little or no care to their fowls is as surprising as it is shameful. In every neighborhood where I have lived I have known of cases where fowls have been literally sucked bloodless and destroyed by these pests. There is neither profit nor humanity in keeping poultry under such conditions. The usual excuse that one hasn't time to be fussing with chickens, doesn't apply; all stock to which one cannot give the proper care should be disposed of.

OLD LUMBER AND TRASH.

We have seen that mites can live on rotten wood and filth; consequently, quarters once infested may be vacated by fowls for months, yet the mites will be there in waiting for the new occupants. Even a board or perch from such quarters, if put into a new poultry house is sufficient to "leaven the whole mass." Any old material used in the construction of poultry quarters should be thoroughly disinfected. In fact, it is often questionable economy to bring old lumber and like trash upon one's place unless very certain as to the company it has kept. In the late dispatches we learn that one of the fine old mansions on the Eastern coast is being destroyed by teredos which started from a pile of old ship timbers brought on the premises for fire wood.

POULTRY HOUSES AND NESTS OF SIMPLE CONSTRUCTION.

Everything about the poultry quarters should be got-at-able, with no filagree, cracks or crannies, and with as little furniture as may be in the poultry houses. Stationary nests and perches are an abomination, as are dropping boards. Throw out all such vermin harborers. Have smooth 1x3-inch scantling for perches, resting loosely on other strips of scantling set edgeways and nailed to the wall through inch blocks, thus leaving an inch space between the rests and the walls. If the perches are inclined to slip on the rests, a single tack or shingle nail driven halfway in on each side of the two ends with space enough to lift the perches out readily, will keep them in place. For nests, ordinary grocery boxes some 12x14 inches, set on the side and a 4-inch strip tacked across the lower part of the top or front, are entirely satisfactory. These may be placed along the open space of the wall, or on a low shelf under cover outside. If the poultryman wants uniformity in his outfitting, the necessary number of boxes may be made on the same plan. The beauty of these simple detached nests is that they may be gone over in every part and chack with a brush and coal oil.

SPRAYS AND PAINTS.

As before mentioned, powders, odors, or even sulphur fumes, have little or no effect upon this class of vermin. Some sort of liquid insecticide must be used in order to "get them." Whitewash has always been considered the best for the purpose, but though excellent to sweeten and purify the premises it is not thoroughly effective with mites unless applied boiling hot and made strong with brine. The great disadvantage with whitewashing the inside of poultry quarters is that when dry the lime scales off and leaves a roughened surface which makes a fine location for mites. There are many effective sprays which may be made or obtained already prepared from the poultry supply houses, and the point in their use is to apply thoroughly and often. No matter how complete the slaughter there will always be some vermin left to start business again at the old stand, and if undisturbed they will soon be as numerous as ever.

THE SAFEST AND BEST VERMIN EXTERMINATOR.

Petroleum in the form of fuel oil together with distillate or cheap coal oil ranks all others as a vermin exterminator. It is cheap, it is ready at hand, and it is in every way harmless to person or fowl. Most other disinfectants, carbolic acid for example, are virulent poisons and dangerous in careless handling, while their strong fumes are injurious to the eyes of both poultry and poultrymen. Again, petroleum in the form of fuel oil is the most lasting of all washes or paints and the best wood preservative known. The Government is now using petroleum paint in the place of whitewash on its buildings at the military posts, and when the many virtues of this paint is more generally known it will be used on all farm buildings, outhouses and fences.

If the poultryman in building a poultry house would have a pot of the pure fuel oil and a brush handy, and give an application to the sills and to the underside of each board of the flooring before laying it, the result would be discouraging alike to vermin and gnawing rodents, while the wood would be preserved indefinitely. Then when the house was completed he should go over the walls and upper side of the floor with the same application, filling every crack with the fuel oil. This oil does not dry out for weeks and before allowing the fowls to occupy the house, he should scatter lime dust over the floor and cover this with an inch of clean sand, and also tack a narrow strip of burlay along each side of the walls at the ends of the perches to protect the fowls' featners; for though the oil will not stick up or injure the fowls it makes light colored ones look brown and dirty. For the outside of the house he should mix three pounds of red metallic with each gallon of fuel oil, thinning the mixture to the consistency of ordinary paint with coal oil. Or if he prefers he may use whitewash on the outside. The perches for this house should be smooth 1x3-inch scantling well soaked with thinned fuel oil.

With such a house and an occasional application of distillate or coal oil to the perches and the walls at the ends of them, at the same time keeping the nests clean and oiled and the trash burned up and droppings cleaned up, the mite question will be settled along with the mites; and not mites alone, but hen fleas, ticks, et al. Also germs of roup and other diseases.

FOR THE OLD POULTRY HOUSE.

However, most poultrymen are already supplied with poultry houses—and the poultry houses supplied with vermin. Just go over them in the same manner with the fuel oil, first raking out and burning all the straw and trash, painting the perches and setting them out in the sun to dry, scraping and sweeping the floors, etc. Also burn the old nest straw and the nest boxes if inhabited and of little worth, otherwise give them a thorough application of coal oil and fill with fresh clean straw. For two or three days go over the perches and nests with a brush and coal oil every day, then once a week during the warm weather and less often in cool weather, but never allowing the premises to go many weeks without a clean-up. Our word for it a faithful adherence to this lan will cause all kinds of vermin to be as scarce as the proverbial "hens' teeth" in every old poultry house.

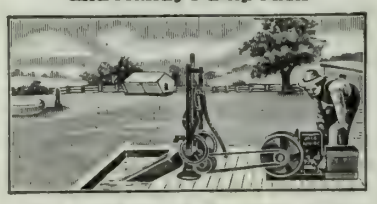
THE STICK TIGHT AND THE SCALY-LEG MITE.

Some good salve is necessary when either of the above infest the fowls. The stick-tights being on the head and comb and about the eyes, some harmless salve like carbolated vaseline or witch-hazel salve should be used, or coal oil mixed

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The Handy Pump Jack can be easily attached to any windmill pump. It is back-geared, strongly built and has tight and loose pulleys.

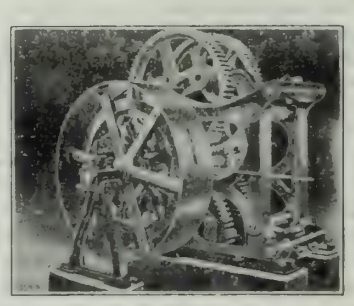
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with lard is excellent, and also good for scaly leg. Coal oil though often used alone for scaly leg is too drying and should always be mixed with lard or sweet oil for the purpose.

POULTRY NOTES.

THE HEN DECIDES THE CASE.—In Sharon, Pa., the justice of the peace was confronted by a question of the Solomon order. Mr. Michael Fisher and Mrs. Mary Romanick appeared before him with a hen which each claimed. But the justice went Solomon one better, and instead of dividing the hen, took her to a point midway between the houses of the contesting parties and turned her loose. Watched by a crowd of spectators the hen crawled through a hole in the fence of Mrs. Romanick, and the costs of the case went over to Mr. Fisner.

GOOD MONEY IN POULTRY.—Mr. J. H. Wilder, who began this spring to give more attention to poultry in connection with his dairy ranch, writes from Madesto: "I am very well convinced that with proper location there is good money in poultry. The new incubator worked fine and we had fairly good luck with the chicks in a home-made brooder. Mrs. Wilder set several hens later in individual nests connected with small runs with fine results, and we have 100 fine chicks therefrom running over the farm. They do grow so fine and fast on free range with their mothers.

"I am on the corn side of the controversy in the RURAL PRESS of some time back. It is hardly possible for hens to lay better than hens here have done this spring and summer, and they have had Egyptian corn in the year, where they could run to it whenever they wished. And talk about fat, those hens which we have killed for the table had layers of fat as thick as your hand, but they sing and lay right along.

"While on the corn subject let me relate what my father learned about corn on our old farm in Iowa. Different renters raised corn the same year, some white and some yellow corn, my father's share of which was thrown together in the corncrib. This mixed corn was fed out to the hogs in the hog lot. One day in crossing the lot he happened to notice considerable yellow corn left from the last feeding and not a grain of white corn. The next time he fed he watched them eating, and found that they did not touch the yellow corn till every ear of white corn was eaten. This made my father investigate, with the result that he found when the white corn is ground it goes into more of a floury condition, while yellow corn breaks into cubes and is of a more flinty nature."

QUALITY COUNTS.—Miss Annie Hoffarth of Bendavis, Mo., sends us some interesting points in relation to farm poultry. This is the Missouri poultry woman whose discouraging experience in marketing her well-fed, pure-bred fowls in the scrub market of her countryside made her an enthusiastic member of the International Utility Poultry Association, one of the aims of which is to place its members in touch with the best markets. Even under poor market conditions she has found pure-bred poultry to be more profitable for the farmer than mongrels or scrubs:

"I hasten to thank the PACIFIC RURAL PRESS for reproducing my article. Permit me to make one correction: I received but $6.64 for my 31 cockerels (fine half-grown Barred Rocks), which was 21.4 cents each. But even at such prices I made money by having pure-bred poultry, as the hens weighed more, laid more and tested better than scrubs, besides being a continual feast to our eyes with their uniformity and beauty.

"The difference in demand for pure-bred stock and mongrels, when the right market is reached, is illustrated in the case of a White Wyandotte breeder who ships his surplus birds, the ones not suitable for breeders, to a city hotel man. This breeder is also a merchant and he bought in some scrub chickens about two months old and fed them on a specially prepared fattening food until they were in good condition, and some three months old. He then proceeded to ship them to the hotel man with whom he had a regular contract for supplying table fowls, but was promptly notified that advance prices could not be paid for any but pure-bred poultry, as the hotel had a class of customers to whom it dared not take the risk of serving any but the fine-grained, toothsome meat found only in pure-bred poultry.

"We Missourians are quite proud of our State Poultry Experiment Station, which is only eleven miles from my home and in the same location as our State Fruit Experiment Farm—the only exclusively fruit experiment station in the United States. This is the heart of the fruit belt, and our peaches and apples the said to excel in flavor even those of California. But it is no less a poultry raising country than a fruit and dairy section."

FOR AN INTERNATIONAL POULTRY SHOW. A few of our fanciers are strenuously advocating through the local poultry press the making of the poultry exhibit at the Panama Exposition a sort of a home affair, rigorously excluding all outsiders. It would seem that these fanciers who have taken for their watchword, "Us for the whole hog," have overlooked the fact that the Exposition is not a local or even a Pacific Coast affair, but a national one, and international in its scope. It is doubtful if the Exposition management would allow such a narrow, sectional policy in relation to any exhibit, but the mere suggestion is a discredit to this coast and entirely foreign to the true spirit of the West.

POULTRY.

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OAKLAND POULTRY YARDS, 149D, California St., San Francisco.—Est. 40 years. Standard bred poultry. White Orpingtons, R. I. Reds, Brd. Rocks, White Leghorns

MY FAMOUS S. C. WHITE LEGHORN baby chicks I am NOW prepared to ship on mail orders; present or future delivery. Carl Stange, 1409 Silver Ave., S. F.

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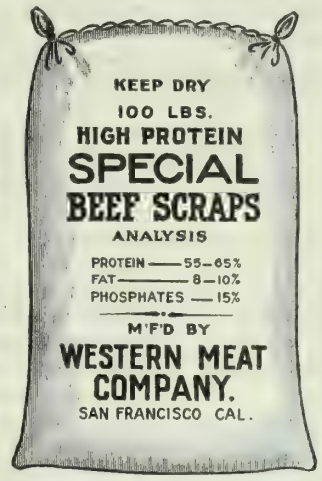
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The Home Circle.

A Cure for Greenness.

Two apple trees trained up an orchard wall;
The apples were growing from spring till fall;
Some were quite brown when first they were seen,
The other kind still remained perfectly green.
"We are *ripe*," cried the apples of ruddy hue.
"Look at us, we're red, not green, like you.
The apples all green on the neighboring tree
Hung their heads in grief and wept silently.
"The sun surely shines on us, too," they said;
"Then why are we green, when they are red?"
But joy filled their hearts as one answered, "It's true,
You are redder than we, but we're larger than you!"
The same loving sun that shines on us all
Will cure us of greenness and make you less small!
We're no use while we're small and hard, you know.
Though some may start red, we've all got to grow!
Let's love one another, not be jealous and fight,
But trust to the sunshine and know it's all right!"—Katharine T. Porter.

To Make Melon Dainties.

Tempting sherbets are made from both cantaloupe and watermelon. There are conserves to be made of the rinds, perhaps in combination with another fruit or vegetable. There are salads which may be concocted by adding to melons, cut into small cubes, a sprinkling of nuts and a spoonful of mayonnaise.

For Watermelon Sherbet.—Boil a pound of sugar and a quart of water together for ten minutes. Add two tablespoonfuls of gelatine which has been soaked in a half cupful of cold water for an hour, then when dissolved, strain and pour into the freezer. Add one pint of orange juice and freeze. When nearly frozen add two cupfuls of pink water melon dice, and let stand packed in ice and salt for an hour and a half.

In making cantaloupe sherbet, soak one teaspoonful of gelatin in a half cup of cold water for an hour. Add one-half cup boiling water. When the gelatine is quite dissolved, add one cupful of cold water, three-fourths cup of sugar, and the mashed pulp and juice of a melon about the size of a cocoanut.

Pickled cantaloupes are not found on the average table. But they certainly deserve a place there. These belong to the sweet pickle variety. Select melons not quite ripe. Cut into oblong pieces, take off the rind and soft parts near the seeds. To every eight pounds of melon allow one pint vinegar and three pounds of sugar. Mix half a teaspoonful each of ground mace and cloves and one teaspoonful each of cinnamon, ginger and allspice. Tie in little piece of cheesecloth and scald with the vinegar. Cook the melons in the hot syrup until tender, then skim out into a bowl. Boil the liquor down and pour over the melon. Repeat this three or four times, and the last time heat the melon with the syrup. Put into jars and seal.

An excellent conserve of melon rinds can be made. Pare off the green part of the melon rind and all the pink, cut into inch pieces, shaping as desired, and weigh. For five pounds of the rind allow one quart of water and a pint of vinegar. Scald the water and vinegar, add the rind and boil 10 minutes. Remove the rind with a skimmer and drain perfectly dry.

Place in the preserving kettle a pint of water and 3½ pounds of sugar. Boil, skim, add the melon pieces and two ounces green ginger cut in slices. Cook until the melon is clear and tender, remove with a skimmer and put in glass jars. Boil the syrup 10 or 15 minutes longer, fill the jars with hot syrup, and seal.

Housekeepers' Clubs.

We reproduce the following information from "The Bulletin of Economic and Social Intelligence," published by the International Institute of Agriculture. The beneficent influence women may exercise in the field of rural economics is now universally recognized; but up to the present their participation in agricultural concerns has only been exemplified in individual cases, without there being any special organ uniting these new forces for definite and continuous action. Belgium, a land very fruitful in social experiments, has been among the first to give us an example of what may be effected by the organization of the farm women. Side by side with the very numerous agricultural associations, the large majority composed of men, in the last five years there have appeared in this country, where they have rapidly extended themselves, also the so-called housekeepers' clubs of which Canada furnished the first example. The principal motive for the foundation of such institutions was the desire of arresting the exodus from the country that is continually assuming more alarming proportions and has now extended to the women. It was thought that one of the most effective means for combating this movement would be to appeal directly to the women, to the mothers, and induce them to appreciate the advantages of country life, and warn them against the dangers and disappointments of the city, as well as to supply them with professional education by means of which they may become better fitted for the occupations specially entrusted to them, such as the work of the dairies, farm yards, garden, etc. The itinerant housekeeping schools that have now been many years at work have already in part provided for this need; but it was necessary that their work should not be lost. For this purpose the farm women had to be united in permanent associations. Thus, there arose in 1906 the first farm women's clubs, which rapidly extended themselves throughout the whole of Belgium, and especially through the efforts of the Catholic party, now have reached the number of 75 and contain 7000 members. Their organization is simple. Members are recruited among the housekeepers of the neighborhood, during the term of the agricultural women's school, with the help of the pupils themselves, and so the club is formed. The club is managed by a president, two vice-presidents, three councillors and a secretary and treasurer. The contribution to the club is 50 cents. Out of the fund so formed the needs of the club are provided for, and articles of domestic utility, selected seeds, etc., are purchased. At the time of the meetings, which are held four or five times a year, lectures are given, argicultural competitions are held, and practical lessons are also given. Almost all these clubs possess libraries composed of books on domestic economy, hygiene, agriculture, dairy work, cattle rearing, etc. Two papers, the Fermiere (Farm woman) for the Wallon districts, and the Boerin for the Flemish districts, are the most widely diffused organs for the extension of this movement. The results attained by these interesting women's organizations have been very happy; the housekeepers attend the meetings most assiduously, take a lively interest in the lectures, and derive great profit from them, as appears in no doubtful manner in the remarkable progress already observed in the rearing of fowls, in cheesemaking, gardening, manufacture of preserves, in every department, finally, in which women's influence is sensibly exercised.

Improved Home-Made Cooler.

Reading the description of a farm cooler in the last Rural Press issue prompts me to describe my present one, which is an improvement on the method of wetting the burlap-covered sides by cloths hanging from a pan on top. My husband made a tin cover for our cooler, conical in shape, soldering the seams well and tacking to cooler top. Then he tapped the cold-water pipe running to my kitchen sink, ran up a pipe as high as the point of the collar top, brought out an arm of pipe and placed on it a tiny faucet which drops a tiny stream of water on the apex of the cooler, allowing the water to trickle down all four sides continually. This arrangement obviates the necessity of filling and refilling pans and also is much more cleanly.

While tne thermometer registered 108 degrees this summer the butter in the cooler remained firm and milk sweet for 24 hours. Mrs. C. R. L.

Ripon, Cal.

Origin of Dog Days.

Among the ancients dog days comprised the period of the greatest heat in summer. They began on July 5 and continued until August 11. The appellation is derived from the heliacal rising and setting of Sirius, the dog star, meaning the time when that star, after being practically in conjunction with the sun and invisible, emerges from the light so as to be visible in the morning after sunrise. To this conjunction was ascribed a malignant influence. Dog days originated in Egypt, whence the superstitious feeling gradually spread throughout the world and still exists among the credulous.

OUR YOUNG FOLKS' DEPARTMENT.

Conducted By M. Russell James

Poultry Course for Young Folks.

DESCRIPTION OF BREEDS.

The Orpingtons.—This is a new English breed that has attained to great popularity. It is an all-purpose fowl with the general characteristics of the American class of fowl, with the exception of white skin and pinkish white shanks and toes in place of the yellow skin and legs of the latter. It was originated by an English fancier, the late William Cook, and named from his place in Kent county, England.

In 1876 Mr. Cook undertook the production of an English breed of fowl that should be excellent layers as well as good table fowls, and also possess hardiness and beauty. The Orpingtons are fine large birds, very similar to the

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MARTINEZ, CAL.

Rocks in shape, with the difference of shorter legs and a half-pound greater weight. The standard weight is 10 lbs. for cock and 8 lbs. for hen.

BLACK ORPINGTONS.—This was the first variety of Orpingtons produced, and some breeders consider it the best, owing to its breeding more true to type and being slightly heavier in weight. This is the variety that won the three-year competition in the ninth Australian egg-laying contest, with a total for six hens of 3047 eggs in the three years—a truly remarkable feat for such a heavy breed. Mr. Cook kept large flocks of pure-bred fowl of different breeds, closely studying their characteristics. He noticed that black sports from the Barred Rocks matured earlier and laid more eggs than the Barred pullets. He mated the Black Rock pullets with Black Minorca cocks; pullets from this cross were mated to Black Langshan cocks. From these three strains he produced the Single Comb Black Orpingtons after nine years of painstaking breeding to get rid of the yellow legs of the Rocks, the slender shape of the Minorca, and the feathered legs of the Langshan. They were first exhibited in 1886. The plumage is black throughout with a beetle-green sheen, and a metallic luster on hackle, saddle feathers, wingbows, and tail.

The Rose Comb Black Orpington was produced in the same manner as the Single Comb with the exception that Black Langshan cocks with rose comb is not a breed characteristic of the Langshans; such cocks were mere variations from the correct type through some mixture, and consequently the Rose Comb variety is less likely to breed true in this respect than the Single Comb Black Orpington, in which all strains in its production possess single combs as a breed characteristic. In fact, in all the varieties of Orpingtons the Single Comb ones are to be prefrerred to the Rose Combs.

On the Old Mississippi.

(Continued from Last Week.)

"You are right," she replied. "We will put a few necessaries together, and if father doesn't come you must get some of the hill folks to move us up there in the morning early. "As she spoke she chanced to notice damp spots showing through the dry patches of earth in the garden below the lawn, and though she did not understand at that time the gravity of the portent, it added weight to her anxiety.

They retired early to be ready for the uncertainties of the morrow. But the spirit of unrest abroad on the waters had gotten into the little cottage. The mother did not expect to sleep and neither could the boy. He had left his bed in the attic room and was sleeping on a cot in his mother's room during the absence of his father.

After awhile Jim called softly to his mother, "Are you asleep?" And when she answered he asked, "Would you mind if I talked a bit, for I just can't keep down a winker?"

"Well, then, talk, and perhaps the sand man will be along before you know it."

They talked on and on and always of the river. Fifty years ago there were not so many safeguards against the periodical overflows as now, and there were many sad tales to recount of fair fields and prosperous homes swept away, and sometimes whole families with them. At last the boy stopped in the middle of a sentence and the mother knew that his words had run into a dream, for an occasional exclamation came from his lips.

She lay a long time after this, listening to the soft breathing of the little girls and the restless slumber of the boy with a weight of anxiety at her heart. Finally, after committing their care to an over-ruling Providence, she too fell into a light sleep.

It seemed that she had not more than closed her eyes when she awoke with a start. She sat up in bed, listening. There was a sound around and through the house as of a soft lapping of tongues.

"Jamie! Jamie!" she called.

The boy, usually so hard to arouse, was awake in an instant. "Yes, mother, what is it?" he cried, and sprang out of his cot.

There was a great splash of water. "Ugh! the old Mississippi is on us!" exclaimed the boy, with a gasping shiver of chill and terror.

Mrs. Russell was a small woman, but her courage and presence of mind was great. She wasted no time in laments, but quickly lighted the candle by her bedside. Its flickering yellow rays flashed upon muddy water which already filled the room to the depth of several inches.

"Quick, Jamie! We must get into the attic," she said, and began to dress hastily while the boy did the same. Then they gathered clothes and food for their immediate needs and some articles of value; after which the boy, with some help from his mother, carried up his sleeping sisters and laid them upon his bed in the attic. When they had gotten up all the articles collected, they hung the lighted lantern by the attic window and sat down on the edge of the bed to wait and pray for the morning. The little ones still slept soundly, and ever and anon, dimpling smiles played around their rosy lips. Did the angels who keep special watch over babes whisper in their ears that they were nearing the shining shore?

To the mother and brother watching beside them, the hours seemed many before the dawn began to show in the east with a widening strip of light like the slow rising of a curtain. Jim leaned out of the window, but instantly drew back and lowered the sash.

He never forgot that moment. It was like a glimpse into hades—the waste of sullen waters; the dark floating objects; the sickening odors! For the first time a hopeless fear clutched at his heart. He pressed his face against the bedpost that his mother might not read his fears, and his father's parting words were in his ears: "I shall expect you to know how to act in an emergency!" Over and over they repeated themselves while the boy prayed mentally for guidance.

He was startled by a sudden exclamation from his mother. "See how the water is rising in the house!" she cried. "We must get out on the roof."

Action brings courage, and as Jim grabbed the hatchet and began cutting a hole through the shingles, his fears were replaced by hope and determination.

The little girls awoke at the noise, and, sitting up in bed, gazed in round-eyed wonder at the unusual proceedings. They were reassured by make-believe laughter and chat, while the mother hastily dressed them and wrapped them in warm cloaks against the chill and dampness of early morning.

In the meantime, Jim had gotten through and out upon the roof, where he could make the opening large enough for all to get out easily. He swung himself back into the attic and arranged for his mother to get out by placing a chair upon a washstand. With his assistance she was able to climb out on the roof; then he handed up to her some clothing, bedding and other articles. And then it was Katie's and 'Ria's turn. Laughing and frolicking with them to keep down their fright at the strangeness of it all, he passed them up into their mother's arms. When all were up, the mother and son clasped the babies close to them, and looked out over their surroundings. To the east spread an ocean of turbid waters; in the bottom-lands along the river the tops of the tall elm, cottonwood and black walnut trees were just above the surface. How often the children had played under those great trees and swung on the grape-vine swings where the vines stretched across from tree to tree like great cables! As they turned their eyes to the higher lands to the west and saw how deep and wide an expanse of water lay between them and safety, they realized their almost hopeless condition.

"We must be prepared to meet the worst bravely, my son," said the mother as she pressed her cheek against his strong, young shoulder. "If help does not come soon, only God can save us. See, the current is setting strong this way and soon our little house will be loosened from its underpinnings and floated off!"

At those solemn words the little girls, whom the novelty, together with the cheerful assurance of their elders, had kept comparatively satisfied and quiet, clung to their mother and began to cry.

"Will us fall into the dirty water den? Me don't like the dirty water!" sobbed Katie.

(Concluded next week.)

THREE Boy Scouts of Mexico, Missouri, have just made the five-day trip on foot, carrying the greetings of their local organization to the Scouts of St. Louis. The boys were equipped with a small "dog tent", a skillet, a coffee pot, and tin cups, and rations, and properly accoutred for scouting.

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SAN FRANCISCO, CALIFORNIA

THE MARKETS.

San Francisco, Aug. 16, 1911.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The northern market remains rather quiet but firm, with prices somewhat in advance of the local figures. There is a little more movement here, however, and Club is quoted a little higher, with considerable firmness at present figures.

California Club	$1.45	@1.50
Sonora	Nominal	
White Australian	1.55	@1.65
Northern Club	1.50	@1.55
Northern Bluestem	1.65	@1.70
Northern Red	1.60	@1.65

BARLEY.

Local quotations have advanced quite sharply, with a heavy demand for all grades, and corresponding firmness through the country. Brewing grain is in strong demand, but the principal inquiry is for shipment, choice stock being hard to get except at top prices at Port Costa. Growers are getting $1.30 to $1.40 all over the State.

Brewing and Shipping	$1.62½	@1.67½
Choice Feed, per ctl	1.55	@1.60
Common Feed	1.35	@1.45

OATS.

Remaining supplies of old stock are small, and the new crop is rather light, causing general firmness. The demand is more active than for some time past, with considerable inquiry for seed, which is quite scare. Quotations have been established for red seed, and all feed stock is higher.

Red Feed	$1.55	@1.60
Gray		1.65
White	Nominal	
Black Feed	1.55	@1.65
Red Seed	1.75	@2.00

CORN.

The present movement is extremely small in this market. Prices stand as before, though there is a rather easy feeling in this market.

Cal. Small Yellow	$1.75	@1.80
Eastern Yellow		1.70
Eastern White		1.70

RYE.

This grain finds very little demand, and while there is considerable stock on the market there is little of desirable quality. Prices are nominal as before.

Rye, per ctl	$1.55	@1.65

BEANS.

The recent activity in some lines has quieted down, and the market is now rather dull in all lines. Values on most descriptions, however, are steady to firm, with comparatively light stocks on hand, though with conditions favorable for a good yield no great advance is expected. Horse beans are considerably lower, as new stock is moving and supplies are more than ample for the present. Large and small whites are about the strongest articles on the list, the latter being firm at an advance. Bayos are also quoted a little higher, while red kidneys are a little easier. Quite a lot of beans have arrived from the Orient in the last few days. Local dealers are quoting limas a little lower, and report continued weakness in this variety, though there appears to be some demand for spot stock in the East. There is a demand in New York from packers of succotash and soaked limas. Apparently the weakness may be attributed to the desire of dealers to clean up odds and ends of old stock in preparation for the new season, though the market may be somewhat unsettled for the next month or so.

Bayos, per ctl	$3.75	@4.10
Blackeyes	6.50	@6.75
Cranberry Beans	3.75	@4.00
Garvanzos	2.85	@3.25
Horse Beans	1.50	@2.00
Small Whites	3.60	@3.75
Large Whites	3.40	@3.50
Limas	5.75	@6.00
Pea		4.25
Pink	4.90	@5.10
Red Kidneys	6.00	@6.25

SEEDS.

So far there has been no inquiry in a large way, and the present limited movement is hardly enough to establish values very definitely. Prices are nominally as before.

Alfalfa	Nominal	
Broomcorn Seed, per ton		$25.00
Brown Mustard, per lb		5½c
Canary	3¾	@ 4¼c
Hemp	3½	@ 4 c
Millet	3	@ 3½c
Timothy	Nominal	
Yellow Mustard		5¾c
Dried Peas, per ctl	3.75	@ 4.00

FLOUR.

The shipping movement continues active, and with a good local demand values are firmly maintained.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Orégon and Washington	4.60	@4.80

Hay and Feedstuffs.

HAY.

Arrivals are gradually decreasing, and the local market is in better condition than for some time past. The local demand has picked up in fairly good shape, as the larger consumers are becoming convinced that they will be unable to obtain supplies any cheaper than at present, and are laying in supplies for their fall requirements. The arrivals have been readily disposed of, and the market is firmer all around, with a rather sharp advance on the better grades of wheat and oat hay. Fancy stock is scarce and closely held. Dealers now admit that the crop is short, and that the fields are cleaning up. Alfalfa is also in better demand than for some weeks past.

Choice Wheat	$15.00@16.50
Good Wheat Hay	12.00@14.50
Other Grade Wheat	8.00@12.00
Wheat and Oats	8.00@15.00
Tame Oats	8.00@14.50
Wild Oats	7.00@11.00
Alfalfa	8.00@12.00
Stock Hay	5.00@ 7.00
Straw, per bale	35@ 60c

FEEDSTUFFS.

Cocoanut cake is easy, though not quotably lower. Most other feeds are firm, with a sharp advance in rolled barley and oats. Shorts are also higner.

Alfalfa Meal, per ton	$16.00@18.00
Bran, per ton	28.00@29.00
Cocoanut Cake or Meal	26.50@27.00
Cracked Corn	38.00@39.00
Middlings	34.00@36.00
Mixed Feeds	28.00@30.00
Rolled Barley	31,00@32.50
Rolled Oats	31.00@33.00
Shorts	31.00@32.00

Garden Truck.

VEGETABLES.

Onions continue to arrive in large quantities, though with a fair demand the market is teady, with a little better prices than last week, though arrivals have been quite heavy for the last few days, and the general tendency of the market is downward. Tomatoes are the principal exception. They have not been coming in very freely since the first of the week, and the prices are considerably higher, good stock being hard to get below $1 per box. Cabbage is also a little higher. String beans are being hard to move at low prices, and green limas are also comparatively cheap. The best lots of green corn are held up to last week's prices, but general offerings are lower, and eggplant has also been shaded.

Onions: Yellow, ctl	80@	90c
Garlic, per lb	3½@	5c
Green Peas, per sack	$ 1.50@	2.00
Tomatoes, per box	75@	1.50
Cucumbers, per box	50@	65c
Cabbage	1.00@	1.25
Carrots, per sack		75c
Cauliflower, per doz		50c
String Beans, sack	1.00@	1.50
Lime Beans, per lb	2@	3c
Summer Squash, per box	35@	50c
Okra, per box	1.00@	1.25
Green Corn, per sack	50@	1.25
Eggplant, per box	50@	65c
Green Peppers, per box	35@	75c

POTATOES.

White potatoes from river districts are coming in faster than they can well be disposed of, and the price has taken another drop. Choice lots in boxes from around the Bay, however, are still in good demand, and bring up to $2.25 per ctl. Quite a lot of sweet potatoes have come in this week, and prices are much easier than before.

River Whites	$ 1.20@	1.50
Sweet Potatoes, per ctl	3.00@	3.50

Dairy Produce.

POULTRY.

Few changes in prices are noted, broilers being a little higher. Quotations are given on spring turkeys. Few are coming in so far but there is a good demand for attractive, plump birds. Arrivals of eastern chickens are moderate this week, and California stock is rather scarce, causing a rather stronger feeling on all classes of stock. Fancy chickens can be sold at a premium, and all attractive poultry finds ready sale.

Large Broilers	$ 3.50@	4.00
Small Broilers	2.50@	3.00
Fryers	4.50@	5.50
Hens, extra	8.00@	9.00
Hens, large	5.50@	6.50
Small Hens	4.00@	4.50
Old Roosters	4.00@	5.00
Young Roosters	6.00@	7.50
Young Roosters, full grown	8.00@	9.00
Squabs	2.00@	2.50
Geese, per pair		2.00
Ducks	4.50@	7.00
Turkeys, live, per lb	28@	30c

BUTTER.

Prices have stood very much the same as last week, with a little stronger feeling at the present moment, due to a better shipping demand, and a strong buying movement on the Exchange. Prime firsts and firsts are higher than a week ago, and extra ladle-packed stock has been added to the list.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed
Extras	26½	26	26	26	26½	26½
Prime Firsts	24½	24½	24½	24½	24½	25
Firsts	24	24	24	24	24	24
Seconds	22	22	22	22	22	22
Packing Stock	20	20	20	20	20	20
No. 1. Ladles Extras	21½	21½	21½	21½	21½	21½

EGGS.

The egg market, both here and in producing districts, shows increasing firmness, though the price of 34 cents for extras, quoted a week ago, was not maintained. The last quotation, in fact, is rather low, in view of the steady decrease in production. The lower grades find a better demand, both prime firsts and firsts having been advanced quite sharply.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	32½	33	33½	33½	33½	32½
Prime Firsts	....	....	31	31	31	31
Firsts	24	24	27	27	27	27
Seconds	19½	19½	19½	19½	19½	19½
Selected Pullets	25½	25½	25½	25½	25½	25
Eastern	16	16	16	16	16	16

CHEESE.

Local flats are quite firm, with a further advance of ½ cent. Other descriptions handled on the Exchange are unchanged. Monterey cheese is quoted a little higher, but production is still in excess of requirements and prices are by no means satisfactory.

Fancy California Flats, per lb	14½c
Storage	14 c
Firsts	13 c
New Young Americas, fancy	16 c
Monterey or Jack Cheese	11@12 c

Deciduous Fruits.

FRESH FRUITS.

Supplies in many lines have been rather in excess of market requirements for the last few days, and there is a general tendency to weakness. Strawberries and huckleberries are somewhat lower, but other berries are doing a little better. Nutmeg melons are coming in freely and lower prices are quoted for both nutmegs and cantaloupes, while watermelons are steady at previous figures. Apples show a general decline, though fancy 4 to 4½-tier fruit is firm as quoted. The best Bartlett pears are held up to former figures to the retail trade, but second-grade stock is weak, and the general feeling is much easier than last week, as the canners have not been buying and arrivals are heavy. Apricots, for the most part, are moving in bulk, and with little stock arriving prices are firm. Peaches, nectarines and figs are lower, the latter being slow to move, while plums are steady at former prices. Seedless grapes are lower, and other varieties are rather weak, with more or less surplus on the market.

Watermelons, per doz	$ 1.50@	2.50
Cantaloupes, standard crate	1.75@	2.25
Nutmegs, box	40@	60c
Raspberries, chest	6.00@	10.00
Loganberries, chest	6.00@	7.00
Blackberries, chest	3.00@	5.00
Strawberries, chest	4.00@	7.00
Huckleberries, lb.	14@	16c
Apples—		
Fancy Gravensteins, box	$ 1.15@	1.85
Choice	60@	1.00
Other varieties	1.00@	1.50
Apricots, lb.	3½@	4c
Peaches, lug box	75@	1.00
Small box	40@	65c
Plums, box	50@	75c
Nectarines, box	75@	1.00
Figs, box, double layer	1.00@	1.50
Pears, Bartlett, box	1.00@	1.75
Other varieties	65@	85c
Grapes—		
Seedless, crate	60@	90c
Other varieties	75@	1.25

Dried Fruits.

Continued activity is noted in several lines, though the movement is hardly as general as last week. From all indications the greater part of the output of tree fruits will be taken out of growers' hands earlier in the season than usual, and it is possible that extreme prices may be realized for small lots which are held back. With prices as high as they are in many lines thus early in the season, however, the outlook is very uncertain, as the consuming demand can hardly fail to be more or less curtailed. The extensive buying in Europe and the Middle West is an encouraging feature, and while the trade in some parts of the country is still holding off, the general feeling appears to be one of confidence. In some lines it is reported that the crop has already been fairly well disposed of. The principal movement at present is in prunes, for which there is a general demand both in this country and Europe. The primary market is now quite strong at 5½ cents, and packers show no hesitation in paying this figure, though so far they are unwilling to make any further advance. Figs have been moving off well as quoted, and apricots seem to be pretty well sold out. The dryers are now getting fairly large supplies of pears, but the market remains steady to firm at the former level. Raisins are firmly held, with some advance in the seedless varieties, but the market is quiet, as growers are holding firmly for an advance which packers are not yet ready to meet. Future raisins are not moving to any extent in the East, though there is a strong demand for spot stock, which is rapidly cleaning up. The New York Journal of Commerce says:

"The New York trade, according to statements made by brokers, are now only interested in the larger sizes of prunes, more particularly 40s, for which a number of orders for straight cars have been forwarded to the Coast. The buyers' ideas, however, are from a quarter to a half cent under those of packers on this size, and as the latter will make no concessions, business is not possible. Small sales of spot California prunes have further reduced the already small supply and caused some advance in prices.

"Not much interest is shown in future apricots or peaches at the prices demanded by packers, but there is no disposition shown to get business by making concessions.

"In sympathy with the strong reports from the Coast the market for California raisins has an upward tendency, though it does not appear that Eastern buyers are responding with orders."

Evap. Apples, 1911, per lb	10@	10½c
Apricots	15	@16 c
Figs, new crop	5	@ 7½c
Peaches, new crop	10¼	@11 c
Prunes, 4-size basis, new crop contracts		5½c
Pears, new crop	12	@13 c
Raisins—		
Loose Muscatels, in sweatbox	4¾	@ 5 c
Thompson's Seedless	6	@ 6¼c
Seedless Sultanas	5	@ 5½c

Citrus Fruits.

As the end of the citrus season approaches the shipments are becoming less, but the Eastern auctions are holding up well. On Monday, August 14, oranges were reported as selling at little lower prices than the preceding week, while lemons were stronger.

In New York on that day valencia oranges averaged from $2.10 to $5.40 per box, and lemons ranged around the $3.75 mark. At Cleveland oranges brought from $3.20 to $4.60, and lemons from $1.70 to $3.50. At Boston valencias sold for $2.70 to $4.35, and lemons at $1.70 to $4.30. At Philadelphia valencias brought from $2.20 to $3.50, lemons from $1.60 to $2.90.

Citrus goods are not attracting much attention in the San Francisco market at present, though the movement is about up to the average for this season. Values are unchanged, and the only new feature is the offering of a few tangerines at the prices quoted.

Tangerines, box	$ 1.25@	1.50
Valencias, choice to fancy	3.25@	4.00
Grapefruit	2.25@	3.25
Limes	6.50@	7.00
Lemons	$ 2.00@	6.00

Nuts, Honey, Hops, Etc.

NUTS.

Almonds, 1911 crop—	
Nonpareils	18½c
I X L	17¼c
Ne Plus Ultra	16½c
Drakes	14½c
Languedoc	14½c
Hardshells	8 @ 8½c
Walnuts—Softshell, No. 1	15 c
Standard	14½c
Softshell, No. 2	11 c
Budded	17½c

HONEY.

Offerings in producing districts are rapidly decreasing, with a steady demand for shipment. The local market is not especially active, but there is more firmness, accompanied by an advance in prices.

New Extracted, White, per lb.	8 @ 9 c
Comb, Whte	15 @16 c

HOPS.

A heavy movement in Sonoma county has continued for the past week, with prices steadily advancing. The latest sales were made at the top quotation, and a further advance is predicted in some quarters, though there is a general feeling among dealers that the market has already advanced beyond a healthy condition. There is, however, a general demand, owing to the marked shortage of European crops.

Hops, 1910 crop	30 @35 c
1911 crop	30 @40 c

Live Stock.

Gross weight:	
Steers: No. 1	5 @ 5½c
No. 2	4¾@ 5 c
Cows and Heifers: No. 1	4¼@ 4½c
No. 2	4 @ 4¼c
Bulls and Stags	2 @ 3 c
Calves: Light	6½@ 6¾c
Medium	6 @ 6¼c
Hogs: Grain-fed, heavy	7¼c
150 to 250 lbs	7⅜c
100 to 150 lbs	7 c
Small prime wethers	4 @ 4¼c
Large prime wethers	4 @ 4¼c
Ewes	3½@ 3¾c
Lambs	5 @ 5¼c

WOOL.

The fall shearing is now under way in several districts, and prices will probably be established within a week or two. Prices on the spring clip are unchanged. The market is still in a rather unsettled condition, owing to the uncertainty of action on the tariff.

Spring Clip—	
Choice Southern, Year's staple	10 @12½c
7 months	8 @11 c
Lambs, spring	8 @10 c
Northern, year's staple	14 @16 c

HIDES.

Prices have not been quotably changed, but buyers regard the present level as too high, and the market is dull, with a tendency to weakness.

HORSES.

Previous quotations rule, though prices realized of late on some descriptions are rather close to the inside figures. Buyers appear to take little interest in general offerings, stock under 1200 lbs. being slow of sale in the local markets. There is some demand for good wagon horses, and drafters continue to bring full figures, though few desirable horses of this type are offered.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	190@240
Wagon Horses, 1250 to 1350 lbs.	140@180
Delivery Horses, 1050 to 1250	100@125
Desirable Farm Mares	100@125
Old Mares	90@115

SPECIAL DECIDUOUS MARKET REPORT.

Sacramento, Cal., Aug. 14, 1911.

The noticeable slump in the Eastern markets the past week has been caused principally by the increase in California shipments. Furthermore, the quality of Bartlett pears shipped from the Sacramento river, and, in fact, other sections of the State, was not of the best. From inspection, we find that about 60% of the Bartletts, especially from the Sacramento river district, are badly rusted, caused by climatic conditions early in the spring. This apparent infecton does not impair the quality of the fruit as much as it does the appearance, and as California pears, as is the case with all other varieties, are purchased in the East principally from their appearance, naturally this has considerably affected the sale of these goods.

Now that the shipments will be less, we fully anticipate an improvement in the market by the latter part of this week. We are informed that the majority of the cold-storage warehouses in the East are filled up with California pears. This is an indication that the market will remain firm, with prospects of a rise.

The shipment of Elberta peaches will be completed by the latter part of this week, and, as there is practically no variety other than Clings that will be heavy, until the Salways come in, we look for an improvement on peaches within a very few days. Owing to the heavy shipments having left the State during the past week on all varieties of fruit, and also on account of local fruits in the East flooding their adjacent markets, there is a decided comparison between the prices realized at the beginning of the season and those now being quoted in the markets.

Plums have remained firm at fancy prices from the beginning of the season, and no decline is in sight.

Grapes are opening up at fancy prices on good quality, Thompson's Seedless selling as high as $3.50 per crate; but, on account of climatic conditions, though the berries show good color, they seem to be void of sugar; consequently the trade, after receiving the first few cars, were loath to take hold of the early grapes at the same prices they paid for the first few cars.

Black grapes and Tokays will be moving in car lots within a few days, and, unless early raisins set in, we anticipate that the total shipment of grapes from the State will be in excess of the tonnage of last season, despite the fact that the Malaga grape crop of Fresno is 50% short.

All things taken into consideration, the season up to date has been a profitable one from a grower's point of view, though in some districts the crop has been very light; but this has been offset by the high prices ruling up to a week ago. With an improvement in the market and high prices prevailing for the balance of the season, the season of 1911 will be the banner one to date.

The markets ranged as follows during the past week:

New York—$0.75@2.05; Tragedy, $1.00 @2.10; German, $1.30@2.15; Burbank, $0.95@1.00; Crawfords, $0.70@1.25; Sugar Prunes, $0.55@1.35; Bartletts, $1.50@ 2.85; Tuscan, $1.15@1.95; P. Duane, $0.80 @1.20; Splendor, $1.65@1.75; Silver Prunes, $1.10; Thompson's Seedless, $0.70 @1.30; Malaga grapes, $0.60@2.40; Diamond, $1.10@2.15; Foster, $0.55@1.15; Washington, 80c.; Elbertas, $0.55@1.55; Yellow Egg, $0.70@1.35.

Chicago — Wickson, $1.05@1.35; Tragedy, $1.25@2.00; Tuscan, 85@90c.; Silver prunes, 65@85c.; Burbank, $0.70@1.40; Crawfords, $0.60@1.00; Elbertas, $0.80@ 1.15; Triumph, 40@65c.; German, $1.30@ 1.95; Sugar prunes, $0.55@1.45; Susquehannas, $0.65@1.05; Bartletts, $1.00@2.25; Purple Duane, $0.65@1.25; Royal apricots, 40@95c.; Moorparks, $0.40@1.05; Malaga grapes, $0.20@4.55; Thompson's Seedless, $0.70@2.35; Diamond, $1.45@2.00; Yellow Egg, $0.85@1.35.

Philadelphia—Wickson, $0.40@1.40; Elbertas, $0.50@1.00; Tragedys, $0.85@1.55; Crawfords, 35@85c.; St. John, 65c.; Sugar prunes, $0.45@1.25; Bartletts, $1.45@ 2.00; Fosters, 50@90c.; P. Duane, 80@ 90c.; Germans, $0.85@1.65; Diamond, $1.90 @2.00; Malagas, $0.75@2.50; Thompson's Seedless, $0.90@2.10; Washington, 55c.; Yellow Egg, $0.85@1.10.

THE RAISIN OUTLOOK.

(Continued From Page 141.)

in a full year. That this consumption has equaled 70,000 tons and over is admitted by packers and all others connected with the industry.

SUPPLY FALLS SHORT OF THIS.—To supply the same markets that consumed these raisins there are but about 5,000 tons of old crop and 40,000 tons of new, making a decided shortage. Since raisins are selling at 4¾ cents and better in a few cases, and no extra supplies can come in from Europe without paying a heavy tariff, there should be no reason why prices should fall below this figure until the crop of 1912 is in the sweatboxes.

Even the heaviest possible European crop cannot supply markets so as to affect American prices appreciably, as the California production is greater than that of Spain, which goes into other markets almost entirely, is met there by the California product, and has to pay a high tariff to compete here.

There should thus be no holdover crop to dispose of next fall, and a sufficient demand to take care of any supply that can be produced, and with salesmen that attempt to develop markets instead of waiting until the demand comes and then buying enough from the grower to fill it, with a few more Raisin Days, and the proper spirit among the raisin men, there could be no reason for a big holdover, and low prices, until the acreage had been greatly extended. On the other hand, a fair crop next year, everybody speculating on prospects, an unsettled condition of the market, and prices will fall back into the old rut, with nobody trying to open the market, even with prices at about 2 cents, just as they were this spring.

ACCURATE INFORMATION ALWAYS. — As stated early in this article, accurate information by all concerned, in the absence of co-operative marketing by a large enough body of growers to exert a steadying influence on the market, would do an immense amount of good in steadying prices, and a steady price should be achieved in some way, whether through the establishment of a raisin exchange, co-operative marketing, or in some other fashion; and this furnishing of acurate information concerning the size of any prospective crop, condition of the market, any any other necessary data will be given, as much as possible, by the PACIFIC RURAL PRESS, through its own efforts, or with the assistance of grower, broker, packer, or any party interested in the betterment of the raisin industry.

PIUTE SQUAWS IN THE HAY-FIELD.

The Labor Problem Solved.

Mr. R. L. Douglas, an extensive farmer of near Fallon, Nevada, being unable to procure and keep sufficient help to put up the hay on his ranch, recently telegraphed an order to the Schmeiser Manufacturing Co., Davis, Calif., for one of their large-sized Automatic Derricks. This was shipped him at once and a man sent to set it up and get it properly started. Mr. Douglas was delighted at the ease and speed with which the Derrick handled hay.

It made the work so easy that he has employed a number of Piute squaws to work in his hayfield and do the work formerly done by men. This may be all right for Mr. Douglas, but it works a hardship on some of the women of the neighborhood, who now have to do their own washing.

Mr. Douglas has placed another order with the Schmeiser Manufacturing Co. for another large-sized Automatic Derrick.

Note: Before publishing the above, it was referred to Mr. Douglas and he endorsed the item and says it is absolutely true.

PUBLISHER'S DEPARTMENT.

Now that the PACIFIC RURAL PRESS is settled in its new offices at 420 Market street, San Francisco, we feel that we ought to and will make a better paper for our patrons. We have more room, and the office is more accessible than before, which helps toward good work. The great gains the paper has made in subscriptions during the past six months ought to be reflected in our advertising columns the coming winter, and as the agriculturists of the West Coast have never had a more prosperous season, we believe everyone who has farmers for customers as the backbone of their business, will do well to reach out as far as possible this fall.

Have you noticed the series of articles we have been publishing regarding growing crops and their marketing? These articles will be continued until the crops have been moved and we want them to be of value. If you have a different idea from ours as to what these articles should cover, we will be glad to hear from you. A letter from the Bureau of Plant Industry of the U. S. Dept. of Agriculture, received this week, says: "The article on California Onion Production and Trade, in the RURAL PRESS of July 22, is interesting and valuable. We have been experimenting in onion growing for four years in some of our most important stations, and this article is of special interest to us."

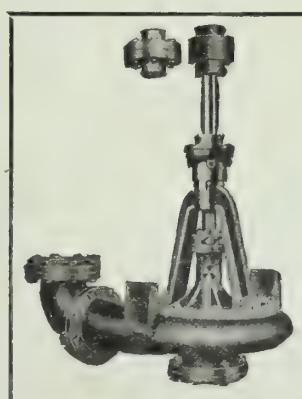
Another letter from a subscriber in West Virginia says: "I certainly do enjoy your paper; it is like a breath of mountain air, perfumed with pine and shimmering with sunshine." We like such criticisms.

One of our subscription solicitors sent us from the field last week 45 new, cash subscribers. We have four other men at work—so we are gaining—sure we are. All these subs. are secured at $2 each and no premiums offered.

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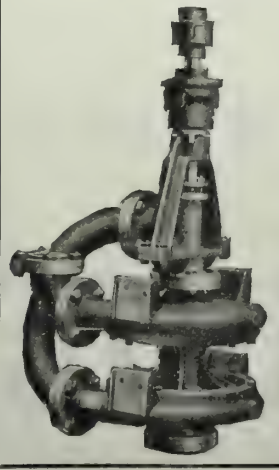
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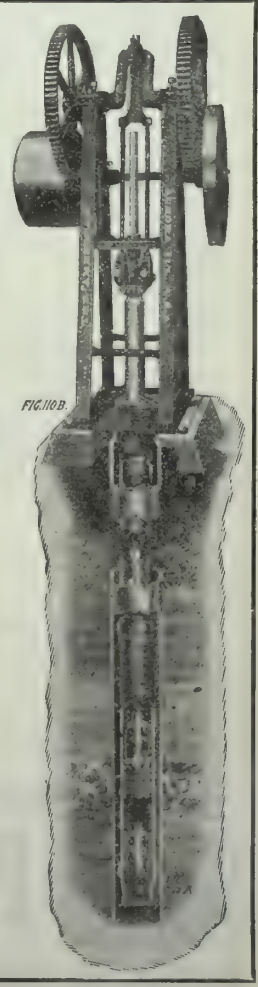
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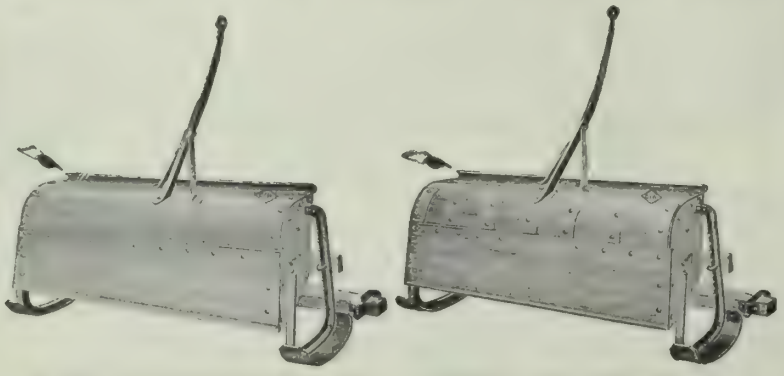
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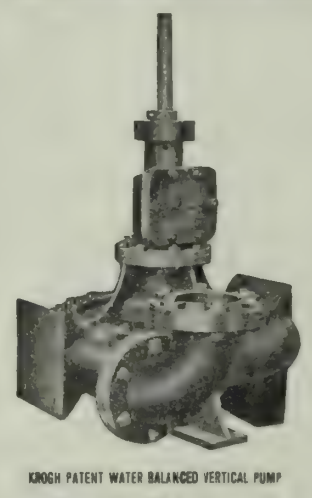
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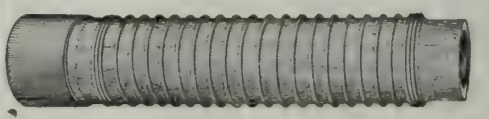
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The Gravenstein First in the Race.

Written for the PACIFIC RURAL PRESS by Mr. W. H. SCHRADER.

We have always taken it for granted that the fruit which proved so irresistibly tempting to our first parents was the apple. A Sebastopol apple grower goes farther than that. He declares it was a Gravenstein. Surely, if that variety attained the same degree of perfection along the river bank of Eden that it does on the Gold Ridge of Sebastopol, and if it, at that first apple show conducted by the Serpent and attended by the whole human race, was as temptingly displayed as at the second annual Gravenstein apple show, we ought cheerfully to continue earning our bread by the sweat of our brow and not blame Adam for taking a bite. [And the joke of it is that the "round fruit" which the translators of the bible called the apple (because in their northern country the apple was the best round fruit they knew) was in reality an orange, and Eve could hardly have known an apple at all.—EDITOR.]

Large and shapely, and with all the rays of a California sunset gorgeously blended in its coloring, the Gravenstein apple is a thing of beauty. And its beauty is not merely skin deep. Its crisp, tender, juicy, flesh and its highly aromatic flavor combine to make it the fruit par excellence.

To us it seemed that the most impressive feature of the second annual Sebastopol show this week was the display of about $10,000 worth of fancy Gravensteins in shipping boxes banked entirely around the immense tent to a height of ten or twelve feet. The apples all facing the interior of the tent, and highly illuminated, made a color effect that is indescribable.

Appealing to the palate as well as to the eye, were numerous table exhibits of processed fruits, preserved fruits, jellies, etc. The feature exhibits were all very interesting and unique. Both fresh apples and dried were used to obtain a variety of realistic effects.



A Well Cared For and Profitable Apple Orchard in Sonoma County.

Local Exhibits.—Pleasant Hill's exhibit occupied space immediately in front of the main entrance, and was an excellent model of the steamer Gold floating in a lake of real water. Forestville showed one of its ideal orchard homes surrounded by beautiful scenery made up of hill and stream. Stony Point was represented by a model of the historic old mill and water-wheel found in that section, marvelously converted into a fairy mill, which, when Gravensteins were fed into one end, ground out at the other pies such as mother never dreamed of making.

Graton's exhibit was a fine model of a castle surrounded by a moat and reached by means of a drawbridge. Healdsburg had a fine exhibit of agricultural and horticultural products of that section.

(*Continued on Page 170.*)

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FRANK HONEYWELL - - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Aug. 22, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	00	.07	.15	64	48
Red Bluff	00	00	00	96	56
Sacramento	00	00	00	92	52
San Francisco	00	T	.01	78	52
San Jose	00	00	.03	88	42
Fresno	00	T	00	100	56
Independence	00	.10	00	98	54
San Luis Obispo	00	T	.03	94	46
Los Angeles	00	T	00	96	56
San Diego	00	.12	00	84	60

The Week.

We have been back to the land during the last hebdomad, and, returning to the tripod, desire to hold forth somewhat voluminously and vociferously upon an arid version of the adage that there is as good fish in the sea as has ever been caught out of it. We are impressed as never before with the fact that there are oceans of land still unimproved in California, and that much of it now awaiting development toward availability to ownership in smaller tracts, is better land than has yet been subjected to such development processes—therefore listen, ye who have hunger for land and gold to give for its appeasement.

Unused Land and Water.

Fortune gave us the advantage, during the last week, of a zig-zag run of a hundred miles or more, back and forth through the land on the west bank of the Sacramento river—chiefly in Tehama county. We have reason to believe, from previous lookings-in at other counties, that what seemed to us interesting and significant in that section can also be found to a greater or less extent in other sections and may therefore be more worth consideration. Several points occur to us as important in this connection:

1. There is better land still locked up in ownership by individuals, banks, etc., than the land which has thus far come into the hands of promoters—perhaps ten times as good.

2. There is therefore more good land available for subdivision than has yet been subjected to that process—perhaps one hundred times as much.

3. There is more water available for the irrigation of that good land than has ever been disclosed by stream measurement—perhaps a thousand times as much.

We have invoked the decimal system to give our guesses the appearance of accuracy and definiteness; the method is not new with us. We use it in the effort to measure the opportunity which still exists for investment in development enterprises and to emphasize the surety of profit in such enterprises if intelligently planned and administered and if land-hungry people enough can be attracted and interested. We are impressed that what has been done so far is only a suggestion of things to do—that so far as changing the great valley landscape, as seen from an airship, it cuts no more ice than a snow-bird in dog-days, and that wonderful as the transformation may be, as seen from the top of a local water tank, and encouraging as the added products may be, in the records of the local railway station—it is all as far from the idea of completion as is the first letter of the alphabet. We mean to say, then, that though valley development in agriculture has carried some cities to tens of thousands in population and some counties to tens of millions of assessed valuation, one can find many points of view from which the plains will seem unbroken and innocent of people and their doings.

The Upper Sacramento Valley.

We seek to illustrate these conclusions by reference to the upper Sacramento valley as we saw it during our last week's wanderings. We were impressed particularly with the private estates of grand dimensions which remain from pioneer days still unbroken. We saw ten or more such estates ranging from five to ten thousand acres each, practically all of them footing on the river and including stretches of rich river bottom lands broader than one could distinctly see across. All of them, too, above the river bottom, had greater stretches of plains studded with great valley oaks which half a century of grain growing has wisely preserved or inertly allowed to remain, as the case may be—great ducal estates waiting to be surveyed into small farms, each with majestic shade trees, to whatever extent the new owners may desire them in dooryard or pasture. Meantime they stand to vouch for the quality of the land, for it takes a good place to make a great oak. But we have, in the cases we have in mind, something more than trees as exponents of quality. We know that the pioneers were in many cases good judges of land, and in making selections where all was open the great captains of pioneer agriculture assured themselves of good land and took all they could get of it. We know also, historically, that these lands made the great crops of grain and stock pasturage; required the largest collections of working stock; encouraged the manufacturers of farming machinery to embody capacity almost regardless of cost, and we know also that good land worked thus largely yielded large fortunes to the pioneers, with which they builded great barns and mansions and surrounded them with gardens and family orchards. The owners have gone hence, many of them years ago. Their heirs had other tastes, and being born into fortune which they did not earn, the land, which would have kept them rich if they had been moderate in anything, was lost by them to those who advanced money for their extravagances. We, of course, do not know haw far this course of affairs covered the land, but quite largely, no doubt, and now this land, selected when the best was easy to get, can be had in large bodies by those who have capital and enterprise to undertake the cost and effort of successful subdivision. Naturally, as land known to be of extra quality, it has been held at higher prices than poorer land in the same section, and earl subdivision enterprise naturally saw less requirement of capital and larger margin of profit in the use of the cheaper lands. Now, however, the greater demand and higher price of land, the greater confidence in what can be done with it and the greater experience in subdivision, all warrant the use of the higher class lands in development enterprise; if in fact such land would not always have been better for such purposes from the point of view of permanent gratification and profit. Such considerations are now appealing to so many people that even the great oaks are often obscured by the dust of cross-country automobiles full of land-seeking investors who talk in millions or good fractions thereof.

Water Under the Land.

It is interesting that nearly all calculations on the amount of water available for irrigation are going astray because not allowance enough has been made for the water under the land. This is, of course, not new; our well-experts and pump manufacturers have been demonstrating the availability of subterranean supplies for years, and publications by irrigation experts, which we have cited from time to time, have set forth facts of supply, cost of pumping, value of product, etc. Thousands of pumping plants now at work demonstrate the feasibility and profitability of the recourse, and great power companies are threading the valleys with power-wires carrying the juice of the clouds to draw forth the juice of the earth. Although this is true, how few actually realize that so much of our lands, even in the midsummer drouth, are only dry on the upper side, and it is only man's fault or blindness that they are even dry on top? Take the Maywood colony in Tehama county where a wonderful demonstration of this fact is now being made. The projectors of that enterprise were freely criticized for encouraging people to think that summer crops could be had without providing an irrigation system to go with the land. There were losses and disappointments encountered in the earlier years of the colony enterprise which, in view of recent demonstrations, seem to be more attributable to poor farming than to anything else—poor farming in this case being chiefly a failure to connect up the crop with the water which underlaid it and to save for it by adequate cultivation the cloud water which could have been conserved from evaporation. It is now clearly shown that water at less cost than any gravity system could supply is now freely available from shallow pumping. Mr. W. N. Woodson, who has been giving his associates in the colony the fullest demonstration of the results of good farming, told us the other day that the 171st pumping plant had just been installed and that everyone who wanted water could get it cheaply because of the low rate established by the power company. At one place we strolled over to a little shed to see what was throwing a five-inch stream into a ditch and found a motor which you could have put in an apple box spinning away all by itself on a centrifugal which was below the floor somewhere—a wonderful instance of take-care-of-yourself in the whole outfit, for the owner was a quarter of a mile away mowing alfalfa. Of course there is nothing new about it but the fact that people are just beginning to realize how easy and profitable it all is. This is new, however, and shows how easy water may be under some dry land. They were digging by contract a well-pit from which to pump to a tower a water supply for a small valley town. The contract was for a depth of ten feet, if we remember correctly, and the contractor had to beg off on the depth, for the water came in at eight feet so fast that his men could not stay in the pit with it. If the town council wanted full depth they would have to get a dredger to work in the well. And that reminds us of another case where a man was starting to bore a well on land which was to be furnished with a gravity system, and we stopped a few minutes to see how it went off. He got his bucket full of water at the second punching into the earth and was in a wonder lest he should have to start a frog farm, while the projectors of the gravity system were wondering what they were coming there for. All these things convince us there is vastly more water available for cheap irrigation that has ever been realized, and that when it comes to good land and plenty of water nothing which has been

done in the way of development can be considered more than a promise of greater things to come.

Safe for a Season at Least.

It is an interesting fact that President Taft has knocked out all the tariff-reduction bills in which we are particularly fearful of by his veto. It is also interesting that there were not enough Republicans fully reformed into Democrats to make it possible to pass the bills over the vetoes. The President's reason for his veto of the wool-revision bill was statesmanlike: that it is not reasonable to revise the wool tariff until a report is had from the Tariff Board especially provided to make Congress wise on the subject. Everyone seems to admit that all the tariff propositions before the just-closed session of Congress were political measures looking to the election of 1912, and the authors of them failed of their purposes because a certain number of representatives feared the people at their homes more than they loved presidential candidates who seek next year's nominations. This is a fortunate indication, because it shows a recognition of duty on the part of representatives. If California industries are protected as they ought to be in the next Congress it will be because our representatives work with other representatives whose districts need protection, and in that way secure enough votes to maintain the protective policy. We hope California representatives will make autumn studies of the interests and desires of their constituents before the winter troubles begin.

Queries and Replies.

Garden Problems.

To the Editor: I wish to kill Bermuda grass out of a blue grass lawn. Suppose I remove two inches of the top and scatter ice cream salt, thick as hail stones, over the ground and then put on two inches of new soil and immediately plant blue grass and white clover. Would the salt be gone by the time the blue grass roots are two inches deep? How long does it take the blue grass to root two inches deep? How long will the killing power of salt last under such conditions when watered daily? Also, if dandelion tops are constantly cut off wont the roots die? Are the ashes of burnt vegetation good for fertilizing? What is the comparative difference between such ashes and manure? Of vegetable ashes, green grass clippings and weeds and manure? Of the three, which has the greatest fertilizing power, which the least?—Gardener, Santa Monica.

If you put on salt enough to kill Bermuda grass you will render the soil sterile to blue grass for two or three years, probably, unless on a very free soil, with abundant use of irrigation water, you could distribute and wash out the soil sooner. With ordinary rainfall and lawn watering it would take at least two or three years to accomplish it. Probably such an amount of salt as you mention would not do any injury to Bermuda grass, as it is particularly resistant to it. The two inches of new soil you speak of counts for little or nothing. Blue grass ought to root two inches deep before it is an inch high. And then you are counting upon having the salt remain where you put it. It will pass both upward and downward with the moisture.

If dandelions are cut below the surface sufficiently to remove the whole root crown, it will seriously discourage their growth, perhaps killing them, but this means cutting at least two or three inches below the surface, for simply removing the top causes an abundance of dormant buds to start and does not kill the roots.

Any ashes from burning vegetation are valuable for the potash they contain, but all vegetation capable of decay should be composted in order to secure value, probably a hundred times as great as can be had from their ashes. Ashes are incomparable with manure, because they contain practically only potash, all the nitrogenous matters which render manure available being destroyed by the burning process. Vegetable refuse decayed approaches manure closely in fertilizing value.

Slow Stuff as a Fertilizer.

To the Editor: Could you suggest an economical but adequate method of utilizing the output of sawdust and shavings from our high school shop so as to combine it with street sweepings, lawn cuttings, etc., and insure ready decay without objectionable features? I supposed that as a permanent adjunct of our school garden a cement container for this compost would be desirable. And I infer that a deep pit, which proves no advantage for manure-rotting, would be equally unsuited here. I have been asked to propose some such outfit and would appreciate a reply from you before doing so.—Teacher, San Francisco.

We cannot advise you to mix sawdust and shavings with lawn clippings and street sweepings, because of the great difference in susceptibility to decay. For instance, the lawn clippings and street sweepings, which would contain considerable horse manure, would be readily transformed into a good fertilizer if put in such a place as you describe and kept reasonably moist, neither being allowed to dry out or be submerged in water. Such treatment, however, would have no appreciable effect upon sawdust or shavings for a considerable period of time, and they would still be too coarse in their character to be of any value when applied to the soil, unless you have to deal with heavy clay soil, and in that case the sawdust and fine shavings might be dug in at once and trusted to decay slowly in the soil, at the same time improving its friability by their coarser particles. If, however, you are dealing with light sandy loam, such coarse material would cause too rapid drying out and injure the plant, which might be benefitted by lawn clippings and street sweepings. Our impression would be, the best way to get rid of the sawdust and clippings is to set up an altar, such as we have in our own backyard—a piece of an old boiler about two feet in diameter and two and a half feet high, in which we currently burn all rubbish which is not available for composting into a fertilizer.

Orange Dropping Leaves.

To the Editor: I am greatly worried over some of my orange trees shedding all their leaves. The trees are fully matured and bore fruit last year in abundance, but were troubled with scale, for which I fumigated. I noticed some few leaves falling all winter, and now they are shedding them rapidly and the new fruit is falling off, too. Will you be kind enough to tell me the cause and suggest a remedy?—Grower, Santa Barbara.

We could not tell without more knowledge what specifically occasions the dropping of the leaves from your orange trees as you describe. There is little doubt but that it comes from inhospitable conditions in the soil and consequent ill effects upon the roots. This might be from waterlogging of the soil during the rainy season or from excessive irrigation at any time on a soil not properly drained, or from lack of water; for either of these conditions causes inactivity of the roots which manifests itself by falling of the leaves, die-back of the branches, etc.

Bearing of Young Fruit Trees.

To the Editor: I have a French prune, a Washington plum, and a Moorpark apricot tree, each of which has been planted out for four or five years; was supposed to be three years old when planted, has grown finely, but neither has borne any fruit. They are all large enough to bear quite considerably. Last December, upon the advice of a German fruit raiser of the eastern part of this county, I cut away about one-half or two-thirds of the last year's growth, but to no avail. Can you suggest to me a remedy for the trouble? I cannot imagine what is the cause of their barrenness, as they are well protected from the winds, are not troubled with vermin of any kind in so far as I have been able to see, and are perfectly healthy, apparently, in every respect.—Suburban, Point Richmond.

You probably did not wait quite long enough for your fruit trees to come into bearing. The pruning back of a young tree which your German gardener prescribed has the effect of postponing the bearing of a young tree, although cutting back of an old tree may produce different effects. Stop pruning these trees, give them good care and cultivation, and you will find the fruit appearing in due time. All fruit trees come later into bearing in the cooler climate near the bay than in the interior.

Rose Mildew.

To the Editor: I enclose herewith a twig of a rose bush which is afflicted with some disease, and would ask if you will kindly advise me what the trouble is, and the best method of combatting same.—Grower, Orcutt.

Your roses are affected with mildew. A general treatment, which enables varieties which are not too subject to it to resist this fungus, is to keep the plants growing well with an abundance of water and manure. A specific for the disease is powdering with fine sulphur, but this is useless if the varieties are too susceptible to the trouble and if the growing conditions are not excellent. Some roses, however, will mildew at this season of the year because of their midsummer weakness and it is often better to give them a rest, pruning and applying water about the first of September, so as to get a fine fall and early winter bloom.

Not on the Osage.

To the Editor: Can the navel orange be grafted on the osage orange? I understand it is done in Florida, and would like to know if it has been tried in California.—Reader, Elk Grove.

It cannot. It has not been done in Florida nor anywhere else. The statements in this line which some general newspaper writers are indulging in are not correct. The efforts for a hardier orange, as we understand them, are based upon crosses upon the hardy members of the citrus family like the citrus trifoliata, or deciduous orange of Japan, etc. The osage orange is not an orange at all. The tree is not a member of the citrus family.

Pruning Oak Trees.

To the Editor: I am trimming up the huge oaks in our home environment. Some large limbs are being cut off, and I am wondering if this is going to injure the tree and if anything should be done to cover over the wounds. I will thank you much for your good advice in the premises.—Farmer, San Joaquin.

You need not apprehend any injury to the oak trees from removal of a portion of the branches. The wound, however, should be covered to prevent checking and decay, and this can be done with ordinary lead and oil paint made rather thick so that it will not run, and then apply sparingly and not allow it to run over the bark below the cut. A good cheap preparation is made by stirring Venetian red into boiled linseed oil until it becomes quite thick. Ordinary gas tar can be used also by boiling previously to eliminate some of the more volatile matters and to induce more rapid drying.

Summer Pruning of the Peach.

To the Editor: I wish your advice regarding the pruning of peach trees.

I have several acres of Lovells and Muirs, set two years ago. They are on rather light soil and have made a very satisfactory growth. Naturally, I want to secure as large a crop next year as possible, and at the same time prepare the trees for producing crops in succeeding years. I am quite inclined to summer-prune my trees at once. Would you and do you advise me to summer prune, or would you advise waiting until winter? Your views upon this matter in some detail will be appreciated. I have before me as I write, your "California Fruits and How to Grow Them", but can't make up my mind what you would do in my case.

Also, would you advise irrigating the orchard again this summer or fall? I have irrigated three times this season—on April 15, June 5, and July 20. I shall appreciate your reply to the above questions. GROWER.

Kern County.

RESPONSE BY THE EDITOR.

There is not sufficient experimental data as to the desirability of summer pruning in California in anything except the matter of forming the young tree. In that line there are some growers who believe proper branching can be secured more satisfactorily by summer pinching rather than by relying entirely upon the winter pruning, but because of the difficulty of doing this wisely, and the fact that growers are almost always otherwise busy at the season when it should be done, there is very little undertaken in this line. It is, of course, now too late in the season to summer prune for form.

With reference to summer pruning for bearing, we should not think of undertaking that on young trees. It should be done later in the season than summer pruning for form—the purpose being to cause fuller development of buds and not to cause a break of young laterals, which is the prime object in summer pruning for form. Just when summer pruning for fruit should be done with the peach, depends upon the local climate and moisture supply. If you can expect a long run of high temperatures and ample moisture, as would be expected in many interior situations, it might be now a little too early to summer-prune for fruit, because late and undesirable growth of new shoots would be induced. If, however, the growing season in a locality is approaching its close, summer pruning for fruit at this time would be desirable. But, on the whole, summer pruning for fruit in the case of the peach is of questionable desirability, because the tree is naturally disposed to bear so young in this State. You can count on quite an amount of fruit on well-grown, properly nourished, three-year-old trees, and that seems quite soon enough. If the tree is pruned in such a way that a much larger amount of fruit would be borne in the third summer than the tree would normally undertake there is a pretty strong probability that what might be gained in the third year would more than be lost afterward by reducing the vigor and longevity of the tree by excessive early bearing.

In our own judgment, it is better to trust to winter pruning during the earlier years of the peach tree. Summer pruning for fruit is a much safer and perhaps a more profitable operation with trees which have been some time in bearing: trees which are growing under very favorable conditions for wood growth and therefore need to have their bearing disposition increased somewhat.

As to whether you should irrigate again this fall depends upon the soil and situation and appearance of the trees. If they are likely to lose their leaves too soon and will be called upon to go through a period of considerable heat during the autumn, later irrigation should certainly be resorted to. Undoubtedly, many trees have been injured in the San Joaquin valley by a deficiency of moisture during the autumn months.

INTERNATIONAL CONGRESS OF PLANT BREEDERS.

To the Editor: The fifth international conference of plant breeders will be held in Paris from September 18 to 23. California is pre-eminently a horticultural State and is vitally interested in everything that makes for progress in every department of the great field of agriculture and ought to be represented at this important meeting. It is said that there are a thousand men and women plant breeders in America, and those in this State actively engaged in creating new plants are numbered by scores at least, the most eminent of whom is Luther Burbank. A congress of these scientific horticulturists in this country would be a crowning epoch in agricultural development.

The official title of the congress is the "Quatriéme Conférence Internationale de Génétique." Philippe L. de Vilmorin, 66 rue Boissière, is the secretary, and is much interested in making this meeting a success. He is a distinguished plant breeder himself and is giving much attention to the subject at the magnificent properties of the Vilomrin-Andrieux et Cie. at Verrièrs. The membership fee for those who wish to attend the meeting and go on the excursions is 25 francs, and for those who do not expect to attend the meetings, 15 francs, which will entitle them to receive the printed proceedings, which will contain articles in English, French, and German, on matters of much interest to plant breeders.

It is hoped that California horticulturists will give their support to this very important meeting, either by attending in person or at least by sending their names and membership fee to the secretary and by lending their influence to secure the seventh session of the congress for San Francisco in 1915.

The attention of the officers of the Panama-Pacific International Exposition has already been called to the importance of securing the conference for this city during the great fair. They will give it their enthusiastic support, and President Moore will send an invitation to the congress inviting it to meet here in 1915. It is understood that the next meeting has been promised to some European country, but the second meeting is still open, and it is thought that the chances are good, if energetic efforts are made, to secure the meeting for San Francisco.

If any Californian has a horticultural friend in Europe, let him be urged to attend the conference and make every effort to draw the seventh meeting to this city. It is hoped that Walter T. Swingle, chief of the Office of Crop Physiology and Breeding Investigations of the U. S. Department of Agriculture, may attend the meeting in Paris and present the invitation from President Moore. If he cannot do so, then Mr. Raphael Weill, now in Paris, may be called upon to do so. It is, of course, too late for the plant breeders of the State to act as a body, but they can individually use their influence to draw the meeting in this direction. Let all who take an interest in the proposed conference send their addresses to the undersigned, who will record them in order that they may be kept advised on matters of interest in this connection and be called together to effect an organization if found necessary or advisable. G. P. RIXFORD.

1813 Pierce St., San Francisco.

INSECT PESTS IN NEW FORM.

Two attacks of injurious insects upon plants and fruit which had heretofore been free from them have been discovered within the past three weeks, the first being the bean thrips, heliothrips faciatus, which has done considerable injury to pear trees in the Vaca valley, and the second the peach worm, anarsia lineatella, which has attacked apricots in Alameda county.

The bean thrips appears to be more acclimated than at first, as when discovered a number of years ago, it did but little injury. Recently it has been found on peach and plum trees and near Vacaville this year it has not only done great damage to beans, but has injured those pear trees upon which it has been found as much as the pear thrips itself. Its control is the same as that of the pear thrips.

The presence of the peach worm in apricots was first discovered by Commissioner Fred Seulberger and several horticultural inspectors in Alameda county around Haywards, where it appeared to be as bad on apricots as it ever gets with peaches. Later an examination of apricots in San Francisco markets was made and the worm was found in fruit from other counties.

Cases have been known where the worm had been found on plums and prunes, but according to O. E. Bremner, Deputy Horticultural Commissioner, this is the first time that extensive injury has been done to apricots. The control of the worm is the same with apricots as with peaches.

CHERRIES IN WASHINGTON.

A new bulletin from the College of Agriculture of the State University of Washington shows some interesting differences in cherry growing in that State and this. As is generally known, Oregon and Washington are our largest competitors in cherry production, as only on the Pacific Coast are the Hearts and Bigareaus, our main types, produced to a very great extent, the Eastern cherries being mainly the Dukes and Morellos, the soft, sweet and sour varieties.

In 1908, according to this bulletin, there were 1068 acres of cherries in Washington, with a large amount of young trees soon to come into bearing. The orchards were divided between the western part of the State, with ample rainfall and moist climate, and the drier, semi-arid districts of the eastern part.

Being so much farther north than this State, there is more danger of injury through frost, both in spring and fall, than here, and "winter killing" is referred to as one of the most serious handicaps of the industry in many locations. The cooler climate is also responsible for later ripening than here, as the earliest varieties are not ready to pick until June 10 to 15, while some do not ripen until the first of August. The Black Tartarians, our main cherry here, are not ripe until July 10 or later. This prevents the Washington cherries from competing in Eastern markets to any great extent with our cherries, and the greatest competition is with the canners, who use the fruit at any time of the year equally well, provided there is not too great a supply of other fruit.

The Royal Ann, the best canning cherry, both here and there, is spoken of as "the best and most successful light-colored sweet cherry for the valleys, but too tender in wood and bud for the uplands. It is a regular annual bearer." The Bing, although largely grown in California, is of minor importance compared with the Black Tartarian, but is described in Washington as "our best sweet cherry for the uplands of eastern Washington, and one of the best for the irrigated districts of the State."

One essential difference between the industry here and there is in the varieties grown. While the sour cherries and soft sweet cherries, the Morellos and Dukes, are held in little esteem in this State, they hold an important position in Washington. In the bulletin there are 26 varieties of these described, a number of which are recommended or spoken of as being important commercially, while the Hearts and Bigareaus number but 23.

MR. CAMMACK IN GUATEMALA.

We are glad to know that Mr. I. H. Cammack, formerly of Whittier, is now situated in a very interesting horticultural region at Chiquimula, Guatemala, and is in a position there in which he can send some very choice Alligator pear seeds to California planters. He has also bud-wood of

the purple skin and green-skinned fruits, both round and pear shaped of medium and large sizes, of excellent quality. He offers correspondence with those interested in this valuable fruit, which he is sure will have a future in California. Mr. Cammack speaks also of the Alberha, a papilionaceous shrub bearing a small pea, that might succeed in the summer months in California where it is too hot for the common pea. It bears at four or five months, and thereafter for a few years.

Our European Citrus Competitors.

By Mr. G. Harold Powell, Secretary and Manager of the Citrus Protective League.

During a recent trip in Italy and Spain several things were observed in connection with the orange and lemon industries which are of interest to the California citrus fruit grower.

The European Demand for Citrus Fruits.—There is a steady increase in the demand for oranges and lemons in European countries, especially for fruit of the higher grades. The exports of lemons to European countries have increased proportionately faster than to the United States during the last ten years. The exports of lemons from Italy have increased about 80% in the last ten years. The exports to the United States increased about 75% during the same period of time. The exports to Denmark increased approximately 3280%, to Germany 250%, to Switzerland 225%, to Belgium 230%, and to Norway and Sweden 210% each during the same time.

The increase in the demand for lemons in Europe has raised the price of the fruit this year. Palermo exporters having to pay from $5 to $10 per thousand fruits laid down at the packing-house during the last few months. No systematic efforts are made by the Italian exports to develop the European trade, but it is the opinion of the leading exporters there that the foreign demand will increase even more rapidly in the future than it has in the past.

The highest-priced lemons are exported from Italy to Russia. All of the countries of northern Europe receive grades similar to those that are shipped to America. It is interesting to know that in some of the countries that use Italian lemons exclusively where there is no tariff duty and a freight rate of only about 30 cents per box, the retail price is practically the same as the retail price in the United States. The exports of lemons from Italy in 1910 were approximately 569,000,000 pounds, or the equivalent of about 20,000 California carloads.

The Spanish Orange Industry.—There are a billion pounds of oranges exported annually from Spain, half of which are consumed in the United Kingdom. There are probably a hundred thousand acres of oranges in Spain, located mostly on the eastern coast in the Valencia province and in adjoining areas. The Spanish crop is marketed during the same period as the California navel crop, that is, from October to June. The groves in Spain are under irrigation and intensely cultivated. In some sections like Alciras and Carcagente, the groves are cared for as well as the best groves in California. The pruning of the oranges is much more systematically done there than in California. The trees are more open and spreading and with much less fine wood than is to be found in a California navel or valencia tree. The trees are generally headed three to four feet from the ground. The Spanish grower gives more attention to the individual tree than we do. An ailing tree is carefully examined, the roots are bared, and a root that is out of condition is cut off and removed. In many of the better groves, the soil was removed from the base of the tree, so that the hand could be extended under it. The large roots were exposed two feet or more from the body of the tree. A ridge of soil was raised around the basin to prevent the water touching the crown of the tree, thereby reducing the danger from root diseases.

The increase in the demand for lemons in Europe applies equally to oranges, the Spanish grower receiving this year about 20% more for the fruit than for several years past.

Labor and Transportation Conditions.—The cost of labor in Sicily varies from one-quarter to one-third of the cost of similar labor in California. In Spain the labor is still cheaper. An ordinary man laborer is paid from 45 to 70 cents a day in Italy. Special kinds of labor are sometimes paid as high as 80 cents or even $1 per day. An ordinary man laborer in Spain is paid from 40 to 50 cents per day, the usual wage seldom running over 45 cents.

About one-third of the agricultural laborers in the citrus fruit district of Sicily are women. Women are also used largely in the packing operations in both Spain and Italy, the wages of women varying from 15 to 30 cents per day.

A considerable proportion of the labor is also made up of boys from 10 to 16 years of age. These boys are used both in the groves and packing-houses, and are paid the same rate of wages as the women.

The cost of shipping a box of lemons from Italy to the United States is about three-elevenths of a cent per pound. From Spain to the principal distributing centres in Europe, the freight rate is still less. Sometimes it is not over a shilling a case; the case holding about 2½ California boxes. This would equal a rate of about 10 cents a California box for the cost of transportation. From California it costs 1 cent per pound to transport the lemons to the principal centres of consumption and $1.15 per hundred pounds to transport oranges, plus the refrigeration charges on a considerable portion of the crop.

The Citrus Marketing System in Italy.—The citrus industry in Italy is founded on the speculative method of doing business. There are a few speculative exporters in Palermo, who handle the bulk of the crop. There are a few speculative importers in New York who handle the crop in this country and whose interest and often whose identity is identical with the exporters of Italy.

There are a horde of small brokers in Italy between the exporter and the land-owner. Five different profits or commissions are frequently included in the f. o. b. value of a box of lemons in Palermo. It is seldom that less than three profits or commissions are included in this value; the profit of the land-owner, of the renter of the land, and the commission of the intermediate broker between the producer and the exporter, or of two brokers, where two frequently exist. The grower has nothing whatever to do with the marketing of the fruit.

Under the speculative system followed in Italy, there are no comprehensive marketing plans developed, the marketing following the usual course of speculative trade practices. When a dozen Italian lemons finally reach the American consumer, the latter pays from eight to eleven commissions or profits in the retail price. There is a wide difference between the price the consumer pays and the price the producer receives, the latter receiving from one-fifth to one-fifteenth of the former price.

The present system of distributing and marketing the Italian lemon crop, both in Italy and the United States, is similar to the method which brought general disaster to the California citrus producer fifteen to twenty years ago, and which led to the present comprehensive system of distribution and marketing.

The speculative system now in use in the Italian lemon business brought disaster on the Italian citrate of lime business, which is a department of the lemon business, and caused the government to take the marketing of the product out of the hands of the speculative interests and to establish through the Camera Agrumaria, in 1908, and by supplementary legislation in 1910, a government monopoly. Through a commission, the government fixes the minimum price to be paid to the producer for the citrate of lime, into which 40% of the entire crop is converted, the minimum selling price also, and it markets the product for the producer.

The speculative system is said to have brought the lemon essence industry to a similar condition, and efforts are under way to induce the government to extend the authority of the Camera Agrumaria to the essence trade as well.

FLORIDA LAW AGAINST GREEN ORANGES.

A Florida enactment against selling green oranges is attracting much attention. This is as follows:

"Section 1. That it shall be unlawful for anyone to sell, offer for sale, ship or deliver for shipment any citrus fruits that are immature or otherwise unfit for consumption, and for anyone to receive any such fruits under a contract of sale, or for the purpose of sale, or of offering for sale, or for shipment or delivery for shipment. This section shall not apply to common carriers or their agents who are not interested in such fruits, and who are merely receiving the same for transportation."

Other sections are against misbranding packages in name, size, quality, locality, etc., and prescribe penalties.

Dr. Wiley's Warning.—In a recent letter Dr. Wiley says that if, "by 'artificially coloring' you mean 'loading the fruit into refrigerator cars with the plugs and vents partly or all in place, or upon the arrival of car at destination or some junctional point, create a warmer atmosphere by keeping it closed tight, or even by putting heat in the car.'

"I beg to advise you that I am of the opinion that there is no objection to artificial coloring as indicated above when applied to the mature citrus fruit, nor is there any need, under these circumstances, to mark the product 'Artificially Colored.' The law considers as adulterated any food which is 'mixed, colored, powdered, coated, or stained in a manner whereby damage or inferiority is considered.' In the case of a mature fruit of the kind to which you refer, the coloring apparently does not conceal any damage or inferiority. Where the fruit is immature it is a different matter, the artificial color giving the apparent color of the ripe fruit, which apparent ripeness is not borne out by the real character of the fruit. It seems to the Board that there should be no difficulty on the part of the growers and handlers of oranges, with their wide experience, to know when an orange is mature, edible, and fit for consumption."

CITRUS FRUITS AND THE CANAL.

At the East they are already figuring upon the possible advantages of receiving their citrus fruits from California by water. Last week's Fruit Trade Journal speaks of the benefits which will accrue to the fruit growers of California by the opening of the Panama Canal. It says: "Not the least of these promise to be a reduction of freight rates on all products to the Middle West and to New York. The experiment of shipping oranges and lemons to the city by the Hudson over this route several months ago, while not a brilliant success, was far from discouraging. The fruit reached its destination in fair condition, considering the delay due to congestion and other causes while crossing the isthmus. The obstacles which it then met were the result mainly of unpreparedness and will be largely overcome when the canal is open for traffic. The oranges, it was asserted, showed only a small percentage of decay, while only about 5 per cent of the lemons were spoiled, and this in spite of the fact that both oranges and lemons had to be placed in the hold of the steamer on the Atlantic side on account of cold weather. The water rate, it was then announced, was 50 cents per hundredweight, or $23 per ton. In view of these facts, there is little room for doubt that the completion of the canal will be a great boom to growers of citrus fruits in California. The belief is general that it will decrease the imports of Sicily lemons, providing the California product is sufficient for home consumption, and that the quality will compare favorably with that of the Italian fruit. It will also give California oranges, lemons, and possibly other fruits a wider outlet in the Eastern market than they now enjoy."

We doubt the advantage of stating these advantages so plainly: it will tempt the Italian importers to plug up the canal.

AGRICULTURAL REVIEW.

Prices and Prospects.

In the crop bulletin of the U. S. Department of Agriculture the condition of crops on August 1, which has just been issued, barley was recorded as being a 92% crop in California, against 88% as an average; wheat 18 bushels per acre, against 14 in 1910 and 13.4 average; potatoes 89.5% of a full crop, against 89.4 average; apples 73% and 80%; peaches 78% and 87%; grapes 87% and 92%; pears 73% and 84%; sweet potatoes 93% and 90%; tomatoes 92% and 91%; onions 94% and 93%; sugar beets 94% and 93%; peanuts 93%, and dry beans, lima beans and hops each 90% of a full crop.

Dried fruit buyers in San Francisco state that the following prices are being paid to growers for this year's products: Apricots, 14½ to 15½ cents; Muscats, 4½ to 4¾ cents in the sweatbox; prunes, 5½ cents; peaches, 9½ to 10½ cents; pears, 10 to 12 cents, and apples, 9½ to 10 cents.

Reports from lower Alameda county state that a larger proportion of the hay crop has been sold than ever before for this early in the season.

Reports from Lodi state that the firm of George West & Son has contracted with growers for Alicante Bouschet grapes on a basis of $9 for the crop of 1911, $10 for 1912, $11 for 1913 and $12 for $1914.

According to an announcement from H. G. Johnson, sales agent for the California Farmers' Union, that organization has just settled with its members for 1910 peaches on a basis of $98 per ton, or $8 more than other growers obtained.

C. B. Jeffries of Fresno is shipping large quantities of Thompson's Seedless grapes to Eastern markets from Marysvills.

Heavy shipments of grapes from Almeria, Spain, are said to be expected to come into competition with Tokays from this State in Eastern markets.

The Home Packing Company of Fresno has issued a circular stating that the raisin crop will be 40 per cent short this year, and claiming that 4¾ and 5 cents in the sweatbox are prices that will be secured in the coming season. The price that seems to have been decided upon by the majority of the growers is 5 cents. Small purchases of Muscats are being made at 4¾ and 4⅞ cents, and of Sultanas and Thompson's at 5¼ and 6¼ cents. It is claimed by several persons in close touch with the market that a large part of the new crop is already sold to the Eastern trade.

The Farmers' Union of the Santa Clara valley has decided to hold all prunes not yet sold at 6 cents. Apricots are to be held at 18 cents and peaches at 10½ cents. A report was made to the Union at the last meeting by Alexander Sheriffs, superintendent of the San Jose schools, that approximately 1100 children of that city had been given employment in the valley orchards through his office, owing to the efforts to obtain white help by growers.

The Barton Vineyard Company is said to have guaranteed a price of $10 per ton to growers at Clovis, Fresno county, for wine grapes.

The shipping of Malaga grapes to the East seems to have resulted in a lowering of the price of other grapes in Eastern markets. Some losses have resulted from the efforts to get the benefit of high early prices, by shipping grapes that were to green and did not reach the market in good condition.

Arthur Cleal of Haywards, Alameda county, has averaged $90 for his choicest apricots, which were sold fresh in San Francisco, the culls being dried.

During the week ending August 22, 4851 tons of hay arriveo in San Francisco, against 3977 in the week previous. In spite of these arrivals prices continued high and the future promises well also.

With the Fruit Men.

The second brood of codlin moth, according to Commissioner W. H. Volck in his monthly report to the board of supervisors of Santa Cruz county, came out about August 15, to continue the rest of the season, making spraying with arsenates again necessary. The aphids have been exceptionally troublesome in the county, owing to cool weather, other pests being about as usual. A strong recommendation for more planting of apples in the mountain districts of the county is made, as the fruit there is said to be superior to that produced in the valleys.

The George Frank company of Santa Clara county last week sent the first straight carload of apricots for the season from the valley. The shipment was valued at $6000 and was sent to London.

George Studebaker of Anderson valley, Sonoma county, has completed an apple drier on his place. He states that the high price for fresh fruit has decreased greatly the amount that would otherwise be dried.

A number of grape men in Napa and Sonoma counties are holding out for $20 per ton for wine grapes. Around Fresno $12 has been suggested as the proper price for Zinfandels, although no offers, as far as is known, have been made at this figure. One company is said to be offering $10 per ton.

The fruit growers of Wyandotte and vicinity in Yuba county met recently at the home of Edward Rutherford to fix a price, or to see what price could be obtained for their fruit.

Deciduous Fruit Shipments.

Sacramento, August 19, 1911.

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, August 18, 1911, as reported by the California Fruit Distributors:

Peaches—265¾ cars. As indicated last week, the shipment of this fruit has fallen off quite materially, over 100 cars less going forward than during the previous seven days. Some of the desirable varieties of clings from Placer county are now offering—considerable quantities of McDevitts and a few orange clings. Late Crawfords are nearly finished. There will be very few peaches to offer until Salways are available, which will be about September 1.

Plums—116½ cars. Plum shipments continue to decrease slowly. Giants, Grand Dukes, Gros, nad Diamonds, with a few Kelseys, constitute the bulk of



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FRUIT GROWERS' TALKS
No. 2—Systematic Distribution.

Last week we mentioned our successful method of systematic distrubition. Today, we give you a practical illustration of it.

Not long ago, Toronto, Canada, reported "FRUIT MARKET GOOD, SUPPLIES LIGHT." At that moment we had one car en route for that city and immediately ordered in a second one, which would be ample for that market's needs. Two outside shippers, hearing same report, sent in five cars more—result, a glutted market, prices forced down and a net loss to the growers of $300.00 per car.

MORAL: Ship your fruit through shippers in our organization, who enjoy facilities which protect you from loss.

Correspondence cordially invited.

California Fruit Distributors
1008—1010 SECOND STREET SACRAMENTO

Paper
Berry Baskets
We can save you money.
Look at these prices:

One Pound Ventilated Baskets

1000 Lots,	$2.75	10,000 Lots,	$2.40
5000 "	2.50	25,000 "	2.30

Not Ventilated

1000 Lots,	$2.55	10,000 Lots,	$2.20
5000 "	2.30	25,000 "	2.10

One-Half Pound Baskets, Not Ventilated

1000 Lots,	$1.75	10,000 Lots,	$1.65
5000 "	1.75	25,000 "	1.60
		50,000 Lots,	$1.50

Don't fail to send for samples. We want you to see what we make.

E. F. ADAMS
362 MAIN ST., PETALUMA

(Telegram)

New Franklin, Mo., May 3-4, 1911.

The Frost Prevention Co.,
Balboa Bldg., San Francisco, Cal.

Lit heaters last night, burned them five hours. Sixty heaters per acre raised temperature five degrees within thirty minutes after lighting; held same temperature until closed down. We consider them a great success; never received thermometer, only wire and bill; rush thermometer.

T. H. TODD.

1.41 a. m.

Chico, Cal., July 26, 1911.

The Frost Prevention Co.,
San Francisco, Cal.

Dear Sirs:

In reply to yours of the 25th, would say that there ought to be good sale for the Bolton Orchard Heater this year, as they have proven a success during last spring's frost. I have used the heaters four years. In 1908 I had 80 per acre in apricot orchard; none in the almond orchard, just across the road. There was no sign of frost in the apricot orchard, and the almonds froze off clean. This year (1911) I had the heaters in the almond and none in apricot. Apricots froze clean except a few in tops of trees 18 or 19 feet from ground. No sign of frost in almond trees. N. C. Jessee and A. Gee both used heaters with the same result. These three orchards contain nearly all the almonds for quite a large scope of country. I think this proves all you claim for the heaters. There was no need to use them in 1909 or 1910.

Yours truly,
(Signed) H. LOSEE,
R. 3, B. 141, Chico, Cal.

BEAR CREEK ORCHARDS.
W. S. Brooke, Manager.

Medford, Ore., U. S. A.,
July 25, 1911.

The Frost Prevention Co.,
San Francisco, Cal.

Gentlemen:

Replying to your favor of the 18th inst., beg to state that we used about 3500 of the Bolton Orchard Heaters during the past season, and though there were several mornings that the temperature was as low as 24 degrees, we pulled out a crop of about thirty-five carloads from fifty acres. There were seven mornings, any one of which would have practically annihilated our crop had we not been equipped to fight the frost. We expect to equip another fifty acres for the coming season, and while we dread the magnitude of the undertaking, one hundred acres does not look as large to us now as fifty did before we undertook it. Yours very truly,

THE BEAR CREEK ORCHARDS.
By W. S. Brooke, Manager.

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SAN FRANCISCO

F. H. HAMMER, Southern California Representative

CHERRY HILL FRUIT FARM.
The E. H. Everett Co., Owners.
H. A. Albyn, Manager.

Toboso, Licking Co., Ohio,
July 21, 1911.

The Frost Prevention Co.,
San Francisco, Cal.

Dear Sirs:

We used the small heaters for three evenings. We did not have the frost that we sometimes have, but cold enough that all blossoms where we did not use the pots were killed. We only lighted every third pot, which raised the temperature six degrees. Six hours has been the limit as to time of burning them. We used fuel oil from the Standard Oil Co. We have just tried an experiment with the crude oil from the well, as we have several wells of our own, and find that it burns equally as long as this fuel oil. Yours very truly,

H. A. ALBYN.

Owensville, Ind., April 3, 1911.

The Frost Prevention Co.,
San Francisco, Cal.

Gentlemen:

Am trying the Smudge Pots which I purchased from you one year ago, and meeting with success. Have used them two nights. It being a new thing in this part of the country, the newspapers are taking kindly to it and publishing results. Have had many inquiries regarding same. Would be pleased to have you send by mail one or two of your new attachments you wrote me about, to try in this community. Yours respectfully,

(Signed) P. S. ARMSTRONG.
R. F. D. 19, Owensville, Ind.

THE FIRST NATIONAL BANK OF ROSWELL.
Roswell, New Mexico.
W. H. Godair, Pres.
A. Pruit, Vice-Pres.
E. A. Cahoon, Cashier.
A. Hanny, Asst. Cashier.
C. Hobbs, Asst. Cashier.

July 10, 1911.

The Frost Prevention Co.,
San Francisco, Cal.

Gentlemen:

In reply to inquiry from your local agent, the writer begs to advise you that three thousand of your two-gallon Bolton Smudge Pots were used in his orchard during the past spring and were eminently satisfactory. While the cold weather here was not excessive, still the writer lit about one-third of the pots on three nights and found that number ample to control the temperature in his 45-acre orchard. By actual test, the pots burned from eleven to thirteen hours. The writer selected this pot after testing out several of the most prominent makes.

Yours very truly,
(Signed) A. HANNY.

the movement. Shipments will probably drop off rapidly after next week.

Pears—301¾ cars. A decline of over 50 cars in this variety is noted from shipments of last week. A further decline during the coming week is probable. Pear shipments on the river are practically completed. Fruit has improved in quality, and later shipments will be better than those previously sent out. Some Beurre Hardys are now offering.

Grapes—197½ cars. An increase in the shipment of this variety over last week amounting to practically 50 cars is noted. A further increase is expected next week. Movement of Thompson's Seedless is practically concluded, varieties now mostly in evidence being Malagas, Black Prince, and limited offerings of Muscat and Tokay. The quality of grapes this year is unusually good. After next week considerable quantities of Tokays will be available.

Total shipments from California to August 21 were 5340 cars, as against 6974 cars to the same date last year.

General Agriculture.

George Peckham of Reno, one of the largest potato producers of the district, expects to realize at least $300 per acre this year, which was the income from the crop in 1910. His crop will be very large unless a frost comes within the next week or so.

A very large acreage of black-eyed beans is being harvested in the West Covina country this year, most of which is contracted for at $4.30 per hundred. The crop was planted extensively through the efforts of J. W. Larmer, a large acreage being necessary in order to obtain economical harvesting.

A. N. Rude of the Estrella, San Luis Obispo county, has harvested a larger crop of corn off 25 acres planted this spring than he was intending to use and he let a good part go for cattle feed. He will increase the acreage a good deal next spring.

On the Fred Miller ranch north of Woodland 12 tons an acre of sugar beets are being harvested at the rate of 40 tons per day. There are 600 acres of beets on the place. The beets have not been irrigated. Irrigated land in this vicinity is said to be producing 18 to 20 tons to the acre.

Eugene H. Grubb of the U. S. Department of Agriculture has been making a study of potato growing on the delta lands west of Stockton.

The sugar beet harvest in the Salinas valley will begin a few days before September 1, on which date the Spreckels factory will begin operations.

A good deal of trouble with ducks on the rice fields of the Balfour-Guthrie Company near Biggs, Butte county, is being experienced.

Harvesting of Egyptian corn in the Huron country of the lower San Joaquin will begin in a few days. There are about 10,000 acres in the district.

A. J. Hunsaker of Ducor, Tulare county, has harvested a wheat crop of 2280 sacks, or about 7½ sacks to the acre. Winter sown wheat yielded 10 sacks to the acre.

Cotton picking has begun in Imperial county. The yield is estimated at about 12,000 bales. The yield per acre is much higher than last year.

Miscellaneous.

That an early winter seems possible is indicated by heavy frosts Monday night at Williston and Bismark, South Dakota, as well as points in Canada.

Plans are being made to hold a poultry show in Modesto next month.

The Southern Pacific is to give a special rate round trip to Watsonville for the "Apple Annual" of October 9 to 14, and run extra trains to accommodate visitors to the show. There will also be a large poultry show at the same time, premiums for which will be announced early next month. Judge Geo. D. Holden will have charge of the scoring of the birds.

The Tulare County Bee-Keepers' Association recently met and decided to sell their output of honey at 5¾ cents, if such an offer was received, although a 6-cent offer was more desired.

The Northern California Poultry Association has been formed at Corning, Tehama county, to handle the poultry and eggs produced in the northern Sacramento valley.

H. A. Sessions of Kerman, Fresno county, has been appointed director of farmers' institutes for the San Joaquin valley by Prof. Warren T. Clarke of the University of California.

A flow of 2000 gallons of water has been struck on the Shaw place near Germantown, Glenn county.

The Nevills vineyard of 480 acres opposite the Kearney estate, Fresno county, has been sold to A. V. Lisenby and K. Emirzian for $150,000.

The membership in the Nevada State Poultry Association now amounts to 104 persons, and the number is expected to be greatly increased after the first annual show next January. Contestants from all over the West are expected to exhibit at the show.

The dam of the Great Western Power Company on the North Fork of the Feather river, below Big Meadows, Plumas county, will hold enough water to cover 25,000 acres of land above it.

The government has restored to the public domain for settling by homesteaders 11,000 acres of land adjoining the Klamath reclamation project in Klamath county, Oregon, as the land was too elevated to be irrigated from the canals to be constructed.

Owners of delta lands along the Sacramento and San Joaquin rivers are forming an association to supply data regarding tenants and other information of various kinds of value to members. Improvement of the district affected will also be undertaken.

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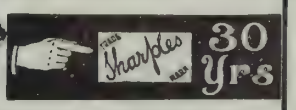
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Killing the Squirrels.

Not until every squirrel is destroyed in the San Joaquin valley will the campaign against the rodents now being waged by the Marine Hospital Service and the counties be discontinued, according to the plans under which the work is being done. It is thought by some that the work is temporary, but as a mat ter of fact, it is not intended to stop until every squirrel in the territory being worked is killed and every opportunity for damage by the rodents through their natural increase taken away. A realization of this intent may encourage many to do their part who have not been interested, and aid others to renew their efforts to complete the destruction of the animals.

A number of times before efforts have been made to kill the squirrels under poorly organized plans, or on too limited areas. This has been done by private, and, in some places, public bounties, and in other by the free distribution of poison, which was usually not distributed carefully enough to have any permanent effects in any one place.

The present wor kwas authorized by the State by the law of March 13, 1909, although but little was done under it until this spring and summer, when the Marine Hospital Service lent its assistance. This was done on account of finding the bubonic plague in a number of places, enabling the Federal Government to take a hand in the work as a public health measure. The Hospital Service is working to prevent the plague, and the county and State authorities for economic reasons, the effect on the squirrels being the same regardless of the reasons for the work. Dr. Rupert Blue, of the Marine Hospital Service, is managing the whole campaign, Dr. French Simpson being field agent for the San Joaquin valley.

The present work was authorized by San Joaquin valley counties, including Calaveras county and the coast counties adjoining them as far down as San Luis Obispo. If this territory can be effectually cleared of the squirrels, there will be but little danger of new infection except from the north, as the Mojave desert and the San Luis Obispo hills on the south, the Sierras on the East, and the Pacific ocean on the west will be pretty efficient barriers.

In this territory there are employed 50 inspectors and supervising officers to see that the squirrels are destroyed. Each inspector has authority from the Marine Hospital Service for the Federal Government, from the State, and from the county in which he works, to see that proper measures are taken against the rodents. An inspection of each ranch is first made and notice that poison must be put out or the animals suffocated in their holes. Several weeks later another inspection is made to see if instructions have been followed, and if not, another warning is issued, which is followed by the work being done under the authority of the Government, and the bill sent to the owner. It is found, however, that in 75 to 80 per cent of the cases, poison is put out or other operations against the squirrels begun.

Where the notice is not regarded, it is usually because of a non-resident owner who cannot see about the work properly. This is remedied by the inspectors having the work arranged for as soon as the money for poison is sent, making a minimum of trouble for the owner. In most cases a neighbor is glad to distribute the poison free in order to prevent the squirrels from coming over onto his land which has been freed from its former inhabitants. That there may be no danger of the work being done wrong and efforts wasted, printed instructions of the best methods to use are given with each notice.

The best method of killing the squirrels, during the dry season, at least, is by poisoning with barley and strychnine. This costs about 10 cents per pound, or a little more if the rancher does not wish to take the trouble to prepare his own poison, and is distributed a teaspoonful at a time around squirrels' holes, not inside them, as is sometimes recommended by inexperienced persons. The squirrel then gathers the grains in his cheeks and dies before he gets back for another load, if the food has been properly prepared and distributed. About 90 per cent of the rodents are thus destroyed at the first dose, and the second distribution generally completes the work if well done and no other squirrels come on the land. Barley is recommended instead of wheat on account of the fact that the birds will not eat it as quickly as wheat, and on account of its superiority in other ways.

It is claimed by Dr. Blue that with the proper co-operation from the property owners every squirrel in the district can be killed, and the sooner this is done the sooner the work can be stopped, as once eradicated, there will be little chance of more trouble from them. The cost of the work is said to be less than the damage the squirrels would do if left alone during the same time, and while this expense can finally be discontinued, the damage will be stopped for good. That this is greatly to be desired is shown by the estimates of Government scientists that $10,000,000 worth of damage every year is done by the rodents in this State alone.

The cost of the poisoned grain is but 10 cents per pound, and the total cost per acre of killing the animals varies from 3 to 10 cents, with an average for the whole valley of but 7½ cents at the highest figure.

Besides the work done by the property owners, the Marine Hospital Service has a crew of men at work in places where diseased squirrels have been found, to keep the disease from spreading. This includes a strip extending from the Contra Costa hills on the north, down into San Luis Obispo county. Recently, infected squirrels have been found near Modesto and Ripon, San Joaquin county, and the men have been working there. The cost to the federal government for every expense is $23,000 per month.

How long the work will be continued can only be estimated, but it is claimed that it will be until the squirrel and the vast amount of damage done by him is only a memory, and pasture, fruits and grain will be safe from his attack.

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LIGHTNESS
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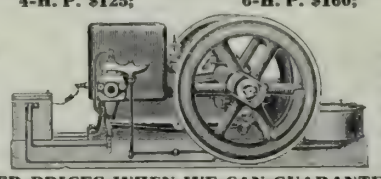
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On the Trail of the Little Leaf.

Professor Bioletti and his associates in the viticultural work of the University Experiment Station have been busy for some time in the effort to determine the cause of a vine disease which is called "little leaf" from one of its manifestations.

"Little leaf" is not confined to any one locality in the valley," says Professor Bioletti. "I have found it all the way from Lodi, where it is prevalent, to Porterville. It may exist in regions beyond these, but I have not yet visited them since the discovery of the disease in the upper regions of the valley.

"It is not a new disease by any means. It has existed near Lodi for 15 years. It should hardly be called a contagious disease, when it is found always in one part of a vineyard, while the remaining portions are not affected."

Professor Bioletti says that the disease manifests itself by a small growth of leaves and rather small shoots, an appearance familiar to many growers. The leaves are one-half or even one-fifth as large as the normal, and many of tne diseased shoots may be found on vines not otherwise affected. The shoots may or may not bear grapes. Frequently the grapes on a "little-leaf" shoot will be as good as those on the rest of the vine, but more often they are inferior or fall off altogether. In some vineyards the crop is cut one-half. The disease is more prevalent this year than usual, having appeared in orchards of all ages, on all sorts of soils. On the whole, however, only a small percentage of the vineyards are affected.

"I think the climate may possibly have something to do with it," said Professor Bioletti. "It cannot be laid to the soil; or, if it can, it has yet to be proved. It is not due to starvation, as it is found sometimes in three-year-old orchards in the richest ground. The frost was not the cause, as the ravages of the disease are no worse in vineyards cut down by the frost than in those not hurt."

The professor has several assistants working with him collecting specimens of the vines and the soils and analyzing them. Diseased cuttings are being planted in new ground, to watch the developments. Various sprays are being tried, and every method known to the horticulturists of the State is being used to find either the cause of the disease or some remedy for it. As yet no remedy has been found, and the experiments have not progressed far enough to warrant recommending any course of action.

Where the disease takes a full hold on a vine it dies in a few years. No method of pruning the vine is recommended; in fact, Professor Bioletti seems to think that climatic conditions may be such next year that the disease will disappear automatically, although he is not remitting any in his efforts to discover a remedy.

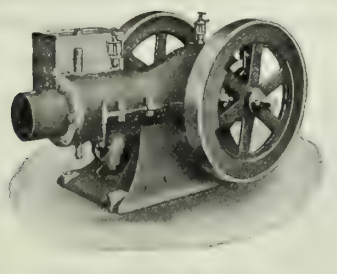
GROWING TREES FROM HARD SEED.

Our readers who may have had difficulty in growing seedlings from very hard seeds like those of acacia, cytisus, etc., may learn wisdom from the way prescribed by Prof. Longyear of the Colorado station for growing seedlings of the common locust:

Any person who can secure seed of black or honey locust can readily grow his own trees of these two species. Seeds that have been kept dry, even eight or ten years, will grow almost as readily as those that have been gathered but one year. In either case the seeds are so hard that if planted dry, as one would peas or beans, many of them will fail to germinate and all of them will be very slow. They should first be treated with hot water, in the following manner:

For about one-half pound of seed place the seeds in any can or jar that will hold about one gallon and that will not be broken by hot water. Pour about two or three quarts of boiling water upon the seeds, cover and allow to stand over night. When the water is poured off, it will be found that many of the seeds have doubled in size and become softened. These should be taken out and should be planted immediately, while those that remain hard should be treated in the same manner until all of them have swollen.

Plant in good garden soil, in rows about three feet apart, planting the seed about one inch apart, in the case of the black locust, and three inches apart for the honey locust. Cover the former two-thirds of an inch, and the latter one inch deep, and firm the soil upon them. As soon as the plants break through the ground they should be given the same cultivation and irrigation as a crop of corn. The young trees will probably need thinning, so as to make them about four to five inches apart in the row. This will give much stronger seedlings than to allow them to grow much thicker.



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It is well worth your while to verify this statement, and when in doubt as to the Sodium Chloride content of a Cyanide, have a reputable chemist furnish you an analysis. It may prove a good investment.

The Roessler & Hasslacher Chemical Co.'s Special Fumigating Cyanide of Potassium 98-99 per cent and Cyanide of Sodium 128-130 per cent is manufactured expressly for fumigating. Contains no excess of chloride of sodium. It generates quickly. Reliable, Efficient, Economical.

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THE GRAVENSTEIN FIRST IN THE RACE.

(*Continued From Page 161.*)

EXHIBITS BY ORGANIZATIONS.—The Sebastopol Grange showed a cart made of apples and loaded with fruit and vegetables of remarkable size and beauty. The Sebastopol Japanese association had a beautiful shrine to their hero Lanka. The Sebastapol Berry Growers' Association showed their label and shield worked in berries and fruit. A very excellent model of the Analy Union High School reflected credit on its builders, Prof. J. E. Williamson and his pupils. The model was on the scale of 1 to 8 and every detail was complete from the tennis court to the American flag waving in tne breeze at the top of the mast. We might mention that Prof. Williamson is an enthusiastic advocate of teaching agriculture in the public schools and practices what he preaches. The local W. C. T. U. dispensed Adam's ale drawn with a moss-covered bucket from an old-fashioned well.

EXHIBITS BY INDIVIDUALS.—Luther Burbank's exhibit of his famous creations, including the spineless cactus, was housed in a beautiful bower of autumn leaves with a fountain playing in the center, the whole being highly illuminated. Mrs. L. E. Barlow showed an exact replica of her famous ranch, where hundreds of boys from the city camp every season while berry and fruit picking. Glockner & Dorward, a real estate firm, had an excellent model of a complete poultry farm with several dozen hens busy in the manufacture of hen fruit. The exhibit of William S. Lidders was entitled "The Gravenstein apple from B. C. 4000 to A. D. 1911." Adam and Eve were discovered under a Gravenstein tree in the Garden of Eden, and curled in its branches was the serpent offering them a particularly tempting specimen of that fruit. Overhead was suspended an airship of latest model loaded with several boxes of apples. Kinley & Sons, nurserymen, had an attractive display of nursery stock. Beautiful floral exhibits by Margaret Butts and Fred Grohe, Santa Rosa florists, added beauty and variety to the general effect.

Just to show how these apples compared with those in other sections, the growers exhibited a collection of cups and gold and silver medals which they won at Watsonville last year in open competition with the whole State of California.

A large annex to the main tent contained interesting exhibits of the latest things in agricultural and horticultural implements and supplies, etc.

Our readers will without doubt be interested in knowing what are the conditions that made possible the holding of such an interesting and successful apple show. Back of it all is the Gold Ridge, which comprises one of the finest fruit belts in the State. The soil is a deep sandy loam especially adapted to cultivation and the conservation of moisture. The climate is tempered by ocean breezes and is comparatively free from frost.

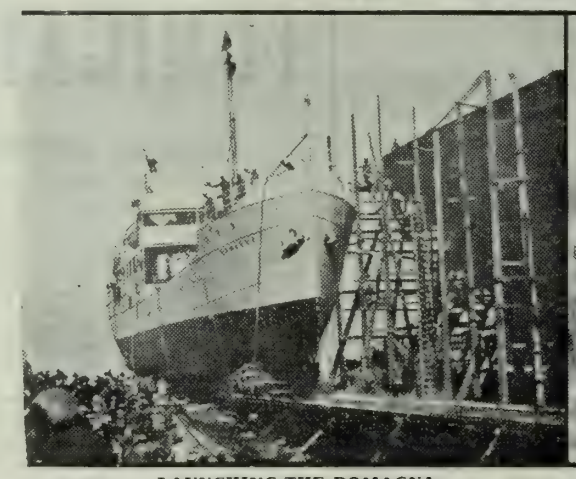
Luther Burbank chose this section over 20 years ago as the site of his experimental grounds, and it is here that he has developed most of the creations that have made him famous.

Last year the Gold Ridge shipped 2000 carloads of apples, and produced, besides, the folowing: Cherries, 800 tons; pears, 400 tons; grapes, 12,000 tons; blackberries, 980 tons; Mammoth Blackberries, 225 tons; loganberries, 370 tons; strawberries, 80 tons; raspberries, 20 tons; peaches, 965 tons; dried prunes, 650 tons; green apples, 215,000 boxes; dried apples, 1400 tons; hops, 2217 bales; eggs, 38,865 cases, or 1,399,140 dozen, valued at $326,605; value of poultry shipped, $67,000.

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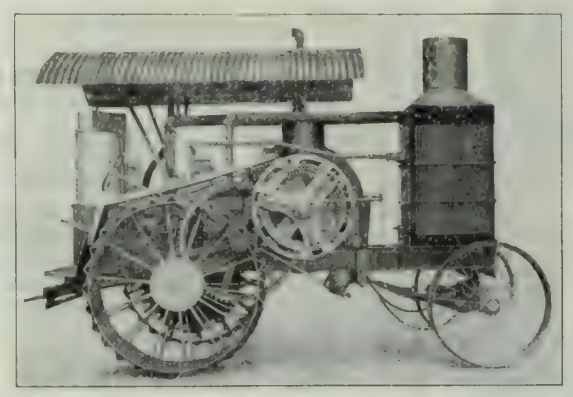


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READ WHAT THE BUHACH PRODUCING AND MANUFACTURING CO. THINK OF THIS REMEDY.

Stockton, Cal., Aug. 4, 1911.

Pear-Blight Remedy Co., Vacaville, Cal.

Dear Sirs: In accordance with our recent letter to you, will say that we have taken up the matter of the Pear-Blight Remedy with our superintendent, and we have this to report.

The first year's application of your remedy checks to a certain extent the blight. The second year's application still further checks the blight, and we are now convinced that the third application is a complete cure for the blight.

Actions speak louder than words, and we are so thoroughly convinced that the third application is a complete success for pear blight that we have planted some sixty odd acres of pears in the past year, and we are no longer afraid that the pear blight will ruin our orchards.

Our experience has been that the application must be made three years in succession to entirely eradicate the blight.

You may use this entire letter or any portion that you see fit for a guidance of purchasers of your valuable remedy.

Any additional information that we can give you, we are yours to command. Yours very truly,

BUHACH P. & M. CO.
Peters.

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Time means **Money** to the **Hog Raiser**

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enables stall-fed animals, whether horses, cows, bulls, pigs, sheep or poultry to ASSIMILATE ALL their hay, grain and other food by properly digesting it; thus their feed not alone fills them up but

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LIVE STOCK NOTES.

Two cows in the Barstow district of Fresno county died last week from rabies, resulting from the bite of a mad dog several weeks ago.

Recent experiments in feeding alfalfa hay to hogs in connection with kafir cornmeal showed that the animals which weighed 125 pounds each at the beginning gained 1.44 pounds a week for nine weeks and were in fine condition at the end.

W. Clark, of Petrolia, Humboldt county, is building up a herd of high-class Short-horns. Quite recently while in Oregon he bought of W. O. Miner one bull for which he paid $500, and six heifers at $125 each. The bull's grandfather was Choice Goods, who took the prize for being the most perfect Short-horn in this country. Mr. Clark also bought 28 head of heifers from Senator Rush of Suisun.

A wool-scouring plant is to be started in Red Bluff and will probably be ready in time to handle the fall clip that comes in to that city.

The Nevada State University is shipping two carloads of live stock to exhibit at the State Fair. The exhibit will be in charge of Professor True of the University. Professor True states that there is a big demand for high-class dairy stock in all parts of the State, and that it is difficult to secure good stock at the State University for this reason.

DAIRY NOTES.

The State Creamery Operators' Association will hold a week's session in San Luis Obispo during the latter part of November, or the first part of December.

The new plant of the Danish Creamery Co. in Fresno has been completed at a cost of $30,000 and is turning out between 4000 and 5000 pounds of butter daily.

Richard Sweasey, of the Sweasey Dairy of Ryans slough, Humboldt county, has purchased a number of milk goats which he will use to build up a herd to furnish milk for infants.

The Reedley, Fresno county, creamery is shipping 700 pounds of butter per day, but expects to increase this amount to 1200 pounds by September 1.

A new dairy barn to accommodate 90 head of cattle is being built on the Mills brothers' ranch at Corcoran, Kings county. On the N. Hansen ranch nearly two barns with a combined capacity of 120 cows are being completed.

HILLCREST STOCK FARM

T. S. GLIDE, Proprietor,

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Hints About Hogs.

Mr. George R. Samson of the Oregon Agricultural College has been giving good advice about hogs in our northern exchanges and we take a few hints therefrom which seem to us especially valuable to beginners:

The points upon which the practical pork producer should base his selection, are vigor, fecundity, type and efficiency in transforming feed into pork and lard. Since the best type of pig is the one which is most responsive to feed and most efficient to laying on flesh or fat, it is apparent that the pig breeders' problem is most simple of all large animal breeders' problems.

The marks of thrift and vigor are too well known to require much explanation. In any good size litter there will appear some individuals more alert, larger, and fuller chested from the very start. Their greater aggressiveness, which leads them to avail themselves of their food supply and perhaps a part of their mates, gives them initial advantage which they usually keep through their sucking days. In fact it is seldom lost when they go to the feed lot where they all get get all they want.

It is not the little fat, chubby females which should be retained as breeding animals, for they almost prove disappointing at farrowing time. They neither produce large litters nor save the little ones from being crushed in the pig bed. They are not good milkers, either, and thus do not give the litter a good send off during the sucking days.

One should rather select the long, growthy females, taking care, however, that they do not stand too high from the ground and are not contracted at the heart girth or the rear flank. One should make sure, too, that there is no tendency for the back to sag or the feet to go down on the dew-claws. It is better to select one with some arch to the back, making sure that the arch is in the back and not in the rump. An arched rump with a low set tail means a shorter ham, and that curtails the carcass in its best part. The back should be wide, and the sides should come down perpendicularly to a low, straight underline.

Width between the eyes, and smoothness and freedom from coarseness about the head are of importance; but one should look to the body first, for that is the valuable part of the pig. One should see that the sow has at least twelve good teats, with room enough between the front and hind legs to accommodate twelve pigs.

One should select a boar of the desired breed and then adhere to that one breed. The breed is of less importance than individuality in the boar. Whatever the breed, the boar should be a good individual and of the desired market type, better than the sows. He should be one of a large litter.

Having found sows that are good mothers and have large litters of good thrifty pigs which mature quickly and fatten well, one should keep those sows and select pigs from their litters to replace the less profitable sows in the herd.

The average breeder would do well to buy his boars rather than use those of his own production unless his herd be pure bred. In such case he would do well to avoid in-breeding until he has found by experience the characteristics his pigs possess and transmit.

Males intended for market should be castrated at three weeks of age, that they may recover and regain normal growth before being weaned. If they are allowed to run whole until they are of 35 or 40 pounds weight they are likely to have a coarser, more staggy appearance, which detracts from their market value. Nothing is made by spaying gilts, as the fatalities which are likely to follow will more than offset any increased economy of gains.

Swine breeders should have a rotation of crops which the pigs can graze through their entire period, to keep them growing and fattening from the very start, so that they will be ready to turn off at six or seven months, when they should weigh about 200 pounds each. Shortening the period during which pigs are attaining a certain weight, other factors being equal, materially decreases the cost of the animals.

They should be provided with a clean, dry bed into which the sun should shine as much as possible. Having the openings and windows on the south side of the sheds will accomplish this. Expensive houses should be avoided, however. When two litters are to be produced each year by a sow she must have a better house than when only one litter is required of her.

The relative economy of one or two litters a year has not yet been worked out for this locality (the Wallamette valley), and as considerable difficulty attends winter litters because of lack of sunshine, one should go slowly in preparing for two litters. It should be profitable if done on a large enough scale so that the pigs are sure of proper attention. Plenty of sunlight and shelter from wet are to be sought in a house for winter litters rather than great warmth.

Whatever plan is adopted, the breeder should be sure to see that his swine have clean, dry quarters and plenty of good food and water. Ground barley and about one-tenth tankage or one-fourth wheat middlings or skim-milk, if it is available, with the run of a good forage crop, should produce pork of excellent quality, with considerable profit to the owner.



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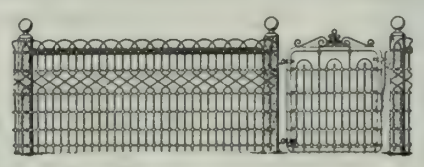
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Puncturing for Bloat.

One of our readers kindly gave account of his success in preventing serious bloat by simple means, which are very good up to a certain point. There are, however, cases in which the life of the animal may depend upon more heroic treatment. Such treatment is very clearly described in the Oregon Agriculturist as follows:

The most effective treatment for all bad cases is to let the gas out by sticking a hole in the paunch with a knife or a trocar. The trocar consists of a small round rod about five or six inches in length and sharp at one end and with a handle at the other. A thin tube fits tightly around the body of the rod. This instrument is driven into the paunch, tube and all and then the rod part is withdrawn, leaving the tube in the hole. The gas passes out through this hole and relief comes in a very few minutes, almost instantaneous in fact. Stick the animal on the left side about five inches in front of the hip bone. A better way is to remember to stick at the point of highest distension, which will always be on the left side and just in front of the hip bone. In normal condition there is usually a three-cornered hollow just in front of the hip bone, but in bloat, this region becomes so enlarged that on standing behind the animal this region is seen to be higher than the hip bone. When the swelling reaches this stage there is danger, and great danger.

Every farm where clover is pastured should be provided with a trocar. They can be obtained from practically all druggists and supply houses and cost but a small amount. Then keep it where everyone can find it in a moment. Do not be afraid to use it even if you never had any experience or never saw the work done. Stick at the point of highest distention and there is no danger, but relief instead. It takes but a short time for the wound to heal, and it usually causes practically no trouble. The writer has stuck cows three or four times before the first wound had healed, and with no bad results. Where no trocar is at hand use a long bladed knife; a four-inch blade if obtainable. The knife is not so good, however, since the hole passes through a number of different membranes and when the animal moves these membranes tend to shift and the holes close up. A good plan is to put a goose quill in the hole after the knife is withdrawn. This is just as effective as a trocar, but the trouble is that the hole may close up before you can get the quill in place, and in that case there is nothing to do but stick another hole, a cruel and disagreeable job, but it is that or lose the cow.

The best remedy for bloat, as in all other diseases, is prevention, for while there is practically no loss of life if you are on the spot with a trocar, there is a loss of milk, and then the time is sure to come when you are not there in time and the cow dies.

NOTES FROM HUMBOLDT COUNTY.

To the Editor: G. M. Niles of Ferndale, Humboldt county, has just completed a model dairy barn. The floor of the cow stable is concrete, as is the drain trough. Mr. Niles has hydrants at convenient places and with the help of a hose and a heavy water pressure he flushes out the cow stable instead of having to shovel up the droppings in a wheelbarrow.

The manure is run into a cesspool some distance from the barn. It is then pumped into a tank wagon and is put on the soil in liquid form. In this way he gets the full strength of the manure. His stalls have the suspended metal stanchions. The barn has a capacity of 120 cows. Mr. Niles is planning to install two milking machines.

The crop conditions in the Mattole valley are good this season, though about two weeks late. The apple crop is estimated at about 50 per cent. The grain and hay crops are above the average. Owing to the lateness of the spring and the cool summer, the grass on the hill ranges furnished good pasture for the cattle later this season than usual.

D. Zanone, of Petrolia, sold 150 head of two-year-old Hereford steers that averaged $65 apiece. This was supposed to be the finest bunch of beef cattle ever sold in Humboldt county.

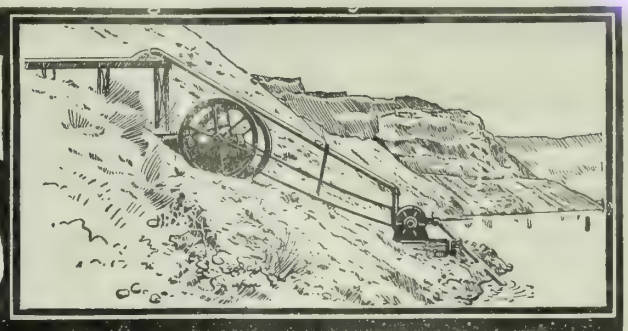
D. L. Schrader.

THE ALFALFA WEEVIL IN UTAH.

The way the weevil is striking the Utah growers seems to be very serious, as this paragraph shows:

The Deseret Farmer has a great deal of sympathy for the farmers in Salt Lake county who during the past two years have suffered such severe losses through the ravages of the alfalfa weevil. It is a fact, however, that many of the fields that have been destroyed by the weevil should have been destroyed by the plow 25 or 30 years ago. The weevil has done much more damage on old fields. Alfalfa should not be allowed to stand on the ground for more than 6 or 7 years at the outside. Farmers who have lost their alfalfa through the ravages of the weevil should not become discouraged and feel that they cannot win success with live stock, because alfalfa is by no means the only good forage crop that can be grown in this section. We have never seen a district where mixed grasses thrive so well.

It is certainly timely of Mr. Jeffrey, State Horticultural Commissioner of California, to put all alfalfa hay, seed, etc., from Utah under quarantine to escape the introduction of the pest into this State.



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SOIL that will yield crops with a meager supply of water can often be made to yield two or three times as much with plenty of water. Government experiments have proved this beyond a doubt. Just think what this means—more crops—better crops—the choice of crops—all within your reach with the help of an

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It will guarantee you a sure water supply—in fact a water supply that is even better than rain as you can have as much water as you need at just the right time. You won't have to wait for rain and watch your crops dry up in the field. An I H C engine is dependable and the cost is so small in comparison to what you can make that the extra profits the first year will often pay for it. In addition to your irrigating this same engine can be used for general purposes.

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Water Tanks, Wine Tanks, made from carefully selected stock by careful and experienced workmen. "Tanks that are well made last a long time." It will pay you to get my prices before buying.

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Especially is the dry season in this section very hard on hoofs. If you have a horse with a bad foot caused by tender, brittle, hard or contracted hoofs, split hoofs, quarter cracks, mud fever, scratches, corns, cracked heels or grease heels, send 16 cents postage and we will send you a 50c package of ESHELMAN'S WOOL FAT HOOF HEALER, and if satisfactory, send us the 50 cents. If not, write us to that effect, and you need pay nothing. We take all the risk, you just try it. Send for it today, or send for folder with many testimonials of big horsemen, vets and others.

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Where Poultry Reigns Supreme.

The Thirty-Seventh Annual Meeting of the American Poultry Association at Denver, Colo.

Written for the PACIFIC RURAL PRESS by Mr. HENRY W. KRUCKEBERG.

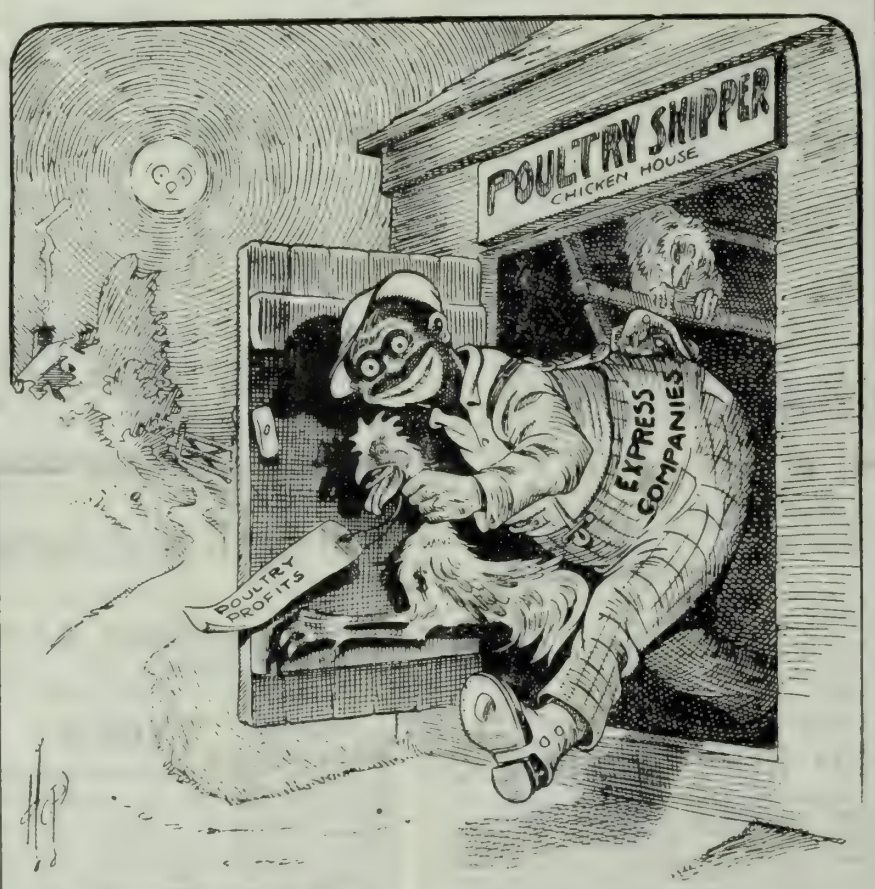
Many who are not directly interested in pure-bred poultry do not realize the strength and educational value of the American Poultry Association, hence a few facts and figures will clarify public opinion and at the same time prove of more than passing interest. The thirty-seventh annual meeting of the organization has only just been held in the city of Denver, which goes to show that it is not a spring chicken. In membership, it now numbers over 3600 poultry breeders and fanciers, representing every State of the Union and the provinces of Canada. It has a reserve fund of $8000, deposited at interest in a number of banks; it has a current expense fund of over $2000, and a second reserve fund realized from sales of its book, "The American Standard of Perfection," amounting to $4425—all of which give it a standing much above many kindred organizations of a similar character having to do with an enlightened agricultural practice. But it is even more than this: it is now the largest live stock association in the number of its members and in the economic values of the industry it aims to foster, develop, and protect in this country. Allowing for these facts, it is not to be wondered at that the Denver meeting numbered 170 delegates, coming from nearly every State and the Dominion of Canada. There are those who think that it is composed chiefly of poultry fanciers who "go in" for beauty of plumage and fine head and leg points in the breeding of fowl; but when it is recognized that one of its chief officers did a business of $65,000 in one year in breeding stock and poultry products, and that any number of its members turn the trick at from $5000 to $20,000, it must be conceded that it was something more than a gathering of people who "go in" for feathers rather than economic values. Its membership represents the best thought and practice in intensive poultry culture—that element of progress that has increased the average yield of hen fruit per bird from 66 and a fraction in 1900 to 80 in 1910. Its axiom is that a Standard bird is also the ulitity bird; that if it were otherwise, California would be a country of mongrels instead of a region where more pure-bred poultry may be found than in any other State. In economic importance, poultry as a food—eggs and meat—is not only the largest in commercial importance, but also the most universal. The egg is palatable alike in the Orient and the Occident. It is the food of the poor man's lunch and the breakfast at the rich man's table. Such an industry needs organization, to the end that its prosperity shall be assured and its economic importance maintained and developed. So much by way of introduction; let us now view some of the salient features of the Denver convention.

THE STANDARDIZATION OF HEN FRUIT AND MEAT.—It was indeed gratifying to see the organization pledged to at once create and have published an Egg and Meat Standard by which poultry products are to be bought and sold in the future, said Standard to be national in its operation. As it is, standards for eggs and carcass are more or less local in character and vary much as between different sections of the country. In this laudable ambition the Association has the hearty support of many of the big egg concerns of the East, and also a number of the produce exchanges. It is proposed to make a standard for the grading of hen fruit and meat on the hoof and dressed. But the book will do more than this: it is designed to give instructive suggestions whereby the breeders will be induced to produce more first-class stuff, thus in a measure eliminating in the course of time much of the inferior eggs which constantly find their way to market. It is estimated that, the country over, fully 20 per cent of hen fruit grades below first because of careless and ignorant handling on the farm. We believe such a standard will fill a long-felt want, not only among poultry breeders, but also among buyers of all classes.

BREED STANDARDS.—The Association has long been on record as favoring the publication of breed standards. In order to arrive at some intelligent solution of the problem it was decided, some two years ago, that the breed which showed the largest number of entries in all poultry shows during one year, should first have the distinction of a Standard of its own. This honor was won by the Plymouth Rocks. The Denver meeting voted its early publication. The book will not only contain illustrations of all the varieties of the breed, together with the descriptive text as now published in the regular Standard, but it wil give timely suggestions on mating, breeding, hatching, brooding, and final rearing to maturity. The purpose of breed standards will be to maintain type and color of plumage, and at the same time strengthen the economic values of the breed. Its preparation will be in the hands of a committee composed of expert Plymouth Rock breeders in all varieties, men who have attained substantial recognition in handling the different sorts composing the breed. If the book meets with success, all of the popular breeds will be handled in the same manner.

STANDARDIZING THE STANDARD.—No one thing precipitated a more caustic discussion than the imperfections in quite a number of the illustrations of the present edition, and also the glaring clerical errors that abound here and there in the text. The convention refused to discharge the publication committee having the matter in charge, and at the same time voted that it take the matter up carefully, eliminate the objectionable illustrations by substituting correct drawings, and to revise the text. This committee was instructed to at once issue a new and corrected edition of 25,000 copies. Purchasers of the faulty book can return the same to the secretary together with a remittance of 60 cents, and secure a copy of the corrected edition. The regular price is $1.50.

THE HEN IN THE EXPRESS BUSINESS.—The great bulk of poultry meat and hen fruit, as well as breeding stock, finds its way to the buyer by express. Thus the poultry business has a keen desire for equitable express charges; it also has a strong penchant for the parcels post. Either or both would stimulate and strengthen the industry. Under present express tariffs, the charges are excessive. Being keenly alive to these conditions, the executive committee of the Association was instructed to go before the Inter state Commerce Commission and ask for reduced rates and better service. The several State Associations were also instructed to go before the State railroad commissions with a similar plea. That something substantial will come out of it, is devoutly to be hoped. There is no one single business that will receive a greater impetus by the inauguration of cheaper transportation than the poultry industry. It will enable the grower to sell more direct to the consumer, thus gaining some of the middlemen's profit. This is one of the reforms that we can all endorse. If breeders will lend the helping hand the reduction will come all the sooner. It goes without saying that the ultimate buyer "foots the bill"; hence, if he, too, will realize why the price is high, he may also be enlisted to give the movement support.



By courtesy of Rocky Mt. News.

As the American Poultry Association Sees the Express Companies.

A SLOGAN FOR 1915.—The California delegation at Denver impressed it upon all the delegates that the American Poultry Association in 1915 should hold its annual convention in San Francisco, and gave this as the slogan or battle cry of the organization: "Panama-Pacific International Exposition and the American Poultry Association in San Francisco, 1915." A warm letter of invitation was extended by Mr. Chas. C. Moore, president of the Panama-Pacific International Exhibition Company, to hold its annual meet for that year in California. The matter met with hearty support from all the delegates present. At the present writing, there is no doubt but the A. P. A. will meet with us at that time. In addition, invitations along simliar lines were presented to the convention from the California branch of the national or parent body, from the Federated Poultry Clubs, and kindred organizations. In view of these facts, the fanciers and breeders of California will do well to bear it in mind that the poultry breeders of the Nation and also of Canada will be with us in 1915.

QUARTERLY POULTRY BULLETINS.—Commencing with the fiscal year in July, or as soon thereafter as practicable, the Association will commence the publication of quarterly bulletins treating in a concise manner of current Association events, the more interesting phases of the poultry fancy from all parts of the world, together with much of a practical nature to commercial breeders. It is thought that in this way the membership will be kept in close touch with the administration of the organization, and also put in communication with all the latest developments in the industry.

NEW OFFICERS AND NEXT MEETING PLACE.—At this writing Nashville, Tennessee, is in the lead for the next convention, but may not muster up sufficient votes, with such towns as Atlanta, Atlantic City, Old Point Comfort, and others looming up strong over the horizon. The newly-elected officers are: Reese V. Hicks, president, Topeka, Kansas; Samuel J. Hopper, vice-president, Dallas, Texas; L. B. Audigier, second vice-president, Knoxville, Tennessee; S. T. Campbell, secretary, Mansfield, Ohio; David R. Nichols, treasurer, New Brighton, Connecticut; executive board, Charles M. Bryant, H. H. Collier, Earl Hemenway.

THANK YOU, AND WELL DONE!—Just a word to the Colorado Branch of the American Poultry Association: Gentlemen, you are not only royal entertainers, but bricks of the purest ray serene. Come to California in 1915, and we will try and roll you one.

WOULD such a poultry writer as C. W. Zimmer say:

"Being somewhat of an inventor I appreciate the good points as well as the simplicity of your invention," and then order two machines shipped to his father?

WOULD the well-known poultry writer, J. C. Clipp use the expression: "I am in love with your machine"?

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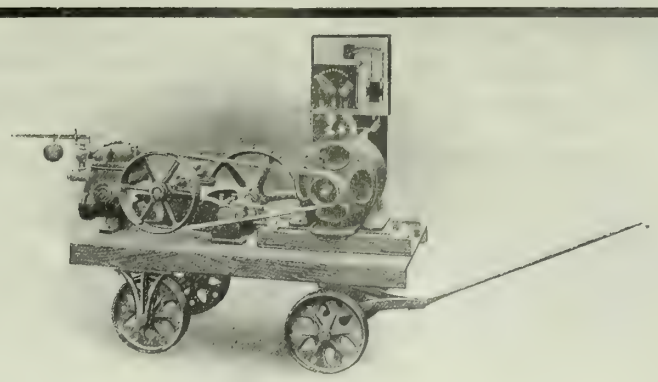
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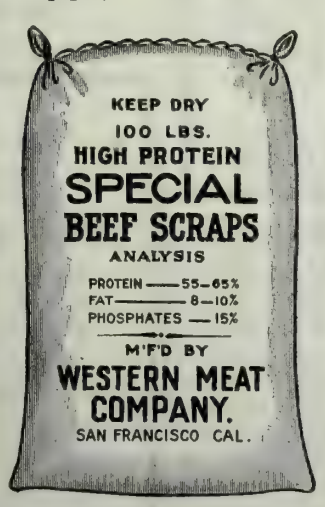
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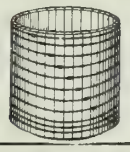
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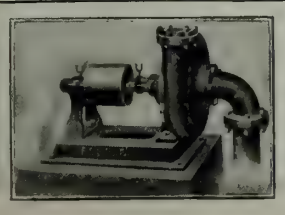


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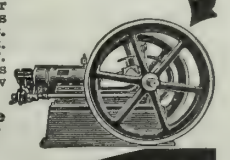
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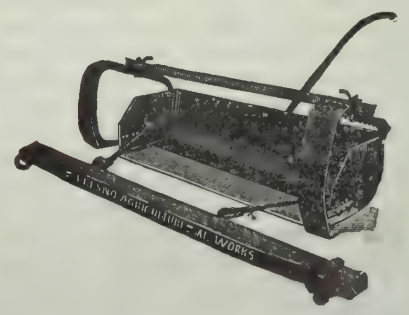
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FRESNO AGRICULTURAL WORKS

FRESNO, CALIFORNIA.

The Home Circle.

A Mile With Me.

O, who will walk a mile with me
Along life's merry way?
A comrade blithe and full of glee,
Who dares to laugh out loud and free,
And let his frolic fancy play,
Like a happy child through the flowers gay
That fill the field and fringe the way
Where he walks a mile with me.

And who will walk a mile with me
Along life's weary way?
A friend whose heart has eyes to see
The stars shine out o'er the darkening lea
And the quiet rest at the end of the day,—
A friend who knows and dares to say
The brave, sweet words that cheer the way
Where he walks a mile with me.

With such a comrade, such a friend
I fain would walk till journey's end,
Through summer sunhine, winter rain,
And then?—Farewell, we shall meet again!
—Henry van Dyke.

The Home Grounds.

In a recent discussion of how to plan and plant the home grounds, B. O. Longyear, Colorado Agricultural College, said:

The location of walks and drives should be made a matter of convenience. Neither the walks nor the drives are ornamental, hence they should not be more numerous than the uses of the daily life call for. Curved walks and drives are often more pleasing than straight ones, especially where the grounds are large. The curves, however, should be easy and natural; not short and kinky.

The home grounds may be compared with a picture in which the lawn forms the canvas, with the house the principal center of interest. Viewed in this way, the house should not be hidden behind a yardful of trees, but should, at least, have the front facing an open stretch of lawn. Trees, if planted near the house, are preferably placed at the sides and rear, so as to form a setting and a background for it.

The most appropriate places for large trees are along the boundaries of the grounds. The most pleasing way to place them is not in straight lines, but in groups, with lower-growing kinds in front and toward the center of the grounds. It is usually desirable partly to separate the back of the yard from the front. This is most pleasingly accomplished by placing one or two masses of low-growing trees and shrubs at the sides of the house and extending them to meet the masses planted at the sides of the yard. One or more openings should be left between the dividing masses of trees and shrubs for free passages and for the glimpses of the farther parts of the grounds.

A strong massing of trees and tall shrubs may be used in the proper position to shield the house from the prevailing winds. By using a variety of trees with tall shrubs next, and smaller shrubs in front, a most effective windbreak may be formed, and by planting the latter in irregular groups a much more pleasing effect is possible than where all are placed in formal rows.

Wherever fine views of the distance are in danger of being shut off, openings should be left or made to retain them, especially such views as may be seen from porches and living-room windows. Evergreen trees are most desirable on the north and west, because of their effective port oak qualities in winter. They are the Ea not suitable trees for the south side of a house or in front of windows.

The smaller shrubs and flowering annuals are best placed in the corners by the porches, along the base of the house wall and in front of the larger plants at the sides of the lawn. Groups of such plants on either side of the entrance gates are usually very pleasing. Avoid planting single shrubs or bushes or other plants promiscuously about the lawn. The pleasing, distinctive character of a place can be secured only by leaving large, open places where nothing but green grass is allowed to grow.

Flower beds cut out of the lawn are best avoided. They break up the stretches of green, are difficult to keep in good condition, and leave unsightly bare spots in winter. Such flowering plants as are not suited for planting in the front of the shrubbery borders and about the porches, are best kept in a flower garden at the rear or side of the house.—Farm Journal.

The Guest.

It is a sacred thing to be admitted into the innermost life of a family, and the guest who is thus honored should so regard the trust. It goes without saying that she should never repeat to others anything that would sound like an unfavorable criticism of the family by whom she was entertained, nor should she criticize a fellow-guest to another visitor. There are many little courtesies which, if observed, will make her a more welcome guest.

She should not fail to answer promptly an invitation to visit a friend. Nor should she break her engagement once made, unless compelled by actual necessity. Neither should she stay beyond the time set for her departure.

Enter heartily into all plans for amusement.

Do not be late at meals.

Leave the bedroom in order; also, do not disarrange other parts of the house.

Don't take books and magazines to your bedroom without permission.

Don't let the hostess pay any expenses except those of entertainment.

True Doctoring.

When Kien Long, the Emperor of China, learned from Sir G. Staunton our method of feeing the physician for attendance during illness, he inquired: "Is any man well in England that can afford to be ill? I have four physicians to whom the care of my health is committed, and a certain salary is allowed them, but the moment I am ill the salary stops until I am well again. I need not inform you that my illnesses are usually very short." Paying when sick is a stupid substitute for the better way. If we paid our doctors only when well, they would take care to look after our habits of self-poisoning with alcohol and other rubbish.

Mouth Breathing.

If a child sleeps with his mouth open, this fault can be corrected by gently tipping his head downward. It will soon learn, unless there are nasal obstructions, and then these should be attended to at once by a good physician. Do not believe the doctor who says that there will be time in the future to correct bad habits. He may not be thinking of the fees he will collect from the ills caused by false breathing, but he certainly does not know what he is talking about.

"If a task is once begun,
Never leave it till it's done;
Be the labor great or small,
Do it well or not at all."

Household Hints.

The ordinary cotton dish-mops are useful in cleaning a stove or in dusting baseboards. They are easily cleaned; can even be boiled in strong soda water when necessary.

Left-over cuffs from worn-out shirts make good inner-soles if cut to fit the shoe.

Try greasing the bottom and sides of dishes you are going to cook rice, oatmeal, or hominy in. It saves much time in dish washing, as such things seldom scorch under this treatment. Use butter or lard sparingly.

A convenient chair for the kitchen has drop leaves on the arms and is fitted with castors. It is also quite low, allowing the feet to rest squarely on the floor.

Oftentimes drop shelves can be added in various places in a kitchen that will add much to the convenience.

Red Is Favored as a Flag Color.

Red seems to be the favorite color for flags all over the world, and after red, blue is the predominating color, says the Los Angeles Times. There is only one flag in the eastern hemisphere that does not contain red, and that is the flag of Greece.

The flags which are entirely red, except the devices in some, are those of Egypt, Morocco, Austria-Hungary, and Japan. Turkey's flag is nearly all red, and 42 other countries have most conspicuously displayed the color which represents valor. Blue is supposed to represent justice, and white purity.

The Black Hand.

"Our whole neighborhood has been stirred up," said the regular reader.

The editor of the country weekly seized his pen. "Tell me about it," he said. "What we want is news. What stirred it up?"

"Plowing," said the farmer.

"She showed her elegant trousseau,
And lovely wedding ring;
Embroidery and fancy work—
She'd fashioned everything.
But dear old grandma sadly sighed,
And this is what she said:
'I wouldn't marry, dear, till I
Could bake a batch of bread.'"

BEAVER BOARD
takes the place of lath, plaster and wall-paper in every type of building
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OUR YOUNG FOLKS' DEPARTMENT.

Conducted By M. Russell James

A Well Ordered Day.

How shall the day be ordered? To the sage
The young man spoke, and this was his reply:
A morning prayer.
A moment with thy God, who sends the dawn
Up from the east, to thank Him for the care
That kept thee through the night, to give thy soul,
With faith serene, to His complete control,
To ask His guidance still along the way.
So starts the day.

A busy day.
Do with a will the task that lies before:
So much there is for every man to do.
And soon the night when man can work no more;
And none but he to life's behest is true
Who works with zeal and pauses only when
He stretches forth his hand to help the men
Who fail or fall beside him on the way.
So runs the day.

A merry evening.
When toil is done, then banished be the care
That frets the soul. With loved ones by the hearth
The evening hour belongs to joy and mirth,
To lighter things that make life fresh and fair,
For honest work has earned its hour of play.
So ends the day.

—The Independent.

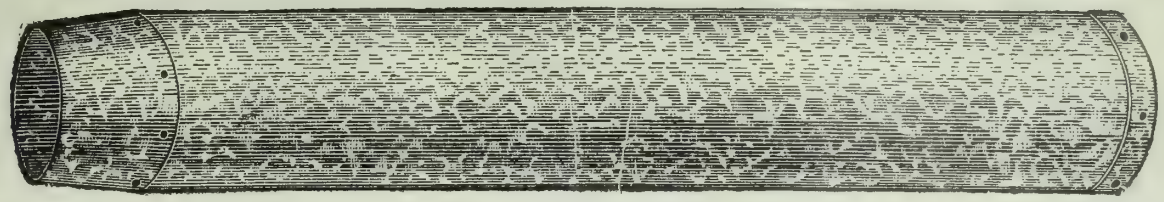
Poultry Course for Young Folks.

DESCRIPTION OF BREEDS.

The White Orpington.—Having established a breed of Orpingtons in the Blacks, Mr. Cook turned his attention to the production of a white fowl of the same type. He mated White Leghorn cocks with Black Hamburg pullets, and the pullets from this cross that came pure white were mated to White Dorking cocks. It required years of scientific breeding to eliminate the extra toe of the Dorking, the yellow skin and legs of the Leghorn, and the blue barrings from the Black Hamburg cross, and to establish a pure white breed of Orpington shape and characteristics. This variety did not prove as popular as the next variety produced (the Buffs) until a few years ago, when it was taken up by wealthy breeders and advertised to the limit, since when unheard-of valuations for fowls have been put upon birds of this breed and variety, and probably more sales have been made at higher prices than of any other breed known.

The Buff Orpington.—The Buffs were produced a few years later by mating Golden Spangled Hamburg cocks with Colored Dorking hens. From this cross came pullets of a reddish brown color; these were mated with Buff Cochin cocks. To establish a breed of the Orpington type with plumage of pure golden buff throughout from such a combination was indeed a task for even this skilled and scientific fancier, and its accomplishment may be considered the climax of his achievements. In 1894 this breed was first exhibited by Mr. Cook. Its popularity was immediate and assured in England, and has spread to this country, where the Buff Orpington has aroused the greatest enthusiasm and rivalry among fanciers, and occupies the front line in most of our poultry shows.

SAVE YOUR TIME WATER AND GRADING BY IRRIGATING WITH AMERICAN SURFACE IRRIGATION PIPE



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American Steel Pipe & Tank Co., General Offices 342-43 Pacific Electric Bldg., Los Angeles, Cal.

On the Old Mississippi.

(Continued from last week.)

Jim turned his eyes from the turbid waters which made him sick and looked upward to the sunny blue skies. There right over his head was the great cottonwood tree. How strong and unmoved it towered amid the chaos about it! Suddenly an idea came to him. "I have it, mother!" he shouted joyfully. "We'll get up into the cottonwood and be as safe as birds in their nest."

A shadow of a smile crossed his mother's face. "You might as well propose that we hang ourselves on a star. How could the babies and I get up there?"

"I will show you," said the boy, as he dived down into the attic. Then his anxious mother heard him frantically at work uncording the bed (those were the days when a rope was used instead of the wire springs of the present time) and in a few minutes he was up again with a stout new rope.

"You see that big limb extending over the corner of the roof," he explained. "It isn't more than fifteen feet above it. It's me to tie the rope around my waist and swim to the tree; then to climb up it and out on the limb above us. I'll anchor my end of the rope fast and tight to the limb, and with strips of the bedding you can loop the other end of the rope under Katie's arms and around her body, and hold her up and steady her while I draw her up as easy as nothing; then I'll tie her fast in a crotch near the big trunk, while we get 'Ria up the same way."

"Yes, Jamie; but you can hardly pull me up."

"What's the matter with a rope ladder? I wouldn't be good for much if I couldn't make one after all dad's teaching." With that he slipped down into the muddy water, having in the meantime fastened the rope about him, and struck out for the tree.

As Mrs. Russell breathlessly watched him and noted the strength and catlike agility with which the boy climbed the tree and went from limb to limb, she was thankful that she had not given away to her nervous fears, but had allowed him to learn to "do things" even if there were some risk in the doing. Being perfectly at home in the tree, the boy was able to inspire the others with some of his own confidence.

"We are going to live with the birds, Katie," he encouraged, as he drew her up slowly out of her mother's arms. "Up she comes, one, two, three, another bird in the tree!" An the girls began to think it a great lark and their tears were changed to laughter. When they were securely fastened to the tree by strips of the bedding, the brother set to work on the rope ladder, which he quickly and deftly made and fastened to the limb. Then it was the mother's turn to ascend the swinging rope. It was something of an acrobatic feat for a woman, but this one was active and had a steady head, and there was really no danger unless, as her son cautioned, "You let go your holt."

When all were safely up in the tree and resting close to its great trunk, the mother and son looked down upon their home and belongings and watched the mastery of the waters with a sort of fascination.

"There, look, there goes our house!" exclaimed the boy excitedly. The underpinning had given away and the building toppled, then rose on the water and began floating slowly down in the current.

"Thank God that we are not in it," breathed the mother devoutly.

Time passed slowly. The little girls had eaten the small amount of food saved for them and were hungry for more. All were cramped and restless except Jim, who went from limb to limb like a squirrel and kept watch of the upper shore in hopes of speedy succor.

Suddenly he espied a large rowboat manned by several persons cautiously making its way along the edge of the waters and among the swirling driftwood. Climbing out on the end of a limb, Jim waved his handkerchief and shouted loudly for help.

Instantly the prow of the boat was turned toward him, and great was the joy the the family to recognize the father among the rescue party.

They were soon taken from the tree and landed on the high ground above the water's edge; then the boat continued on its work of rescue.

Strong man though he was, the tears were in Mr. Russel's eyes as he gathered his little family to his arms. "This is something to be thankful for!" he cried. "And proud of, too," he added, slapping Jim on the shoulder. "A boy who can act in an emergency!"

(The End.)

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Round Trip	145.50
One way rail, one way steamer between New Orleans and New York	70.00
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Rates include meals and berth while on steamer.

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WITTE IRON WORKS CO.
1607 Oakland Ave., Kansas City, Mo.

THE MARKETS.

San Francisco, August 23, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Local trading is almost entirely of a jobbing nature, but more activity is noted this week than for some time past. Prices show no further change, but there is a fairly firm tone to the market. So far there has been no heavy movement of Northern wheat, but more activity is expected within a few weeks.

California Club	$1.45	@1.50
Sonora	Nominal	
White Australian	1.55	@1.65
Northern Club	1.50	@1.55
Northern Bluestem	1.65	@1.70
Northern Red	1.60	@1.65

BARLEY.

Prices stand very firm at the advance of last week. Trading in the country is hardly as active as it has been, as a large part of the crop has already been sold by the growers. The local demand, however, continues fairly active, and there is a steady shipping movement, both to the East and to foreign ports.

Brewing and Shipping	$1.62½	@1.67½
Choice Feed, per ctl	1.55	@1.60
Common Feed	1.35	@1.45

OATS.

Prices continue to advance, as comparatively little stock is coming in, and the demand continues fairly active, with an increasing inquiry for seed. Red oats are especially strong.

Red Feed	$1.65	@1.75
Gray		1.65
White	Nominal	
Black	1.65	@1.70
Red Seed	1.75	@2.00

CORN.

There is no particular feature to the market at present. Arrivals are limited, and there is little trading locally, though some California corn is moving in the country. Prices are inclined to easiness, but show no quotable change.

Cal. Small Yellow	$1.75	@1.80
Eastern Yellow		1.70
Eastern White		1.70

RYE.

Rye stands nominally at former quotations, trading being of too small a nature to establish very definite values.

Rye, per ctl	$1.55	@1.65

BEANS.

All descriptions of beans are quiet at present, as buyers are inclined to await the arrival of the new crop, which will be coming in within the next three or four weeks. Prices are lower on several descriptions, though the market is described as fairly firm as now quoted. Large whites, however, are a little higher, and better prices are obtained for horse beans. Under present conditions the market is naturally unsettled, and will be subject to frequent fluctuations in values for a month or more. Limas are steady as last quoted. According to reports from the lima bean districts, the crop has been slightly retarded by cool weather, but the harvest is beginning in some places. Blackeyes are also being harvested, but neither variety will be ready for market for several weeks. Arrangements are being made to hasten the delivery of new-crop limas to the Eastern markets, where a strong demand is expected at the opening of the season.

Bayos, per ctl	$3.75	@4.10
Blackeyes	6.00	@6.25
Cranberry Beans	3.60	@3.80
Garvanzos	2.85	@3.25
Horse Beans	2.00	@2.50
Small Whites	3.60	@3.75
Large Whites	3.40	@3.60
Limas	5.75	@6.00
Pea		4.25
Pink	4.75	@4.90
Red Kidneys	6.00	@6.25

SEEDS.

Demand is still lacking for all descriptions of seeds, and while there is some business in a small way, there is no life to the market. Values are more or less nominal, being quoted as before.

Alfalfa	Nominal
Broomcorn Seed, per ton	$25.00
Brown Mustard, per lb	5½c
Canary	3¾@ 4¼c
Hemp	3½@ 4 c
Millet	3 @ 3½c
Timothy	Nominal
Yellow Mustard	5¾c
Dried Peas, per ctl	3.75@ 4.00

FLOUR.

All prices are steady as last quoted, with a good movement both locally and for shipment.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.60	@4.80

Hay and Feedstuffs.

HAY.

The activity of the local market continues, arrivals for the last week having been about as heavy as at any time this season. Notwithstanding the heavy arrivals, the market is well sustained, and dealers are now predicting an advance. It is noted that the heavy arrivals at this time of year usually tend to depress the market, but this season everything is easily disposed of, and dealers are making efforts to secure additional stock in the country. The leading producing districts tributary to this market are now pretty well cleaned up, and hay is being bought at comparatively distant points. Alfalfa is moving fairly well, but the demand is hardly as strong as usual at this season, and with increasing offerings the market is inclined to easiness.

Choice Wheat	$15.00@16.50
Good Wheat Hay	12.00@14.50
Other Grade Wheat	8.00@12.00
Wheat and Oats	8.00@15.00
Tame Oats	8.00@14.50
Wild Oats	7.00@11.00
Alfalfa	8.00@12.00
Stock Hay	5.00@ 7.00
Straw, per bale	35@ 60c

FEEDSTUFFS.

The expected reduction has been made in the price of cocoanut meal, but most other feedstuffs are strong. Rolled barley and rolled oats have been advanced again, in sympathy with the firmness of the raw grains.

Alfalfa Meal, per ton	$16.00@18.00
Bran, per ton	28.00@29.00
Cocoanut Cake or Meal	25.50@26.50
Cracked Corn	38.00@39.00
Middlings	34.00@36.00
Mixed Feeds	28.00@30.00
Rolled Barley	32.00@33.00
Rolled Oats	32.00@33.00
Shorts	31.00@32.00

Garden Truck.

VEGETABLES.

The situation in onions remains about as before, with liberal arrivals and only a moderate demand, causing a slight reduction in prices. Many changes are noted in general garden truck, most lines being lower. All descriptions of green vegetables have been coming in very freely, and considerable quantities are carried over from day to day. The oversupply of tomatoes has been especially heavy, though most offerings are of unattractive quality. Garlic is lower. Cucumbers and string beans have taken quite a drop, while the best offerings of green peas are a little higher. Green lima beans are also firm. Okra is lower, while summer squash stands as before. Green corn is doing a little better. Cabbage is lower, while cauliflower has advanced.

Onions: Yellow, ctl	70@	80c
Garlic, per lb	2@	3c
Green Peas, per sack	$ 2.00@	2.25
Tomatoes, per box	75c@	1.25
Cucumbers, per box	25@	50c
Cabbage	85c@	1.00
Carrots, per sack		75c
Cauliflower, per doz	50@	75c
String Beans, sack	50c@	1.00
Lima Beans, per lb	2½@	3c
Summer Squash, per box	35@	50c
Okra, per box	75c@	1.00
Green Corn, per sack	75c@	1.25
Eggplant, per box	50@	65c
Green Peppers, per box	35@	50c

POTATOES.

Arrivals have been extremely heavy all week, and while there is some demand for shipment, it has been impossible to maintain prices at the former level. Salinas Burbanks are now coming in, and sell at about the same figure as fancy local boxed potatoes. Sweet potatoes are arriving more freely, and ordinary offerings are lower.

River Whites	$ 1.00@	1.25
Sweet Potatoes, per ctl	2.50@	3.50
Salinas Burbanks	1.50@	2.00

Dairy Produce.

POULTRY.

California stock is coming in a little more freely, and the supply of Eastern chickens is about up to the average. The market is accordingly rather quiet, with a slight decline on the less desirable class of stock, though first-class poultry finds a ready demand. There is a good demand for spring turkeys, especially fat stock, 2½ to 4 pounds, of which there is not much to be had at present.

Large Broilers	$ 3.50@	4.00
Small Broilers	2.50@	3.00
Fryers	4.50@	5.50
Hens, extra	8.00@	9.00
Hens, large	5.00@	6.00
Small Hens	4.00@	4.50
Old Roosters	4.00@	5.00
Young Roosters	6.00@	7.00
Young Roosters, full grown	8.00@	9.00
Squabs	2.00@	2.50
Geese, per pair		2.00
Ducks	4.50@	7.00
Turkeys, live, per lb	25@	30c

BUTTER.

The lower grades remain at the same level as before, the movement showing little fluctuation. With a light shipping movement, prices on extras and firsts fell off a little early this week, but extras have recovered their former strength, as offerings of this grade are not heavy.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	26	26	26	26	25½	26
Prime Firsts	25	25	25	25	24½	24½
Firsts	24½	24½	24½	24½	24	24
Seconds	22	22	22	22	22	22
No. 1 Packing Stock	20	20	20	20	20	20
East Ladles Extras	21½	21½	21½	21½	21½	21½

EGGS.

Extras, prime firsts, and selected pullets have been lower this week than last, though other grades stand about the same. The easiness in upper grades has been caused by liberal offerings of Eastern stock, which at comparatively low prices is proving attractive to the general trade. Local stock is also rather more plentiful than last week.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	31½	31½	31½	31	29	29½
Prime Firsts	30	30	30	30	28	28
Firsts	27	27	27	27	27	27
Seconds	19½	19½	19½	19½	19½	19½
Selected Pullets	25	25	25	24½	24	24
Eastern	16	16	16	16	16	16

CHEESE.

Both grades of new local flats are lower, though storage stock and Y. A.'s remain as last quoted. Monterey cheese is also a little stronger, though the market is not yet in altogether satisfactory shape.

Fancy California Flats, per lb	14 c
Storage	14 c
Firsts	12½c
New Young Americas, fancy	16 c
Monterey or Jack Cheese	11½@12½c

Deciduous Fruits.

FRESH FRUITS.

The market in general remains rather easy, with large supplies in most lines, and considerable unattractive stock coming in. Bartlett pears have been especially weak, with large offerings of off-grade stock, which is sold to the dryers at low prices. Even the best offerings are lower, though there is less pressure to sell at present than for several days past. Fancy and choice apples are doing a little better, but there is considerable cheap stock coming in. Apricots are higher, with very few coming in, and supplies of peaches are lighter than for some time past. Some poor stock, however, is selling at very low prices. Attractive lots of plums are firm at an advance, and the best figs are also doing better. Berries in general are quiet, raspberries being lower, while blackberries are higher, and strawberries show little change. Watermelons are quiet, but the former price is maintained. The market has been overloaded with cantaloupes, and especially nutmegs, which are unusually cheap. Grapes are dull and weak, though a few fancy lots of seedless have been sold at good prices.

Watermelons, per doz	$ 1.50@	2.50
Cantaloupes, standard crate	1.00@	1.50
Nutmegs, box	15@	50c
Raspberries, chest	6.00@	7.00
Blackberries, chest	6.00@	7.00
Strawberries, chest	5.00@	6.00
Huckleberries, lb.	10@	12½
Apples—		
Fancy Gravensteins, box	$ 1.65@	2.00
Choice	50c@	1.00
Other varieties	1.25@	1.50
Apricots, lb.	4@	5c
Peaches, lug box	1.00@	1.25
Small box	25@	65c
Plums, crate	50c@	1.25
Nectarines, crate	75c@	1.00
Figs, box, double layer	1.00@	1.25
Pears, Bartlett, box	50c@	1.50
Other varieties	65@	85c
Grapes—		
Seedless, crate	50c@	1.00
Other varieties	75c@	1.00

Dried Fruits.

The general market on tree fruits continues active, though the movement seems to be quieting down a little as compared with the last few weeks. The principal reason assigned for this is the fact that some descriptions of fruit have been pretty well taken out of growers' hands, and those who have not sold are inclined to hold off. Few changes in price are noted. Pears are lower, as a large quantity of this fruit has been blown from the trees, necessitating its sale to the dryers, whereas it would otherwise have been shipped. Peaches seem to be rather unsettled, but prices are unchanged, and the crop is said to be pretty well cleaned out of growers' hands. Figs have been well cleaned up, at comparatively high prices. Prunes continue in demand, and many purchases are still being made in the country, though some growers in Santa Clara county are holding out for 6c. Raisins remain very quiet, as growers are firm in their demand for high prices, while the packers report little inquiry at present from the consuming markets, and have reduced their orders for loose muscatels. Seedless varieties, however, are still quite firm, and there has been considerable demand in the East of late. According to a Fresno report about half the new Muscat crop has already been sold. The New York Journal of Commerce says: "There is a most unsettled feeling in the market for California prunes for October-November shipment from the Coast out of the 1911 crop. Several local agents of Coast packers have received instructions from their principals to raise the f. o. b. four-size bag basis to 5¾ cents, which represents an advance of ¼ cent. Others were still authorized to sell Santa Clara fruit on a 5½ cents f. o. b. Coast bag basis for 50s to 90s. According to some brokers the Eastern trade is showing a fair degree of interest in the offerings, but others say that it is difficult to attract orders. Peaches are quiet and somewhat unsettled, but it is held that the ratio of supply to demand is rather less than in former years in spite of reports of a better yield than was at first expected, and most holders are not influenced by the present indifference of buyers to make concessions from their quoted prices. Here and there it is possible, however, that some shading would be done to secure immediate business. Apricots do not seem to be wanted by either home or export buyers. Prices are somewhat nominal and vary as to seller, but there has been no appreciable change in quotations of late. There is a continued demand for Thompson's Seedless raisins for both immediate and future shipment, but buyers and sellers seem to be apart in their views. Small sales of bleached Thompson's are making to the East Side trade, from which most of the demand comes, up to 11½ cents for fancy and 11 cents for extra choice."

Evap. Apples, 1911, per lb	10	@10¼c
Apricots	15	@16 c
Figs, new crop	5	@ 7½c
Peaches, new crop	10¼	@11 c
Prunes, 4-size basis, new crop contracts		5½c
Pears, new crop	10	@11 c
Raisins—		
Loose Muscatels, in sweatbox	4½	@4¾c
Thompson's Seedless	6	@ 6¼c
Seedless Sultanas	5	@ 5½c

Citrus Fruits.

The Eastern citrus markets are lower than last reported, lemons especially being very much cheaper. On Monday of this week at the New York auction valencia oranges sold for $3.90 down to $1.70 per box, and lemons from $1.05 to $3.60 per box. At Boston the same day valencias averaged from $3.40 down to $1.90, and lemons sold for $4.50 and down to $1.50.

Shipments from California are only running about 20 cars of oranges and 35 cars of lemons daily. Total shipments of oranges for the season to August 20 were 35,301 cars, as against 24,251 cars to same date last year. Lemon shipments were 6030 cars, as against 4278 cars last season.

The movement of oranges in San Francisco is limited, as usual at this season, but with moderate offerings values are steadily maintained. Lemons are moving about as usual. Increased arrivals have

caused a decline in Mexican limes, everything else on the list standing as before.

Tangerines, box	$ 1.25@ 1.50
Valencias, choice to fancy	3.25@ 4.00
Grapefruit	2.25@ 3.25
Limes	5.50@ 6.00
Lemons	$ 2.00@ 6.00

Nuts, Honey, Hops, Etc.

NUTS.

New-crop almonds are finding a fairly active demand, as the market is practically bare. Prices on foreign almonds have been advanced, and from all indications the California crop should be easily cleaned up at about the present figures. Walnuts are nominal, and it will be impossible to say anything about new prices before September 15, when the Association will fix prices. The southern crop outlook is good, and the harvest will start within a few weeks.

Almonds, 1911 crop—	
Nonpareils	18½c
I X L	17¼c
Ne Plus Ultra	16½c
Drakes	14½c
Languedoc	14½c
Hardshells	8 @ 8½c
Walnuts—Softshell, No. 1	15 c
Standard	14½c
Softshell, No. 2	11 c
Budded	17½c

HONEY.

Little change is noted in the local market, values on the best grades of both comb and extracted being about as before. Some amber and dark extracted honey is coming in, but finds little demand. Supplies of amber honey in growers' hands are not large, and this grade is expected to clean up readily before long. The better grades are being rapidly disposed of in producing districts.

Comb, white	15 @16 c
Extracted, water white	8 @ 9 c
Amber	7½@ 8 c
Off grades	5 @ 6 c

BEESWAX.

New beeswax is not yet moving to any great extent, but with some demand the market is strong for choice stock. There is quite a lot of old dark wax on hand, however, which is hard to sell at low prices.

Light	28 @35 c
Dark	23 @26 c

HOPS.

Old hops are hardly quotable, as practically everything has been cleaned up. The movement of 1911 stock continues very active, and prices are still advancing sales having been made at 40 cents or over in all Coast districts. Many growers are looking for a price of 50 cents before the season is over.

1911 crop	40 @45 c

Live Stock.

All prices stand the same as last week, though there is a little firmer feeling in sheep and cattle. Hogs are quiet, with ample arrivals, but prices seem to be pretty well established at the present level.

Gross weight:	
Steers: No. 1	5 @ 5½c
No. 2	4¾@ 5 c
Cows and Heifers: No. 1	4¼@ 4½c
No. 2	4 @ 4¼c
Bulls and Stags	2 @ 3 c
Calves: Light	6½@ 6¾c
Medium	6 @ 6¾c
Hogs: Grain-fed, heavy	7¼c
150 to 250 lbs	7⅜c
100 to 150 lbs	7 c
Small prime wethers	4 @ 4¼c
Large prime wethers	4 @ 4¼c
Ewes	3½@ 3¾c
Lambs	5 @ 5¼c

DRESSED MEAT.

Steers	8½c
Cows	7½c
Heifers	7½c
Veal, large	10 @11 c
Mutton: Wethers	8 @ 8½c
Ewes	7 @ 8 c
Lambs	10 @10½c
Hogs, dressed	10½@11½c

WOOL.

The market remains featureless, as the fall clip is not yet ready for the market. Consuming interests seem to be holding off, but a fair movement is expected within the next month.

Spring Clip—	
Choice Southern, Year's staple	10 @12½c
7 months	8 @11 c
Lambs, spring	8 @10 c
Northern, year's staple	14 @16 c

HIDES.

The market is weak, with no demand of any consequence, and lower prices are expected, though so far there has been no quotable change.

Heavy Steers, over 56 lbs	12 c
Medium	11½c
Light Steers, under 48 lbs.	11 c
Heavy Cows, over 50 lbs	11 c
Light Cows, 30 to 50 lbs	10 c
Kip	12 c
Veal	16½c
Calf	16½c
Dry—	
Dry Hides	18 @19 c
Dry Bulls	16 c
Dry Kip, 10 to 15	18 @19 c
Dry Veal, 5 to 10	20 c
Dry Calf, 7 down	23 @24 c
Sheep Skins—	
Long Wools	$ 1.00@ 1.25
Medium Wool, 6 to 9 mos	75@ 90c
Short Wool, 3 to 6 mos	40@ 65c
Lambs	35@ 60c

HORSES.

Heavy horses, 1400 pounds or over, are wanted in the city trade, but very few are offered. Otherwise the market is very slow, and no great activity is expected for a month or more. Recent sales have brought out very little interest on the part of buyers, and few horses have changed hands. The general range of prices, however, remains about as before.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	225@275
Chunks, 1350 to 1500 lbs	190@240
Wagon Horses, 1250 to 1350 lbs.	140@180
Delivery Horses, 1050 to 1250	100@125
Desirable Farm Mares	100@125
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

SPECIAL DECIDUOUS MARKET

As our regular market letter from Sacramento failed to reach us this week, we cannot give the market conditions, other than to print the telegraphed report of Eastern auction sales for Monday, August 21, which were as follows:

New York—Sixty cars sold. Market is depressed; overstocked. Weather is favorable. Malaga grapes, $1.05 to $1.35; Elberta peaches, 55 to 75 cents; Bartlett pears, $1 to $1.85; Crawford peaches, 55 to 70 cents; Susquehanna peaches, 65 cents; Thompson's Seedless grapes, 75 to 80 cents.

Chicago—Thirty-six cars sold. Market is very dull and depressed. Malaga grapes, $1 to $1.30; Bartlett pears, 85 cents to $1.35; Egg plums, 70 to 80 cents; Gros prunes, $1.10 to $1.30; Crawford peaches, 70 cents; German prunes, $1; Thompson's Seedless grapes, 65 to 75 cents; Elberta peaches, 55 to 75 cents.

Boston—Sixteen cars sold. Market is doing better. Weather is cool and pleasant. Elberta peaches, 60 to 65 cents; Malaga grapes, $1.15 to $1.35; Bartlett pears, $1.15 to $1.65; Crawford peaches, 65 cents; Susquehanna peaches, 55 cents; Grand Duke plums, $1.70; Diamond plums, $1.25; Egg plums, 65 cents; Giant plums, $1.05; Thompson's Seedless grapes, 70 cents; Tokay grapes, $1.70.

FAIR AND SHOW FIXTURES.

Sacramento, Cal.—California State Fair. Aug. 26 to Sept. 2.

Stockton, Cal.—San Joaquin County Fair. Sept. 12 to 16.

Hanford, Cal.—Kings County Fair, Sept. 25 to 28.

Fresno, Cal.—Fresno County Fair. Oct. 3 to 7.

San Jose, Cal.—Santa Clara Valley Poultry Show. Oct. 6 to 9.

Watsonville, Cal.—Watsonville Apple Annual and Poultry Show. Oct. 9 to 14.

Stockton, Cal.—San Joaquin Poultry Association Poultry Show. Nov. 7 to 11.

Oakland, Cal.—Alameda County Poultry Association. Nov. 21 to 27.

Petaluma, Cal.—Petaluma Poultry Association. Dec. 6 to 9.

Reno, Nev.—Nevada State Poultry Association's Show. Jan. 11 to 13, 1912.

SECOND HAND **PIPE**

Very best quality of selected second hand water pipe and standard casing pipe. All newly cut threads and new couplings attached; asphaltum dipped. Fully guaranteed at extremely low prices. BUY NOW while the opportunity prevails.

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PUBLISHER'S DEPARTMENT.

Read the new advertisements in this week's PACIFIC RURAL PRESS. Perhaps the one most prominent will be that of the Frost Prevention Co. of this city. The next in size is that of the Duffy Bros. motor truck for farm uses. Then the tractor engine ad of J. E. Sloan of Palo Alto will demand your attention. A note from O. A. Coburn of Whitewater, Mich., states that the Holstein cows he is advertising are fine in markings, color and size, and bred from the heaviest milkers. T. S. Glide of Davis announces that he will have a fine lot of Short-horn cattle, Merino and Shropshire sheep on exhibition at the State Fair, which he will take pleasure in showing. He also states in a note to us that his stock are all doing well and that sales are good. Henry Wheatley of Napa announces that he will leave shortly for England to bring back another lot of Shire horses.

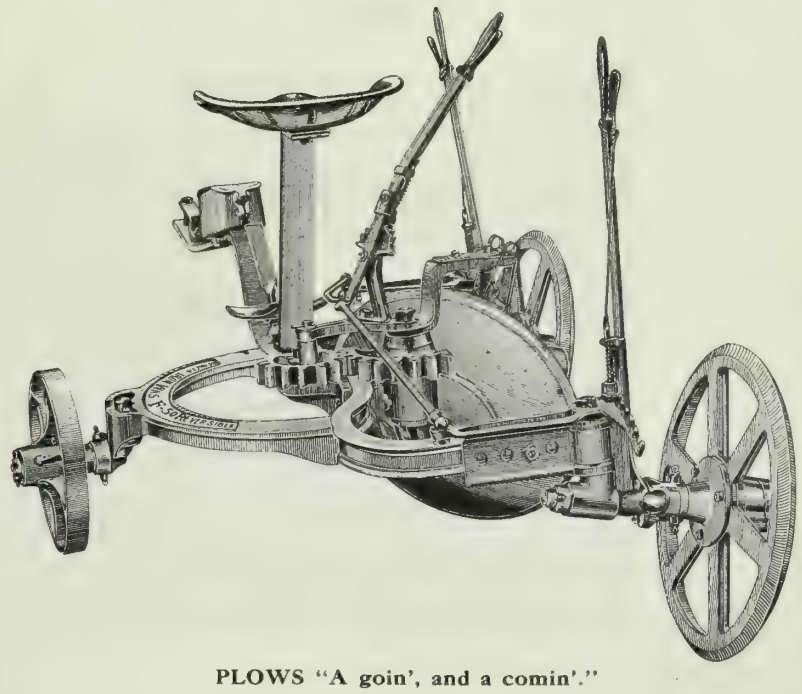
Fruit growers will be interested in the announcement of the Pear Blight Remedy Co., now located at 112 Market street, this city. The letter printed in their ad is a very fine testimonial of the efficiency of the remedy for pear blight.

Realizing the importance of San Francisco as a buying center for the farmer, the Geo. E. Dow Pumping Engine Co. has equipped a display room wherein various types of pumps manufactured by this concern will be demonstrated. This is an interesting place for any man to visit who owns or contemplates buying pumps of any sort, as here many types of pump may be seen. It is well known that this company build more different sorts of pumps than any other one manufacturer in the world, so that a visit to this display room will be profitable to anyone. All visitors to San Francisco are cordially invited to 179 Fremont street, where they will be welcomed by the representatives of the Geo. E. Dow Pumping Engine Co.

The yield per acre of potatoes throughout the United States this year is estimated, from the condition of the crop on August 1, at 71.5 busnels per acre by the U. S. Department of Agriculture. Last year the final yield was 94.4 bushels, and the average for ten years 96.9 bushels. The crop for California is approximately as heavy as usual.

Dr. Charles Keane, the State Veterinarian, Dr. R. A. Archibald of Oakland, and several other veterinarians of this State, have left for Toronto, Canada, where they will attend the annual meeting of the American Veterinary Medical Association, which will convene there from August 22 to 25.

BENICIA-REVERSIBLE DISC PLOWS



PLOWS "A goin', and a comin'."

The Benicia = Reversible Disc Plow

is the only successful Reversible Disc Plow built. It is simple in design, few in parts, and perfect in construction, and its durability is beyond question. It is easily operated on hillsides or level land.

As a Deep Tiller it is an unqualified success. Bear in mind, this plow is not necessarily for use on hillsides only—it is the best Single Sulky for general use made today.

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KROGH PATENT WATER BALANCED VERTICAL PUMP

KROGH'S NEW VERTICAL PUMP

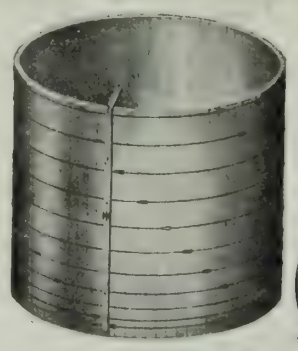
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We have a branch in Los Angeles at 206 N. Los Angeles Street.

The pump can be seen in operation at our place of business.

KROGH MANUFACTURING CO.,

149 Beale St., San Francisco.



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National Wood Pipe Company
Pacific Tank Company

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PIPE & TANKS



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Continuous Stave Pipe 12 in. to 12 ft. shipped knocked down.
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Kenton Station, Portland, Ore.
404 Equitable Bank Bdg., Los Angeles, Cal.

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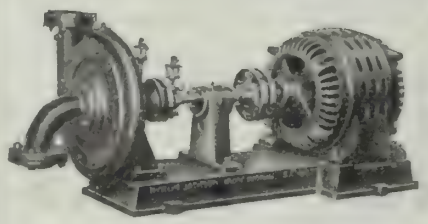


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THE PACIFIC RURAL PRESS

Vol. LXXXII. No. 10. SAN FRANCISCO, SATURDAY, SEPTEMBER 2, 1911. Forty-first Year.

At the California State Fair.

Written for the PACIFIC RURAL PRESS by Mr. W. H. SCHRADER.

The farmers who flocked in large numbers from the four quarters of California to the State Fair at Sacramento this week found not only entertainment, but instruction. While, to amuse them, aviators aviated, bronco busters busted broncos, bands blared, spielers spieled, and Hell's Delight held forth, these were but the fringe of the real Fair—only the relish to the substantial meal.

The real Fair the farmer found in the big agricultural building and annex, where county vied with county in splendid horticultural and agricultural exhibit, such exhibits as only a Californian county can get up. Here he gained a broader idea of the wonderful productiveness of his chosen State, and also a broader idea of the dignity of his chosen calling—the development of that productiveness. Here, too, the experiment farm of the University of California had its exhibits, cereal, dairy, and poultry, and, in connection therewith, held daily butter classes and dispensed much valuable information.



The Live Stock Parade at the California State Fair at Sacramento.

He found the real Fair, too, in the manufacturing building, where he learned about the countless things that contribute to his higher plane of living and to the comfort of his home and surroundings.

Every stall and every pen filled so generously by the live-stock exhibitors was to the farmer an object lesson, teaching forcibly the advantage and importance of selection and breeding to the one who would make a success in the field of live stock and dairying. We hope that those who had not previously learned the lesson, were here convinced that, while you put no more into a thoroughbred than into a scrub, you get a great deal more out.

Trust the wide-awake manufacturers and jobbers of agricultural implements and machinery to take advantage of this excellent opportunity to acquaint him with their wares. The machinery building and numerous surrounding tents were filled with every variety of machine and implement that facilitate the production and handling of the farmer's crop. The gasoline engine, the farmer's friend, was there, in all sizes, from the one-fourth horse-power to fifty horse-power or more, made to drive every type of machinery from sewing machines and milk separators up to threshers, and great centrifugal pumps that throw a flood of water into the pit in the machinery building. The big iron horses that are doing so much of the progressive farmers' work nowadays, plowing, harrowing and seeding at one operation, sometimes, and later harvesting the grain and hauling it to market, were shown in great variety, with the implements they are adapted to pull and the machinery they drive. An endurance contest between these tractor engines for a purse of $250 was possibly of more interest to the farmer than the horse races.

The automobile man, too, remembering that this has been a year of prosperity for the farmer, was exceedingly anxious to get at him. He filled the automobile quarters under the grandstand, and after that the overflow quarters that were provided. Still coming, he brought his own tent and humbly begged only for enough ground to squat on. His display comprised the light, handy runabout to carry the farmer over his premises and to market; the luxurious touring car to carry his family on pleasure trips and to church or to the summer resorts; also the sturdy truck to haul his produce to market or shipping point.

Even the suffragettes realized that the farmers' vote cuts a good deal of ice, and were in evidence in large numbers to teach him their creed and to tag everything and everybody with their slogan, "Votes for Women."

Taken all in all, the Fifty-eighth Annual State Fair was the biggest and best ever, and was marked by the biggest and best display of live stock and industrial products ever assembled. The number and extent of the exhibits were limited only by the size of the grounds. Overflow quarters were provided for practically every class of exhibit, and then many had to be turned away.

The county exhibits surpassed all previous efforts. Those deserving particular mention are: Alameda, Butte, Colusa, Fresno, Imperial, Kern, Los Angeles, Merced, Placer, Sacramento, San Diego, Sutter, and Tehama. Watsonville had an excellent apple display, advertising its coming apple show. The live stock entries numbered over a thousand.

Cows were milked in the new $30,000 model milking dairy building, tests being made night and morning under an expert from the University of California.

Another new building contained a display of dairy products in a McCray refrigerating display case. This is to be a permanent feature.

While this is a bad season to show the feathered tribe, the poultry exhibit exceeded all previous records by over 500 birds. The purveyors of poultry supplies and foods, too, were well represented for the first time in the history of the Fair.

There were special features by days: Saturday, Woman's Suffrage day; Sunday, band concerts and singing, military drills; Monday, San Francisco and Panama-Pacific Exposition Day; Tuesday, Stock Parade; Wednesday, Governor's Day; Thursday, San Joaquin Valley and Delta Day, with excursions from San Joaquin Valley points; Friday, Sacramento and Sacramento Valley Day, with a half holiday by Sacramento merchants and excursion from Sacramento Valley points; Saturday, San Diego and Southern California Day.

All these events pleased somebody and added much to the general interest in the exposition, which, as already stated, was one of exceptional quality and variety, and reflected credit upon the energetic directors and executive officers who have brought all this to pass.

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FRANK HONEYWELL - - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Aug. 29, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	00	.07	.19	60	50
Red Bluff	00	00	00	102	56
Sacramento	00	00	00	90	52
San Francisco	00	T	.01	62	50
San Jose	00	00	.03	82	50
Fresno	00	T	00	100	58
Independence	00	.10	00	92	52
San Luis Obispo	00	T	.03	72	48
Los Angeles	00	T	00	82	56
San Diego	00	.12	00	74	62

The Week.

We cannot escape making another reference to the relations between politics and industry, and desire to do it coolly. And this statement reminds us that several readers have written asking us what we meant, a few issues back, by wishing that we could get very angry without losing our temper, and we have to confess that we really do not know. We are coming to believe that some of our comments on current affairs are impressionistic and occasionally even inspirational: how then can we explain just what we mean? Such things are clearly beyond definition at the moment: they take time to get ripe and nutritive. We are more inclined to entertain this view since the late Mr. Walt Whitman is being pedestaled as perhaps the greatest poet that America has produced and some advanced critics are proclaiming him the greatest philosopher and others the greatest priest of the human race—both of which, we presume, the greatest poet ought to be. All this strikes us as strange because we can easily recall Whitman's time and remember that the picturesque term "barbaric yawp" was coined to express his contemporaries' conception of his utterances. It was often alleged that Mr. Whitman did not himself know what he meant by his writings, and we are not aware that he ever denied the impeachment. Now, if Mr. Whitman did not explain what he wrote, why should we? Why should not we take the chances, just as he did, that some future seer should see some profundity of significance in our words: we certainly do not propose to destroy our own chances of a statue by dynamiting the concrete pedestal which we are now reinforcing. Perhaps, however, we can satisfy anxious readers, without incurring any such risk of oblivion by simply stating a fact of recent occurrence. While we were up in the Sacramento valley, the week before last, we had the good fortune to have an invitation from one of the most progressive farmers to sit beside him on the bow of his automobile which he was driving himself, and the juice was hardly running before he began to squeak around the gills and broke out into a laugh, smote the machine on the steering wheel, and screamed: "What did you mean in your editorial that you would like to get very angry without losing your temper? I have been chuckling over that ever since I read it in the paper, and I can't be sure what you mean." We modestly expressed satisfaction that we had given him pleasure—that the PACIFIC RURAL PRESS was $2 per year and that the publisher was getting so many new subscribers that he had to get a new adding machine to count them up. "That may all be," he said, "but I am beginning to believe I know what you meant by that remark, and it is going to be worth more than $2 per year to know it, too. It is this way: this morning I was hauling grain with an eight-mule team and one consarned mule was always getting one leg over the draw-chain. I stopped several times to square that mule, and I was getting pretty hot under the chin with the loss of time and the dust. When I crawled back onto the wagon I kept getting hotter, and I had a twitching in my right leg like I could kick that mule's ribs in. But we started up and I happened to think about what you said, and I had to laugh again. Just about then the mule went over the chain another time, and, thinks I, here's where I get mad without losing my temper: if that damule wants to go on three legs, let him go it a spell." And he did: laughing again as he finished the recital. It was a good deal to do, for there was some risk to the mule—the same being now quotable at 20c. per lb. live weight: for that is the price of young mules in that section. Herein is a sermon, surely: but who wants to preach to a mule? It is traditional that imprecatory medicine alone moves a mule: let us proceed to that.

The Mule and His Daddy.

But we have now a greater responsibility than explanation of our own meaning. Whatever it means, it applies to this tariff legislation in its relation to California prosperity, as we previously pointed out, and we refer to it to impress the lesson that making the protection of American industries a political football is going to put California in the pinch of the door unless the impending calamity can be averted. We have contended that protection has no more place in politics than patriotism has: or, rather, that both should permeate politics so that no issue for offices on either of these fundamentals of American citizenship would be possible. Of course, questions may arise about both of them, but the party platforms are not the forum for their discussion nor the general election the tribunal for their settlement. This all being true, at least in our notion, it is here that we begin to exhort the mule. Now, by common consent, and by no device of ours, the emblem of one of the great political parties is the donkey, just as that of another is the elephant, and perhaps that of another will be the fish perhaps; who knows? The offspring of the donkey by irregular descent is the mule, which partakes of the nature of his daddy: measurably in the ears and tail, and immeasurably in the alacrity of his heels, for he is much worse as a kicker than his daddy. Now when one of these great parties (of animals, surely, for we are discussing natural history) indulges its natural propensity for evil it has always, hitherto, made a mess of American industry, and when it takes into the business its offspring, there is apt to rise a clatter of heels upon the solar plexus of prosperity, the ultimate effect of which has never yet been measured, and we hope may never be. All of this convinces us that it is unsafe and unwise to allow such important interests as the protection of American industries from unfair competition with cheap and subsidized foreign products, to become ammunition in the battle for political domination—as we argued on a former occasion at considerable length. And yet that is just what has been done during the last few weeks, and it occurs to us that it must be at a good deal of risk to the mule, even if the people do allow it to go on that way for a spell. We count it of less moment to the donkey, or less moment to the country because of the donkey, for the mule is not only worth several times as much as his daddy, but if it were not for the mule no one would consider the donkey worth anything at all, or give him even thistle-room.

What We and Mr. Taft Think of It.

We dislike to put it just that way, but the Science Workers' Union, to which we belong, has an inflexible rule that precedence is to be determined by priority of publication. Mr. Taft may have made the discovery first, but credit goes with the first publication, which was in the PACIFIC RURAL PRESS of August 12—therefore Mr. Taft has to take our dust. In a public address at Hamilton, Massachusetts, President Taft said, concerning the tariff bills which he vetoed last week:

"The tariff bills bear internal evidence that they rested on a basis of not 'tariff for revenue only,' but 'tariff for politics only.' The democrats and insurgent republicans did 'play politics' of the most irresponsible character in respect to those tariff bills. Never in the history of the government, I venture to say, have important public interests been dealt with in such a light-hearted way, with such absolute ignorance of the effect of legislation and with such willingness to sacrifice business interests to political exigencies as in the present legislation, which has just been defeated."

This is a clear charge that the raw tariff laws which passed Congress are to be credited to the devotees of the donkey and to such near-donkeys as thought best to vote with them, not for prosperity to the country, but for politics to themselves. This sort of thing will not go far in California, and it must be counted fortunate that some excellent representatives who are strong for certain needed reforms are not willing to play the tariff game to the extent of endangering industries for the sake of getting offices. What we have to do from this on is to see to it that more such representatives are awakened to their duties before the issue arises again during the coming winter.

The Bankers Care More for Agriculture.

We turn now to something pleasanter, to wit: the bankers' revised attitude toward agriculture. They are surely not making such jackasses of themselves as some of the politicians are; on the other hand, they are guiding, guarding and protecting agriculture as people, who know where their true interest lies, ought to. But we cannot fulsomely praise them without noting a little discrimination which keeps them off our highest pedestal: they do not rise to the highest socialistic principle that one man is as good as another. We have noticed that they come to confer with the publisher, hat in hand; and with the editor, cane in hand—but ah us!—such is life: we do not resent it—personally an editor takes what he can get and is glad he gets anything. The editor is the most devoted and self-forgetful man in the world: if the cause he espouses prospers, he does not care what happens to the seat of his trousers—but we are writing about bankers. It is largely due to the improved attitude of the bankers, rural and urban, that development of agricultural properties is now proceeding so rapidly in this State and elsewhere. Note what they are now doing in Wisconsin: At their recent convention at Milwaukee, the State Bankers' Association unanimously decided to aid in the dis-

tribution of pure-seed grains and the dissemination of agricultural knowledge through the medium of farmers' meetings and exhibitions. The plan as outlined will involve the division of the State into circuits, three to five banks composing each circuit. The College of Agriculture will determine the circuit meeting dates and will send a representative to each gathering. The local committees in each case will make arrangements for the meeting and will solicit prizes from the local business men for the farm products exhibited. Winners in the local circuits will be allowed to exhibit their produce at the annual bankers' show which will be held during the Farmers' Course at the College of Agriculture at Madison.

Women Voting.

We have been courteously invited by the committee in charge of the propaganda in favor of Constitutional Amendment No. 8, providing votes for women, to undertake regular and somewhat voluminous publication to that end. We have politely declined the effort as unnecessary. This journal has stood for suffrage for women nearly as long as we can remember. We believe our readers have already set their alarm clocks so that they will be sure to vote early on that day. It is quite superfluous for us to exhort our readers toward a course of action they have already decided to adopt. In fact, some of our readers, who have confided to us their inmost convictions on the subject, seem to be somewhat overconvicted. We remember one old farmer-friend in particular who told us recently: "In this matter of women voting, it looks to me like a man's chance of a lifetime. My old lady doesn't know whether she wants to vote or not, and, by heck, I'm going to make her. It will be the first time I have had my own way in forty years."

Legal Good Health of the Old Raisin Association.

When the autopsy shows organs normal we are apt to blame the departed for dying and causing us so much sadness. It seems to be about the way with the California Raisin Growers' Association which was formed for the purpose of packing, advertising and selling raisins and had under contract 2800 raisin growers in 1903. In the course of business it advanced to some growers more money than their crops sold for, and when it tried to recover the overpayment it was met by a suit from those who had been paid too much, contending that the Association was organized to create a monopoly in the raisin trade; but the Supreme Justices, with the Superior Court, hold that there was nothing in the evidence to show that the Association had engaged in any conspiracy for the restraint of trade, arbitrary fixing of prices, or had arranged to exclude raisins from packing-houses not delivered by them. This is certainly a vindication of the right of producers to associate for produce-selling which will be valuable in many ways. But what sadness there must be in the thought that producers could be found who would impeach their own right to associate for the promotion of their own interests for the sake of gaining a few dollars.

Queries and Replies.

Potato Growing.

To the Editor: Please state in what locality the best early potatoes are grown and the average wholesale price received by the grower. Can they be raised on wheat lands without irrigation as an early crop?—Enquirer, Seattle, Wash.

The fullest account of potato growing methods in this State is given in our book on "California Vegetables". Early potatoes are grown in thermal situations in all parts of the State where they are found—around the bay of San Francisco, on the mesas in southern California, and to some extent at slight elevations in the central part of the State. The potato will stand some frost, but one has, for an early crop, to guard against the locations subject to hard freezing. Prices fluctuate considerably, according to relation of new and old supplies when the former come in. We expect to take up the potato trade in a special article before long.

Most of our potatoes are grown without irrigation because the California winter temperatures favor their growing during the rainy season. The middle season and late potatoes are grown on moist lowlands where irrigation is not necessary. On the plains where wheat is chiefly grown, potatoes are not largely produced because they may be too frosty in the winter and too dry in the summer, but, of course, in proper situations much of the land which is used for potatoes has at some time produced wheat or barley, corn or sorghum, and other field crops.

Alfalfa Sowing.

To the Editor: I intend sowing alfalfa this fall on land that has some very compact hard spots. I aim to doctor these spots with gypsum at the rate of about 1000 lb. per acre and cultivate the gypsum in thoroughly two or three weeks before sowing the alfalfa seed. Would this be all right? Is there danger of injury to seed by coming in contact with gypsum? How can I make sure of getting good alfalfa seed free from dodder weeds and weevil?—P. Alling, Lodi.

Gypsum will not hurt the alfalfa seed. It is not corrosive like an alkali. Whether it will have time enough to ameliorate the soil in the spots in the period you mention depends upon there being moisture enough present at the time. To be sure of the seed you may get such assurance as you can from the dealer that his seed has been tested, or you may have a sample tested at your own expense before buying. Miss Alice F. Crane, 314 Cherry street, San Francisco, is a professional seed-tester with whom you can correspond.

Lice on Pansies.

To the Editor: Our pansy plants are dying from the ravages made upon them by a green louse resembling those sometimes found on rose bushes. I have tried cayenne pepper water, soap suds—others have tried tobacco water—taking them up by the roots and soaking all over in water all night, then transplanting them in new dirt, all in vain. Can you tell me what will destroy the lice?—Reader, Redding.

You not only have to kill the plant-lice, but to keep killing them. They multiply so fast that no louse remembers what hit his grandfather. Your treatment was heroic: it probably killed everything it touched but the eggs, and it only takes a short time to get a new stock from the outside. Use the soap or tobacco solutions every few days. The pepper probably only made them feel good during this cool summer.

Fruit Trees and Sunburn.

To the Editor: Will you kindly tell me how long it is wise to leave protection around young fruit trees set out in March in this hot valley? The trees are doing well, but we could not tell when to take away protection. We have a variety of trees.—Reader, Colusa.

We suppose you refer to protection from sunburn. It is necessary to maintain the protection all through the autumn, for the autumn sun is often very hot, and as the sap flow lessens, the danger of burning is apparently greater. The bark also must be protected against the spring sunshine, even before the leaves appear. So long as the sun has a chance at the bark, you must protect it from sunburn.

An Amateur's Problem.

To the Editor: I have just purchased a place on which there is an apricot tree (the only one large enough to bear) that appears to be almost dead; all but a very few small green leaves are gone, and it looks very bad, still I think it might be saved if I only knew what to do. I also would appreciate it very much if you could advise best means to prevent gophers killing all my tomatoes by snipping them off just below the surface of the ground.—Beginner, Los Angeles.

Presumably your apricot tree is suffering from too much standing water during the dormant season, or from a lack of water during the dry season. The remedy would be to correct moisture conditions, either by underdrainage for winter excess or by irrigation for summer deficiency. When a tree gets into a position such as you describe, it should be cut back freely and irrigation supplied, if the soil is dry, in the hope that the roots may be able to restore themselves and promote a new growth in the top. This should have been done earlier in the season, but it is the only thing which can be suggested as likely to help the tree in its present condition.

The way to keep gophers from killing tomatoes is to kill the gophers. It may be done by trapping, poisoning, or drowning out, if your plat can be fixed for flooding.

Waste Water and Sulphur.

To the Editor: Kindly advise me through your paper as to the feasibility of using wash water, etc., for watering fruit trees and vegetables. My supply of fresh water will be limited. Will dry sulphur injure vegetables if sprinkled over them for the purpose of killing bugs?—Subscriber, Suisun.

You can use the waste water to advantage. Kitchen sink water is not desirable because of its great content of grease, but wash-tub and bath-tub water are good. Strong soapsuds should be mixed with considerable rinsing water to escape excessive content of alkali. Run the water in hoe-ditches, along the rows of vegetables, hoeing thoroughly as soon as the land hoes well, changing the runs of water so that the soil does not become compacted but is kept friable and lively. Sulphur seldom injures anything—not even the bugs. It is of very small insecticidal value, except for mites. It is chiefly useful in fighting some kinds of fungi.

Perfume Farming.

To the Editor: As I am taking some of the correspondence courses from an Eastern college. I asked if they could put me in touch with an authority on distilling perfumes from flowers. They were unable to do so, but referred me to you. I should be much obliged to you if you could tell me of anybody who would give me full instruction on this subject.—E. C., Orange, Virginia.

We regret to say that although many experiments have been made and some industries projected along the line of perfume extraction in this State, none have passed the experimental stage nor demonstrated their profitability, so far as we know.

Italian Rye Grass.

To the Editor: What kind of grass is enclosed? Also the best method to eradicate it?—J. W. M., Seiad Valley.

The grass is the Italian rye grass, or as it is sometimes called, the Italian variety of the perennial rye grass. It is proving a very satisfactory grass in California for moderate drought resistance and for winter growing, and a great deal of it is being sown for these purposes. You can readily kill it out by cultivation, but most people are more occupied with its propagation than with its destruction.

An Effective Mulch by Continued Stirring.

It is a good time of the year to see how much moisture has been retained in the subsoil by summer cultivation. In the PACIFIC RURAL PRESS of June 3 we had a discussion as to whether it is desirable to cultivation whether the surface layer often called the earth-mulch had become compacted or not. We demurred to the statement that there was nothing to gain by cultivation after the mulch was secured by earlier working. Those who remember that discussion will be interested in the position taken by Mr. Campbell, the dry-farming apostle, in answer to a claim that the mulch ought to be let alone. The following is the occasion of the comments by Mr. Campbell:

"No necessity exists for any sort of cultivation if the surface of the field is already covered with a mulch of loose earth. The advice to keep dragging some form of implement through the field between the rows of corn whether it rains or not is ill founded. Nothing is gained by re-stirring a mulch that already exists, so that cultivation need follow only beating rains that spoil the mulch."—Nebraska Farmer.

These editorial remarks are based upon a publication by Professor Pugsley of the Nebraska station. In our comments on the same proposition in our issue of June 3 we dissented from the view that a summer mulch once formed should not be stirred. California experience has demonstrated increased moisture conservation by continued cultivation. The same position is taken by Mr. H. W. Campbell in his Scientific Farmer, as follows:

The conclusions [of Professor Pugsley] are based wholly on theory and cannot be substantiated by practical demonstration. There is no question in our mind regarding this matter of cultivation. During the very dry years of 1894, 1901, 1910, and the present year, 1911, we have proved the truth of our position. In 1894, in a cultivation of a potato crop, we, by accident, discovered a perfectly reliable rule to govern cultivation during periods of severe drouth.

Watch carefully the top of the firm soil under the mulch. So long as this top remains moist, cultivation is not necessary, but when this top begins to show dry, immediate cultivation is necessary. In the production of the potato crop in 1894, we followed this rule explicitly. The correctness of this rule we proved time and again, by brushing away the mulch in a part of the field that had not been cultivated for from six to ten days. Here we would find the firm soil just beneath the mulch becoming dry. Then going to the part of the field that had been cultivated the previous day, we invariably found the firm soil moist, proving the value of stirring the dry mulch, although the cultivation was no deeper.

In 1901 we carried a crop of corn through that very drouthy season at Hill City, Kansas, and kept it growing perfectly, by maintaing the same condition up to the time of the wheat harvest. The weather being hot and very windy, we had much difficulty in cutting the wheat, owing to the fact of excessive heat and high winds. It yielded 42½ bushels per acre, while the other wheat fields in the vicinity were not worth cutting. Being short of help, we neglected the corn for sixteen days, when we found that a crust had been formed that could not be broken without destroying the roots, so we left it and the corn ceased to grow, although there was moisture beneath the crust.

The present year we have sixty acres of corn on the Holdrege farm. When the excessive hot weather came we followed the foregoing rule and gave this field five cultivations between the last rain in May and July 8. On the seventh of July we examined this field in no less than a dozen places, and at every point examined, we could make a ball of the top one-half inch of the firm soil beneath the mulch. Great care was exercised to avoid disurbing the roots, which we found in large numbers from one-half inch to one inch below the top of the firm soil. This field of corn is today, July 24, fully six feet high, tassels just breaking out and ears beginning to show, while other fields in that locality are not to exceed three feet in height—most of them badly damaged.

The advantage of this method of cultivation is found in the fact that the heat of the sun penetrating the soil mulch to the firm mosit soil beneath heats it to a degree that causes the moisture to be transformed into steam or vapor, which rises and to some extent moistens the mulch sufficiently to establish capillary action up and through the mulch. Now the longer the mulch is allowed to remain undisturbed the faster will the moisture escape by evaporation. This transmission of the moisture is what causes the crust to form. Once formed down to or beyond the point where the feeding roots of the corn are found, you are up against it and the corn will suffer.

As Professor Pugsley observed, to break this crust by deeper cultivation is very dangerous. Do not dare to cultivate deeper to break the crust when it has enveloped the feeding roots. It was the known fact of the damage to corn by this kind of cultivation that fixed the idea of the corn growers, a few years ago, that it was wrong to cultivate corn when it was dry. They were positive that it would ruin the corn.

Stay with your corn, keep stirring that mulch often enough to keep the top of the firm soil moist. Thus you can prevent the loss of your moisture by evaporation and keep it in the soil for the use of the plant. Last year, and this year too, there would have been millions of bushels of corn in Nebraska, if her farmers had cultivated according to the above rule.

FAMILY PRUNE PICKING WORKS WELL.

Readers of the PACIFIC RURAL PRESS will remember our references to the undertaking of Mr. Homer A. Craig and his associates of the Farmers' Union committee to promote orchard work by enlistment of city families as help in the fruit harvest. This enterprise is now on, and we hope Mr. Craig will give us quite fully his experience and the conclusions therefrom at the end of the season. Many are waiting to hear from him just how his plans worked out. Meantime, we find an interesting sketch by Amanda M. Miller in the San Jose Mercury, from which we take some observations:

I found the little colony which for five years has gathered Mr. Craig's crop of prunes under the cool shade of a clump of elm and walnut trees, the mothers sitting in rocking chairs, if you please, the youngsters swinging hilariously in the three swings which hang from the curving branch of a big pepper tree close by. And not a single "old, drawn look" could I find.

"Have you begun gathering the prunes yet?" I questioned, for such ease in fruit season seemed impossible.

The two mothers exchanged glances and smiled.

"We gathered a ton this morning and we came in before 10 o'clock," was the answer. And, in answer to my exclamation, added: "That means a half ton for each of us in about two and a half hours."

"And what time do you begin work in the afternoon?" I asked, for they had made no move to get out, and it was then 4.

"We never go out until it is cool. We can keep the prunes picked close enough in that way so that none spoil, and we have plenty of time to do our housework."

So far, so good. But what might be well enough on small orchards might not work at all on large ones. I suggested as much to Mr. Craig.

"Bless you," he said, heartily. "It does just as well on big as on small places. I heard a day or two ago that a man with 100 tons of prunes to care for was advertising for white families to help him. He has 50 people there now—all white—and he was delighted when I told him how to secure the extra 25 families he needed. Why, do you know that over 1400 parents and children have been directly placed in the fruit orchards about here since the fruit began to ripen. And of course we know that there are thousands of others who have secured positions through their own efforts and of whom we have no account."

The mere handling of California's fruit crop costs the growers from $2,000,000 to $2,500,000 yearly; and in our own fruitful valley for prunes alone Mr. Craig estimates that at the most conservative estimate $200,000 will be paid out for gathering this crop.

How much better, then, reasons Mr. Craig, that this vast sum should go into the pockets of families who need it and who enjoy the outing in the country besides, than to employ aliens who will send it out of the United States. All of which is perfectly good reasoning, and bears, besides, the stamp of successful trial.

Mr. Craig is uncommonly modest about the vast amount of time and work he has bestowed upon this movement which he has so steadfastly advocated. He gives great credit to the press, to the school boards who have helped him, to everybody, in fact, except the one who deserves the most credit—himself. He is intensely in earnest and desirous of the success of this white family help movement.

"If," says Mr. Craig, "we could get the active co-operation of all the school boards, so that the vacations could be made to conform to the ripening of the fruit in the various sections, I think the whole problem of help would be solved. The children like the work; it is easy. It is different from their school work; they are out in the good fresh air and away from the temptations that beset the idler in the city; they get enough work to make them keenly enjoy their 'playtime' during the rest hours of midday, and they have something tangible to show for their summer outing when they return to the city."

COMMENTS ON RAISIN SELLING.

Charles G. Bonner, a Fresno raisin packer, in a public letter, has advised the growers in the raisin districts to hold on to their crops until they secure at least 4¾ or 5 cents a pound. He claims that the present lull in buying is only temporary and that good prices are more than justified by conditions: He says:

"I am satisfied that over half the crop of raisins is already under contract to the packers, nearly half the crop has been contracted for Eastern shipment—could more be expected at this season of the year?

"Every grower has had an offer of 4¾ cents for his crop of 1911 raisins; those who did not sell were either holding for 5 cents or would not sell until the raisins were cured. Why should any grower have changed his mind in the last two weeks? Why should he sell today for 4½ after refusing 4¾ two weeks earlier? All the grower needs is some firmness and patience, and he will undoubtedly get as high a price for his raisins as he has yet been offered, and possibly more."

Mr. Bonner gives the shipment of raisins for the year 1907-08, August 1 to July 31, as 59,226 tons; for 1908-09, as 56,796 tons; 1909-10, as 60,425 tons, and 1910-11, as 66,223 tons, and estimates the present crop, with the hold-over from last year included, at only 57,000 tons gross weight, or 52,000 to 53,000 tons packed weight, a little in excess of 75% of last year's consumption, as was done in a recent issue of the PACIFIC RURAL PRESS.

He states that: "Seeded raisins (in which form most of our raisins are marketed) can be retailed in the United States with good profit to the jobber and retailer at 15 cents per package. There would be danger in forcing prices much higher, yet, note shipments August 1, 1907, to January 1, 1908, in round figures 50,000 tons, with prices considerably higher than this year.

"Let the growers study these figures; I will not venture to offer any further suggestions or give any more advice."

CALIFORNIA CANNED FRUITS IN BAVARIA.

Consul Ifft, of Nuremberg, Bavaria, writes:

The volume of sales of canned and tinned goods in Nuremberg, with its population of 325,000, is, in my opinion, about the same as that of the average American city of the same size. The Amer-

ican imports of this class are principally fruits—peaches, pears, apricots, and plums. These all come from California, and the California peaches are highly prized. American canned fruits are relatively expensive, the average cost of a 2-pound can being about 52 cents. They are luxuries purchased only by the well-to-do. The German products are considerably cheaper, the average price being less than 24 cents, except apricots, which cost about 43 cents.

The White Sapote: A Fruit Deserving Wider Attention.

By F. W. Popenoe, of Pasadena, in the Pomona Journal of Economic Botany, Vol. 1, No. 2.

Among the fruits brought to California by the Franciscan fathers when they established their missions along this coast, more than one hundred years ago, were some, like the olive and grape, whose cultivation is today an important factor in our horticulture. But there is one at least, which, although introduced early in the nineteenth century, is at present cultivated only a little more extensively than it was at that remote day. This is the White Sapote, or Zapote Blanco of the Mexicans, botanically known as Casimiroa edulis. In the city of Santa Barbara there is still to be seen an aged tree which has survived all vicissitudes from the early mission planting, being without doubt over one hundred years old. This tree is one of the most interesting horticultural landmarks of California, as it has the honor of having been the first tropical fruit tree planted in this State. Several other trees much more recently planted are now in bearing and have helped to demonstrate that this fruit is well adapted to our climate, and with the increasing interest now being taken in the subtropical fruits, it seems likely that this one will soon receive the attention which it deserves.

The White Sapote is a member of the order Rutaceae, and is found growing both wild and cultivated in the States of Sinaloa and Durango, and other parts of northern and central Mexico. The tree is handsome, having large, palmate leaves, glossy green on the upper surface, and with age forms a dense, dome-shaped head of foliage. As an ornamental alone it is of value, and possesses good possibilities as a street and avenue tree. The fruits greatly resemble in appearance an apple or a quince, and the better varieties are as large as a good-sized apple. When fully ripe the pulp becomes quite soft, and has been described as of a delicious, melting, peach-like flavor. The normal season of ripening is October and November, but as soon as the fruit is fully developed it may be picked and ripened in the house, and is then quite as good as though ripened on the tree.

It should be remembered that the results obtained from this tree in southern California, both in growth and fruiting, have been produced under the most adverse conditions in practically all cases and much more can be expected when it is put under proper cultivation.

Of the local trees there are a number which produce small and inferior fruits, worthless or of little value. This is the case with the old tree in Santa Barbara, referred to above, but there are a few which have produced fruits equaling many of the best grown in Mexico, and although it would probably be possible to obtain better varieties by going to Mexico for them, those described are well worth propagating.

Propagation and Culture.—Probably the principal reason for this fruit never having been brought into general cultivation in Californa lies in the fact that its propagation has been but imperfectly understood, and as it does not come true from seed, it has been impossible to perpetuate the superior varieties. It is doubtful if much experimenting has been done in the propagation of the White Sapote by budding or grafting, but it seems reasonable to believe that it will not be long until our nurserymen will be propagating it in this way, and when this is done and standard varieties established, it promises to appear in general orchard plantings along with such fruits as the avocado and mango.

Quite a number of trees have been grown from seed in recent years and disseminated by nurserymen, and the propagation of the tree in this way is a very simple matter. The seeds do not retain their power of germination for a great length of time after being removed from the fruit, and should be planted as promptly as possible. No special treatment is necessary, and the seedlings make a rapid and vigorous growth under favorable conditions. The seedlings are very much inclined to spindle. I have seen many which have grown to a height of ten or twelve feet before branching, and to avoid this it has been advised to pinch out the terminal bud when the tree has attained a height of two or three feet.

The tree will certainly tolerate a great amount of harsh treatment and still thrive, as is emphasized by the behavior of many of the local trees which have had no cultivation or irrigation for years, and still bear regularly and profusely and are in a flourishing condition. This drought-resistant quality makes the tree very valuable for locations where there is an insufficient supply of water.

The question of hardiness has probably never been definitely settled. In his Dictionary of Gardening, Nelson predicts that it will prove hardy in Ireland and the south of England, and no amount of frost that has occurred in southern California has been sufficient to injure even the youngest seedlings. Doubtless it will prove hardy practically all over the State. According to Von Mueller, it is found in Mexico up to heights of 7000 feet, which certainly goes to show that it is adapted to a cool climate.

A second drawback to its being more extensively planted has been the fact that the seedling trees do not come into bearing until eight or nine years old, but this is a difficulty which will doubtless be eliminated through the propagation of the tree by some vegetative means.

Variations and Varieties.—Like most other fruits grown from seeds, the White Sapote is subject to considerable variation. With the local trees no two have produced fruits exactly alike, and there are even marked differences between fruits on the same tree in many instances.

Especially is this variation noticeable in regard to size. None of the trees which I have observed produce fruits of anywhere near uniform size, but this is probably due in a large measure to lack of cultivation and irrigation. For many years the old tree in Santa Barbara was the only fruiting White Sapote in California, and it produced fruits no larger than a cherry. This is doubtless the reason that in early accounts of this species the statement is made that the fruits are from one-half to one inch in diameter. The trees which have come into bearing more recently have produced much larger fruits, in many cases up to the average of the fruits grown in Mexico.

There are several points in which variation is usually shown; in form there is considerable difference, and while the majority of the fruits are round, there are also oval varieties and many trees which produce malformed or abortive fruits of practically no value. In color there is also considerable variation, and as the highly colored fruits are naturally the most attractive, these would be the most desirable for market purposes. The finer varieties grown in Mexico all possess fairly good color, and in this respect the Harvey is all that could be desired. The Harvey variety is growing on a vacant lot at Sierra Madre, and so far as I have seen, is our largest and most highly colored variety. Possibly it has not as fine a flavor as the Gillespie, but the proportion of seed to fruit is considerably less than in the latter variety, and the fruit is larger and presents a more attractive appearance. Dr. Franceschi states that this tree was raised and planted in its present location by J. C. Harvey, formerly of Los Angeles. In and around Los Angeles are a number of other trees raised by Mr. Harvey, probably from the same batch of seed, and these all produce fruits very similar in general characteristics, so much so, in fact, that they could not be considered as distinct varieties. But as most of them are inferior, in size at least, the Harvey is the only one of the lot I have considered it worth while to describe.

The Gillespie variety is growing on the Gillespie place at Montecito, near Santa Barbara. Dr. Franceschi states that the tree was planted by the late Kinton Stevens in 1892. While not so large or attractive in appearance as the Harvey, it is probably the finest flavored of the local varieties. It is quite distinct from the others in having a rather rough, russet exterior, and perfectly developed seeds.

The Parroquia variety is growing behind the Catholic church on State street in Santa Barbara, and was raised by Dr. Franceschi from Mexican seed and planted in its present location in 1896. So far as I have seen, it contains but three seeds, one or more of which are usually undeveloped, and it also differs materially in form from the other varieties here described.

There is much difference in the quality of the fruits produced by different trees, and this is, of course, one of the most important points, if not the most important of all.

Much could be done to improve this fruit by selection and crossing; the number of seeds could be reduced, or the seeds eliminated entirely; the flavor could be improved, and a fruit could be produced combining the good points of several varieties and eliminating the bad ones. It is to be hoped that the White Sapote will be given more attention in the future; it certainly merits a more general cultivation, and to the plant breeder it presents very attractive possibilities.

MR. WOODFORD'S POINTS ON ORANGE PLANTING.

According to a Los Angeles correspondent of the New York Fruit Trade Journal, Mr. B. A. Woodford, manager of the California Fruit Growers' Exchange, estimates that on August 1 there were about 4000 carloads left to ship from southern California. The fruit was then going forward at a rate of from 80 to 100 cars per day. It is believed that there are upward of 1500 cars of lemons yet to be shipped, and from 2500 to 3000 cars of valencia oranges. Practically all other varieties of oranges have been disposed of.

Last year there had been shipped at this date about 27,500 cars of citrus fruits, and the total for last season up to October 31, the close of the citrus shipping season, was approximately 31,000 cars.

The shipment of citrus fruits is fast becoming practically an all-the-year proposition, whereas a few years ago it began in November and closed about June or July. But with the increase of the lemon and valencia acreage, shipments are now continuing throughout the fall, and the latter promise largely to increase.

Of the new plantings set out in southern California this year, Mr. Woodford estimates that one-third is navel oranges, one-third valencias, and the other third lemons.

While this would make the same acreage increase of each fruit, but on a percentage basis the lemon and valencia increase would be much larger than that of navels. In northern California the new acreage is largely navels.

A RARE CITRUS FRUIT IN FRESNO.

Local accounts say that Mr. A. R. Pearson of Del Rey has submitted a sample of candied Sour Turanji to the Fresno Chamber of Commerce which is unique. Sour Turangi is a citrus fruit originally brought to Fresno from India. In appearance the product is not unlike grape fruit, being some seven or eight inches in length and almost that much in diameter. The juice of the new fruit is said to make excellent lemonade, while the fruit when processed can scarcely be distinguished in taste from citron. In appearance, however, the Sour Turanji is very much superior to the citron, it being a bright lemon color and almost transparent.

Mr. Pearson at present has but three trees of the fruit, which he planted about three years ago and which began bearing full sized fruit almost in their first year. These trees, with another one planted by Secretary William Robertson of the Chamber of Commerce in his yard in this city, are the only ones of their kind in Fresno county.

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AGRICULTURAL REVIEW.

Prices and Prospects.

The lowering of prices on fresh fruits during the past week has had its effect on the prices of dried fruits which are given by dried-fruit houses in San Francisco as follows: Prunes, 5½c; apricots, 14 to 14½c; peaches, 10c; Muscat raisins, 4½c; apples, 9 to 10c; and pears, 8 to 9c. With the exception of prunes, the market is said to be dull, except with those fruits which have fallen appreciably in price.

One buyer, Wednesday morning, stated that the tone of the market articles in the PACIFIC RURAL PRESS was more favorable for the grower than was justified by any conditions. It is our intention to be as correct as possible, so we print the above opinion.

Since prune-drying has started, it has been found that there is a much greater shrinkage than in normal years, the ratio, according to the best estimates, running from 2¾ to 1, against 2¼to 1 in normal seasons. This will have the effect of reducing the total output a good deal and making the sizes run much smaller than would otherwise be the case. Prices may rise as a result of the shortage, although the grower will receive much less for his crop. The shrinkage is said to be due to the cool weather, which made a watery rather than a sugary prune.

It is stated that the Wine Growers' Association of Fresno is paying $12 per ton for second-crop Muscats.

Some purchases of peaches are said to have been made this week in the San Jaquin at 10¼ cents.

The A. & C. Ham Co. of Fresno sent the first car of prunes East this season. The car was sent by fruit express and was valued at about $4000.

Prices of 7⅝c for Muscats for Eastern delivery were recently made by several local dried-fruit houses, which would make present prices on the sweat-box basis as high as they could well go. One of the houses stated that the crop was only 15 per cent short, which seems to be incorrect.

The opening offer for wine grapes in Fresno was $10 per ton.

The offer for apples which was turned down by the Humboldt County Apple Growers' Association was $14 per ton.

Green-fruit shipment has ceased at Hanford, Kings county, about 140 cars leaving there this summer.

It has been announced that owing to the difficulty of disposing of fresh fruits, especially grapes, at good prices, the California Fruit Distributors are to make special efforts to get goods into the smaller towns and markets in the East, instead of sending so largely to the main distributing centers.

With the Fruit Men.

Picking of Thompson's Seedless for raisins began this week around Fresno. The first picking was done on the Kearney estate. The raisin grapes both here and in the Sacramento valley are much later in ripening than usual. Japanese contractors around Fresno announce that the price of picking is to be greater this year than last.

It is reported that prunes in Yuba county are ripening earlier this year than usual, while other crops are later.

Early estimates of fruit crops in Tehama county have proved approximately correct. Pears are almost normal, while most other fruits are quite short. Field crops are very good. On the King ranch near Vina three cuttings of alfalfa have been made from a field of 80 acres planted this spring, and a fourth is about ready to cut.

According to an announcement from Oroville, the olive crop in Butte county will be 25 larger this year than last.

Nearly all the fruit around Chico is said to be shipped green this year, owing to the rather short fruit crops and the good prices secured for fresh fruit.

The shipping season for the 1911 crop of almonds was opened August 24 by the California Almond Growers' Exchange filling an order from San Francisco for Nonpareils on that date.

Warm weather in Yolo county recently has caused such a rapid ripening of fruit that many canneries are being rushed to their capacity to handle the crop. The

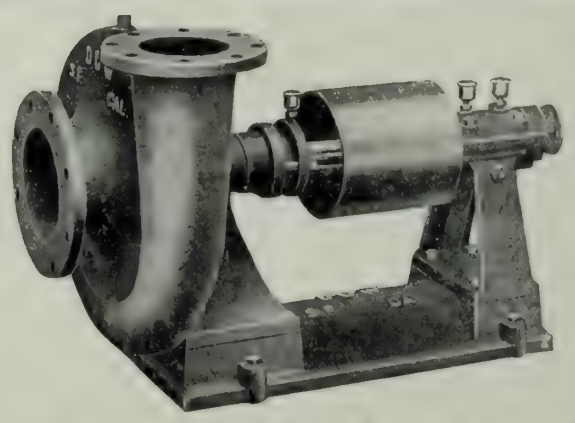
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(Telegram)

New Franklin, Mo., May 3-4, 1911.

The Frost Prevention Co.,
Balboa Bldg., San Francisco, Cal.

Lit heaters last night, burned them five hours. Sixty heaters per acre raised temperature five degrees within thirty minutes after lighting; held same temperature until closed down. We consider them a great success; never received thermometer, only wire and bill; rush thermometer.

T. H. TODD.

1.41 a. m.

Chico, Cal., July 26, 1911.

The Frost Prevention Co.,
San Francisco, Cal.

Dear Sirs:

In reply to yours of the 25th, would say that there ought to be good sale for the Bolton Orchard Heater this year, as they have proven a success during last spring's frost. I have used the heaters four years. In 1908 I had 80 per acre in apricot orchard; none in the almond orchard, just across the road. There was no sign of frost in the apricot orchard, and the almonds froze off clean. This year (1911) I had the heaters in the almond and none in apricot. Apricots froze clean except a few in tops of trees 18 or 19 feet from ground. No sign of frost in almond trees. N. C. Jessee and A. Gee both used heaters with the same result. These three orchards contain nearly all the almonds for quite a large scope of country. I think this proves all you claim for the heaters. There was no need to use them in 1909 or 1910. Yours truly,

(Signed) H. LOSEE,
R. 3, B. 141, Chico, Cal.

BEAR CREEK ORCHARDS.
W. S. Brooke, Manager.

Medford, Ore., U. S. A.,
July 25, 1911.

The Frost Prevention Co.,
San Francisco, Cal.

Gentlemen:

Replying to your favor of the 18th inst., beg to state that we used about 3500 of the Bolton Orchard Heaters during the past season, and though there were several mornings that the temperature was as low as 24 degrees, we pulled out a crop of about thirty-five carloads from fifty acres. There were seven mornings, any one of which would have practically annihilated our crop had we not been equipped to fight the frost. We expect to equip another fifty acres for the coming season, and while we dread the magnitude of the undertaking, one hundred acres does not look as large to us now as fifty did before we undertook it. Yours very truly,

THE BEAR CREEK ORCHARDS.
By W. S. Brooke, Manager.

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F. H. HAMMER, Southern California Representative

CHERRY HILL FRUIT FARM.
The E. H. Everett Co., Owners.
H. A. Albyn, Manager.
Toboso, Licking Co., Ohio.
July 21, 1911.

The Frost Prevention Co.,
San Francisco, Cal.

Dear Sirs:

We used the small heaters for three evenings. We did not have the frost that we sometimes have, but cold enough that all blossoms where we did not use the pots were killed. We only lighted every third pot, which raised the temperature six degrees. Six hours has been the limit as to time of burning them. We used fuel oil from the Standard Oil Co. We have just tried an experiment with the crude oil from the well, as we have several wells of our own, and find that it burns equally as long as this fuel oil. Yours very truly,

H. A. ALBYN.

Owensville, Ind., April 3, 1911.

The Frost Prevention Co.,
San Francisco, Cal.

Gentlemen:

Am trying the Smudge Pots which I purchased from you one year ago, and meeting with success. Have used them two nights. It being a new thing in this part of the country, the newspapers are taking kindly to it and publishing results. Have had many inquiries regarding same. Would be pleased to have you send by mail one or two of your new attachments you wrote me about, to try in this community. Yours respectfully,

(Signed) P. S. ARMSTRONG.
R. F. D. 19, Owensville, Ind.

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E. A. Cahoon, Cashier.
A. Hanny, Asst. Cashier.
C. Hobbs, Asst. Cashier.

July 10, 1911.

The Frost Prevention Co.,
San Francisco, Cal.

Gentlemen:

In reply to inquiry from your local agent, the writer begs to advise you that three thousand of your two-gallon Bolton Smudge Pots were used in his orchard during the past spring and were eminently satisfactory. While the cold weather here was not excessive, still the writer lit about one-third of the pots on three nights and found that number ample to control the temperature in his 45-acre orchard. By actual test, the pots burned from eleven to thirteen hours. The writer selected this pot after testing out several of the most prominent makes.

Yours very truly,
(Signed) A. HANNY.

rapid ripening of melons and poor prices has caused much of that product to be used for cattle feed.

Deciduous Fruit Shipments.

Sacramento, Cal., Aug. 26, 1911.

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, August 25, 1911, as reported by the California Fruit Distributors:

Peaches—223¾ cars. Shipment of this variety shows a falling off of practically 40 cars since last week. The decline will be even greater during the week to come. Salways will not be available in any quantity until about September 5, although it may be possible to get a few carloads before that time. Not many Clings are available, owing to large purchases of this stock by canners.

Plums—145 cars. This variety shows an increase in shipment from last week which was entirely unexpected by the trade. It is probable that there will be a sharp decline during the coming week. Grand Dukes are nearly done, and there are not very many Kelseys available.

Pears—268¾ cars. A decline is noted in the shipments of this variety, about the same as last week. The most important shipping sections have now finished on Bartletts and shipments should show a material decrease from this time on. Vacaville and Suisun are nearly done. Most of the remaining stock will be sent from the mountain districts.

Grapes—301½ cars. The shipment of Thompson's Seedless is now concluded. Malagas are going forward in considerable quantities and the shipment of Tokays is on the increase. It is expected that a few cars of the latter will be shipped from the Lodi and Florin districts during the coming week, but there will be no considerable quantity to offer until after the first of September. A limited number of cars of Black Prince are still available.

Total shipments to August 28, 6088 cars; total shipments to same date 1910, 7679 cars.

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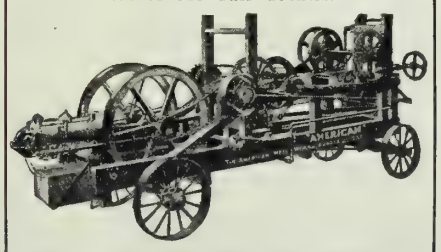
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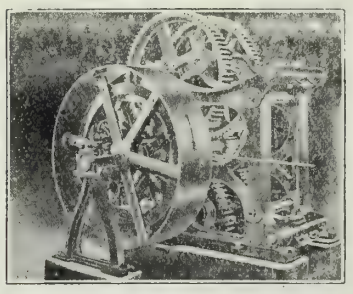
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FRESNO AGRICULTURAL WORKS
FRESNO, CALIFORNIA.

California County Free Libraries.

Written for the PACIFIC RURAL PRESS
By Miss HARRIET G. EDDY.

In the last few years California has made vast strides forward in improving the district schools, in establishing more country high schools, in spreading the telephone service, in bettering its roads, in extending the trolley systems, and in doing various other things to add to the attractiveness of living in the country. And now another progressive move brings us one step nearer to the solution of the problem which the Commission on Country Life is facing. This new attraction which has been added to those of rural California is the county free library system. A library no longer has to find an excuse for its existence. It is accepted as a part of modern institutions. But for too long a time the library has been the peculiar opportunity of the city resident. Now the California slogan has become, "If a library is good for part of the people, why not for all the people?' Books are the most portable form of recreation and education, often the only form of recreation and education that could be sent to the most isolated places. By this co-operation with the county as a unit, all the people can gain a book service otherwise impossible to obtain.

With this idea in view, the State Library, which is situated in the State Capitol in Sacramento, is carrying on in California the establishment of county free libraries, which are being conducted with most signal success and giving satisfactory service. A central library is maintained at the county seat in charge of a trained county librarian, who visits the various communities, learns their needs and inclinations, and establishes branches in various parts of the county so that the books are available to all the people. Where the community is large enough a reading room is maintained in charge of a custodian who keeps the place open whatever hours it will be most used. The reading rooms are furnished with papers and magazines, in addition to their collection of books.

The collections of books at each branch are made up with especial reference to the needs of the community, and are changed in whole or in part as often as the people have no further need for them. In addition, if anyone wishes a book not to be found in the local collection, his request is sent to the central library at the county seat, from which these special request books are sent out every week or so. Or, if the book is not there, it is sent, transportation paid, from the State Library. Thus anyone in a county free library system has at his disposal a practically limitless supply of books. This means that if any county high school is in a county operating a free library, it may have a splendid supplemental supply of books on science, history, literature, and so on; that any club may have the books it needs for special study; that any professional man may have a chance to consult the books which he does not wish to add to his own library; that the farmer may read and study the latest books on his particular industry; and that the general public may have access to a supply of books for recreation and improving the mind.

There are already twelve counties which have established a county free library, and many others are making preparations. The law gives the supervisors power to take the steps toward establishment, and also to levy a tax for its maintenance. The tax, however, is so minimal considering the great benefits received, that it is only an incident in this broad and comprehensive plan for giving complete library service to all the people. One farmer very aptly says, "It brings the agricultural college to our barn door." By co-operating with all the educational forces in the county, and by giving the people not only the opportunity but the persuasion to read wisely and well, we have gone several strides toward giving all our people a home university.

[The State Librarian, Mr. J. L. Gillis, will be interested in receiving correspondence on this subject from our readers.—EDITOR.]



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THE real proof of the strength, durability, and value of I H C wagons is what they have done and are now doing for thousands of farmers throughout the country. Light loads and heavy loads have been carried by I H C wagons, over good roads and bad roads, for so many years that there is hardly a farmer who is not familiar with the high quality that these names on wagons represent—

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"FARMOGERM" is a practical culture of nitrogen gathering bacteria which is easily applied and will increase a cover crop fifty to two hundred per cent. Our booklet on this subject is intensely interesting. Write Dept. O for a free copy.

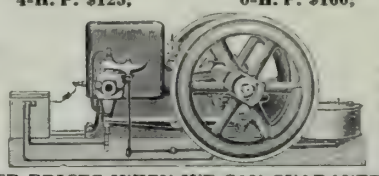
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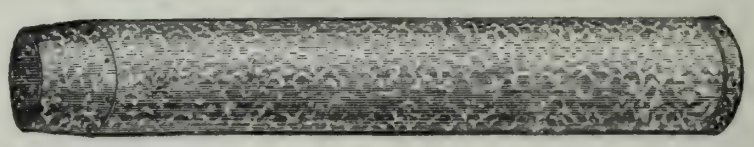
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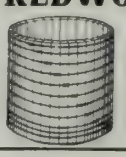
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R. F. WILSON, 447 W. Main St., Stockton, Cal.

A Story About Whitewash.

To the Editor: Will you kindly publish in the PACIFIC RURAL PRESS the old Government recipe for whitewash, and you will greatly oblige.

Fillmore. M. R. MAYHEW.

CERTAINLY. HERE IT IS:

"Slake half a bushel of unslacked lime with boiling water, cover during the process to keep in steam; then strain the liquid through a fine sieve or strainer, and add to it a peck of salt previously dissolved in warm water, three pounds of ground rice boiled to a thin paste and stirred in while hot, half a pound of Spanish writing, and one pound of clear glue previously dissolved by soaking in cold water and then hanging over a slow fire in a small pot hung in a larger one filled with water. Add five gallons of hot water to the mixture, stir well, and let it stand a few days, covered from dirt. It should be applied hot, for which purpose it can be kept in a kettle or portable furnace."

This mixture is said to be almost as serviceable as paint for brick, wood, or stone. If coloring is desired, add yellow ochre for a cream color; for pearl or lead color, add lampblack, etc.

BUT IT DOES NOT ALWAYS WORK.

To the Editor: You were so kind as to send me the Government whitewash receipt and direct me how to apply it to the trees. I tried to follow your directions, but have met with indifferent success, owing to the very poor quality of the whitewash. It looked well and went on well, but for some reason or other it crumbles off just as though it were chalk and water. I got the very best lime that I could get—the lime that they sell for whitewashing purposes—and followed the directions to the very letter, excepting alone that I did not strain the whitewash. The reason why I did not do this is that I did not intend using it in a spray pump, and there was so much of it I did not consider it necessary. But the whitewash is no account at all. I put some of it on a building and by hitting the side of the wall with a hammer I can jar most of it loose. The high winds which have prevailed this spring have cracked much of it loose on the trees. It must be deficient in some way. Can you suggest what might be the trouble. I am anxious to get the next batch right, and if you can suggest my trouble I will be greatly obliged. D. D. BOWMAN.

Santa Cruz.

WE TAKE A GUESS AT THE REASON.

My dear Mr. Bowman: Answering your favor about the failure of the whitewash, my guess would be that the trouble was in the lime. Is it possible that they sold you Spanish whiting or some non-caustic form of lime such as would be successfully used by calciminers in connection with glue-size or something of that kind? The Government recipe is based upon having well-burned and unslaked stone lime, the efficiency being due to the slaking of the lime with the accompanying heat in connection with the other materials employed. I have seen whitewash made by that recipe which was perfect, producing a complete white cover unyielding to the touch and so far from scaling off that it could be rubbed over without even whitening the hand. I do not think that the straining would have any effect whatever, as that is merely for the purpose of keeping the pump from clogging or making the substance flow more evenly from the brush.—EDITOR RURAL PRESS.

IT WAS THE LIME.

Subsequently Mr. Bowman wrote us that he had ascertained that he had been sold some overburned lime which would not slake well. Then he secured some good lime, and says: "The whitewash made from that is absolutely perfect. It is quite pasty in character, spreads well, and leaves a beautiful surface. I am satisfied that too much emphasis cannot be placed on the necessity of using only the very best lime in this whitewash."

METHOD OF ERADICATING JOHNSON GRASS.

C. R. McBride, of Solano county, sends out the following method of Johnson grass eradication:

When a man who has a piece of land infested with Johnson grass is told that he can get rid of the pest in one year at a reasonable expense, he is liable to disbelieve the statement. It is true, nevertheless, and absolutely so, excepting, of course, infestations along creek banks and other trying situations, where the pest will have to be handled in a different manner than the one under discussion.

The eradication of Johnson grass is based upon the following facts:

1. Plants must have light.

2. Plants must have food from the air, which is taken in the form of carbon dioxide.

3. It is the purpose of all plants to reproduce themselves.

Keep the plant (Johnson grass) from the light and air, and prevent it from seeding, and it will die.

The method is as follows: Plow the infested piece in the middle or last of May, depending on the time that the regular spring plowing was done. Plow again in the middle or last of June. The land should be harrowed after each plowing. The purpose of these plowings is to keep the plant from light and air, and to keep the soil loose for the final plowing, which should be done in the middle of August. This month is the hottest and drying time of the year, and is the most effective time to disturb the roots. It is also the time of ripened seeds, if the plant is let alone, the time that the roots go into the dormant condition to rest, their purpose being accomplished. But, due to the two previous plowings, the roots will not be dormant at this time, but will be striving to reproduce seed, will be overworked and very susceptible to a disturbance at this time.

The foregoing statements which I have made are based upon the practical experience of Mr. G. W. Long. By this method he eradicated two acres of Johnson grass in a vineyard in one year, and is willing and able to prove it to anyone who is interested enough to inquire. The cost will not be over $8 per acre in an orchard or in vacant land, although in a vineyard it will be a little more.

BERRY PLANTS

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IS THE IMPORTANT CONSIDERATION

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It is well worth your while to verify this statement, and when in doubt as to the Sodium Chloride content of a Cyanide, have a reputable chemist furnish you an analysis. It may prove a good investment.

The Roessler & Hasslacher Chemical Co.'s Special Fumigating Cyanide of Potassium 98-99 per cent and Cyanide of Sodium 128-130 per cent is manufactured expressly for fumigating. Contains no excess of chloride of sodium. It generates quickly. Reliable, Efficient, Economical.

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How One May be Misled in Irrigation Projects.

Complaints have been received from setlers on reclamation projects that by reason of the misrepresentations of land agents they have been induced to purchase lands which were afterward found to be without any rights to water from the Government canals. The Secretary of the Interior has issued the following warning, which, while it refers particularly to the Rio Grande Project in New Mexico and Texas, is equally applicable to other projects containing large areas of private lands:

"All persons are warned against accepting any statements concerning this project, without inquiry from the officers of the Reclamation Service. Experience has shown that some warning of this kind is necessary, because misleading statements have been issued regarding the project and the conditions existing upon it. The project has many advantages, and would not have been taken up and pushed unless it was considered feasible and worthy of development. These facts, however, do not warrant certain exaggerated statements which have been made.

"In particuar, attention is directed to the requirements of the Reclemation Act regarding residence and cultivation. The act prescribes that no right to the use of water for land in private ownership shall be sold for a tract exceeding 160 acres to any one landowner, and that no such sale shall be made to any landowner unless he be an actual bona fide resident on such land or occupant thereof, residing in the neighborhood of said land.

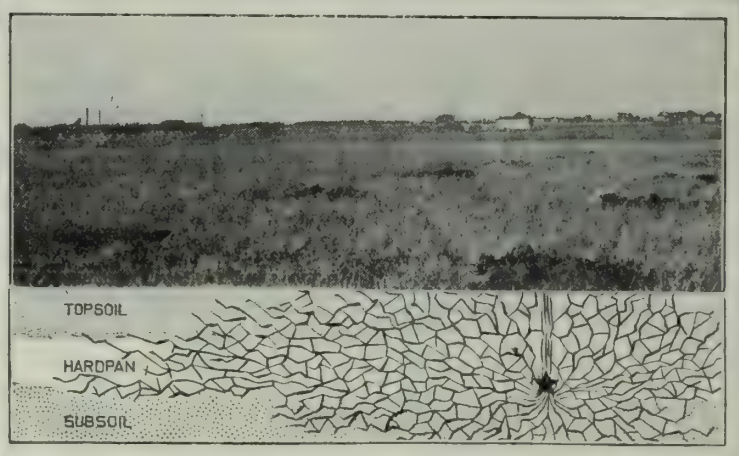
"It is also required that the landowner shall reclaim at least one-half of the total irrigable area of his land for agricultural purposes before any right to the use of water shall permanently attach. Ignorance of these and similar requirements has resulted in great embarrassment to purchasers.

"It is not known how many years will be required for the construction of the storage dam, nor is it safe to make predictions as to when water will be available, in view of the many uncertainties existing.

"Warning is also given that the amount of available water-power has been grossly exaggerated in many current discussions. It is not definitely known that there will be any power available for sale, and there is no assurance that it will produce dividends reducing the cost of water rights.

"Purchasers are warned against being misled by the statement that certain tracts as 'signed up' under the Government irrigation project. This 'signing up' is the landowner's subscription to the water-users' association. It designates tracts of land and subjects to liability for water charges so much thereof as shall hereafter be furnished with water from the Government works, but it does not in any way bind the Government to furnish water to any particular tract. On the contrary, considerable areas have been thus designated in subscriptions to which, because of location, elevation, physical conditions, or other reasons, water can never be furnished. Prospective purchasers should not rely upon the statement that the land is 'signed up', but should carefully investigate and satisfy themselves that the tracts offered to them are in fact likely to be furnished with water under the project.

"While it is not possible to give definite assurance on many of these points, the persons interested are advised to read carefully the terms of the Reclamation Act or consult the publications such as 'Questions and Answers' which have been prepared to explain some of the requirements of the law."



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No. 3—Handling Adverse Conditions.

The peculiar conditions now existing in the fruit markets of the country prove the truth of the old saying that the best laid schemes of mice and men will sometimes go astray.

And yet, Mr. Fruitgrower, we draw your attention to the fact that were it not for the admirable system of EVEN DISTRIBUTION now carried on by our organization, matters would be infinitely worse.

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A WINTER TO CATCH WILD HORSES.

According to an account in the Breeder and Sportsman, all save a few straggling bands of wild horses of the California mountains perished in the snows of the past winter, which covered the Sierras with a thicker mantle than they have worn for years, and made the problem of subsistence for wild stock a hopeless one. For many years big droves of wild horses have roamed the ranges of the Modoc Forest Reserve and gaining numerical strength by enticing the branded stock of breeders to join their nomadic existence and defying all attempts on the part of aggrieved ranchers to capture or destroy them. Their encroachments upon the stock range of the up-State cattlemen became so annoying and costly that a few years ago the Government foresters built a giant corral in the Modoc forest and made more or less successful attempts to trap the outlaw equines in it. A few of the animals were captured in this way, but they were a wary tribe, and their depredations continued despite the interference of Uncle Sam. Wild as deer, fleeter and more alert, they were usually seen by human eys for an instant only, disappearing like shadows into the fastnesses of the range. But Nature, more powerful than governments or human forces, suddenly and unexpectedly allied herself with Uncle Sam, and by cutting off the supply of range food, meager enough under the best of winter conditions, practically exterminated the Modoc broncos.

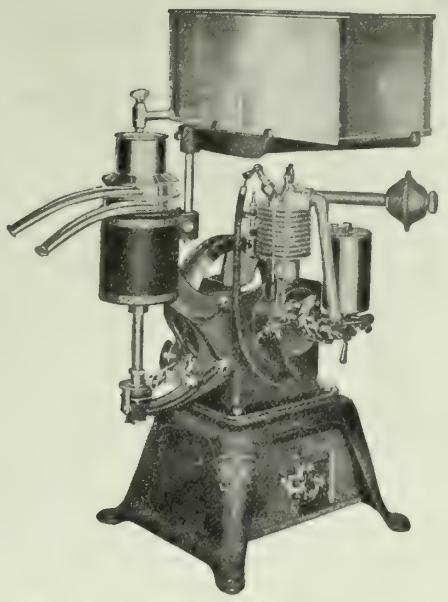
Assistant Forester J. H. Hatton, who has just returned to the Government offices here, after a two months' visit to the Klamath, Snasta, and Modoc forests, reports that more than 300 wild horses either died or were captured in an enfeebled condition on the Modoc range at the end of the winter. In all probability the total number of the dead greatly exceeds this report, as there has been no definite effort to count the carcases that dot the ranges. The wild horses of the Modoc were the last survivors of their spices in California, all of the other ranges having been ridden of them.

According to Mr. Hatton, the unusually severe winter has been followed by an exceptionally good grass season, and he declares that the ranges are in better grazing condition than they have been for years. Stock raisers, in consequence, are looking forward to a prosperous season. Mr. Hatton says the winter broke up just in time to avert a heavy loss of stock. Had the snows continued for another week, he says that the range cattle and sheep would have died by the thousands, the supply of food having been completely exhausted. Many of the stockmen, he reports, carried hay into the ranges at a cost of $18 per ton.

That as a result of the co-operation of the Federal and State authorities, scabies in sheep has been reduced from 90 to 3 per cent in this State, is the statement of Dr. J. A. Grau of the Bureau of Animal Industry, who is making an inspection of flocks in northern California. The reduction was due to enforced dipping. Dr. C. C. Walker, who is in charge of several of the lower San Joaquin counties, reports that the disease is practically eradicated in most of his district, although several bands are still under quarantine.



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Fifteen years experience at Chicago, St. Louis and Kansas City Stock Yards. Judge of Pedigree and Quality of all classes of Pure-Bred Stock. Country sales a specialty. Address **Key Route Hotel,** Oakland, Cal.



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Is now in quite general use in California, giving satisfaction to users on account of saving in time, labor and butter-fat as compared with the hand separator. Its simplicity of construction and ease of operation appeals to all who have seen it. Write us for the name of your nearest agent, and letters of endorsement.

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NO DEATH TRAPS
In the Layne System
THE LAYNE PATENTED STEEL PIT IS A SAFE PIT

Workman Falls 90 Feet to an Untimely Death.

Falling down a ninety-foot shaft in some mysterious manner while at work at the Buena Vista pumping station in Elysian Park, E. J. McComb, 67, a veteran employe of the water department, was killed at about 5 o'clock Friday morning. The body fell into the water at the bottom of the shaft, and was not recovered until 7:15 o'clock Friday morning.

No one witnessed the accident, but it is believed that the man lost his balance while at work at the top of the deep shaft, and fell, striking the circular stairway inside of the well as he fell.

Fell Into Water.

The shaft leads to a tunnel under the Los Angeles river. The tunnel is filled with water forty feet deep. Work was immediately started to pump out this water, and the body was reached after two and one-half hours' work. Coroner Hartwell was immediately notified, and the body was taken to Pierce Bros.' undertaking establishment.

McComb had been an employe of the city water department for twenty years. He served under the late President McKinley when the martyred president was a colonel. When McKinley visited Los Angeles, while president, he sent for McComb, and the two visited for a long time.—News Item.

NO OPEN PIT

No going down into the pit to tighten bolts, pack boxes, grease bearings, etc. All lubricating and adjusting is done from the outside at the pump head above the ground.

Sand Kills Other Pumps

but does not affect the

Layne Pat'd Centrifugal Pump Screen and Steel Pit

The greatest water developer in the world today. Gives more water at less expense than any pump now in use.

WRITE FOR CATALOGUE 30

It fully describes the **Layne Pat'd Pump** and **System** and also contains data and information that will prove valuable to every irrigator. Free.

LAYNE & BOWLER CO.

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VIOLET AND SANTA FE AVENUE
F 6543 **LOS ANGELES, CALIFORNIA** Main 1141

Hogs for the Farm, Not the Range.

Prof. E. L. Potter, of the Oregon Agricultural College, gives the Oregon Agriculturist a very suggestive article on the place of the hog on the farm and not on the range.

Dairy farms, grain farms, hay farms, fruit farms, all have waste products which may be turned into money with a few pigs. Perhaps the strictly range stock ranches have the least opportunity for hog raising because of the scanty pastures and the scarcity of grain, while the dairyman, with his abundance of skim-milk, pasture and grain, has the ideal place for hogs. In choosing a place for making the raising of hogs the principal business, there is more chance of mistake. We are often told that the hog is the most economical producer of all of our meat animals, and this is true, but while the hog takes less feed to make a pound of gain of any of our other farm animals, it must be remembered that this feed used is of the best quality and much of it is expensive. The hog will not go out in the dry hills amid the sagebrush and cactus and make a living and grow fat, as will a steer. Neither will he browse the fence corners and eat all kinds of weeds, as will sheep. He will, of course, eat slop and refuse of various kinds which other animals will not eat, but nevertheless the bulk of his feed must come from comparatively expensive products like grain, mill products, skim-milk, etc., and where pasture is used as it should be in all cases, the pasture must be rank and luxurious to get good results. A hog will eat some hay and make the best use of it, but the hay must be good, and even then only limited quantities may be used. A hog will not live and get fat on bunch-grass pasture and prairie hay.

What to Choose for Hogs.—All this means that where hog raising is to be made an important industry we should choose a farm where there is plenty of grain and rich pastures. In other words, the best locality for hogs is the best grain and hay region. The richer the soil the better, although it must be remembered that the raising of hogs for a number of years on a farm will greatly increase the fertility.

Rough hill land has but limited value in hog raising, and that value consists mainly in affording a good place for lots and winter houses. There is no better place for locating a winter hog-house than on a rocky knoll where there are a few scrub oaks. Such land, however, affords practically no feed, and pastures on such lands can be considered as little better than exercise lots. Sheep or beef cattle will pay very much better on such land. Land that is slightly rolling, but yet good cultivating land, is the best for hogs—much better than low, flat land. On the latter kind the wet winters practically prevent turning the hogs out of their houses and floored lots. Early forage crops such as rape will almost go to seed before the hogs can be turned on, while on some of our rolling land the hogs may run out at almost any time.

In Country or City.—With hogs, the question of near markets is of less importance than with other products. Of course, it is nicer to be close to a city and get the advantage of the lowest freight rate, but it must not be forgotten that this same low freight rate applies to hay and grain, and the feed the pig eats will be more expensive in such places—more so in porportion than it would be in more out-of-the-way localities. It is cheaper to ship hogs than grain and hay.

Furthermore, land near the large cities is much more expensive than if farther away, and this adds to the expense of production. We do not mean to discourage hog raising near the large cities, but in discussing the best places for the most profitable raising of hogs we are thoroughly convinced the more out-of-the-way localities, where the market for hay and grain is less brisk, offer the best inducements.

How Large a Farm.—The size of the farm will depend largely on the number of hogs the farmer desires to raise. Forty acres makes a good hog farm. Less than that is not recommended unless the owner has some other source of income. Five and ten-acre farms are not to be recommended for any sort of live stock. On the other hand, 160 or 200 acres in a hog farm is rather a large undertaking and requires an outlay of capital and labor much larger than would be supposed at first thought.



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MODESTO ALFALFA MEAL

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CATTLE POULTRY SWINE

FOR PRICES SEE OR WRITE

THE GRANGE CO., Modesto, Cal.

HENRY WHEATLEY

SALVADOR STOCK FARM, NAPA,

Importer and Breeder of Shire Horses, will leave for England shortly after the State Fair, and will bring back a high class shipment of Shire Stallions, arriving about the middle of November.

They will be sold with a State license under the new stallion law, at moderate prices.

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America's Leading Horse Importers

At the six World's Fairs since 1900, our Percheron Stallions have won every Championship, and every first prize except two.

At the recent California State Fair our Percherons and French Coach Stallions won 14 Gold Medals and both Championships.

When you want the best come to us.

McLAUGHLIN BROS.,

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ALTA VISTA HERD OF IMPORTED GUERNSEYS

OWNED BY

CHAS. G. LATHROP, Stanford University, Cal.

From above herd I offer for sale a few choice bull calves from such sires and grand sires as

IMP. LORD KITCHENER—11369

Winner of the grand champion prize at Sacramento State Fairs 1909-1910, and

IMP. RAYMOND OF THE PREEL—11353

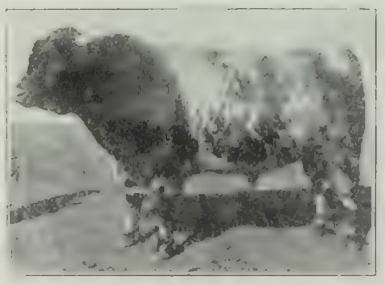
Winner of the first prize 1906, Island of Guernsey.

For further particulars write to above address. Inspection solicited.

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KING LANCASTER, GRAND CHAMPION BULL CALIFORNIA STATE FAIRS, 1909-10.

SEE OUR EXHIBIT OF

Short Horn Cattle Shropshire and Merino Sheep

AT THE FAIR.

Rams and Bulls in single or car load lots.

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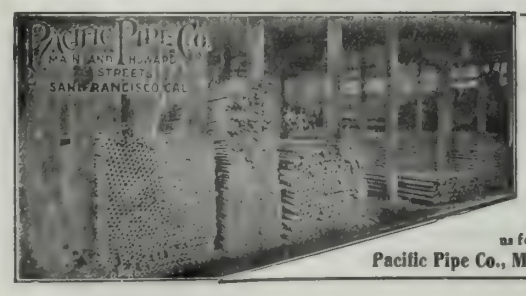
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Cheapest Food in the Market to-day. If your dealer doesn't carry it,

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Save Money By Buying This Good Second-Hand Pipe

We can supply you with any size and quantity of **Standard Pipe or Casing**—all new threads and couplings—all stock guaranteed first class.

If thinking of buying any kind of pipe, your best interests will be served by writing us for prices and particulars.

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150 Head Registered Shropshire Bucks

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GREENBANK

Powdered Caustic Soda and Potash Still the Best Fruit Dip

T. W. Jackson & Co. 42 Market St. San Francisco

Horse Owners! Use

GOMBAULT'S



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A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all liniaments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle, SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish.* Every bottle sold is warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.

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BE READY FOR EMERGENCIES.



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SHOULD BE IN EVERY HOME AS A SAFE-GUARD AGAINST SORE THROAT, SWELLINGS, SPRAINS, RHEUMATISM, NEURALGIA, STIFF JOINTS, LAMENESS, STOMACH CRAMPS, DIARRHOEA, Etc.

50¢ AND $1 SIZES

THE STOCKMAN'S STAND-BY FOR SUCCESS IN VETERINARY USES

IT DOES THE WORK.

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Soy Bean MEAL

PROTEIN EXCEEDING 44%

For Cattle, Poultry and all Farm Animals

Will double your milk, cream and egg supply.

Write for booklet "SYSTEMATIC FEEDING AND THE VALUE OF SOY BEAN MEAL."

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NO HOOF=NO HORSE

Especially is the dry season in this section very hard on hoofs. If you have a horse with a bad foot caused by tender, brittle, hard or contracted hoofs, split hoofs, quarter cracks, mud fever, scratches, corns, cracked heels or grease heels, send 16 cents postage and we will send you a 50c package of ESHELMAN'S WOOL FAT HOOF HEALER, and if satisfactory, send us the 50 cents. If not, write us to that effect, and you need pay nothing. We take all the risk, you just try it. Send for it today, or send for folder with many testimonials of big horsemen, vets and others.

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Cutter's Anthrax and Blackleg Vaccines

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HERCULES HARNESS SADDLES HORSE COLLARS

They Last Longer

The only sure way to get a HOME Industry Harness is to look for the Hercules stamp Made by W. DAVIS & SONS, San Francisco, Cal. Your Dealer has our Catalogue

FOR SALE

A Jersey bull calf sired by Ravachol's Romulus 74652; dam Blue Fox's Golden Rosebay 209372; half sister of Noble of Oakland's that recently sold at Cooper's 1911 sale for $15,000.

T. B. PURVINE, Petaluma, Cal.
R. F. D. No. 4, Box 152.

Inaccuracy in Test Bottles.

Recent examinations of bottles used in making the Babcock test for fat in milk and cream by inspectors of the State Dairy Bureau show that many are falling short of the requirements of the new dairy law. The law provides both for an accurate scale in the neck of the bottle where the column of butter-fat is read, and that the scale have a certain length for each per cent of the butter-fat. The latter requirement was not in the old law, and does not apply to accurately-graduated bottles in use before the new law went into effect.

The new law provides that the scale on test-bottles for milk shall be at least 65 millimetres—4⅞ inches—in length for each 10% of butter-fat, and that the scale on cream test-bottles shall be at least one centimetre—0.394 inches—in length for every 5% of butter-fat where an 18-gram sample is used, and double this length when a 9-gram sample is used. Where a 9-gram sample is used in a 9-gram bottle, the scale must be graduated to 0.5%, and where a 9-gram sample is used in an 18-gram bottle, it must be calibrated to 0.2%.

Inaccurately-graduated bottles are occasionally found, although not all sold in the State are examined at the Bureau. That all should be is shown in an extract from a letter sent out recently by F. W. Andreasen, secretary of the Bureau, who says: "We have just now a lot of 10% milk bottles that come so far from meeting the requirement of the act sent you, and also requirements of the manufacturers of testing glassware, that we could only pass 9 out of 100. The dealer came to the office to see about it, and declared that he plainly saw that the manufacturer had tried to unload some old bottles on them that he could not sell in other States."

This same thing has happened in States without special requirements for glassware, and all bottles not passed by the Bureau inspectors should be measured with a ruler, if no accuracy test is made, to see that the scale is long enough. Inspected bottles are marked with the letters "S. B.", and are correct in every particular. The requirements of the law are all to encourage correct testing and should be observed by the dairyman as much as the creamery operator, as the dairyman is generally the one to suffer in case errors are made.

Another requirement of the law is that the butter-fat column shall be read at a temperature between 130 and 140 degrees Fahrenheit. The fat column is to be read from the bottom of one meniscus to the bottom of the other. This is required because at a temperature much below this the fat column shrinks and the reading is less than it should be. To get this temperature, bottles must not be left standing where they can cool off for a very long time after they are ready to read.

FINE MERINO IN THE SAN JOAQUIN.

We are glad to find in the American Sheep Breeder an appreciative account of an admirable San Joaquin valley enterprise, in these words: The story of the Kimble flock of Merinos at Hanford, California, would be a record of the enterprise, energy, and sheep sense that has developed one of the best Merino flocks on the Pacific Coast. Mr. Kimble was raised near the sheep corner of the Empire State, and is a shepherd by nature and experience, and just likes sheep. He has built up his flock chiefly on a Garnier foundation and has always bred the best stock rams obtainable in any State, and has selected rams from the Glide and Bullard flocks of California, Jackson of Washington, Butterfield of Idaho, and Hansen and Seeley of Utah, Lincoln, Shaw and Reigle of Ohio, and Wyckoff, Wood and Lockwood of Michigan. The present flock numbers something like 15,000 head, of which over 3000 are pure-bred ewes, which have been bred to rams selected from the above mentioned flocks, and it is well to state these rams have been selected for good size and bone covering, density and shearing qualities, and are ranging chiefly on 35,000 acres of leased lands, near the Coast range foothills. A few hundred, however, can be seen feeding in the rich alfalfa fields near Tulare lake, where Mr. Kimble owns about 560 acres of very fertile meadow lands all in alfalfa and all under irrigation. There are other flocks at the home ranch which comprises about 480 acres, and in neighboring leased fields the writer saw excellent breeding ewes and many fine young lambs, sired by the aforementioned rams, as are also 1500 yearling rams at the "West Side" which will be offered this season. Good form, size and wool production are the watchwords at the Kimble ranch, where the pilgrim shepherd enjoyed a few days looking over the flocks and ranch properties and in making an automobile trip to the neighboring town in search of the peaks lost on the level lonesome plains about Tulare lake, and we do not hesitate to say the hospitality and good-will at the Kimble ranch is all wool and a yard wide.

TRIUMPHS FOR TUNIS LAMBS.

Some months ago we gave an outline of the success with the Tunis breed of fat-tailed sheep, in crossing, etc. It seems that Tunis is something delicious for the table. The American Sheep Breeder says:

In the old Rountree's Tunis lambs were popularized by Louis Pfaelzer because they outdressed their college-bred competitors and led in quality all the famous cuts at the saddle and sirloin. About the same time the high livers at the capital of New Zealand were startled by a new brand of lamb that eclipsed the delicacy and flavor of any lamb ever eaten there before. "So sweet and jiucy," everyone said, when all at once the secret was out when the story of the famous lamb feeding test in the neighborhood explained that William Cooper & Nephews had brought over half a dozen Tunis breeding ewes and rams from the fold of Hon. Charles Rountree, of Crawfordsville, Ind., and a string of the cross-bred lambs from the Cooper ranch had got into the feeding and killing test, winning all the high prizes and setting the high clubmen wild with the sweetness and juiciness of the Tunis mutton. And now comes a new story from Prof. Wilson of the Arizona Experiment Station, giving the chief honors of cross-breeding to the Tunis sheep purchased of Charles Rountree, with the chief laurels of our own southwestern range, our best stockyards killing test, the quality test at the Easter dinners going to the Tunis, and nobody knows how many other startling surprises ready to be sprung by the distinguished breeder from Crawfordsville, it looks much like a sweeping triumph for Mr. Rountree and his African fat-tails.

HOLSTEIN DAIRY STOCK

Thirty head choice high-grade Holstein two-year-old heifers, good size, color and bred for milk. Also two registered yearling bulls. When in the market for dairy stock, write us your wants.

EDGEWOOD FARM,
Route 3, Whitewater, Wis.



Sound as a Dollar

That's the way to keep your horses. It's easy to do it with Kendall's Spavin Cure. Thousands of other horsemen have done it in past 40 years.

Cured Spavin

"Two years ago, I bought a pair of fine black mares. In about six months one had a Spavin. I simply used your Spavin Cure, and cured her entirely, which mystified all the horsemen.
Yours truly,
M. S. Culver, Union City, Conn."

Letters like the above are received by us daily from grateful horsemen.

Kendall's Spavin Cure

is the only safe, sure cure for Spavin, Curb, Splint, Ringbone, Bony Growths and all Lameness. Save your horses with the old reliable cure. Leaves no white hairs or scars. It is the world's best liniment for man and beast. At druggists, $1 a Bottle; 6 for $5. Ask your druggist for book, "Treatise on the Horse," or write to

Dr. B. J. Kendall Co., Enosburg Falls, Vt.

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LITTLE IRRIGATED FARMS

Merced County, in the San Joaquin Valley, 3000 acres in small tracts. Rich sandy loam soil. Santa Fe railroad crosses land. Two shipping stations. Surrounded by a highly productive district. Abundant water.

Write today for our descriptive booklet,

MERCED COLONIES

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CO-OPERATIVE LAND & TRUST CO.
"Lands that produce wealth"
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HORSES AND CATTLE.

N. H. LOCKE CO., Lockeford, Cal., are offering registered Jersey bulls and bull calves of the choicest Island and American breeding, from prize winners and big producers; also a carload of unregistered Jersey cows, and a car of Jersey heifers, unregistered.

JOHN LYNCH, breeder of Registered Short-horns; milk strain. High class stock. First-class dairy breeding. Smooth cattle. Best pedigree. P. O. Box 321, Petaluma, Cal.

PURE-BRED SHORT-HORNS, Poland-China hogs, and Shropshire sheep. Rose-lawn Stock Farm, Woodland, Cal.

A. W. MORRIS & SONS, Woodland, Cal.—Importers and breeders registered Holsteins.

STEVENSON & WAGNER, Newman, Cal.—Holstein-Fresian bulls, heifers for sale.

SWINE

FOUR OAKS STOCK CO., breeders of Berkshire and Hampshire hogs and Importer Hampshire Down sheep. Woodland, Cal.

POLAND CHINA HOGS; Barred Rocks and Black Minorca poultry; young stock and eggs for sale. M. Bassett, Hanford, Cal.

GEO. V. BECKMAN, Lodi, San Joaquin Co. Cal. Registered Poland-China Hogs, both sexes.

G. A. MURPHY, Perkins, Cal. Breeder of Champion Herd of Berkshires; also Short-horns.

KNOB HILL STOCK FARM—Reg. Poland-China swine. A. M. Henry, Farmington.

BERKSHIRE AND POLAND-CHINA HOGS. Both sexes. C. A. Stowe, Stockton, Cal.

STUDARUS & CUNNINGHAM, Mills, Cal Registered O. I. C. swine.

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroughbred Berkshires.

WITH THE STOCKMEN.

E. A. Clausen, of Woodland, has returned from a trip to the Eastern States bringing with him some valuable pedigreed stock. Among the animals brought to the ranch are the Berkshire boar, Third Masterpiece, and a Holstein-Friesian bull calf sired by Friend Hengerveld De Kol Butter Boy.

A new phase of the tuberculosis problem among cows has been discovered by the Marine Hospital Service men in their fight against squirrels in the San Joaquin valley. The officers in charge are said to have found that the squirrels eating grass over which tubercular cows have grazed become tubercular themselves and thus help to spread the disease. Thus, with the bubonic plague and tuberculosis too, the poisoning of the rodents goeth merrily on.

L. H. Schulz, of the Hawaiian Islands, has been buying mules near Woodland, Yolo county, for the sugar plantations.

With a licensing law in Wisconsin, the proportion of pure-bred to grade and scrub stallions changed from 35% pure-bred and 65% grade in 1907 to 46.6% pure-bred and 53.4% grade in 1911. The number of stallions licensed for the breeding season of 1911 was 1514 pure-bred and 1745 scrub and grade. Of the 1745, mongrels and scrubs numbered 673.

Willis Bledsoe, of Montpellier, Stanislaus county, is to retire from the stock business soon, according to a recent announcement.

DAIRY NOTES.

State Veterinarian Charles Keane has sent out letters telling dairymen that the veterinary department will assist by testing cows for all dairymen anxious to eradicate tuberculosis from their their herds.

Plans are being discussed for a cooperative cheese factory at Greenfield, Monterey county. A cheese and butter plant is also projected at Yerington, Nevada.

A. W. Morris, of Woodland, is completing an eight months' test of his Holstein cow, Sadie De Kol Burke. The record the cow has made up to this date indicates that the production of milk will equal or surpass all previous records for periods of the same length.

O. J. Kilgore, of Sycamore, Colusa county, has sold his herd of 30 milch cows to Frank Chester, of Hough Springs, for $2100.

The price of dairy cows in the East seems to have risen recently, the following prices being quoted in a Chicago paper: Fancy Holsteins, $56 to $65; cows, good to choice, $47.50 to $55; fair to good, $36 to $45; inferior, light, $25 to $35. As can be seen, these prices are much below those fixed in local sales.

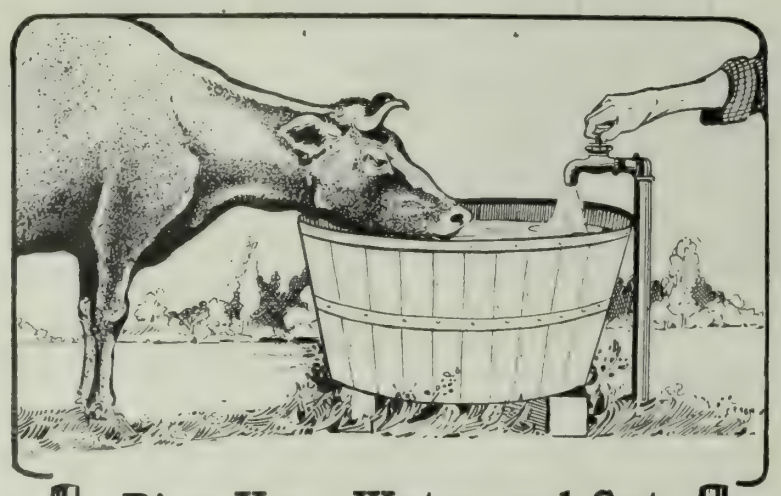
From an exchange in Imperial county we learn that a herd of 25 cows from an Imperial county dairy was recently sold to W. W. Hoist of Los Angeles at $130 each. The cows were full-blooded Holsteins and belonged to G. Reinbach.

F. C. Darr, formerly of Shattuck, Oklahoma, has purchased a quarter section of alfalfa land near Poplar, Tulare county, which he will use as a dairy ranch.

Some French veterinarians announce that they have found a cure for the foot-and-mouth disease in cattle. The treatment consists in the injection of serum under the skin of diseased animals.

From 12,000 to 15,000 head of cattle are to be shipped soon from the Miller & Lux ranch at Winnemucca, Nevada, according to a recent announcement.

The largest shipment of steers this season from the vicinity of Merced is said to be one of 400 head from the Crane ranch. The animals occupied 15 cars.



Pipe Your Water and Cut Out Much Hard Work

Tap that spring or creek and lead it around your yards, barns and house. Probably a few hundred feet of pipe and a little concrete work will do it all, and save you an immense amount of hard labor and a whole lot of time.

Save One-Fourth on the Cost of Pipe

by ordering from us. We are large wholesalers and sell DIRECT to you, putting the middleman's profit into YOUR pocket. You pay WHOLESALE prices for your pipe and get the best manufactured in America. We stand back of every foot of our pipe with a liberal money-back guarantee. Write us at once telling us your pipe needs.

ALEXANDER PIPE CO.
1085 Howard Street, San Francisco.

2335-ACRE RANCH FOR SALE

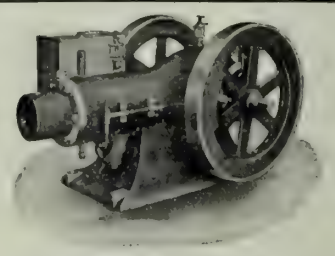
We have a Stock Ranch of 2335 Acres, three running streams, two barns, two houses, well fenced, rolling hills, good soil, about 1500 acres tillable, and has produced as high as eighteen sacks of wheat per acre. Four miles southwest of Dunnigan, Yolo County.

PRICE, $18 PER ACRE

EASY TERMS.

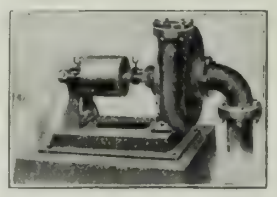
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WINTERS
Yolo County, - Cal.



THE SIMPLE OIL ENGINE
Simplicity—Economy—Efficiency.
No expert attention necessary.
No spark plug, batteries, carburetor or other complicated parts to get out of order.
"A child can operate it."
Guaranteed fuel consumption, material and workmanship.
Cheapest to buy. Cheapest to operate.
Dealers and Salesmen Investigate.

SIMPLE OIL ENGINE CO.
LOS ANGELES, 114 E. 8th St. — SAN FRANCISCO, 412 Pacific Bdg.



PIONEER CENTRIFUGAL PUMPS

Improved machinery and methods enable us to sell you this pump for less than you can buy any other make.

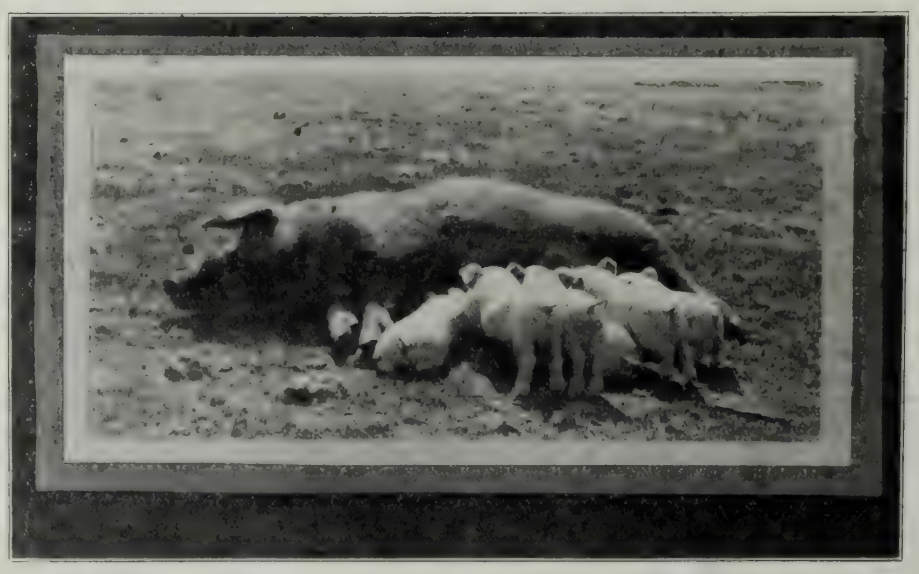
Our retail prices are less than our competitors' wholesale prices.

We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.

PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press

MANHATTAN STOCK FOOD
(RED BALL BRAND)

Time means Nothing to the Hog



Time means Money to the Hog Raiser

Manhattan Stock Food Fattens Quick. Is a Rapid MEAT MAKER.

A LITTLE OF THIS FOOD

enables stall-fed animals, whether horses, cows, bulls, pigs, sheep or poultry to ASSIMILATE ALL their hay, grain and other food by properly digesting it; thus their feed not alone fills them up but

BUILDS THEM UP.

Commence with a little at weaning time. There will be no sickness and you will be many pounds of pork ahead.

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POULTRY DEPARTMENT.

Conducted By M. RUSSELL JAMES.

POULTRY NOTES.

CHICKEN AS CHEAP AS BOLOGNA AND FRESH EGGS A PENNY APIECE.—Mr. Grant Curtis, of New York, one of the high-ups in poultry matters, but not dependent upon poultry for a livelihood, said in his address before the convention that every young man in the country should raise chickens, and if they did so, the cost of living would be materially reduced, as the price of fresh eggs would drop to a cent each and chicken would be as cheap as bologna. A most cheering prospect, truly, for the consumer in reducing the cost of his living; but Mr. Curtis neglected to tell the producer of fresh eggs and fat poultry how at the same time to reduce the cost of poultry living. Until he does so, if his proposition were carried out with poultry feed continuing to average from 2 to 3 cents per pound, the only permanent reduction which would result would be in the number of poultry raisers.

THE LITTLE BROWN HEN.—The following is the closing paragraph of the Denver Republican's splendid tribute to that small domestic fowl in whose honor an association of nearly 4000 members is holding a convention in Denver:

"Give the right kind of a farm-wife a setting of eggs and fate can do its worst. The fruit buds may drop from the trees in May, the wheat may burn in July, the corn-stalks wither in August, the September harvest become a mockery, but so long as the hen stays on the job the family will yet live and hope for better days. Few who have not been thrown in close contact with the American farmer in his less prosperous communities can realize to what extent through the years the family relies upon the eggs and the chickens, not only for the direct product, but for the many other necessary forms of food to be purchased in the market town in exchange for the poultry products. The problem of existence is never hopeless so long as there is a bit of a place and a few chickens. The universe had not been nearly so well organized had the little brown hen been left from the scheme of things."

POULTRY POINTS OF IMPORTANCE TO CALIFORNIANS.—Mr. A. Warren Robinson, of Santa Cruz, who is in close touch with poultry matters, sends up the following interesting article:

CALIFORNIA'S OPPORTUNITY.

Looking forward to the grand Panama exposition to be held in San Francisco in 1915, the poultrymen of Santa Cruz county are already planning for a showing of their fowls which shall do credit to this county and materially assist in making the State showing one of marked note.

It is none too early for poultrymen to lay plans for this coming event. The organization of the different county poultry societies under one federation is a grand movement in the right direction, and if good management is bestowed, California will make a wonderful showing along all lines pertaining to poultry.

Not only will individual exhibitors find this the very best method of advertising, but our favored State will receive a world-wide notoriety for exceptional advantages for breeding and raising fowls of all breeds. Thereafter, California should take her place in the very front rank of poultry-producing States.

Keeping this matter ever in mind, our poultrymen will strain every nerve for the attainment of the success that all should covet. Experienced veterans of other States and distant lands are to do their level best to win coveted prizes, and the half-hearted poultryman will be left far in the rear.

There is every indication that at the State Fair to be held in Sacramento the yatter part of this month, there will be a showing of poultry far in advance of that made in any previous year. It only needs good management on the part of the directors to bring this about. Our poultrymen will readily respond if they have merited encouragement. This exhibition of poultry will be followed by a show in San Jose, in the early part of October, which, it goes without saying, will be a very notable occasion. Stockton, Oakland, and Corning will make fine exhibitions in November, and in early December Petaluma will surpass all previous showings.

A rare opportunity will be offered young and old, of both sexes, who desire to better inform themselves upon incubation, brooding, and the rearing of fowls according to the most modern methods, at the farmers' short courses at the State Farm at Davis, in October. No one having the time to spare can afford to neglect this grand opportunity for acquiring priceless information. Theory will give way to practice, and, at trifling expense, the persons who shall be so fortunate as to attend will gain knowledge whose value cannot be reckoned in dollars and cents. Grand incentives, these, for a broadening, a rapid enlarging of our poultry affairs.

It is ever to be borne in mind that it is the persevering, the persistent breeder who is to override all obstacles, and who is thoroughly in love with his avocation, who will win coveted laurels, who will forge to the front and there remain.

A. WARREN ROBINSON.

Santa Cruz, Cal.

POULTRY.

IF YOUR POULTRY RANCH DON'T PAY, write us. If the ranch prospers, write us anyway. Everything for everybody interested in poultry. GEO. H. CROLEY CO., 629 Brannan St., San Francisco.

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WAYSIDE YARDS—A few settings from special S. C. White Leghorn matings, at $5 for 30. Carl Gregory, Petaluma, Cal.

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BUFF ORPINGTONS—Mr. and Mrs. W. S Sullivan, 25 Market St., Agnew, Santa Clara County, Cal.

BRONZE Turkeys and Eggs. Ed Hart Clements, Cal. Large size, good plumage, early maturity.

TWIN OAKS FARM—W. H. Bissell, Proprietor, Livermore, Cal.—Buff, White Orpington.

HATCHING EGGS—White Leghorns. Circular 164. A. H. Gregory, Fruitvale, Cal.

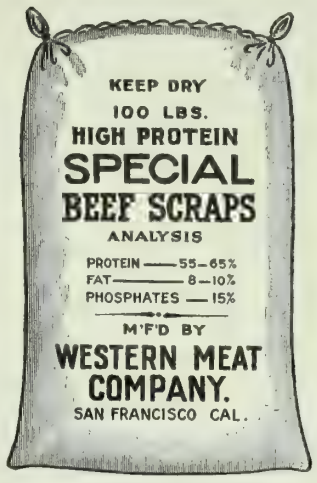
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WOULD such a poultry writer as C. W. Zimmer say:

"Being somewhat of an inventor I appreciate the good points as well as the simplicity of your invention," and then order two machines shipped to his father?

WOULD the well-known poultry writer, J. C. Clipp use the expression: "I am in love with your machine"?

WOULD the Great River Home Poultry Yards of Perrysburg, Ohio, run on the most scientific methods known in Poultry Culture, equip their entire plant, and thousands of poultry-men all over the country use the

NORWICH AUTOMATIC EXERCISER AND FEEDER

If it were not the greatest grain and labor-saving device ever introduced in the poultry business?

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TO POULTRY RAISERS: Do you realize this is the period that your hens really require most attention? The moulting season is when a building up of the hens' system is imperative. She needs a TONIC—something to put her in shape for fall laying—when eggs are worth real money.

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Orders booked for spring delivery of baby chicks. Our specialties are Rhode Island Reds and S. C. White Leghorns.

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1200 Pullets	May Hatching
1000 Pullets	June Hatching
500 Pullets	July Hatching
200 Cockerels	
50 Aylesbury Ducks	

Will hold for purchaser until five months old, if desired. Orders booked for eggs next season's hatching. Correspondence solicited. Visitors welcome.

R. N. FOSTER, Manager
HOPLAND, CAL.

The Home Circle.

The Beautifying of a Farm Home.

Written for the PACIFIC RURAL PRESS
By W. VORTRIEDE.

The wealthy, refined farmer with a large estate will employ a landscape architect to furnish a plan for the beautifying of the entire possession, and also employ a landscape gardener for leading the work; but the man with small means must rely upon his own or his wife's taste and skill to make pleasant surroundings.

The ten-acre farm, or of a little more or less, must be in the hands of a specialist to make it pay, such as a market florist, a truck gardener, berry farmer, or poultry raiser, who has learned his business thoroughly. Such a man needs no help for beautifying his home; he almost invariably knows what he can afford to spare from his few acres for such purpose.

The farmer of 20 to 100 acres, or even more, is most in need of a little help to make his home surroundings cheerful. Such size places are springing up on our great valley plains by the subdividing of the large stock and grain ranches.

Only a few of these ranches have stately native trees, by good luck so placed to make the dwelling homelike from the beginning.

The selecting of the space for the house, barn, and other necessary buildings is the first important step to be taken. Mistakes made here are difficult and most costly to alter.

There is so much variation in rolling or hilly ground that on-the-spot suggestions are of value only. But, luckily, most land in the great valley is flat and almost level, and of fertie, deep soil, where the locating farmer has the best chance to make a lasting home for his family. Such farms join at least on one side on a county or colony road, and, if otherwise suited, the side of the farm nearest the village, town or city should be chosen, but not too near the adjoining property. The distance should be far enough to avoid the road dust and give privacy—from 150 to 300 feet, depending somewhat on the size of the farm and on which side of the road the property fronts, is usually sufficient. The barn and other buildings should be placed so they will be annoyed least by noise and odor, but not any further than absolutely necessary; too long walks between buildings is very annoying in wet weather. The drive to and from dwellings should be such an easy curve or bend that the teams will travel it as readily as a straight drive; 20 feet is a convenient width. This drive should widen near the entrance of the house, broad enough for an easy turn, and extend to the kitchen door, but narrowed to 16 feet in width, and extending from kitchen to barn the same width. Drives well built could serve as walks also, or a walk 6 feet wide parted from the drive by a cultivated strip about 10 feet in width, could follow the line of the inner curve of the drive. If building only about 150 feet or less from the road, a straight walk about 8 feet wide, joining the road at right angles, is very convenient and looks well. The road joining the barn and county road should be as direct as possible, slightly curving or straight.

The planting of trees for beauty, shade, and shelter is the next work to be done to make the home worth the name. They should be planted the first season, taking little care, and not annoy the farmer and wife by keeping them working after the finishing of a long day's work.

Deciduous trees, or trees shedding their leaves in autumn, are best near house and drive. They give the welcome shade in summer and let in the needed sunshine in winter. Evergreen trees and shrubs are better for wind-breaks, shelter, background, and screens. Horizontal growing evergreens are best for groups and clumps.

The road joining barn and county road should have a row of shade trees planted on each side, but arranged so as to allow the largest load of hay to pass unobstructed. A row of trees for shelter and shade for the stock should be planted outside the corral fence.

The arranging of drives, walks and trees, and shrub planting should be so that when the time comes that tne owner can afford to have a fine lawn and beautiful flower beds and flowering shrubs, they are arranged right.

The lawn in front of the house should be open and whole, not cut up in distinct parts by walks or bad planting. A good rule is: plant sparingly around the edge and in corners of lawn and leave an entire open center.

Any unsightly object near home or barn can be hidden by shrubs or climbing plants.

If the owner has to economize in building the house, it can be made a pleasant picture by judicious planting of shrubs, flowers, and climbers near the house. If the house is simply but substantially built, a strip of lawn near the house, with a few climbing plants on the walls give a fine effect.

The restful effect of a blue-grass and white-clover lawn can be produced by alfalfa instead, requiring a great deal less labor and give better returns for stock feeding.

No time to call on the neighbors, too busy to join in getting up a neighborhood frolic, the burden of milking, feeding the chickens, doing the housework, caring for the hired help, keeping the stocking and mending bags up, leave no strength or ambition for anything but going to bed for the few short hours that can be given to rest. This is the case, quite too much the case, with four-fifths of the dear, good women who are helping to build those new big barns, buy the adjoining forty, or raise interest on the big mortgage. Still, my good friends, some way must be found to get some pleasure and recreation. Look upon it not as a pleasure or a selfish thing, but feel that it is just as necessary for you to somehow shape around to get in a little quiet reading and an occasional trip as it is to do the other things that seem so necessary.

Family singing at least once a week is a great thing. No, probably you haven't much of a voice, and some of the children may at first pipe in with broken voices, but certainly as often as every Saturday night or Sunday there should be some family singing.

We know a farmer who always has flowers when tney are in season on his table at mealtimes. No, he is not trying to put on airs, but he has learned to appreciate the beauties of Nature and to enjoy the poetry of farm life.

When you have a base hit made,
Don't linger on the line;
Steal to second, dive for third,
And your finish will be fine.

The Good Woman.

Her eyes are the windows of a soul
Where only the white thoughts spring,
And they look, as the eyes of the angels look,
For the good in everything.

Her lips can whisper the tenderst words
That weary and worn can hear;
Can tell of the dawn of a better morn,
Till only the cowards fear.

Her hands can lift up the fallen one
From an overthrow complete:
Can take a soul from the mire of sin
And lead it to Christ's dear feet.

And she can walk wherever she will—
She walketh never alone;
The work she does is the Master's work,
And God guards will His own.

—Jean Blemett.

The Secret of Long Life.

You sometimes see a woman whose old age is as exquisite as was the perfect bloom of her youth. She seems condensed sweetness and grace. You wonder how this has come about; you wonder how it is her life has been a long and happy one. Here are some of the reasons:

She knew how to forget disagreeable things.

She understood the art of enjoyment.

She kept her nerves well in hand, and inflicted them on no one.

She believed in the goodness of her own daughters and in that of her neighbors.

She cultivated a good digestion.

She mastered the art of saying pleasant words.

She did not expect too much from her friends.

She made whatever work came to her congenial.

She retained her illusions and did not believe that all the world was wicked and unkind.

She relieved the miserable, and sympathized with tne sorrowful.

She retained an even disposition, and made the best of everything.

She did whatever came to her cheerfully and well.

She never forgot that kind words and a smile cost nothing, but are priceless treasures to the discouraged.

She did unto others as she would be done by, and now that old age has come to her and there is a halo of white hair about her head, she is loved and considered.

This is the secret of a long life and a happy one.—Exchange.

A Bashful Young Man.

Dr. G. Herbert Richards, president of the Orange Board of Health, tells the Newark Star this one:

"A very bashful young man was driving with his best girl one cool Sunday. The young lady used all of her arts to make him 'spoon', but failed, and, despairing, became silent and preoccupied.

"'What's the matter?' asked the young man when the silence became oppressive.

"'Nobody loves me,' said the young lady tearfully, 'and my hands are cold.'

"'I'm surprised to hear you say that,' said the young man. 'God loves you, and your mother loves you, and as for your hands being cold, you can sit on them.'"

Her Distinction.

A teacher asked her class in spelling to state the difference between the words "results" and "consequences."

A bright girl replied: "Results are what you expect, and consequences are what you get."

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Located near Oakland, within short distance of San Francisco and the great universities of the West. Full collegiate courses leading to degrees. Entrance and graduation requirements equivalent to those of Stanford and University of California. Students fitted to teach regular lines of academic work and Home Economics. Special advantages offered in music, art and library work. Well equipped science laboratories and gymnasium. Special attention to health of students and provision for outdoor life. Courses so arranged that new college students may enter both semesters, opening in August and January.

For catalogue and brochure of views, address President's Secretary, Mills College P. O., California.

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OUR YOUNG FOLKS' DEPARTMENT.

Conducted By M. Russell James

The Girl Who Smiled.

The wind was east and the chimney smoked,
And the old brown house seemed dreary;
For nobody smiled and nobody joked,
The young folks grumbled, the old folks croaked—
They had come home chilled and weary.

Then opened the door, and a girl came in.
Oh, she was homely—very!
Her nose was pug and her cheek was thin;
There wasn't a dimple from brow to chin,
But her smile was bright and cheery.

She spoke not a word of the cold and damp,
Nor yet of the gloom about her;
But she mended the fire and lighted the lamp,
And she put on the place a different stamp
From that it had had without her.

Her dress, which was something in sober brown,
And with dampness nearly dripping,
She changed for a bright, warm, crimson gown;
And she looked so gay, when she so came down,
They forgot that the air was nipping.

They forgot that the house was a dull old place,
And smoky from base to rafter;
And gloom departed from every face
As they felt the charm of her mirthful grace
And the cheer of her happy laughter.

Oh, give me the girl who will smile and sing,
And make all glad together!
To be plain or fair is a lesser thing;
But a kind, unselfish heart can bring
Good cheer in the darkest weather.

—Selected.

Poultry Course for Young Folks.

DESCRIPTION OF BREEDS.

Diamond Jubilee Orpington.—This variety was brought out in 1897, the year of Queen Victoria's Diamond Jubilee; hence the name. The same breeds were used in its production as in that of the Buff Orpington, with the exception that Speckled Dorkings were used instead of Colored Dorkings. In this variety the main color is reddish brown, barred with black and tipped with white. The hackle or long floating feathers on neck and back are deep golden in color, striped with black in the center and tipped with white.

Spangled Orpington.—In the plumage of this variety the feathers are greenish black with the edges tipped with white. Barred Rock hens were mated with Colored Dorking cocks, and the pullets from this cross with Silver Spangled Hamburg cocks. Fowls of this variety are fine layers and very hardy.

The five original varieties of Orpingtons are Single Comb, but each has been duplicated in the Rose Comb, making ten varieties of this breed, but all have not been admitted to the American Standard of Perfection.

As before stated, this breed has the general characteristics of the American class of fowl, being all-purpose fowls. They are fine layers of brown eggs. good mothers, and excellent table fowls.

SUMMARY.

The English class of fowl is made up of three breeds and fourteen varieties. One of these breeds is classed with the meat breeds; one with the egg breeds, and one with the general-purpose breeds. All of the English breeds and varieties have white skin and either white or slate-colored legs and toes.

A Glimpse Into the Past.

Not oftn have we read so interesting a letter as one copied in the Rural New Yorker from old annals of the early settlement of Pennsylvania. It was written November 28, 1685, by a little Quaker girl to her grandmother in England.

There are many points of interest about this letter. It gives us a flashlight picture of a home in the New World two hundred and twenty-six years ago—the great kitchen or living-room with its immense fireplace on a winter's night when the flames roared in the wide-mouthed chimney, and that dear little maid "learned to bake cakes on the coals." And the garden in summer with its "rows of sage and camomile, comfrey and rue," and other sweet and bitter herbs from the home in Old England; and our useful friend the tomato—wildling of the New World—posing as something "just too pretty to look at." This picture has for setting the primeval forests and unexplored wilds.

Another point of interest is this: How many little girls or boys of the present day with the advantages of schools galore and the improved methods in teaching of our boasted educational advance of over two hundred years, can express themselves as correctly and intelligently in writing a letter as did this little girl in the wilds of America with only home study and her mother as teacher? One pleasant thought, however, we catch from this girlish letter: The centuries may come and go, and times and customs change, but the dear little maids remain always the same.

LITTLE SALLY'S LETTER.

Our new house is all done; I wish that thee could see our big kitchen. It has a fireplace entirely across one end of the room. Father brings the backlog in with the horse, and when the boys pile wood up against it, such a fine fire as it does make!

There is a little narrow window near the chimney where the spinning-wheel stands. I've learned to bake cakes on the coals. We have a Dutch oven now. I wish thee could have seen our garden this Summer. Besides the rows of sage, and camomile, thyme, comfrey and rue, with yarrow and some onions, we have great big love-apples (tomatoes). They are almost as large as an apple. They grow on a busy plant which starts from a seed in the Spring. Uncle James found them last Summer among the Indians. He brought some of the seed home. Mother says they are poison if we eat them; but I guess nobody would want to eat them. They are just pretty to look at.

Mother has school for me every day. She is the teacher and I am the scholars. I am head of my class. Father says that if I keep on doing that well he will send me to England to school when I get big. Then I'll see thee, grandmother, and the dear old place I love so well.

Cook—My dog took first prize at the cat show.

Hook—How was that?

Cook—He took the cat.—Journal of Zoophily.



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GAS—GASOLINE—DISTILLATE—NAPHTHA
Do the work at average cost of **One Cent** per horse power hour. Immense saving by our method of "pre-heating" the fuel. Built so perfectly that repairs cost less than $1 per year average. Every valve is **vertical** and will not wear on the stem or slip inside. Freezing cannot injure bed as **cylinder and base** are **separate.** Hammered steel cranks, cut gears, etc.
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RATES.

First class rail to New Orleans and First Cabin steamer to New York	$ 77.75
Round Trip	145.50
One way rail, one way steamer between New Orleans and New York	70.00
Second class rail and second cabin, New Orleans to New York	65.75

Rates include meals and berth while on steamer.

Write or ask any agent for details.

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MARKET STREET FERRY DEPOT,
THIRD AND SOWNSEND STREETS DEPOT,
BROADWAY AND 13th STREETS, OAKLAND

THE MARKETS.

San Francisco, Aug. 30, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The local demand is somewhat livelier than for some time past, and the market is very firm, though prices have not been quotably advanced. Business is picking up all along the Coast, with heavy buying in the North for Oriental interest.

California Club	$1.45	@1.50
Sonora	Nominal	
White Australian	1.55	@1.65
Northern Club	1.50	@1.55
Northern Bluestem	1.65	@1.70
Northern Red	1.60	@1.65

BARLEY.

The situation is extremely strong, prices on feed grades showing a further advance. Feed is in good demand locally, and shipping barley is being taken in large quantities by Eastern and foreign interests. A large part of the grain in the country has been sold, and stocks are pretty well concentrated.

Brewing and Shipping	$1.62½	@1.67½
Choice Feed, per ctl	1.60	@1.62½
Common Feed	1.45	@1.50

OATS.

No further change in prices is noted, but the market is firm, with quite an active demand, both for seed and feed grades. Offerings are light, and a further advance is expected.

Red Feed	$1.65	@1.75
Gray		1.65
White	Nominal	
Black	1.65	@1.70
Red Seed	1.75	@2.00

CORN.

Corn is inclined to easiness in value, though quotations are unchanged. The market is sluggish, with little demand locally, and moderate arrivals of Eastern stock.

Cal. Small Yellow	$1.75	@1.80
Eastern Yellow		1.70
Eastern White		1.70

RYE.

Prices remain as before, but are largely nominal, as there is little demand and no trading of any consequence.

Rye, per ctl	$1.55	@1.65

BEANS.

Numerous changes in prices are noted, as is to be expected at this time of the year, when the new crop is near at hand. Trading in most lines is limited, as buyers are inclined to wait until crop returns are more definitely known. Horse beans, however, are a little higher, and a further advance is noted in large whites. In other lines the crop outlook is favorable, and prices show a tendency downward, blackeyes and red kidneys being considerably lower, while limas have declined to some extent. The blackeyes harvest is well under way, and it is estimated that the yield from Riverside south will amount to 150,000 bags. Some buyers are offering about $4.55 in that district for new crop, but the general tendency is to wait. The situation in limas is made uncertain by conflicting reports regarding the amount of old stock remaining on hand. Some new limas are expected on the market within a few weeks.

Bayos, per ctl	$3.75	@4.10
Blackeyes	5.60	@5.75
Cranberry Beans	3.60	@3.80
Garvanzos	2.85	@3.25
Horse Beans	2.50	@2.75
Small Whites	3.60	@3.75
Large Whites	3.50	@3.75
Limas	5.65	@5.75
Pea		4.25
Pink	4.75	@4.90
Red Kidneys	5.75	@5.85

SEEDS.

So far there has been no demand of any importance, and trading is confined to narrow limits. Prices remain nominal as before.

Alfalfa	Nominal
Broomcorn Seed, per ton	$25.00
Brown Mustard, per lb	5½c
Canary	3¾@4¼c
Hemp	3½@4c
Millet	3 @ 3½c
Timothy	Nominal
Yellow Mustard	5¾c
Dried Peas, per ctl	3.75@4.00

FLOUR.

Prices remain unchanged, but everything is firmly held, and trading is active, both for local and foreign shipment.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.60	@4.80

Hay and Feedstuffs.

HAY.

Arrivals in the last week have been even larger than for the week previous, being, in fact, the heaviest of the season. Local buyers appear to have waked up to the fact that cheap hay can no longer be had, and their purchases have taken up the large arrivals without difficulty. Prices, in fact, are still advancing on some grades, and are very firm on nearly all descriptions. Some of the lower grades are rather slow of sale, but are expected to advance before long. The crop has been closely cleaned up in all district around San Francisco, and the high prices are attracting shipments from more distant points. Alfalfa is still rather quiet, and while there is some local business under way, the heavy offerings have brought a decline in prices.

Choice Wheat	$15.00@17.00
Good Wheat Hay	12.00@14.50
Other Grade Wheat	8.00@12.00
Wheat and Oats	8.00@15.00
Tame Oats	9.00@15.00
Wild Oats	7.00@12.00
Alfalfa	8.00@11.50
Stock Hay	5.00@7.00
Straw, per bale	35@60c

FEEDSTUFFS.

Most descriptions are firm, with a well sustained demand, but no further change is noted in prices.

Alfalfa Meal, per ton	$16.00@18.00
Bran, per ton	28.00@29.00
Cocoanut Cake or Meal	25.50@26.50
Cracked Corn	38.00@39.00
Middlings	34.00@36.00
Mixed Feeds	28.00@30.00
Rolled Barley	32.00@33.00
Rolled Oats	32.00@33.00
Shorts	31.00@32.00

Garden Truck.

VEGETABLES.

The onion market has been in rather poor condition most of the week, prices showing a slight reduction, though the market is now getting into better shape. Miscellaneous vegetables again show numerous changes, both up and down, though in a general way the market has been oversupplied. Excessive arrivals of tomatoes have been the principal feature of the last few days, and even at the present low prices it is difficult to clean up the arrivals from day to day. Green corn is also very cheap, supplies being too much for the market. Green peas are less plentiful and well maintained in price, while string beans are considerably higher. Cucumbers also find a better sale, and eggplant is a little stronger than last week. Summer squash and okra are in good demand, but large arrivals have caused a decline.

Onions: Yellow, ctl	70@	75c
Garlic, per lb	2@	4c
Green Peas, per sack	$ 2.00@	2.25
Tomatoes, per box	25@	50c
Cucumbers, per box	50@	60c
Cabbage		85c
Carrots, per sack		75c
Cauliflower, per doz	50@	75c
String Beans, sack	1.00@	1.25
Lima Beans, per lb	2½@	3c
Summer Squash, per box	25@	40c
Okra, per box	65@	75c
Green Corn, per sack	50c@	1.00
Eggplant, per box	50@	75c
Green Peppers, per box	35@	50c

POTATOES.

The market has been easy for the last week, and river stock is lower. Choice offerings, however, are in good demand, and with an increasing movement in the last few days, Salinas Burbanks are stronger. Fancy local stock in boxes continues to bring top prices.

River Whites	$ 1.00@	1.15
Sweet Potatoes, per ctl	2.25@	2.50
Salinas Burbanks	1.60@	2.00

Dairy Produce.

POULTRY.

Prices show no further change, but the market for general offerings is in poor shape, and it is difficult to move anything except choice stock at full quotations. Eastern arrivals are about as usual, but local chickens were in oversupply at the first of the week. Spring turkeys are quoted as before, and find a very fair demand.

Large Broilers	$ 3.50@	4.00
Small Broilers	2.50@	3.00
Fryers	4.50@	5.50
Hens, extra	8.00@	9.00
Hens, large	5.00@	6.00
Small Hens	4.00@	4.50
Old Roosters	4.00@	5.00
Young Roosters	6.00@	7.00
Young Roosters, full grown	8.00@	9.00
Squabs	2.00@	2.50
Geese, per pair		2.00
Ducks	4.50@	7.00
Turkeys, live, per lb	25@	30c

BUTTER.

The week's quotations for extras and prime firsts are below the level of the previous week, as trading in general has been quiet, with little demand from outside points. The market, however, is firm at present quotations. Lower grades remain as before.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	26	25½	25½	25½	25½	25½
Prime Firsts	24½	24½	24½	24½	24½	24½
Firsts	24	24	24	24	24	24
Seconds	22	22	22	22	22	22
No. 1 Packing stock	20	20	20	20	20	20
East Ladies Extras	21½	21½	21½	21½	21½	21½

EGGS.

Extras advanced quite sharply early this week, owing to an active demand for shipment. Production, however, is still fairly heavy, and at the moment the market is barely steady at a slightly lower figure. The only change in other grades is a decline in Eastern stock.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	30	30	30	30	31½	30½
Prime Firsts	28	28	28	28	28	28
Firsts	27	27	27	27	27	27
Seconds	19½	19½	19½	19½	19½	19½
Selected Pullets	24	24	24	24	24	24
Eastern	16	16	15	15	15	15

CHEESE.

Trading has been of small proportions for the last few days, and while arrivals are moderate, new local flats and Y. A.s are lower. Arrivals of Monterey cheese are falling off, and the market is gradually getting into better shape.

Fancy California Flats, per lb	13½c
Storage	14 c
Firsts	12½c
New Young Americas, fancy	15 c
Monterey or Jack Cheese	12@12½c

Deciduous Fruits.

FRESH FRUITS.

Supplies in most lines continue excessive, and the market is in poor shape, with very few fruits cleaning up at anything like satisfactory prices. In some lines choice or fancy fruit is in good demand, but the large offerings of common fruit tend to depress the market. Apples are easier, and little attention is given to anything but fancy Gravensteins. Bartlett pears are lower than last week, and are still very easy, owing to large offerings of ripe fruit which is pressed for sale, though a few fancy lots of green stock are held above quotations. Choice peaches in small packages are a little stronger, but there is plenty of ordinary stock that has to be moved at concessions. Black figs are fairly plentiful, but find a good demand. Plums and nectarines are lower. A few quinces are coming in, but are not much of a figure in the market. Cantaloupes are lower, the market being still oversupplied, though nutmegs are a little stronger than last week. Watermelons are rather easy. Strawberries and blackberries are in very poor condition, though huckleberries and raspberries bring an advance. Grapes are quiet, though seedless goods bring very fair prices.

Watermelons, per doz	$ 1.50@	2.25
Cantaloupes, standard crate	75c@	1.25
Nutmegs, box	25@	50c
Raspberries, chest	6.00@	9.00
Blackberries, chest	3.00@	4.00
Strawberries, chest	4.00@	5.00
Huckleberries, lb	15@	16c
Apples—		
Fancy Gravensteins, box	$ 1.10@	1.65
Choice	60c@	1.00
Other varieties	1.25@	1.35
Peaches, lug box	1.00@	1.25
Small box	40@	65c
Plums, crate	40@	75c
Nectarines, crate	65@	85c
Figs, drawer	50c@	1.00
Pears, Bartlett, box	50c@	1.25
Quinces, box	75c@	1.00
Other varieties	65@	85c
Grapes—		
Seedless, crate	75@	90c
Other varieties	50c@	1.00

Dried Fruits.

The active movement of a few weeks ago is no longer in evidence, and the situation is now rather quiet, with little demand from consuming markets and no great anxiety on the part of packers to take on additional supplies. The feeling in regard to prices is rather easy. The amount of pears dried is turning out greatly in excess of estimates, and this fruit has declined quite sharply. Packers have also reduced their offers for apricots, as there is a general unwillingness in consuming markets to buy on the basis of the figures recently prevailing, and local interests are anxious to effect sales. A similar situation prevails in raisins. Purchases of new stock by Eastern interests have so far been very small, and while there is still some uncertainty regarding the crop, the packers are unwilling to buy more stock at the prices recently offered. Seedless raisins, however, are still strong. The movement of the fruits mentioned above is limited, as most growers who have not yet sold hope to realize better values as the season advances. Local packers, however, look for a further decline during the early fall. Other descriptions are unchanged, and there is a fair movement of prunes, though the Santa Clara crop is said to be pretty well cleaned up. The New York Journal of Commerce says:

"Although advices from the Coast indicate that the market on new crop peaches is unsettled, there is a stronger undertone. The fact that one prominent packing factor has been active in buying from the growers and has succeeded in accumulating several thousand tons, for which, according to the reports from the Coast, he has paid top prices to growers, has created resentment in other packing quarters. The short sellers on orders from the South and Southwest principally are now exerting bearish influences, the report goes, by sending out reports of a better crop than was at first expected. In the meanwhile they are said to be buying from the growers anything they can find at 10c or less net to the grower. Thus while some reports emanating from the short interests would impart an easy tone to the market, the undertone is strong, and the few buyers who are enquiring for September shipments from the Coast find that they can do little if any better than 10¾c for choice, 11½c for extra choice, and 11¾c for fancy Muirs, f. o. b. Coast, in 50-lb. boxes, unfaced.

"Sales of fancy seeded raisins are said to have been made for October shipment out of the new crop at 7½c f. o. b., but this is exceptional, the inside price being quoted by most reputable packers being 7¾c f. o. b. Coast for October shipment. Several of the larger packers still hold for 7¾ and 8c f. o. b. Coast."

Evap. Apples, 1911, per lb	10	@10¼c
Apricots	14	@15 c
Figs, new crop	5	@ 7½c
Peaches, new crop	10¼	@11 c
Prunes, 4-size basis, new crop contracts		5½c
Pears, new crop	8	@ 9 c
Raisins—		
Loose Muscatels, in sweatbox	4	@ 4½c
Thompson's Seedless	6	@ 6¼c
Seedless Sultanas	5	@ 5½c

Citrus Fruits.

The Eastern fruit auctions show a little better average price for oranges and lemons, though the price on the latter is still low. At New York on Monday, the 29th, valencia oranges varied greatly in price, averaging from $5.65 for the Old Mission brand, down to $1.80 per box for Palm Tree brand. Lemons in that market sold for $2.40.

At Boston the same day, valencias brought from $2.55 up to $4.55, and lemons from $3.25 to $3.95 per box.

Cincinnati markets on the 29th took valencias at from $2.55 to $2.90, and lemons from $2.10 to $3.85.

Up to August 27, the total shipments from California for the season had been 35,439 cars of oranges and 6121 cars of lemons. Only valencias and lemons remain in the State to be shipped, till the new season opens.

In the San Francisco orange market, demand and supply are running about the same as for some time past, but prices on the better lots of valencias are higher. Grapefruit is also a little higher, while lemons are easy at a decline.

Valencias, choice to fancy	$ 3.50@	4.50
Grapefruit	3.00@	3.50
Limes	5.50@	6.00
Lemons	1.50@	5.50

Nuts, Honey, Hops, Etc.

NUTS.

There is a fairly active demand for almonds out of the new crop, as the spot market is practically bare, and an early clean-up is anticipated, notwithstanding the high prices prevailing. Walnuts are nominal, with practically nothing offered at present. The Oregon walnut crop is said to promise exceptionally well.

Almonds, 1911 crop—	
Nonpareils	18½c
I X L	17¼c
Ne Plus Ultra	16½c
Drakes	14½c
Languedoc	14½c
Hardshells	8 @ 8½c
Walnuts—Softshell, No. 1	15 c
Standard	14½c
Softshell, No. 2	11 c
Budded	17½c

HONEY.

There is nothing new in the local market. Quite a lot of honey has been sold for shipment East from Tulare, practically cleaning up the yield of that district. The demand for shipment is good, and offerings are rapidly cleaning up, though there is no great activity in the local market.

Comb, white	15 @16 c
Extracted, water white	8 @ 9 c
Amber	7½@ 8 c
Off grades	5 @ 6 c

BEESWAX.

So far there has been no movement of any importance, but light stock is scarce and firm. Off grades find little demand. prices.

Light	28 @35 c
Dark	23 @26 c

HOPS.

The market has quieted down since the activity of last week, as few dealers are willing to pay the prices recorded at that time. A few sales are being made around the prices quoted, but the few growers who have not sold are firm in their views.

1911 crop	35 @40 c

Live Stock.

Hogs are moving in a rather larger way than for some time past, increasing arrivals being readily absorbed at the figures formerly prevailing. Sheep are coming in quite freely, and prices show some reduction. Dressed beef and veal are a little higher.

Gross weight:	
Steers: No. 1	5 @ 5½c
No. 2	4¾@ 5 c
Cows and Heifers: No. 1	4¼@ 4½c
No. 2	4 @ 4¼c
Bulls and Stags	2 @ 3 c
Calves: Light	6½@ 6¾c
Medium	6 @ 6¼c
Hogs: Grain-fed, heavy	7¼c
150 to 250 lbs	7⅜c
100 to 150 lbs	7 c
Small prime wethers	3¾@ 4 c
Large prime wethers	3¾@ 4 c
Ewes	3¼@ 3½c
Lambs	5 @ 5¼c

DRESSED MEAT.

Steers	8¾@ 9¼c
Cows	7½@ 8½c
Heifers	7½@ 8½c
Veal, large	10½@11½c
Mutton: Wethers	8 @ 8½c
Ewes	7½@ 8 c
Lambs	10 @10½c
Hogs, dressed	10½@11½c

WOOL.

The market is still very dull, no transactions having been closed as yet in fall wool, though prices may be established in a few days. At the moment prices are largely nominal.

Spring Clip—	
Choice Southern, Year's staple	10 @12½c
7 months	8 @11 c
Lambs, spring	8 @10 c
Northern, year's staple	14 @16 c

HIDES.

The refusal of buyers to take on additional supplies at the prices recently prevailing has brought a general decline of ½c in all lines of hides. Sheepskins are also quoted lower.

Heavy Steers, over 56 lbs	11½c
Medium	11 c
Light Steers, under 48 lbs	10½c
Heavy Cows, over 50 lbs	10½c
Light Cows, 30 to 50 lbs	9½c
Kip	11½c
Veal	16 c
Calf	16 c
Dry—	
Dry Hides	17½@18½c
Dry Bulls	15½c
Dry Kip, 10 to 15	18 @18½c
Dry Veal, 5 to 10	19½c
Dry Calf, 7 down	23 @23½c
Sheep Skins—	
Long Wools	$ 0.85@ 1.25
Medium Wool, 6 to 9 mos	50@ 75c
Short Wool, 3 to 6 mos	30@ 50c
Lambs	35@ 50c

HORSES.

Recent sales have brought out a great deal more interest than has been apparent for some time past, and somewhat better prices have been realized for the general run of horses, offerings of which in the local market have been pretty well cleaned up within the range quoted. Mules are in fair demand in the country, quite a lot of stock having been purchased recently for shipment to the islands.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	235@285
Chunks, 1350 to 1500 lbs	200@250
Wagon Horses, 1250 to 1350 lbs	150@200
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	100@125
Old Mares	90@115

MULES.

1200 lbs	$240@290
1100 lbs	200@225
1000 lbs	165@190
900 lbs	140@165

SPECIAL DECIDUOUS MARKET

Sacramento, Cal., Aug. 28, 1911.

A general depression in all the markets of the East and West has been noticeable for the past two weeks, due principally to universal business conditions, caused by stock market fluctuations, railroad retrenchment, together with heavy quantities of local home-grown fruits.

The fruit crop in Illinois, Ohio, and New York has been earlier and heavier than in several years. The local dealers, in nearly all of the markets, have received this fruit on consignment, consequently could not handle California fruits only at a very reduced price. Furthermore, the principal reason that caused the depression in the Bartlett pear market was on account of the fact that nearly 85% of the Bartletts pears shipped from this State this season were, in appearance, poor quality, being scarred and rusty, undersized, and very uneven in shape.

The bulk of these pears was rushed East in a short space of time, though the river season has extended over a greater period than any previous season in the past five years, due principally to the lateness of the crop and the length of time it took to mature. Had the growers packed their No. 1s, or fancy stock, separately from the No. 2s, I doubt if the market would have reached such a low level.

It is impossible to predict the prospects on grapes, for several reasons. The quality of the tokay has not yet been determined this season. Business in general, throughout the country, especially east of the Missouri river, is unsettled, and it is possible that the Atlantic seaboard markets will be, in a measure, affected by the heavy crop of Almerias, the first shipment of which will leave Spain about September 9. However, it is reported that the quality of these Spanish Malagas is very fine, and if such is the case, upon their arrival in New York they will undoubtedly be bought for storage.

We understand the crop this season amounts to nearly 2,000,000 barrels, and on account of the unsettled conditions in England, which market, as a rule, consumes in the neighborhood of 1,000,000 barrels, it is probable that a larger amount than usual will be shipped in the United States. Naturally, under the circumstances, heavy arrivals are likely to affect the market on California grapes.

Michigan is reported to be shipping heavily, early peaches and grapes, but we do not look for serious competition from this particular district, as was at first anticipated, owing to the fact that the quality is reported good and buyers from all over the West are purchasing for wide distribution.

New York State appears to be cleaning up rapidly. St. John, Foster and Crawford varieties already have been shipped, and Elbertas will begin to move this week.

As the bulk of the tree fruit shipments from California have been shipped, and as the balance of the crop, aside from grapes, is not heavy, we look for a slight upward tendency in all markets, and it appears that the season will clean up showing a creditable average on all varieties.

The markets averaged as follows for the past week:

New York—Wickson, 75@85c; Susquehanna, 45@80c; Tragedy, 85c; Kelsey, $0.65@2.55; German, $1.50; Grand Duke, $0.75@1.65; Burbank, 65@75c; Crawford, $0.40@1.15; Lovell, 45@80c; Tokay, $0.75@2.65; Hungarian, $0.60@1.80; Sugar, $0.50@1.00; Bartlett, $0.80@3.50; Giant, $0.70@1.60; Silver, 60@90c; Thompson's Seedless, $0.45@1.30; Malaga, $0.60@1.87; Muscat, $0.85@1.20; Diamond, $0.65@1.55; Elberta, $0.50@1.05; Yellow Egg, $0.60@1.25; Satsuma, 65@75c.

Chicago—Lovell, 60@75c; Bradsnaw, 55@85c; Tragedy, $0.50@1.35; Kelsey, $1.05@2.20; Tokay, $0.65@2.90; Silver, 50@60c; Crawford, $0.55@1.20; Elberta, $0.55@1.20; Grand Duke, $0.70@1.35; German, $0.60@1.00; Sugar, 55@65c; Susquehanna, $0.55@1.10; Gros, $0.65@1.15; Bartlett, $0.60@2.20; Y. Free, 50@65c; Giant, $0.70@1.30; Malaga, $0.80@1.80; Thompson's Seedless, $0.50@1.05; Yellow Egg, $0.55@1.10; Hungarian, $0.60@1.50.

Philadelphia—Elberta, $0.55@1.10; Kelsey, $0.75@1.60; Crawford, 45@80c; Muscat, $0.90@1.20; Tokay, $2.20; Bartlett, $0.75@1.65; Foster, 50c; Malaga, $0.85@2.10; Clusterette, $1.05@1.10; Thompson's Seedless, 55@80c; Washington, 60@70c; Yellw Egg, 60@95c; Susquehanna, 50@70c; Gros, $1.10@1.65; Silver, 50@65c.

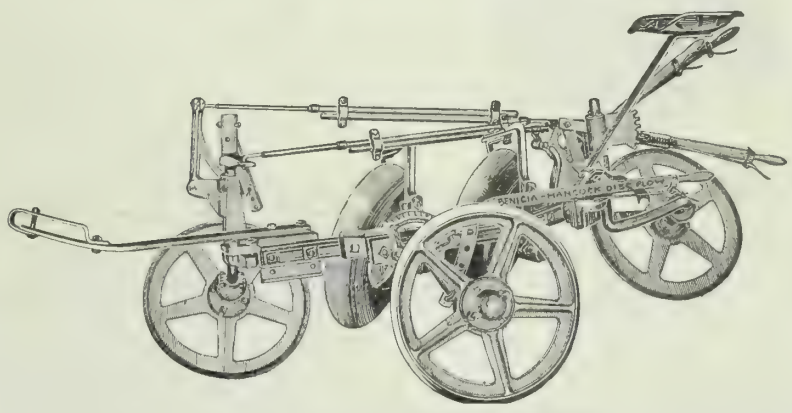
PUBLISHER'S DEPARTMENT.

Business is very good at this office. Since moving to our new location on Market street, we have found that more people come in to do business with us. Especially in the book department is the increase noticeable. Not all the increase of business is to be attributed to change of location, as the number of new subscribers added each week from over the State and the new advertisers using our columns are not influenced by location. The gratifying increase of the business means that we shall soon have to increase the number of pages of the PACIFIC RURAL PRESS.

Note the advertisements in this issue. Prominent among them is the announcement of spineless cactus by Luther Burbank, the pipe advertising of the Alexander Pipe Co., and the Layne & Bowler Pump Co.

A new column has been started this week, for the benefit of our readers who may have something to sell or exchange. Look up the "Classified Advertisements" and read them; perhaps there may be something of interest to you. Send us your ad. for this department—the rate is very reasonable.

Benicia = Hancock



2=Disc Plow

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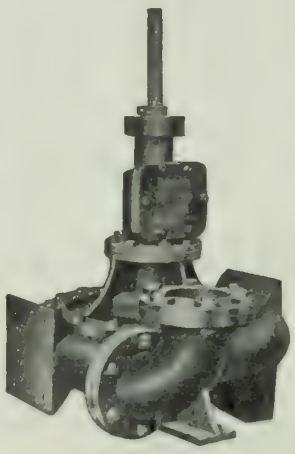
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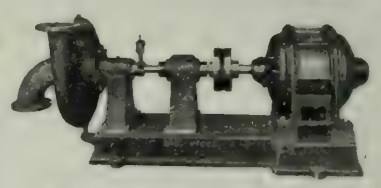
HENRY COWELL LIME & CEMENT COMPANY

9 MAIN STREET, SAN FRANCISCO



Krogh New Vertical Water Balanced Pump

¶ Careful irrigationists are investigating our new water balanced Pump---then buying it.



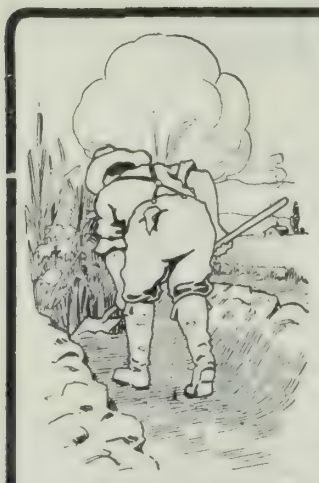
Krogh Electric Pump

¶ Experience has taught them that a successful pump must be not only efficient but must also be capable of withstanding, to a reasonable degree, the cutting action of sand. Our pumps excel on this point. Bulletin No. R10 tells all about them.

¶ Our branch house, 206 N. Los Angeles Street, Los Angeles, carries a complete stock.

Krogh Manufacturing Company

149-157 BEALE STREET, SAN FRANCISCO, CAL.



Irrigation Problems

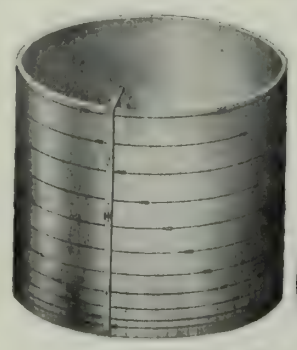
The continual cleaning-out of weedy ditches is but one of the disagreeable and expensive features of old-style Irrigation Methods.

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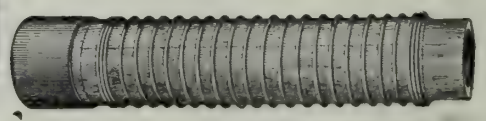
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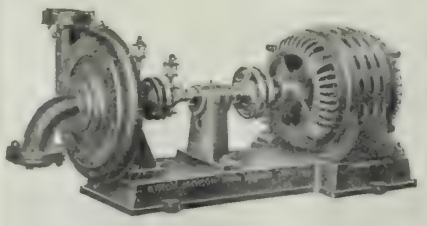
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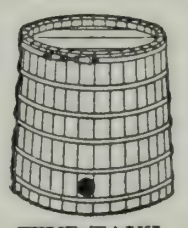
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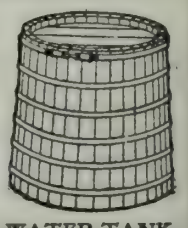
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THE PACIFIC RURAL PRESS

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CALIFORN STATE

TOMATOES THIS SEASON.

Written for the PACIFIC RURAL PRESS by Mr. D. J. WHITNEY.

The opening of the canning season for tomatoes seems to find that crop in about the same condition as California fruits as regards supply and demand, although probably with less prospective profit. The crop appears short and the stock on hand practically exhausted. Tomatoes are produced in all parts of the country, unlike some California fruits, but the production in the East will be quite short, according to the U. S. crop reports, as it is with other crops, and the canners expect the supplies this year to be only large enough to carry them to 1912 and leave no surplus.

Sources of Production.—While tomatoes are grown in small quantities or in market gardens all over the State, they are grown extensively for canner and mid-season market only in two or three places. The largest district is in Alameda county from Oakland south well into Santa Clara county. Along the Sacramento river below Sacramento about half as many as are produced in Alameda county are grown, and around Stockton there are a few for the canner or for shipment to other markets. In other places only a few, comparatively speaking, are raised.

The Alameda county tomato is firmer and more meaty than that raised along the river, and about 12 tons may be produced in a good year, while 6 tons would be fair in the latter named district. The average crop in Alameda county would run nearer 8 tons, and less than this would often be satisfactory. The acreage in the county has been continually decreasing, owing to the growth of the towns in the district where tomatoes are grown, and the production per acre has been decreasing, owing to continual cropping.

Quality of Tomato Desired.—The kind of tomato desired is the same for both cannery and open market, except for size and shape. The canners prefer as large a tomato as possible, and the one generally grown gives a heavy crop per acre, but is uneven in shape. The market tomato is smaller, smoother and bears less, although the price is usually greater than for the canning kinds. Both tomatoes must be firm fleshed and not too juicy or watery. The Alameda county tomato is firmer than the river product and makes a "solid pack" that sells at a premium over the "standard pack" from the river. The contract price for tomatoes in either district is, however, the same, and late in the season the quality of the Alameda tomato deteriorates to some extent, and has to be put up in a "standard pack" also.

Owing to its smaller size and the less quantity produced per acre the market tomato cannot be sent to the cannery except at a loss, if the market is overstocked, while its uneven shape prevents the canning tomato from selling, except at a loss, in the open markets.

Growing for the Market.—The practice of growing tomatoes under glass for the winter and spring trade is not employed in this State, as it is in the East, owing both to the long season in which they grow in the open and the importation of tomatoes from the west coast of Mexico the rest of the year. Tomatoes are shipped in large quantities from Imperial and Coachella valleys between the time the Mexican and northern California crops are coming in, allowing this fruit to be on the market practically all the year round.

The growing of early tomatoes, however, may be very profitable in central California, as the price early in the season is often three or four times as great as later on, although the loss from late frosts, extra planting and extra care usually cuts profits down to a moderate level. The tomatoes on the river ripen earlier than those near the bay, and consequently command a better prace at first, and less go to the canner in proportion to the amount produced. Some from both places are shipped as far east as Denver, and sometimes further, nearly every year. Only about a third of the crop, aside from that grown in truck gardens in all parts of the State, goes to the market, as the canners take the bulk of the production, and a large part of that canned goes East.



A Tomato Plant at Christmas, at Loomis, Placer County.

The Cost per Acre.—Good tomato land in Alameda county rents for about $20 per acre. The same land, of course, is not used for the one crop year after year, owing to the need for rotation. On the river the rent is less.

The itemized cost of producing an acre of tomatoes, aside from interest and taxes, is about as follows: Plowing and cultivating up to the time of planting, $5 per acre; planting, $2.50, which could be reduced to $2 if no damage was done by frosts, disease and insects, and replanting was not necessary; cultivating after planting, $1; hoeing, 50 cents, and picking, from $15 down. The latter item varies with the size of the crop, 5 cents a box being the usual cost of harvesting the crop.

A good part of the tomato growing is done by Japanese and Chinese on shares or lease, although other nationalities are more than holding their own in this business.

Contracts for Canning.—Contracts with growers are usually made early in the season at about $7.50 per ton, which is the price this year. Many growers however, prefer to run the chance of waiting till the crop is ready to pick before selling it, and some years get several dollars more than growers under contract. In other years when crops are large they have to sell at a much smaller figure. There is, however, no objection by the canneries to this method, and F. H. Williams, one of the largest growers in Alameda county, follows this method of selling nearly every year.

With the steadily increasing population of State and Nation, decreasing local production, in the main tomato section at least, and bare market, there should evidently be but little danger of planting too many tomatoes for some time yet. Being a year to year crop, no large capital is needed or long time required before returns are secured. There is, of course, more danger of overproduction for market tomatoes than canning kinds in case of a bumper crop and large acreage, although returns may be proportionately larger in other years with proper handling.

The Outlook This Year.—The cool, late season has lessened the coming crop, as it has with most fruits. Not only was the planting late and growth slower than usual, but in some places the fruit refused to set

(*Continued on Page 207.*)

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Sept. 5, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.08	.15	.26	62	50
Red Bluff	04	.04	.07	98	54
Sacramento	00	00	.02	92	50
San Francisco	00	T	.01	68	50
San Jose	00	00	.07	88	46
Fresno	00	T	00	104	52
Independence	00	.10	00	95	48
San Luis Obispo	00	T	.05	92	46
Los Angeles	00	T	00	94	56
San Diego	00	.12	00	76	60

The Week.

Have you sought a California sunrise by the Netherlands Route? We did it last week, and were highly delighted with the sunrise and deeply impressed by what we saw on the way to it. And what is the Netherlands Route, and what is there about it? The novelty in it is chiefly in the name, and that becomes very significant when one thinks widely about it. The choice of the name is a simple matter; the suggestiveness of the name is profound. The choice, we presume, came about through the persistent endeavor of the Southern Pacific Company to keep people moving. Passenger traffic success depends upon overcoming the inertia of mankind and the substitutions of inducements to travel for the proverbial wisdom of staying in one place—which the present generation is coming to repudiate. The old exhortation to inactivity on the ground that "the rolling stone gathers no moss" is reduced to absurdity by the new noun, "moss-back," which describes a person inactive mentally and physically—a fossil; a silurian. The new idea does not deny the old; it explains it. It picturesquely demonstrates that the worst thing you can get on your back is moss; worse than stripes; worse than rags; worse than a shell, for a shell-back does move—slowly. And so comes about the popular conviction that a rolling stone, in the loss of moss, loses only that which is not worth gathering, and by rolling gains everything: observation, experience, wisdom, impulse to new action, achievement, success beyond ancient standards in every way. And thus it is plain that enterprise in passenger traffic is one of the greatest educational agencies of the day. Therefore we appreciate the contents of the suggestion which established the Netherlands Route in the nomenclature of California travel, for it means an invitation to see the Holland of California.

Of course there is nothing new about the route but the name and its popular significance. As we stood upon the hurricane deck of the Navajo at 5 a. m. on August 24 watching for the sun to gild the crests of the Sierra Nevada we were simply doing what some one else's father did in the autumn of 1849—with this difference: the pioneer was looking to the mountains and dreaming that the gold he saw in the sky was but the reflection of the gold in the mountains awaiting the glance of the prospector; to us the gold in the sky was not a reflection but rather a suggestion of the gold which all coming generations will gain by tillage of the rich riverside lands which stretched for miles from the river's edge to the plain beyond. The route was the same which the miners of 60 years ago chose to avoid the crossing of the hot, dry plains of the great valley: the point of view was different. They had no idea that the sea of rushes through which the river found its winding way, bordered by the tree-grown banks which it had piled up with its own flood-flow sediment, would in time be the great garden of California. The idea came later to the earlier reclaimers, but they saw it darkly through the rebellion of the river against unsystematic and inadequate restraint. We now have the idea and the foretaste of its successful realization through co-operation of Nation, State and private owners—for these factors will ultimately bring not only the Netherlands Route but the Netherlands of California attained, behind dykes stalwart as those which are the historic endowment of Holland and occupied by people as numerous and prosperous as those who have for centuries made their name and fame a pride of Europe and a benefaction to mankind.

Activity Along the Sacramento River.

But the delightful hours which we passed from the dawn until the steamer reached her landing in the capital city were not all occupied with dreams. There was too much to see along the river bed and the river banks. As a suggestion of the possibilities of traffic on the great waterway we met in the stream or passed at the landings not less than six river steamers in action within two hours of early day light. Besides these, there were fleets of fishing craft, numerous motor boats of private owners, several ferries and other forms of water traffic in action. Those who know only California's railway and highway activity certainly have no idea of how much the rivers are used and no present use is any measure of their coming usefulness. Along the banks of the stream there was agricultural action in all forms; great stretches of verdant pasturage peopled with herds and of grain stubble with piles of hay and grain like fortifications; large acreages of orchard and of garden products; new levees of great height and breadth and dredgers extending them; miles of driven piles and of 12-foot woven-wire fence holding bank protection in place. Everywhere along the river south of Sacramento there were abundant indications of investment and improvement, not to speak of two railways on their way toward San Francisco along new lines—showing that even the iron horse enjoys the riverside and to startle the river gods with his piercing shrieks.

Having so recently traversed the plains of the valley and enjoyed words about their outlook and the disposition to hasten its realiaztion by energy and investment, it pleased us to see all these things which are indicative of another strong promotive effort in the State. In the years to come there will be peoples of the mountains and the foothills; of the irrigated plains and of the dewatered river lands and of the coast regions with their infinite variety of agricultural endeavors. All these districts of the State are rich and productive and in their several ways welcome investment and effort. Sometimes we feel, as we do now, that of all important things which should be done for the State nothing is greater nor more promising of ample reward than well planned enterprises for the improvement of internal waterways and rendering their adjacent agricultural lands available for individual ownership and working. To this end we rejoice in the great improvements planned for co-operation between nation and State and have high hopes that both the river and the adjacent lands may be saved each for its own share in increased production, commerce and the movement of those who scorn to gather moss. Every associated effort of California people toward these ends may be of influence and value. We desire therefore to approve a movement which has just resulted in the organization of the Delta Association of California, composed of property owners of the delta and reclaimed swamp lands in the Sacramento, San Joaquin and other rivers of the State. Among the aims and other objects of the association are the co-operative efforts to protect the delta and reclaimed lands from floods, to destroy crop pests and eliminate plant diseases, to strive for improved wagon roads and bridges, as well as improved mail service; to establish weather stations and to report high water from important points, to establish telephone and telegraph communications to prevent danger from floods, to determine the best crops for the soil, to grade the products and to keep a record of the acreage of the various crops, to work for the introduction of improved methods of farming, better implements, machinery and live stock, and to foster industries allied to the delta agriculture.

Picturesqueness of the Melon Industry.

The enterprising people who have laid out for themselves all the activities just outlined can certainly have none of the joy of ease which traditionally associates itself with a melon in a fence corner, and yet they have, we believe, some thought of melon-cutting in the advanced values of the properties they hold, and they are entitled to it. Come to think of it, the melon as a token of idleness is almost as out of place now as a moss-gathering stone has become as a sign of thrift. For the melon, especially he of the musky odor, is becoming very strenuous and is gathering much that is worth while by rolling. For example, the Imperial valley, our southeasternmost county, which now desires to annex Mexico for the purpose of getting the chief irrigation canal out of revolutionary associations, has shipped this year about 2700 cars of canteloupes—something like a thousand more cars than in any previous year. In a single day they sent forwarded 133 carloads making a train considerably more than a mile long. A writer for the Los Angeles Times, with a taste for computation, says: "There were 324 crates in each car and forty-five melons to each crate, or a total number of 14,580 melons in each car, and in the train 1,939,140 melons. When one appreciates the fact that each of these melons was handled at least three times in picking, wrapping and crating, he can readily imagine the army of men necessary in the field to do this work. This was probably the greatest number of cars of the same class and loaded with the same product ever hauled on one train."

This seems to be strictly business. Picturesqueness could have been had by stating that these melons were grown and this train started below sea level but that statement would throw the record into the category of fish stories with all distant readers, probably. In the Turlock district of Stanislaus county melons are a leading product. They do not as yet grow as many as the Imperial valley, so they make up by talking more about it. Last week they had a melon carnival at which 5000 people attended and disposed of about as many melons. They also had a procession and an oration—not to speak of a melon-eating contest for a prize of $100 which is probably more than the contestants are worth, melons included. We call the attention of the State of Texas to these impressive facts, for Texas has an export melon ambition and is making quite a fuss about sending some to Canada.

At the State Fair.

The State Fair closed last Saturday night with a reported reduction of gate receipts of nearly $20,000 from last year's record. This would mean perhaps that about 50,000 less persons, large and small, attended this year. We are not sure how much of that aggregate must be counted a loss from the point of view of the agricultural value of the fair which is clearly the way to look at it. Presumably the absentees were chiefly people from Sacramento and vicinity who could not find in the announcements the hair-lifting entertainments which they delight in. The fair managers cut out the sensational features largely and saved the cost of them. The result is that this year's fair came as near to paying the cost of the legitimate phases of such a fair as is usual—the loss in gate money and the saving by not catering to this form of popularity being about a stand-off. If this statement is correct it seems to us that the irectors ought to be well satisfied with their work, for they certainly came nearer to giving the fair good educational and agriculturally inspiring characteristics and freedom from senseless distractions than early expositions have manifested. An interesting question is, of course, were the 70,000 persons who attended worth more to the industrial activities of the State than the 120,000 who passed the gates last year? We have no answer. Our impression was from studying the crowd that it was a saner and more directly interested lot of people than we have seen at the State Fairs in previous years. What is the observation of our readers who attended—particularly of those who exhibited stock, implements, fruits, etc? If they would write us what they think of the kind of people they had under their voices while explaining exhibits, we would certainly have some data for determining what the net value of this year's reduced attendance signified to agriculture and allied industries. We would like to have notes of observations in this line.

One thing we must lift from our conscience. We are aware, of course, that certain things of scant or no industrial importance had to be done by the management for revenue only. It ought not to be so, but it is. One such thing we seriously objected to, and that was filling the space between the main entrance and the agricultural building with as rank a lot of fakers and offensive clap-trappers as we ever saw assembled. There were two features which were certainly out of place in such environment: one was the implement exhibit and the other the woman's suffrage pavilion. They were rightly placed, but they were debased by their environment Perhaps the most culpable deception was done in desecration of the memory of the pioneers of '49. Public announcement was made that the buildings of an old deserted mining camp would be brought down from the foothills and set up and things would be done to faithfully reproduce the old life of California's beginnings. We are a credulous person and we paid our money to see this historic display. We found no such thing. The buildings were bogus, such as a few carpenters and jointers could knock together in a day with boards and cloth, and the action was the cheapest vaudeville in the market. The whole thing was a catchpenny outfit of the lowest sort—and to such a thing the most prominent place on the grounds was sold. The State ought not to need such revenue.

Mr. Lubin and the International Institute of Agriculture.

While in Sacramento we took occasion to call upon Mr. David Lubin, Delegate of the United States to the International Institute of Agriculture at Rome, Italy. Readers remember, of course, that this Institute was a conception of Mr. Lubin as a means of assembling agricultural wisdom from the whole civilized world and dispensing it for the guidance of all the parts thereof—a clearing house of accurate statistical knowledge about the world's food supplies for the purpose of trade therein upon a better basis of fact than hitherto, and a clearing house also of cultural wisdom which will minister to successful production to the end that the world shall eat well and be happy, and to the end also that the producers of the world's food shall work more directly and intelligently toward individual prosperity. It is not so picturesque a world's peace, for well-fed people are traditionally peaceful and contented. Nearly fifty of the leading nations of the world are now represented in the Institute, which during the last two years or more has been diligently at work defining its scope and work and undertaking transactions therein. It has begun frequent publications, not only of statistics, but of the results of scientific research into various agricultural problems of world-width. As originator of this unique international activity Mr. Lubin has personally worked diligently, giving his time and his private income largely to the work of demonstration and promotion. Results hitherto justify the enterprise and munificence of the King of Italy in giving the Institute idea standing among the nations in providing for its honorable housing at the Italian capital. Our call upon Mr. Lubin was prompted by our appreciation of his great work as a Californian who is making California better known not only by large products of the earth, but as a corner of the world fertile in the birth of statesmanlike ideas and fertile also in American skill and energy in their promotion. Although weary with his assiduous undertakings, we found no token that Mr. Lubin has lost either force or point, and record this fact for the gratification of Californians who know him and admire his work. After brief recreation in this State Mr. Lubin will return to his activities in Rome.

Queries and Replies.

Waterproof Cloth and Stump Killing.

To the Editor: I am desirous of preserving a considerable area of cloth used for covering young seedlings and I am told you have a recipe tested that will protect cotton cloth for several years from "weathering and rotting" in exposure to sun and rain.

I also am planning to cut down a row of cottonwood trees, and as it would be inconvenient to remove the roots on account of other growth nearby, I would like to know of some acid or other chemical which could be used in borings to effectually destroy the stumps, so that they would not sprout again.—Farmer, Coachella.

The following recipe for waterproofing cloth is probably the one to which you refer, and is taken from our book on "California Vegetables," namely: Soften 4½ ounces of glue in 8¾ pints of water, cold at first; then dissolve in, say, a washboiler full (6 gallons) of warm water, with 2½ ounces of hard soap; put in the cloth and boil for an hour, wring and dry; then prepare a bath of a pound of alum and a pound of salt, soak the prepared cloth in it for a couple fo hours, rinse with clear water and dry. One gallon of the glue solution will soak about ten yards of cloth. This cloth has been used in southern California for several years without mildewing, and it will hold water by the pailful.

We are not sure of any chemical method for killing stumps. Gasoline is most likely to produce the desirable effect of killing the bark so that no buds will start from it, but we should rely upon barking the stump well below the surface of the ground or excavating a little and building a fire of chips so as to kill the bark at the base and on the upper roots by burning.

Soil Depth for Citrus Trees.

To the Editor: I have a top soil of rich loam containing small rocks and pebbles. Underneath it is washed gravel, rocks, boulders, yellow sand, etc. Please tell me what is the proper depth of the topsoil to get best results in growing citrus trees. Also, what is the limit as to thinness before trees will not grow, or thrive.—Beginner, Upland.

We have seen orange trees growing quite successfully on shallow soil overlying clay where the use of water and fertilizers was carefully adjusted so as to keep the trees supplied with just the right amount. Under such conditions a good growth may be expected so long as this treatment is maintained. There should be, however, not less than three feet of good soil to make the large expenditure necessary to establish an orange orchard permanently productive, and all the depth you can get beyond three feet is desirable. We should, however, seriously question the desirability of planting orange trees even on a good soil overlying gravel, rocks or sand. Roots will penetrate such material only a short distance usually. It is almost impossible with such a leachy foundation to keep the surface soil properly moistened and enriched. You are apt to lose both water and fertilizer into the too rapid drainage.

Not Worth Growing for By-Products.

To the Editor: In the orange industry there is quite a per cent of oranges that do not come up to sizes of the shipper. I should like to enquire what the amount of oil and other useful ingredients may be derived therefrom? It is possible that there is a material by-product that may be made of use therefrom.—Grower, Berkeley.

There is no very comprehensive and satisfactory publication on the matter of citrus by-products in this State. Many undertakings have been made without success in southern California and the Citrus Protective League, of which Mr. G. Harold Powell, Los Angeles, is secretary, is now undertaking some investigation. Obviously, however, the culls and defective fruit which are now an absolute waste would be cheaper material for such manufacture than any fruit which could be grown for that purpose, and every effort should be made not to grow oranges which are not in large proportion up to ordinary commercial requirements.

Soil for Alfalfa.

To the Editor: What kind of soil is best for alfalfa on a dairy ranch?—Enquirer, Coalinga.

An ideal soil for alfalfa is a deep well drained soil into which the roots can run deeply without danger of encountering standing water or alkali. Still we are finding that alfalfa is very successful on soils which are not strictly ideal, providing the moisture is supplied in such a way that the soil shall not be waterlogged nor the water be allowed to remain upon the surface during the hot weather, because this kills the plant.

Acetylene Waste.

To the Editor: Is the lime from a light machine good to make the lime-sulphur wash?—H., Lakeport.

The residue of calcium carbide will not do for the preparation of the lime in the sulphur spraying. It requires a good sharp lime—the best you can get—to produce a satisfactory solution of the sulphur.

What Tokay Grapes Do and Ought To Do.

In a recent issue we had some wonderful figures on the returns from table grapes in California as they came to us by way of a New Mexico promoter. If the reader will refer to our issue of August 12, page 128, he will find them. In contrast therewith, we place a statement just made for the Sacramento Valley Monthly by Mr. N. E. White, who, the editor of that journal tells us, "lived and worked in Sacramento while his vineyard was nineteen miles away at Orangevale, and though he paid the highest price for labor and material necessary to the conduct of his vineyard, was still able to make a net income of 20% on his investment."—EDITOR.]

The Valley Tokays.—Among the important industries of the Sacramento valley is the growing of the Flame Tokay grapes for the Eastern markets. The Tokay ranks among the most popular of the many varieties of California table grapes, and always brings remunerative prices, except when, from objectionable packing or other preventable causes, they happen to reach the East in poor condition. In the last two years, however, there has been a marked improvement in packing methods, owing to a vigorous agitation in favor of a general standardization of fruit packing, and it is safe to say that there will be little complaint in the future of indifferent or careless methods in the packing of California fruits for the market.

Up to four or five years ago the acreage devoted to Tokay grapes was quite limited, and the fruit was so popular among Eastern consumers that the growers' profits were quite abnormal, often exceeding 100 per cent the cost of production. Naturally this fact induced many persons to engage in that industry, until from a few hundred carloads the output has grown to from 5000 to 6000 carloads a season. This season's output is expected to exceed even the latter figure.

Despite this enormous increase in production there have been very few seasons that have not returned the growers good profits. A prominent Sacramento grower, who has been in the Tokay business for some sixteen years, paying the highest cash prices for the work on his vineyard, has figures to show that—taking the seasons as they came, good and bad—his Tokay grapes have netted him upward of 20% annually on his investment. Occasionally the profits have reached 30 and 40%, while some seasons they have been nominal.

Three years ago a ten-acre tract in the American river district, Sacramento county, netted its owner $2500. He does not reside on the place and pays the highest prices for all kinds of labor employed. Others did equally well, while some did not. In the cases of those who failed to succeed the cause can generally be traced to insufficient cultivation, poor packing and slack methods generally.

Naturally, all seasons are not good ones. Occasionally—but very rarely—a late April frost strikes in some places, doing more or less damage; but this has not happened twice in a dozen years. The chief trouble that Tokay growers have to contend with is the tendency to sunburn. An abnormally hot spell early in July, coupled with a drying north wind, sometimes burns portions of young grape clusters that are not protected by the foliage of the vine, thus somewhat reducing the yield. Unless these attacks are of unusual severity, however, the output maintains about a normal standard.

The Outlook for Tokays.—It is true that there has of late years been a very large increase in the Tokay acreage, and many growers who have been long in the business fear that the production may exceed the market facilities. This might be true if there is to be no enlargement of the Eastern markets, which have thus far been limited to about a dozen cities east of the Rocky mountains. The present season, with the decided increase in shipments at present anticipated, should prove a good test, though there seems to be no good reason to doubt that, with the increase of shipments, there will come a widening of the market area. This should be possible with the present area of growth of railroad facilities and general improvement in shipping methods.

The Tokay is perhaps the best shipping grape now grown. Carried in ordinary refrigerator cars, grapes grown in the Sacramento valley have reached the Eastern markets in good saleable condition after having been three weeks on the road. At present, however, grapes are landed east of Chicago in ten days, and with the pre-cooling methods now being introduced there will probably be no complaint of future shipments from any locality reaching the East in poor condition.

Investments in Tokays.—Good Tokay land can be had near to shipping points at from $75 to $100 per acre, and matured vineyards can be purchased at from $200 to $500 per acre, according to condition of the vines, accessibility to shipping centers, etc. Vines begin bearing about the third year, and by the fifth year should yield a fair profit. From that time on the yield and shipping quality of the vines steadily increase. There are Tokay vineyards in Sacramento valley upward of twenty years old that are the best and most reliable producers and command the highest values.

Many of these vineyards are owned by non-residents, who hire everything done. The labor—except in the cases of very large vineyards—is mostly performed by residents of the locality. The men do the cultivating, pruning, picking, hauling to the railroads, etc., while their wives, sons and daughters find profitable employment in culling and packing the fruit for market.

Where an owner lives on his property and has sons and daughters who are not above lending helping hands, he can handle a ten-acre vineyard without having to employ much if any help—perhaps two or three persons during the picking season. He can thus save several hundred dollars a year in expenses. In the meantime he finds employment for himself and team in cultivating for non-residents, hauling to the shipping point, and at various other kinds of work.

Cost of Production.—Without going into minute details of the cost of conducting a ten-acre Tokay vineyard, it can be said that the cost heretofore of placing a crate of grapes in a far Eastern city has been about $1, perhaps a few cents less. This year there has been a reduction in railroad (including refrigeration) rates to points east of Chicago from $1.40 to $1.15 per 100 pounds. Three well-packed crates will weigh about 100 pounds, hence a saving of several cents per crate.

The non-resident pays about $100 per season for plowing, harrowing and cultivating a ten-acre tract, which includes pruning, disposing of brush, sulphuring vines, topping, etc. Picking, culling, packing and hauling to the shipping point—say two to three miles—costs on an average about 25 cents per crate. The shipping companies supply shooks (material for crates), nails, etc., at from 9 to 11 cents per crate. Some owners pay more than $100 for cultivating, even as high as $175, and they claim that it pays to do this. Certainly the vineyard that receives the most thorough cultivation and best care gives the biggest yield and is less affected by dry seasons, hot north winds, or other evils that the average vineyardist has to contend with.

A ten-acre tract that is well and properly cared for should produce from 3000 to 4000 crates of shipping grapes per year. One grower, whose 10-acre vineyard is about six miles south of Sacramento city, says he expects to ship about 5000 crates this season. But all vineyards are not in this class, many of them from sheer neglect on the part of their owners. Some try to get along with one plowing and harrowing, others neglect to sulphur sufficiently, and mildew attacks their crops; others seem to never do anything at the right time. Take most any Tokay district, and you will find the yield (say for ten acres) running anywhere from 1000 to 4000 crates. Consequently there is always to be found a class of growers who declare they cannot make a cent in raising grapes. It is the man behind the gun that gets the game, and it is the enterprising, up-to-date man behind the plow who doesn't get red-ink balances on his market returns.

Early in the season Tokay grapes usually sell in the East at from $2 to $3 per crate; but, except when the supply is short, the price soon droys to an average of from $1.40 to $1.80. The grower who averages 50 cents net per crate feels well satisfied with the results of his season's work. Up to this time this has been considered a moderate profit. Future profits will depend largely upon the extent to which the market area is broadened.

The statements herein are based largely upon the writer's observations and experience in Sacramento county, which was the pioneer in the Tokay industry in California. But Tokays are now grown successfully in many other parts of the valley. Very few Sacramento growers resort to irrigation, except in one district, where the soil is not deep. But this locality has one advantage that more than covers the cost of irrigation. The grapes grow there are a week or two earlier than in most other localities, hence bring top prices.

As in regard to all other branches of husbandry, the man who thinks of engaging in the Tokay grape industry should make careful investigation into the quality of land, its adaptability to a shipping point, and other considerations that should readily suggest themselves to a person of average business judgment. Properly conducted, it has for twenty years or more been a profitable industry in portions of the Sacramento valley. In all these years there have been fears expressed of possible over-production, but thus far they have not been realized, and a steadily broadening market seems to keep the demand apace with production.

GETTING HUMUS INTO FOOTHILL SOILS.

To the Editor: I have been interested for some time in methods of supplying and retaining soil fertility and especially humus in our rolling foothill orchards where clean culture has been followed for many years. There has been an idea advanced recently that our natural weeds and clovers, if allowed to mature to be turned under dry in the winter will materially aid and will supply the necessary humus. No doubt you have read of something of the kind by G. Geraldson. I wish to ask a few questions in regard to the matter, which I am confident you are in a position to answer.

1. In what condition should a cover crop be for the formation of humus par excellence (green or dry)?

2. Will our native grasses turned under dry materially increase the production of humus in our soils?

3. Is the method of leaving alternate rows in our orchards unplowed for the purpose of allowing native grasses and weeds to mature practical?

4. Kindly give me your opinion as to the best methods of supplying humus to our Placer county soils that have been under clean culture for many years. FARMER.

Bowman, Placer county.

To be to the greatest extent valuable and practicable a cover crop should be plowed into the soil when it is in a succulent condition, and therefore greatest in weight and most easy of decomposition.

Native grasses or any other vegetation plowed under dry will increase humus providing moisture and other agencies for its decomposition are present. Whether Mr. Geraldson's method is practicable or not can be best determined by those who have opportunity to examine its practical operation. We do not know enough about it to give an opinion.

We believe the best way to get humus into your foothill soils is to grow leguminous crops, also native grasses and weeds during the winter time to the fullest extent and to plow them in with the spring working of the soil, which, of course,

should be undertaken when the danger of serious soil washing is practically over. This is on the supposition that you do not have barnyard manure enough for your orchards. If barnyard manure is available we should allow it to stand on the surface during the autumn and winter and plow under the surface during the spring when the danger of erosion is over. Your practice must differ in this respect from what would be best on level lands.

GROWING SEED POTATOES.

To the Editor: The proper method of producing and selecting seed potatoes is one of the main topics discussed in a bulletin just issued by the University of Washington. Very little of the seed used in this State is grown here, but is almost entirely imported from Oregon and Washington, so that the methods described are suggestive to those who desire to produce here the potatoes planted in California.

The bulletin says in part: "There are few plants under cultivation more susceptible to variation than the potato. The more a plant varies, the greater is the chance for improvement with proper methods of selection, as is also the corresponding tendency to deteriorate when poor methods are practiced. A tuber from a vigorous, productive plant, though small because it started late and did not have time to develop full size, would possess and transmit the characteristics of its worthy parent. So, also, the only large tuber from the poor hill, in which it alone attained marketable size, would inherit the tendencies of its parent.

Bin Selection Bad.—"So the farmer, when selecting from the bin or pit, can tell nothing about the parentage of the large or small potatoes. To know the hereditary tendencies, we must know the characteristics of the hill and the vigor of the plant. The whole plant, then, and not the single tuber, must be taken as the unit of selection, and the place to do this is in the field, where the whole plant can be examined."

As an experiment, potatoes were planted that were selected from the best hills, and equally good-appearing seed from medium and poor hills were planted, with the result that "the crop from the good hills not only was about one-third larger, but the tubers were more uniform in size and appearance than those from the medium to poor hills." The experiments, which were carried on for three years, show that the potatoes "run out" very quickly if poor seed is used for two or three generations.

The Type Desired.—Aside from breeding, the kind of potatoes to use for seed are those that are nearest true to the best type of the variety. Usually the best potatoes are those that are of smooth shape and somewhat flattened, oval, or oblong. One that is full at the ends is also better than a pointed potato.

Several successful growers west of the Cascade Mountains take the tubers just below the marketable size from the good hills. Others throw two rows together and when a good hill is found, throw all the tubers in the opposite direction, to be picked up separately for seed. These methods are only to be employed in hand digging, and when digging is done by machinery it is necessary first to dig the selected hills by hand. None of the farmers, it is said, that practice selecting their seed, would ever go back to the old practice of selecting seed from bins.

Where We Come In.—The point of it all, for California growers, is, that practically all of our seed for the late, standard varieties comes from Washington and Oregon, from potatoes like those described in the bulletin. The local grower cannot, therefore, select the seed in the field, but usually just takes a fine-looking shipment from the northern stock and uses it all for seed, from good, bad, or indifferent hills, as the Northern growers are advised not to do. The hint to select seed from good hills looks as if it might be well to follow. The same thing might also work with the seed for early potatoes, which comes usually from the East rather than the North, though the same principles of selection apply to it.

After Our Markets.—That the Northern potatoes stand a good show of taking the place of many now sent from here to Alaska appears probable from the statement that "there is a rapidly increasing market for our potatoes in Alaska and at home."

"The average cost of producing potatoes in eastern Washington is a little less than $5 per ton," and to increase the output it is recommended that more be planted there on summer-fallowed ground, which, it is claimed, will not reduce the good effects of summer fallowing. "The plowing and harrowing which would have to be done on the summer-fallow land if potatoes were not grown is included in the cost. If the market remains as high as it has been for many years, a net profit of $15 to $20 per acre from what would otherwise be idle land can easily be secured."

San Francisco. D. J. W.

RELATIONS OF ORGANIC MATTER TO SOIL MOISTURE.

Although the experiments were not in the fruit line, their bearings upon soil conditions which the fruit grower is always endeavoring to bring about is quite clear. A writer in the London Farm and Home says: Those who visited the experiment station of the Royal Agricultural Society at Woburn on July 28, must have been struck with the comparative want of ripeness and better cropping prospects of the crops which had been treated with farmyard manure. The same effects are noticeable in other parts of the country, and it may not be out of place to indicate very briefly the chief reasons for the delay in ripening. To grow most farm crops to maturity requires about 500 to 600 tons of water per acre, and about 1000 tons in the case of mangels. This year we have only had about 370 tons per acre since the end of April, as compared with the 800 to 900 tons of last year, and at least half of this will be lost through evaporation. The crop must therefore have obtained 300 to 400 tons from the soil, and in the storing of this water by the soil organic matter greatly assists, as the following recently-conducted experiment will show.

Water Gathered by Organic Matter.—At the end of April samples to a depth of 9 inches were taken from a loamy soil carrying potatoes. The part dressed only with artificials was found to contain 20.5% of water, as compared with 28.6 where farmyard manure had been applied. After three months, these plots showed 5 and 8% of water. The weights of water per acre to a depth of 9 inches were approximately 290 and 390 tons in April, and 60 and 100 tons at the end of July. The plot dressed with farmyard manure was thus much damper all through, and yet gave up. 290 tons, as against 230 tons. The crop also of early potatoes showed that the farmyard manure had provided them with more water; it was also noted that the subsoil was drier, presumably because the organic matter, by keeping the surface soil moister, had kept the water films in contact longer. During the summer it is often very difficut to keep the subsoil water within reach, and it cannot be doubted that the very heavy storms experienced at the end of May were of great assistance in preventing many shallow-rooted crops from being killed.

[Of course, the term "organic matter in the soil" does not always mean fresh manure, but rather organic matter in its safer form in well-decayed manure which is readily assimilated by the soil and is on its way toward the formation of humus.—EDITOR.]

New Undertakings for Citrus Growers.

Connected with his observations upon lemon growing and marketing in the south of Europe, which we gave in full in our issue of August 26, Mr. G. Harold Powell, of the California Citrus Protective League, has the following paragraphs about new investigations in the promotion of the citrus industry:

Citrus By-products.—About 40 per cent of the Italian lemon crop, or the equivalent of 20,000 California carloads, is converted annually into citrate of lime, lemon oil, and other by-products. One-third of the citrate, and about one-third of the oil is imported into the United States. There have been many attempts to establish a lemon by-product business in California, but up to the present time the efforts have not been commercially successful. Practically, all the work in Italy is done by cheap hand labor.

In order to establish a by-product business in California, methods will have to be worked out by which we can accomplish economically by machinery the results now attained in Italy by hand. The League is therefore interested in having established in California an experimental laboratory by the Department of Agriculture, through which the Government and the industry can cooperate in an investigation of these complex questions. It is probable that such a laboratory may be established here this fall.

A Soil Study.—The Citrus Protective League is also interested in having some of the orange and lemon troubles that appear to be related to the soil investigated by the U. S. Department of Agriculture, the investigations to supplement the extensive studies already in progress by the State University. As a preliminary step in this direction, the Department has sent specialists to California to look over the ground and to determine whether the problems which confront the industry are of such a nature that they can be investigated by the Department in such a way as to make the work supplementary to the investigations already in progress.

WHY GO TO SPAIN FOR BITTER ORANGES?

The review of the English marmalade and jam industry in Daily Consular and Trade Reports for February 17, 1911, caused an inquiry to be made in regard to bitter-orange pulp from Spain, this being the basic material for the marmalade. Consul Charles S. Winans, of Seville, therefore furnishes the following information:

Previous to the present year, bitter-orange pulp without sugar was put up here in pipes by a London firm. At the close of the 1909-10 season they closed up their places of business here and now ship the bitter oranges in crates to England.

Several shipments of bitter oranges were made last year to the United States and Canada, but on account of the long voyage and transshipments the result was very unsatisfactory and the experiment will probably not be repeated.

Bitter-orange pulp can be put up here very cheaply, and can be sent to the United States in pipes, which can be returned as shooks. In this manner first-class bitter-orange pulp could be secured at small cost. It would be necessary, of course, for some one who understands the orange-pulp business to come to Seville during the season, in order to oversee buying the oranges, and preparing and shipping the pulp. Both bitter oranges and cheap labor can be obtained in abundance.—Daily Consular Report.

This is all very interesting, but why should Americans go abroad for this material? The Florida sour orange is the bitter orange of Seville. It was introduced by the Spaniards at so early a date that it ran wild in Florida and has often been mistakenly considered to be native there. It is now, according to Hume, "naturalized in many of the forests" of Florida, "forming dense thickets in the hummocks on the shores of rivers and lakes." Surely, American marmalade-makers can easily arrange for supplies of the fruit instead of importing it.

SENATOR WORKS AND THE LEMON.

We are glad to see the following in the Washington correspondence of the New York Fruit Trade Journal:

"An element of strength in connection with California's lemon industry is the courageous stand displayed throughout the tariff discussion by Senator Works. The California Senator voted for reciprocity, not because he considered it a perfect bill, but because he regarded it as a step

in the direct revision downward. He quickly showed his purpose to correct the inequalities of the reciprocity measure by voting for La Follette's wool bill, when it was presented as a separate measure. That Senator Works has won the esteem of his senatorial colleagues was evidenced by the cordial support that his protest against the Johnson amendment to put the lemon on the free list has received."

AGRICULTURAL REVIEW.

With the Fruit Men.

Drying of Muscats in Fresno county is going on very slowly, owing to cool weather, which is less dry than usual.

The Eel River Apple Growers' Association has sold its entire output for the season to Leutzinger & Lane of Eureka.

Very good crops of Adriatic figs are being harvested in the San Joaquin valley. Smyrna figs are also bearing well where properly caprified.

A heavy yield of almonds from Durham, Butte county, is reported.

It is reported that fewer Japanese than usual are working in the vineyards around Fresno. Greeks are taking their places in large part.

The way has been cleared for the development of the Linda Vista irrigation district of San Diego county, which has been tied up in litigation and financial difficulties for many years, through the purchase of the stock of the Live Oak Corporation by Col. Ed. Fletcher and other capitalists. The 45,000 acres of citrus land in the district will soon be put under irrigation as a result of the deal.

A suit by the California Raisin Growers' Association for the return of money advanced to growers for raisins several years ago when the association was in working condition, has been decided by the Supreme Court in favor of the Association. The growers were paid for their raisins on a 3-cent basis, but the price fell to 2 cents later on. About $150,000 is the sum sued for.

G. W. Libee, of Selma, announces that he has a new variety of cling peach, resembling the Lovell in many ways, that is of very fine quality. It is said to ripen between the Orange and the Phillips cling. A new variety of peach resembling the Phillips is reported from Gridley, Butte county, Jesse Hobson being the originator.

The Eel River Valley Apple Growers' Association will erect an apple drier this season at Rohnerville, Humboldt county. The apples of the members will be marketed together, but all arrangements for so doing have not yet been completed.

Apple men of Humboldt are discussing the project of holding an annual apple and poultry show at Eureka. No show will be held, however, until 1913—"railroad year."

B Lane, of Healdsburg, has leased the Geyserville apple drier for the year. He has already shipped 100 boxes of dried apples of this year's crop to San Francisco from Healdsburg.

The project of standardizing all Lodi fruit has fallen through for the year, owing to the refusal of two companies to enter into the agreement.

About 150 men were employed to pick and pack grapes on the John Johnson vineyard at Escondido, San Diego county, this year. Mr. Johnson has men that pick and pack at the same time, accomplishing much more than could be done with two sets of men and a double handling of the grapes.

A request for 25 families to help harvest the prune crop on the F. N. Wood ranch near Cupertino has been made to the School Employment Bureau of San Jose, which was established to bring together white help, especially school children and families and fruit grower. The Bureau has been of great value in accomplishing the purpose of its organization.

Drying of the first part of the fig crop began last week at Fresno.

The shortage of the raisin crop this year and the comparatively poor prices for wine grapes has made some growers determine to dry their wine grapes this year around Fresno. Wine-grape raisins will sell for much less than the Muscats, but will pay better at present prices than the grapes at $10 per ton.

The statement was recently made by Theodore Gier, one of the largest wine men of the State, that the cool weather has cut down the crop from "dry wine" grapes to about two-thirds of that of last year.

At the Golden State cannery in Ontario, 738 tons of apricots were handled this year, against 684 tons in 1910.

W. S. Fawcett, of Heber, Imperial county, is preparing for an extensive planting of valencia oranges the coming season. Of 80 acres, 60 will be planted to the oranges and 20 to grapefruit. He stated that there had been an overproduction of cantaloupes in the valley this summer, and the ranchers with late crops lost money.

A correspondent from Oregon states: "The apple crop in Oregon is small this year. At first we thought 50%, but some sections like the Rogue River valley will not go over 20%. Not much of the new acreage is coming into bearing this year, but there will be a tremendous increase next year. Very few figures have been given out as yet on apples; the buyers are not in the field to any extent, but pears are moving at very good figures."

The Kerman, Fresno county, Fruit Growers' Association has been formed to help better market conditions, and the following officers elected: President, D. I. Englund; secretary, Axel Kap; treasurer, John Detjen; manager, B. A. Larsen.

Prices and Prospects.

Los Angeles buyers have contracted for all of the honey in Mason Valley, Nevada, at $10.50 per ton. About 110 tons will be produced in the valley this year.

The condition of cotton in Imperial county was reported to be practically perfect on August 25, by the U. S. Crop Reporting Board, which is 5% better than on the same date in 1910. The whole United States crop is slightly better than a year ago. The cotton ginned this year has a longer staple and is better than usual.

Cantaloupe distributers met in Chicago recently and decided to do what they could to limit the cantaloupe acreage in Imperial county to 5000 acres next year. An attempt will also be made at a better distribution of the crop and a smaller advance will be given to producers.

The Santa Clara Grape Growers' Association has decided that from $18 to $24 should be paid for grapes, depending upon the variety. In San Joaquin county $9 and $10 seems to be the price at present, as fixed by George West & Sons. The same price appears to hold in the southern part of the valley.

The O'Neill Fruit Co., a branch of the Earl Fruit Co., has opened a citrus house at Porterville and will do all central California shipping from there.

For Tokay culls $5 per ton has been paid at Lodi recently for wine-making.

But little movement has been felt in dried fruit recently, as buyers and growers are both waiting for things to come their way. Peaches are 9 to 9½c.; apricots, 3¼ to 14c.; prunes, 5½c. for Santa Clara and 5 to 5¼c. for others; apples, 9 to 9½c.; pears, 9 to 10; Muscats, 4½c., and Thompson's Seedless, 6 and 6¼ cents.

Walnuts in France.

The prospective crop of walnuts in France is reported to be promising this year by Vice-Consul T. W. Murton, of Grenoble, in the walnut-producing section of the country, although lack of rain has been doing some injury to the nuts. He says: "The only ill effects on the walnuts thus far (from lack of rain) has been to retard the development of this fruit, which will probably not be large, and possibly the kernels of some nuts will be shriveled. Otherwise the outlook for walnuts is most promising, an unusually large crop of both Mayettes and Chabertes being anticipated.

"It is expected that the crops will be ready for gathering about September 15. For Mayettes new crop, $19.50 per 100 kilos (220.5 pounds) is spoken of. At these figures, I am informed, some small contracts have already been made for forward delivery c. i. f. New York, but many offers on the same basis have been refused by shippers here.

"According to present estimates, the growing crop of Mayettes is expected to yield 40,000 to 45,000 bales of 100 kilos and Chabertes halves from 45,000 to 50,000 cases of 25 kilos each. Walnut trees are still in fairly good condition and are thickly covered with fruit, which in many cases hangs in clusters of two, three, and four, which always is a sign of plenty."

Other crops besides walnuts are stated to be in good condition, except that a prolonged dry spell has injured them to some extent, and a continuation of the same would do much injury.

General Agriculture.

The American Beet Sugar Co. is said to have secured 8000 acres of land in the San Fernando valley upon which beets will be grown for the Oxnard factory.

An effort is being made by the Sacramento Valley Sugar Co. to have ranchers at Colusa make extensive planting of beets.

A new variety of cucumber weighing nearly 10 pounds is growing on the E. S. Douglas ranch at Atwater, Merced county. The seed was imported from Europe.

The shortage of the hop crop in Germany and other European countries, as well as the small supply on hand now, has caused exceptionally high prices to be secured recently, sales being reported all the way from 30 to 45 cents a pound during the past two weeks. Prices of 60 cents have been prophesied in some places, while 50 cents is a common figure in others. On the Horst field near Wheatland, Yuba county, machines are being used to pick the hops, four machines and 300 men doing the work that 1500 pickers were required to do last year. The machines are said to give good satisfaction. On all other fields hand picking is being done.

Immense profits have been made in barley this year, owing to the very high prices that have been secured. Around Stockton most of the recent sales were made at $1.40 and later sales at $1.45 and $1.50. The crop was also larger than usual.

According to C. Henry Smith, San Francisco representative of the Norway-Mexican Gulf Steamship Company, the Scandinavian countries offer a field for the development of an eastern market for California fruits and other products. Mr. Smith's company is operating a line of steamers between Puerto Mexico and Scandinavian ports and is now purposing to extend same to San Francisco as soon as the Panama Canal is completed.

The Escalon division of the San Joaquin Grape Growers' Association has re-elected the following officers: President, Mr. von Glahn; secretary, Charles Carlson; treasurer, Otto Peterson. N. P. Nelson will be the packing house manager for the season.

Work of signing up owners for reclamation district No. 833 in Butte county is being rapidly accomplished, and it is

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probable that by fall the laying out of drainage ditches will be started.

E. K. Carnes of the State Insectary will visit the Hawaiian Islands to study the Mediterranean fruit fly and recommend the most effective methods to quarantine against it.

Poultry at the State Fair.

The poultry exhibit at the State Fair served to illustrate the rapid growth of this industry in California, the building set apart for that feature being inadequate to properly accommodate the large display of nearly 2000 birds, so that many of the manufacturers and supply dealers were compelled to content themselves with improvised tents, etc, adjacent to the building. This proved a blessing in disguise, however, as the heat in the building, which lacked proper ventilation, and was packed to the limit with feathered exhibits, at times became intolerable. Poultry is not supposed to be in good "show" condition at this period of the year, but nearly every exhibitor proved himself or herself equal to the occasion, and the judges had few occasions to make cuts on the score of condition and plumage, which showed the exhibitors must have had the State Fair in mind for some time. The pigeon display was exceptionally large, nearly every known variety being represented; but far the larger part consisted of the large breeds which produce the succulent squabs which find such ready sale in the large hotels and restaurants.

The water fowl exhibit was the largest ever brought together in California nearly every known variety of geese, ducks, etc., being there. Wonderfully large and brilliantly plumed turkeys also gobbled for recognition.

Outside the building where they had congregated to get a little fresh air a group of water fowl exhibitors discussed the question of having one of the pumping engine firms display the powers of their pumps next year by pumping water into a pool where their birds could be displayed in their natural element, but all seemed to agree that the liberal patronage given the fair by the poultry exhibitors entitled them to better accommodation next year, and compared the $30,000 dairy building with the one set apart for them, which comparison resulted in a valuation of the poultry building at the proverbial thirty cents.

Holstein-Friesian Owners Organize.

A meeting of owners of thoroughbred Holstein-Friesian cattle was held at the State Fair at Sacramento last week and the California Holstein-Friesian Association formed. The object of the association is the improvement of the Holstein-Friesian herds, interesting more people in this breed of dairy cattle and the general welfare of the dairying industry. Annual meetings will be held, and an effort made to get every owner of Holsteins to join. The membership fee is but $1 per year.

Charles J. Welch of Los Banos was elected president of the association, J. W. McAllister of Chino secretary-treasurer and the executive committee and other officers will be selected later.

Jersey Association Meeting.

The California Jersey Breeders Association held its annual banquet at the Hotel Sacramento and its annual business meeting in the new model dairy barn at the State Fair grounds during fair week. At the latter meeting J. G. Stall of Bakersfield was elected president, J. E. Thorpe of Stockton secretary, and W. H. Locke of Lockford was re-elected treasurer.

A committee was appointed to confer with the directors of the State Fair advising new barns and improved stalls and that the dairy exhibits be placed with the other live stock exhibits. Suggestions were also made in regard to the classification, an important feature being the division of prize moneys into four sections and three classes. This and other changes were suggested chiefly with the object of encouraging those new in breeding to exhibit.

Miscellaneous.

A course in agriculture has been added to the studies at the Winters, Yolo county, high school.

C. W. Maples, of Siskiyou county, with several other capitalists, has taken over 30,000 acres near Alturas, Modoc county, which will be reclaimed by the construction of reservoirs and canals and subdivided.

The poultry raisers of Stanislaus county recently formed a permanent organization at Modesto.

Louis Titus, who recently purchased 4000 acres of the Finnell property near Corning, Tehama county, has bought the remaining 16,000 acres of the Finnell holdings.

The C. A. Hooper company has prepared plans for the irrigation of 35,000 acres of land near Oakley and Bay Point, Contra Costa county.

During the present summer the following have been appointed instructors in agriculture in high schools of the State through the employment secretary of the University of California: A. R. Baird at College City, Virgil Bryant at Los Banos, C. J. Booth at King City, J. Christiansen at Livermore, J. E. Gore at Oxnard, R. G. Risser at Stockton, George Robertson at Riverside, Ralph Taylor at Yreka, and M. Terry at Lompoc. The above does not include instructors in agriculture holding the same positions as last year.

A canning and drying company is being organized in the Escondido valley, San Diego county, to handle fruit raised in the vicinity, which heretofore has been shipped to other sections.

Canal and Malpas, of Ukiah, expect to increase their output of baby chicks by 100 per cent next season. This year 15,000 chicks were hatched and sold.

Experiments in wine storing and methods of manufacture are being carried on at Martinez by Prof. Bioletti of the University of California.

The West Side Fair of Merced and Stanislaus counties is being held at Newman this week from Thursday to Saturday.

The Chico alfalfa-meal mill has closed down for the season, owing to inability to secure unbaled alfalfa hay.

A Farmers' Institute will be held at Kerman, Fresno county, September 27 and 28. H. A. Sessions, director for the valley, is arranging for institutes in most of the towns on both the east and west sides for this fall.

A contract for the extermination of squirrels on 13,000 acres was made by the Kern County Land Co. last week. The contract price was only $420. Meetings in Modesto have been held to organize the squirrel campaign effectively by ranchers and Government, and renewed efforts will be made to eradicate them. Miller & Lux have a large crew of men at work in the field, distributing poison where traces of the animals are found. The supervisors of Tulare county, who were intending to slow up on the work on account of lack of funds, have decided to continue their efforts to kill the squirrels as quickly as possible. Several property owners in the county have been notified that they will be arrested within ten days if the killing of squirrels is not undertaken on their property at once. Tulare county has 11 inspectors in the field.

A fair will be held at Willits, Mendocino county, from October 10 to 14. Prizes have been offered for the best exhibits of poultry, dairy, and general farm products.

All the honey in the hands of members of the Tulare county Beekeepers' Association has been sold through the Association.

The rose carnival and the citrus carnival of previous years in San Jose is to be replaced this year by a prune carnival, which will be held from September 14 to 23.

The Santa Fe has a gang of men putting in a siding at Winton, a new town eight miles northwest of Merced. During the past year there has been a large influx of settlers in the surrounding territory and a shipping point has become a necessity. At present the potatoes, melons, peaches and other products are shipped from Atwater.

Johnson & Hostetter of Standish report that they have a good crop of melons and other vegetables, all of which are much later than usual.

An organization of water users of the west side of Stanislaus and Merced counties has been formed at Newman, and E. S. Wangerheim elected president and A. M. Williams secretary. The organization was brought about through the difficulties the irrigators have been having with the Miller & Lux Company, and may result in the formation of a Wright irrigation district.

TOMATOES THIS SEASON.

(Continued From Page 201.)

properly, owing to cool weather and lack of sunshine, and in Alameda county there will be but two-thirds or so of a normal crop. In the river districts, where there was more sunshine, the difference over ordinary years will be very small.

With high prices for other fresh fruits it may be safe to prophesy that prices will be good for tomatoes this year in city markets, although so many factors enter into the price proposition on the open market that it would be unsafe to phophesy anything definite. On the canning side, however, we know from the canners' statements that last year's stock is practically gone, that there is no big production this year, that prices for every other canning fruit are exceptionally high, and that it is a pretty safe guess that those that have canning tomatoes to sell will get more than $7.50 per ton for them.



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Raising Good Queens Under Unfavorable Conditions.

By Mr. H. PERKINS of Los Angeles, in Gleanings in Bee Culture.

Any method of raising queens should, first of all, make for good strong long-lived queens. Economy, reliability, and rapid production are also important points, and must not be lost sight of. It is a comparatively easy matter to raise good queens when weather conditions are favorable and the bees are strong and swarming; but it is a much more difficult task to accomplishe the same results early or late in the season, or during an off year. It is to the latter conditions that I especially devote this article.

In my opinion the most important part of good queen-rearing is raising good queen cells, which includes knowing how to create strong cell-building colonies and keep them in tune for cell building. I have never been able to raise uniformly good cells in any other than strong colonies, above a queen-excluder, or in the brood chamber when swarming preparation or supersedure was in progress.

CELL-BUILDING COLONIES.—For early cell building I begin preparation in the winter season by setting my colonies in groups of five or six. In the spring, as soon as they will average five combs of brood, I select the strongest colony of each group; and on a warm day, about noon, when bees are flying well, I transfer one or two combs of sealed brood from the two nearest colonies to the strong one, and move the colonies, thus reduced, far enough away to compel the returning bees to enter the strengthened one, which is to be a cell builder as soon as the major portion of the brood given it hatches. In two days after, weather permitting, I treat the remaining colonies of the group the same way, giving the brood to the cell builder to be. The result is that in a short time the cell-building colonies will have their supers filled with young bees, which is just the condition needed for super-cell building.

Care must be exercised not to overdo the thing; and colonies thus strengthened must be well fed, especially during bad weather; for so early in the season the honey-flow can seldom be relied upon to furnish sufficient stimulation for cell building.

Just as soon as my cell builders have a super full of bees I put two combs of partly unsealed brood in the super to provide a good cluster, and put on the queen excluder. The second day after, they will be ready for business, and I give them a culture of grafted cells between the two combs of brood.

If the number of cells accepted in this way is not satisfactory (which is often the case early in the season), I resort to the swarm box to insure satisfactory acceptance. I will explain here, for the information of those who do not already know, that a swarm box is a narrow box designed to hold three frames (and is best made from an old super), a wire-cloth bottom and a board for a cover.

In stocking my swarm box I use one comb of honey and one of thin syrup to provide moisture, and into the space between I shake about two quarts of bees and leave them confined for six hours before giving them the cells, which I leave with them over night, indoors if the weather is at all cool. In the morning the cells should be accepted and ready for the reluctant cell builder, and the swarm box bees returned to the colony they came from.

RE-GRAFTING.—A queenless colony of medium strength, without unsealed brood or natural-built cells, will do as well. Under unfavorable conditions it is often impossible to get even strong colonies to build good long well-fed cells from one grafting. To overcome this difficulty I employ what is called re-grafting, which I will here describe.

When I anticipate having to re-graft my cells, I use larvae two days old for the first graft, and allow the bees to work on them thirty hours. I then remove the culture from the cell builder to the grafting room, and, with a hot knife, clip off the end of the cells to reduce their depth. I then remove the larva with a very small hook made from foundation wire, and agitate the jelly with a blunt-pointed stick to disseminate the limpid fluid which always surrounds the queen larva of advanced age.

After waiting about five minutes to allow the surface of the jelly to stiffen a little by evaporation, I re-graft the cells with larva from my breeding-queen. I always provide a swarm box or kindred means to accept my re-grafted cultures before giving them back to the cell builders, because the bees are much slower to go to work on them than when grafted the first time.

I re-graft only when it is impossible to get good cells built any other way, for it is a painstaking operation; but the results obtained justify the effort.

Many bee-keepers fall into the error of believing that the substance resembling peach-gum, found in the bottom of hatched queen cells, is evidence that the cell contained an excess of royal jelly; but this is not always the case. The substance alluded to is often notning but residue, and may be found in cells where the inmates starved to death before hatching.

When a queen cell is sealed, nature sets to work to complete the job if possible. If the supply of jelly has been short, the queen will also be short. If it has been too short, the inmate will never hatch. If the supply was enough, or more than enough, the queen will be fully developed, but that is all.

To build cells, I quite frequently employ colonies that are superseding; but I always remove them as soon as they are sealed, to avoid having them destroyed after the manner of natural-built supersedure cells. Likewise, colonies preparing to swarm may be taken advantage of, their cells destroyed, and a grafted culture substituted with the very best results, but available only during the swarming season.

I regard queenless colonies for cell building (even though they are strong) as the last ditch, and only to be resorted to when all other methods fail, as they often do, especially toward the close of the season.

It is under such conditions that re-grafting comes to the rescue of the bee-keeper by compelling the bees to keep the cells open longer than they otherwise would, and all the while adding to the supply of jelly.

A MATING HIVE.—For early-mating purposes I use a hive of my own design, which I call the Mormon mating hive. It is a ten-frame hive body with three perpendicular sawkerfs ½ inch in depth and 3½ inches apart, run in each end, with kerfs to correspond, in the hive bottom. Into these kerfs are fitted three sheets of heavy tin, thereby dividing the hive into four completely isolated two-frame compartments. An entrance is provided on each side and end, and four individual covers with a large cover to cover all. I like this style of hive because it takes the standard-sized frame and can be

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stocked from any hive in the apiary, and for the same reason can be easily united for honey gathering, or converted into a two-compartment hive for wintering by withdrawing two or more of the tin partitions and closing two of the entrances. The heat communicates freely through the tin partitions, and thus approaches the natural conditions of a full colony. For summer mating a much smaller and more economical hive may be used. I consider the Mormon hive more especially adapted to the needs of the bee-keeper who raises a few hundred queens for his own use than for the queen-rearing specialist.

Returning to my re-grafting method, I wish to say that I do not want my readers to infer that I claim to be able to outdo nature, for I do not. I often find the jelly, left in the re-grafted cells after the queen hatches, to be white and plastic enough to fill the cell more than the depth of a wooden cell cup. I have often had hatched cells which measured 1¼ inches in depth, but I have never created a monstrosity, nor could I ever see that queens thus raised were any better than those raised from natural built swarming cells; but I do claim to be able to raise uniformly good queens by this method when it would otherwise be impossible to do it.

If I am not mistaken, re-grafting in one way or another has been practiced by others. The idea was first suggested to me by Mr. John Nippert, formerly of Phoenix, Arizona. The details as given there I worked out myself.

The quantities, proportions, estimates, etc., as I have given them here, are not intended by the writer to be inflexible, but rather to be subject to local and weather conditions, also to the judgment and experience of the bee-keeper.

THE GARDEN THIS MONTH.

Written for the PACIFIC RURAL PRESS
By Mr. D. J. WHITNEY.

The management of the home garden in September is almost the same as in July and August. Bulbs of several kinds can, however, be planted now, some to better advantage than later on. Among the bulbs that should be planted are freesias, gladiolus, of the early flowering kinds like the Bride and Blushing Bride, the St. Joseph's lily, Bermuda lily, and the Japanese lily. The latter should not be planted out until the last of September, or even later, while several of the others will be gone or not do well if not planted before that time. With the St. Joseph's and Bermuda lillies it is a good plan to plant them in pots, but keep them out of doors and give them the regular garden culture until the buds set, after which they can be brought in, and they will bloom much better than if left outside.

More irrigation is usually done at this time of the year than in earlier months, which calls for one word of caution, especially this year, when the weather is so much cooler than usual. Most irrigating is done in the evening, when water getting on the leaves is likely to remain there all night and well into the next morning. This is one of the most fruitful causes of mildew that there is. The moisture may appear to freshen the leaves, but does but little good that way and a great deal of injury if there are mildew spores around awaiting a chance to develop.

When the leaves are dry the spores remain dormant, and any sprinkling to wash off dust and dirt should be done in the morning, when the water will dry off quickly. The freshening influences of the water is very slight when put on the leaves, as practically all moisture absorbed by the plant comes through the roots and not from any part above the ground.

During this season of the year a great deal of damage may be done to gardens by gophers and moles. The gophers can be easily disposed of by proper handling of poison and traps, but considerable time and effort are often wasted by trying to kill moles in similar fashion.

The mole is a flesh eater, not a vegetarian like the gopher, and cannot be tempted by the choicest carrot, no matter how delicately flavored with strychnine it may be. He also makes a new tunnel every trip he makes through the surface and will not find traps placed for him there. Being a meat eater, the only damage he does to plant life is by cutting roots or going through any vegetable that is in his way, as moles make it a rule never to go around anything that they can cut their way through. The many excursions through the soil are made in search of angle worms and other forms of animal life living among the roots of plants.

About the only way to kill moles is to use a good cat or to dig down to his permanent burrow, which is about a foot below the surface of the ground, and set a trap or patent gun for him. The location of his burrow can be found by observing the part of the garden from which all surface burrows start and carefully digging down there.

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Making Good Earth Roads.

The making of good earth roads is the subject of a popular bulletin just issued by the Agricultural College of the Ohio State University, and many of the hints given therein might well be employed in this State for roads connecting with the proposed State Highway, as well as elsewhere. At all events, the building of the highway might well be the occasion for a general improvement of all the roads of the State, of which the dirt roads furnish the far greater part.

The bulletin says in part: "Water is the best friend and the worst enemy of the country road; a friend, in that the roadbed can never become compacted without it; an enemy, in that those detestable mud holes and ruts are the direct result of its action. With the former effect we need not be concerned, but to the latter we must give serious attention.

"It has been well said that the ideal road is one with a good roof and a dry cellar. These two features, a roof to shed the water falling upon the road and to prevent it from standing upon the surface or sinking into the roadbed, and a drain to prevent hillside or seepage water from working up underneath the road are essential; it makes little difference of what material the roadbed is made—a good driveway will be assured.

"There must be a gentle slope from the middle to each side of the road, not so steep as to cause inconvenience to one driving out to one side with a load, but just steep enough to carry the water down into the side ditch. A rise of one inch to a foot is sufficient. On steep grades a greater slope will be necessary, else the water will run down the road instead of into the ditch.

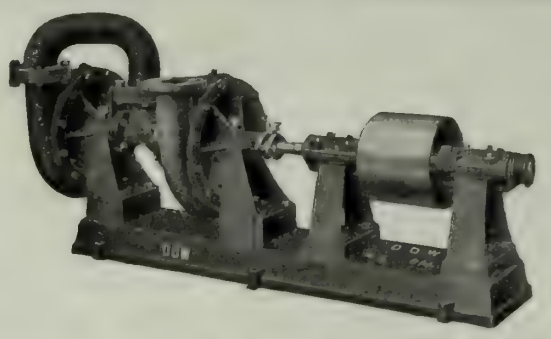
"A good roof must be secured by proper grading. This grading should be done in the spring, for then the earth is soft and easily moved; the summer travel will pack it firmly, making it resistant to the effects of water and frost. The familiar wheel grader, pulled by either horses or a traction engine, and so directed that the dirt from the sides of the road is gradually worked up into the center, is the most effective tool for the purpose.

"There is a very simple tool, concerning which much has been said during recent years, which may be used in obtaining a good roof and the necessary grade. This is the King Road Drag. Mr. King, the inventor of the drag, lives in Missouri, where mile after mile of good roads are made of earth.

"If a surface made of earth is kept sufficiently smooth and given a little grade, water falling on the surface will immediately run off. This desired surface and grade are secured by the use of the road drag. Once the proper grade is secured, the drag is drawn over the road at more or less frequent intervals, depending upon the condition of weather and traffic. The aim is to maintain a surface that will drain off all water as fast as it falls.

"On steep grades water-breaks are usually constructed across the road to prevent the water from flowing down the middle. These are somewhat of a nuisance, and if the road is well crowned, will not be necessary. If they must be built, they should be V shaped so that they will not cause such inconvenience when heavy loads are hauled over them.

"Once a fair roadway is secured, a little care and attention will suffice to keep it in good repair. Most damage is done to earth roads in the winter and spring. There are laws which regulate the traffic over country roads, but these are seldom enforced."



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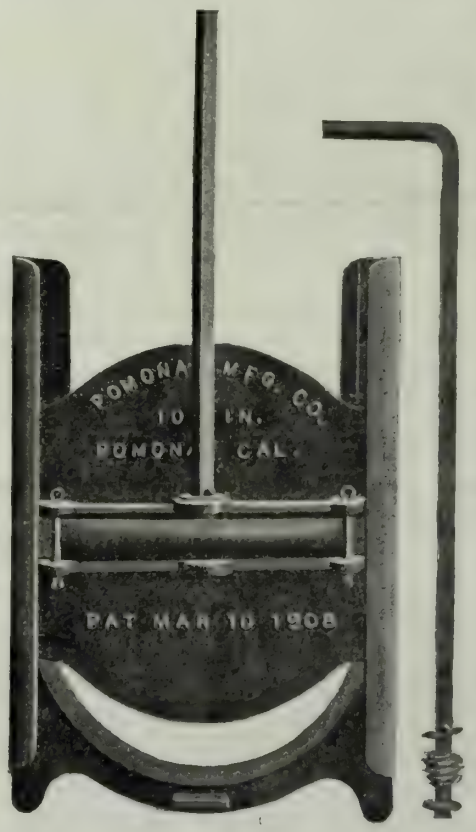
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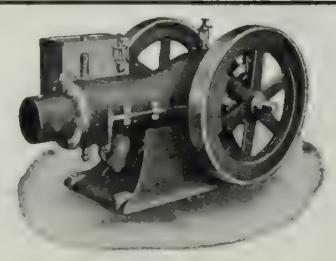
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Those who are keeping sheep on farms on which shade trees do not abound will be interested in the description in the American Sheep Breeder of the way a western New York farmer made portable shades for his sheep. He got a lot of discarded metal running-gears of wheel scrapers, and tells what he did with them in this way:

"We had the axles straightened out and then built a frame on two sets of wheels and formed a roof on that 26 feet long by 13 feet wide. The lumber on the roof was quite light, and the lower part of the frame fairly heavy. You will see from the photograph what they look like, and you will also have an idea how many sheep they will shelter. They are quite light considering, and can be shifted with one horse from place to place, and when the ground gets the least thing dirty about them, two men can move along to clean ground. Thus you see you get over the difficulty of having your sheep lying on dirty ground, as often happens when they lie in the shade of a tree, more in particular where there are only a few trees. They look well in a lot, though no doubt hundreds of people passing along the highway stop to ask what they are for, and they are doubly amused should they happen to see them getting shifted from one lot to another.

"There is no question but that this is the best style of a shade that anyone could think of. It is not so very expensive and would pay anyone to buy wheels and make such shelters, as anyone can see the advantage over the frame that you have to drag along, or lift onto a wagon in order to shift it from place to place, and the trouble with this sort of thing is that they are left so long in the one place that the ground gets filthy and nasty."

Obviously, such shelters would serve well for all kinds of small stock.

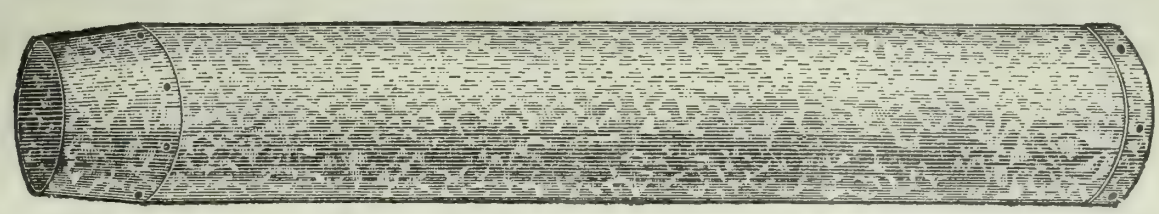
DRIED BREWERS' GRAINS.

To the Editor: Will you please inform me through your valuable paper, what are the feeding qualities of brewers' dried grains? How does it compare to middlings and other feed.

Urban. T. A. MURRAY.

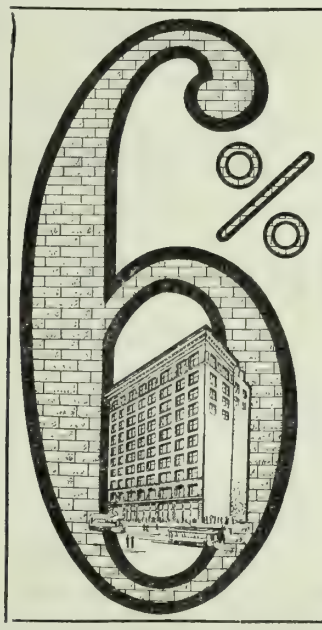
Dried brewers' grains are good feed for cows and have also been pronounced satisfactory for horses after some careful trials. They are rich in protein and fat and rather light in carbohydrates, and compare well with bran and oil meal, and are therefore a rather stronger food than middlings.

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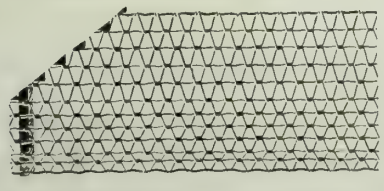
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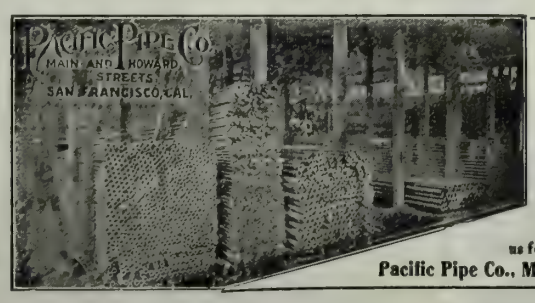
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The Selection of a Brood Sow.

In the selection of a brood sow, as with a brood animal of any kind, the impression which is made upon a person who is not up on the finer points of judging is a fair enough guide for part of the work, as an animal that is unattractive is likely to prove a poor breeder, even if the reasons why a poor impression is made are not fully understood. Other points, however, besides those made upon a person with untrained judgment should be taken into consideration. A breeding animal of any kind should show spirit and vitality, be full chested and have plenty of room for heart, lungs and digestive apparatus.

In selecting a brood sow a plump, chubby female, no matter how attractive she might be from the market standpoint, is not the animal to use for breeding. In place of this type the longer bodied, vigorous growing animal is much to be preferred. The short, chubby sow may owe her good condition to proper feeding, easy living and good care only, while the longer animal, with more room for digestive apparatus, owes her size and shape to heredity and natural vitality. The latter will also farrow more pigs to the litter and give more milk for them and be in every way more profitable.

The sow, however, must not have any definite faults that would make her undesirable, even if in general conformation she comes close to the proper type. Long legs that raise her far from the ground, a narrow girth near the shoulders or flank, a sag to the back, all unfit a sow to produce the kind of pigs that bring big returns to their owners. A pig with broad back and square corners, like a typical beef cow, is better for pork than one that resembles more the dairy type of cow. All meat animals of any kind have a similar general conformation.

Although the head of a sow, or boar either, does not cut much figure with the butcher, as a brood animal this part of the body is as important as any other. A coarse, unattractive head, combined with a fine looking body is just as likely to indicate a poor brood animal, as a good head and poor body. While the body may show the characteristics of the single animal, the head shows the hereditary tendencies of the stock, and the first, being due more to the conditions under which an animal is raised than to its natural constitution, is of small value for reproduction purposes.

WITH THE STOCK MEN.

John Powers, of Mesquite Lake, Imperial county, has brought to his ranch a carload of brood mares and colts as the foundation of a herd of blooded horses.

H. K. Small, of the Riverside-Heber Ranch Co., has been importing a number of thoroughbred brood sows for the ranch. The company expects soon to be able to turn out a carload of hogs to the market every month.

A 15-year-old boy of Linden, Indiana, was attacked recently by infantile paralysis, contracted through caring for diseased hogs. His is the sixth attack from the same cause to be reported to the health officer of Tippecanoe county recently.

Henry Martinus, of Lockwood, Monterey county, has shipped to the city a carload of young draft horses weighing about 1600 and 1700 pounds each.

Owing to low prices for melons around Ripon, several ranchers are using the melons for hog feed and state that the hogs are thriving on the feed, which brings larger returns that way than when sold in the market at present figures.

Several severe losses of stock have occurred in Solano county recently through the activity of cattle rustlers. George W. McDermott, of the Scandia section, lost nearly 50 lambs, and other ranchers have lost cattle and hogs.

The Haydon-Norgard feud in southern Trinity county, arising over cattle troubles, has been brought to a close by the sale of all the Norgards' cattle to the Haydons and their removal from the cattle business within the county limits.

For the newly formed stock farm of Davis & Peterson near Yuba City, 100 head each of thoroughbred Duroc Jersey, Berkshire, and Tamwortn hogs have been secured. Both corn and alfalfa will be raised on the ranch for hog feed.

That a number of deaths of cattle in the lower San Joaquin valley has been due to anthrax or other diseases and not to rabies, as was suspected at first, is the opinion of Dr. W. T. Burks, health officer of Fresno county.

Swingle Bros., of Yolo county, recently sold three large bands of thoroughbred Shropshire rams to head herds in different parts of the State. These sales, as well as others made recently by all breeders, show that an encouraging interest is being taken in improved stock by producers.

H. C. Schofield, of Bakersfield, has purchased of Ira Russ of Petrolia 2000 acres of stock range for which he paid $28,000. He will raise high-class beef cattle on the place.

An investigation by the Marine Hospital Service of samples of the tick known to cattlemen for years as the pajarohuela or birdbug, shows that it is a near relative of the South African tick which causes the relapsing fever. The tick usually attacked sleeping persons at night and caused severe pain. Until the present samples were found, it was thought by many that the tales of the tick were but myths.

The Howard Cattle Co. recently shipped seven young Short-horn bulls to Hawaiian cattlemen. The animals brought more than $160 each.

McLaughlin Bros. of Oakland, Cal., and Columbus, Ohio, have received 80 head of Percheron stallions from France, among them the winners of the last two great shows of France. The stallion Jalisco was recently sold to Prof. O. P. Jenkins of Stanford University and got first prize in the two-year-old class at the State Fair.

T. S. Glide, of Davis has received a shipment of 24 head of Shropshire sheep, 9 of them bucks and 15 ewes, selected from the best flocks in England. One yearling buck stood second in the last Royal show in England; a ewe lamb brought third in her class. The Shropshires from the home flock which were put up for sale some months ago are now practically sold out.

Henry Wheatley, of the Salvador Stock Farm of Napa, is to leave shortly for England to purchase a number of Shire stallions both for himself and clients.



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They will be sold with a State license under the new stallion law, at moderate prices.

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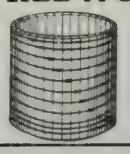
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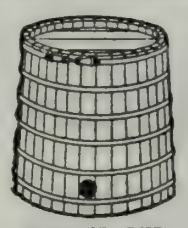


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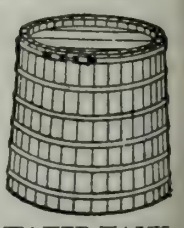
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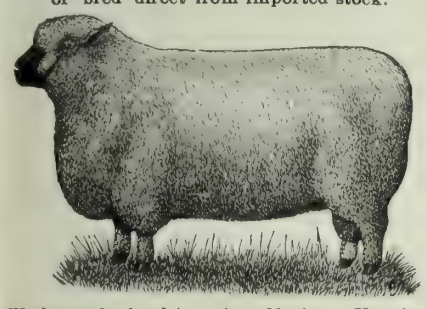
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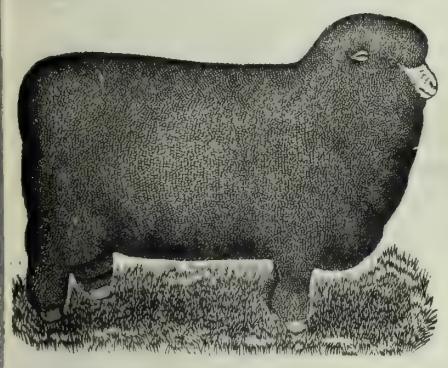
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A Jersey bull calf sired by Ravachol's Romulus 74652; dam Blue Fox's Golden Rosebay 209372; half sister of Noble of Oakland's that recently sold at Cooper's 911 sale for $15,000.

T. B. PURVINE, Petaluma, Cal.
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Pacific Coast Horses for Vermont.

The Bureau of Animal Industry of the U. S. Department of Agriculture has purchased practically all the Morgan horses owned by the Willowmoor Farms, Redmond, Wash., the proprietor, J. W. Clise, of Seattle, having concluded to discontinue the horse-breeding feature of his farm. These animals are intended for the department's Morgan Horse Farm at Middlebury, Vt., where breeding work is being carried on with the object of preserving and improving the Morgan breed.

It is believed that the department has made a very fortunate purchase in acquiring these horses. The mares carry the old-fashioned Morgan strains, and mares so bred have proved exceedingly valuable producers at the Morgan Horse Farm when bred to the stallion General Gates.

Some of the Western Morgan strains have already been added to the Middlebury stud by the service of a number of mares to Meteor Morgan and Roy Morgan. This purchase increases the amount of "old-fashioned" Morgan blood and adds that of Indian Chief, through his famous daughter, Lady de Jarnette.

This will give the Morgan Horse Farm about as many mares as can be conveniently handled, and further purchases are unlikely except as especially attractive opportunities may be offered to add unusually good animals which combine individual excellence with meritorious breeding.

DAIRY NOTES.

Warren B. Thurston, of the U. S. Bureau of Animal Industry, is visiting creameries around the bay for the purpose of making suggestions of profitable changes that might be made in equipment and management.

Richard Lipscomb, one of the newly appointed dairy inspectors of Tulare county, has completed a preliminary inspection of many dairies in the county, and states that a great interest in improved methods is being shown by practically all dairymen.

Col. D. H. Bryant, inspector of the State Dairy Bureau, has started suit against a Monterey county creamery for selling short-weight butter to the dealers with whom it trades. Several convictions have recently been secured in San Francisco and vicinity for violations of the short-weight provisions of the law, and an appeal of one of the cases upon the constitutionality of the law will be completed soon. It is stated by F. W. Andreasen, secretary of the Bureau, that the trial of this case was started without the knowledge of officials who had to do with the enforcement of the law, and discovered by the Bureau only by accident, but in time to prevent the law from being found unconstitutional before the Bureau could state its side of the case.

Montgomery Baggs, of Hickman, Stanislaus county, started his two silos on their fourth season last week. He states that the corn silage he uses has proved to be three times as valuable for feeding as the same material would be dried.

Buildings on the proposed certified dairy of Reis brothers at Oakville, Napa county, are rapidly being rushed to completion, and the dairy will be in operation within a few weeks. Two silos will be built later.

At an auction sale of the dairy cattle of S. S. Farnsworth, of Tulare, Tulare county, the cows averaged $100.50 each, the highest price paid being $142.

The Holstein cow, Riverside Sadie De Kol Burke of Woodland, has just completed an official seven-day test that leaves her with the record for production of butter-fat for nine months after calving. She produced 16.38 pounds of fat during the week, making 20.45 pounds of butter on the 80% basis of calculating. The cow is on an official year's test, and, judging from her record up to this time, will be well up among the great producers when the test is completed.

G. Bonadori, of Old Creek, San Luis Obispo county, has purchased an alfalfa ranch in Imperial county, and will move there in October, taking with him his herd of 80 dairy cows.

The Guernsey bull, Imported Lord Kitchener, of the Alta Vista herd of Charles G. Lathrop of Stanford University, was compelled to take second place to his son, Kitchener's Corona Boy, this year at the State Fair. Both received first prize in their class, although the young bull surpassed the old one in final competition. At the Fair, five head of Guernseys were sold from this herd, two going to Modesto and one each to Stockton, Colfax, and Madera.

The N. H. Locke company recently sold a carload of Jerseys to dairymen of Turlock, and another in Los Banos.

The new plant of the Modesto creamery which is to take the place of the one recently burned down is almost completed and operations will begin within a few days, although it will not be running to its capacity for a month yet. The new plant is much larger than the old one.

A new dairy barn at the Tagus dairy farm near Visalia, Tulare county, is one of the most modern erected in this State. The floor and feed boxes are of concrete and can be cleaned with a minimum of trouble. Overhead is a conveyor for the milk-cans which are carried on cars to the separator house. Each cow has her own stall in which is a name plate with room for her record, preventing "boarders" from remaining there very long.

Dr. C. C. Kennon, of Napa, has completed an inspection of dairies supplying milk to Vallejo, and in a report to the city officials of Vallejo is said to have stated that 60% of cows supplying milk to that town were tubercular or had other serious diseases.

Four dairy cows belonging to Sam Capps of Salida, Stanislaus county, died recently through eating poisonous weeds or other unknown cause.

In an auction sale of dairy cattle at Turlock last week, several Jerseys averaged $90 each, while Holsteins and Durhams brought an average of $87.50 each. Fourteen heifers from 5 to 12 months old averaged $33 apiece.

The Yerington, Nevada, creamery is turning out 300 pounds of butter a day, which is all sold to local trade. The Nevada Milk & Produce Co., of Yerington, which supplies milk for Tonopah and Goldfield, is milking 150 cows and shipping one ton of milk a day to these places. This company has a thoroughly up-to-date plant and is doing its own clarifying and sterilizing, and Mr. Lucy, the manager, reports that business is very prosperous.

CATTLE WAX FAT ON CACTUS

Burbank's Spineless Cactus furnishes succulent feed the entire year. The ideal feed with concentrates or alfalfa hay. Increases flow of milk. Will it pay to plant it? Figure it out then write us for quotations, and plant now.

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Now ready for sale, a few selected, coming three-year-old and one coming four-year-old stallions. All registered. These colts are fine in conformation, size, bone, and disposition, and give great promise. They can be seen at the barn near the station at Los Altos.

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Especially is the dry season in this section very hard on hoofs. If you have a horse with a bad foot caused by tender, brittle, hard or contracted hoofs, split hoofs, quarter cracks, mud fever, scratches, corns, cracked heels or grease heels, send 16 cents postage and we will send you a 50c package of ESHELMAN'S WOOL FAT HOOF HEALER, and if satisfactory, send us the 50 cents. If not, write us to that effect, and you need pay nothing. We take all the risk, you just try it. Send for it today, or send for folder with many testimonials of big horsemen, vets and others.

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Fattening Hogs on Alfalfa.

It is clear from some recent experiments in Kansas, as outlined by Charles Dillon in the Breeders' Gazette, that though alfalfa is a growing rather than a fattening ration for hogs, it really does minister directly to the fattening by making grain which is fed with it more effective.

In the experiment conducted in May and June by Professor T. R. H. Wright, hogs fed on alfalfa pasture made decidedly cheaper gains than hogs fed in dry lots. The hogs used were 1910 fall pigs, essentially in the same condition and weighing about 160 pounds each when the test began. They were fed in this way: One lot, corn alone and dry lot; one lot corn alone and alfalfa pasture; one lot, corn 99%, tankage 10%, in dry lot; one lot, corn 90%, tankage 10%, on alfalfa pasture; one lot, corn 62%, shorts 30%, tankage 8%, in dry lot; and one lot, corn 62%, shorts 30%, and tankage 8% on alfalfa pasture.

In this test it was found that for every 100 pounds of gain made by the hogs fed corn in dry lots, 128 pounds of gain was made by the hogs fed corn on alfalfa pasture; for every 100 pounds gain made by the hogs fed corn and tankage in dry lot, 125 pounds of gain was made by the hogs fed corn and tankage on alfalfa pasture; and for every 100 pounds of gain made by the hogs fed corn, shorts and tankage in dry lots, 123 pounds gain was made by the hogs fed on corn, shorts and tankage on alfalfa pasture. Thus the hogs fed on alfalfa pasture made approximately 25% more gain than the hogs fed without pasture.

The grain required to produce 100 pounds gain cost 54 cents less with the hogs fed corn and alfalfa pasture than with the hogs fed corn alone; 75 cents less with the hogs fed corn, shorts, tankage and pasture, than with those fed corn, shorts and tankage without pasture; and 84 cents less with hogs fed corn, tankage and pasture. The cheapest gains were made with corn, tankage and pasture, and the most expensive gains with corn in dry lot. The hogs on pasture made 25% more gain at approximately 15% less cost than did the hogs in the dry lots. This and other experiments show that from the standpoint of rapidity and economy of gains, the pasture feeding excels the dry lot.

Alfalfa Hay for Hogs.—Experiments at the Kansas station show also that alfalfa hay can be used in the fattening ration with very satisfactory results. In every case in which corn and alfalfa hay have been compared with corn alone, the former ration has produced the more economical gains. In an experiment in 1910 one lot of hogs was fed on corn and alfalfa hay, and a similar lot on corn alone. For every 100 pounds gain made by the hogs fed corn alone, 150 pounds gain was made by the hogs fed corn and alfalfa hay. The hay-fed hogs, in addition to 607 pounds of alfalfa hay, consumed 575 pounds more corn than the hogs fed corn alone, and made 182½ pounds more gain. Valuing corn at 50 cents per bushel and hay at $10 per ton, the feed needed to produce the extra gain made by the hay-fed hogs cost $4.47 for each 100 pounds, which $1.12 cheaper than the gain made with the corn alone.

In another trial this year, for every 100 pounds gained by hogs on corn alone, 124½ pounds was gained by hogs on corn and alfalfa hay. The hay-fed hogs, in addition to 461 pounds of hay, at 67½ pounds more grain that the hogs fed corn alone, and made 168 pounds more gain. With corn at 50 cents per bushel and hay at $10 per ton, the feed needed to produce 100 pounds of gain on the hogs fed corn alone cost $4, and on the hogs fed corn and hay, $3.54. The extra 168 pounds gained by the hay-fed hogs cost $1.77 per 100 pounds, or $2.23 less for each 100 pounds than the gain cost on the corn-fed hogs.

In the experiments here described the alfalfa hay was fed in racks so that the hogs ate whatever their appetites seemed to demand. Experience showed the hogs did better when fed this way than when the hay was mixed with the grain feed, which forced the hog to eat it.

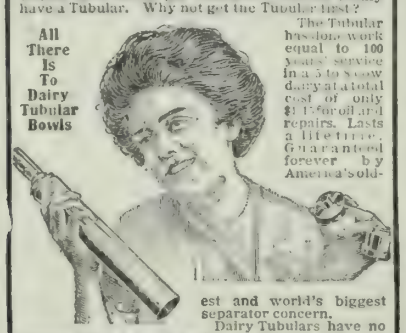
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Conducted By M. RUSSELL JAMES.

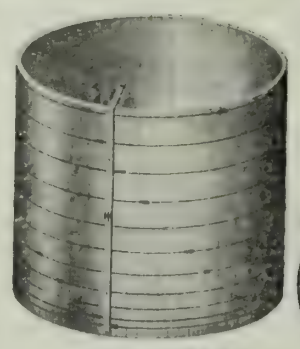
THE BIRD THAT LAYS THE NICKEL EGG.

The success of egg-farming depends upon a large yield of hen fruit during the months of October, November, and December. A large yield of eggs in those months, which constitute the molting season of hens, depends upon the pullets; and the pullets that shall lay these eggs which will average in value toward a nickel apiece depend upon a number of things.

That the pullets shall be hatched at the right season might be considered the first of these things. But it isn't the first. Before that are vigorous parent stock of an egg-laying strain, and correct incubation. Given the promising pullet chick which will result from these things, still other things are required to produce the bird that may be depended upon to lay the nickel egg. These are proper brooding, proper feeding, proper management.

The chick must have a steady, normal growth from the egg to maturity. Any backset or check in growth is pretty sure to delay egg-production in even the early-hatched chick until toward spring. Neither must the chick be forced, that is, fed heavily on mashes made of millstuffs, beef scrap, "egg foods" and the like. An abundance of hard grain and tender green feed should be the pullet's principal food. Some animal food must be supplied when there are no insects or worms. A little fresh meat well cooked and made into a dry mash may be fed each day to advantage, but only what is eaten up clean in half an hour. Free range, or as nearly that as practicable, should be supplied. The growth and development of large, strong bones and tough, vigorous muscles is the business of the pullet for the first five months of her existence.

The boasting reports so common in the poultry press of pullets laying at 3½, 4, and 4½ months old are small cause for gratulation. To the person who has a practical knowledge of poultry culture, they simply reveal faulty management of the pullets. Kept by themselves on fair range and fed as already indicated, the pullets will make a strong growth of bone and muscle and not be forced to premature maturity. Such pullets, if of the Leghorn breed, will begin to lay be-



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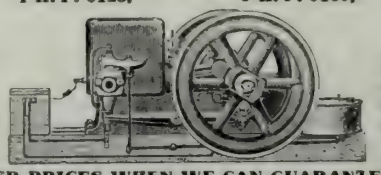
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tween five and six months of age; a small number may lay even before five months old, but the general flock will not be laying before all are six months old. This is the age of maturity for Leghorn pullets kept under right conditions. Any considerable variation from this, either one way or the other, shows forced or retarded growth.

The cut on this page made from a snapshot photo., shows a bunch of pullets of normal growth at about four months old. The smaller ones are less than that age. One of the larger ones laid her first egg on almost the day she was five months old; the others of the hatch did not lay until some two weeks later. In these pullets can be seen the long slender body, full of grace and activity, that is yet to be filled out and rounded into maturity. They remind one of the graceful beauty of girls in their early 'teens.

If the pullets are to be changed into winter quarters, it should be done at about the age of four months. To change them after they begin to lay will often check production for weeks at the beginning of winter, while in the springtime, at the flush of egg-production, it has little or no effect. For winter laying, if the pullets have had free range, it is well to restrict somewhat their range, but to allow them plenty of room and clean



Four Months Old Leghorn Pullets—The Birds That Lay the Nickel Egg.

proportion of animal food. Yard together only those pullets of practically the same age. The practice, so common on farms, of turning the pullets into the general flock where they must eke out an uncertain existence among older birds—old hens, cocks, cockerels, and maybe ducks, geese, and other things—is fatal alike to proper development and to the nickel egg. Eggs produced in tne three months we have named are valuable enough to plan and work—in fact, they must be planned for and worked for. The bird that lays the nickel egg is a product of intelligence and industry; she doesn't come by chance.

POULTRY NOTES.

Warm Talk, but No Hair-Pulling.—The climate of Colorado being more pacific in its influence than that of St. Louis where the former convention was held, the present session of the American Poultry Association came through with much wrangling but no personal encounters. The morning of the last session was devoted to hot argument over the question as to whether the utility and fancy poultry be equally considered by the Association, and a standard be set for the size of eggs and the apeparance of dressed fowl for the market. The matter was finally referred to the executive committee.

The question, "What shall be done about the errors in the 1910 Standards?" came up again, and after much vehement oratory, was referred to the executive committee in spite of strong opposition. At this point one of the members said: "We have public meetings to let out hot air, and then all matters are settled by private meetings of the board." Many of the members agreed that too many things which the intelligence of those present might decide were referred to the executive board. This led to a motion that all meetings of the executive board be open. The fight over this became almost a hand-to-hand conflict, but the motion was finally defeated by a majority of 10 votes.

A resolution was passed that $500 be devoted to pictures and bulletins outlining courses of poultry study for use in the public schools, especially district schools. Another resolution was passed in appreciation of the work of the Y. M. C. A. in educating the boys in poultry science at their night schools. It was further resolved that the Association do all in its power to assist in the work.

All the delegates got together on the last motion, which was a resolution presented by L. C. Byce, of Petaluma, Cal., that the thanks of the Association be tendered to the Colorado branch, the press, and to the many others who contributed to their comfort and pleasure during the convention at Denver.

For an International Poultry Show.—Miss C. B. Carrington, whose yards represent the largest and oldest poultry plant devoted entirely to pure-bred breeding stock on this Coast, and who has been a steady winner at the poultry shows for the past twelve years, has this to say anent an international versus a local poultry show for 1915:

"Those articles advocating a local show for the great Panama-Pacific Exposition make me 'mad.' How very uninteresting a show would be if confined to home products! We are always claiming that our stock is as good—or better—than Eastern, and should be glad to have an opportunity of proving it. I myself would very much like to see some better birds if possible. I believe in trying for the best, and wish the best in America could be established here. My idea is that the difficulty will be to get the Easterners to send their birds—not in keeping them away. It is a long, hard trip on a bird—and costs money. When we sent to St. Louis it took a lot of 'boosting' to start our fanciers on the undertaking.

"The ranch has prospered this year. Prices on eggs less than last year, but we have increased the output; so things evened up. The health and spirits of the birds are splendid. Maybe this is partly owing to the oversupply of green feed. There has been such a rank growth this season."

News Harvest for the Poultry Press.—Fifty poultry journals were represented at the Denver convention, and report says they reaped plenty of news. One member remarked to a fellow-member: "If you only publish the speeches which you yourself have taken the time of the convention to make, they would fill three issues of your paper."

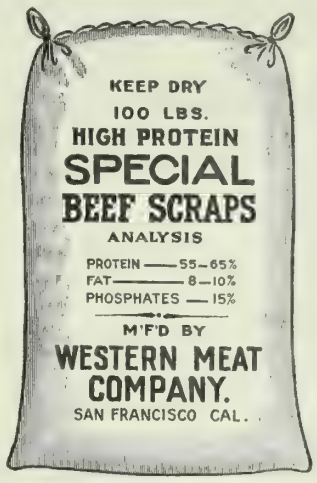
Poultry Husbandry Chair.—An assistant professorship of poultry husbandry has been created at the University of Missouri, according to a statement made by the secretary of the board, in which he says that it will be the purpose of this new chair to offer special teaching in poultry raising and also to conduct experiments in scientific poultry raising.

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The Home Circle.

Causes for Thankfulness.

For all that God in mercy sends;
For health and children, home and friends,
For comfort in the time of need,
For every kindly word and deed.
For happy thoughts and holy talk,
For guidance in our daily walk,
For everything give thanks.

For beauty in this world of ours,
For verdant grass, and lovely flowers,
For songs of birds, for hum of bees,
For the refreshing summer breeze,
For hill and plain, for streams and wood,
For the great ocean's mighty flood,
For everything give thanks.

For the sweet sleep that comes at night,
For the returning morning's light,
For the bright sun that shines on high,
For the stars glittering in the sky,
For these and everything we see,
O Lord, our hearts we lift to Thee,
For everything give thanks.

—Ellen I. Tupper.

The Dog Who Could Count.

A few years ago Dave Pierce, who lived six miles southwest of Neosho, Missouri, owned a shepherd dog who seemed capable of counting. Shep's daily task was to care for the flock of about one hundred sheep owned by Mr. Pierce. Every morning the dog drove the sheep from the corral along a lane for half a mile to the woods, where he kept them until about 4 o'clock in the afternoon, when he would round them up and start them home.

When they reached the mouth of the lane Shep would make his way through the flock, and going to the corral gate would bark and wait for some one to come and open it. Then he would take his stand just inside the gate, and as the sheep passed into the corral he made sure that they were all there.

Two Kansas men were in Mr. Pierce's neighborhood one day, buying sheep. Hearing about this dog they went to Mr. Pierce's to try the animal and to buy him, if he was able to "make good."

"It is just about the hour for Shep to bring the sheep home," said Mr. Pierce, "and the best test is the dog himself. When Shep leaves the sheep and comes to the gate for some one to open it, you catch one of the sheep near the mouth of the lane, take it down into the woods and hide it, and we will see what Shep will do. I really don't know because I have never tested him."

The sheep was caught and tied in the woods, and the gate was kept closed until the Kansas man got back. Then it was opened, Shep took his stand inside as usual, and the sheep went into the corral.

But no sooner had the last sheep passed into the enclosure than Shep gave unmistakable signs that something was wrong. He sprang into the lane, looked in every direction, ran back into the corral and looked the flock over more carefully, then out into the lane again and down toward the woods he ran as fast as his anxious feet could carry him. Finding the trail of the men, he tracked them to the lost sheep.

Two hundred dollars was offered by the Kansas men for Shep, but Mr. Pierce informed them that he would almost as soon part with one of his children.—Dumb Animals.

Greater Work-Capacity in the West.

In both summer and winter, the labor of man and beast is conducted under the more favorable conditions of the arid West with far less bodily discomfort and far more efficiency than is possible in the humid East. It is, of course, impossible to state how much this increased industrial efficiency amounts to in each individual within the arid area, but it is unquestionably very considerable, and when aggregated for large communities it, with the influence of climate on disposition, very largely explains the actual accomplishment in a surprisingly short space of time of the great enterprises for which the West is noted. A. J. Wells has compiled statistics which show that the "average yearly output of each workman in California is nearly twice that of Connecticut; one and three-fourths that of the United States." A climate which confers such increased efficiency upon labor is thus an asset of incalculable value to the arid West; by contrast placing upon the humid climate of the East an industrial handicap which cannot be easily offset. And there arises also the question whether or not severe work in the humid hot weather of the East, forced upon the less fortunate class by the economic necessity of maintaining an existence, may not have a very material influence upon the occurrence of disease through depression of vital resistance depending on interference with the heat regulation of the body.—Dr. Edw. L. Munson, in Pacific Monthly.

Homely Hints.

Clothes should be rinsed thoroughly before putting them into the bluing water, and they will remain white.

Grapefruit should have the bitter white fiber cut out with a pair of scissors; leave the pulp loosened in chunks just the size for a bite. Fill the cavities with cracked ice.

There is nothing better for cleaning copper than a paste made of salt, flour, and vinegar.

Never hang flannel garments near a fire, as they will shrink. However, you may hang them in a warm room.

Few housewives know not to wash the eggbeater in hot, soapy suds, as it removes the oil. Immediately after using wash in cold water.

Any meat intended for soup should be put over the fire in cold water, since the object is to extract the juice.

Menu cards should be placed on the left of each guest.

Rice should be washed in many waters to remove the starch before it is a perfect food. By boiling down the first two waters, an excellent starch can be had for embroidery and laces, which do not need any real stiffening.

If sewing-machine oil should get on white goods, cover the spot with fresh lard for a few minutes, then remove by washing with soap and water.

If a piece of white toilet soap is rubbed on the wrong side of a piece of cloth where threads are to be drawn for hemstitching, the threads may be pulled with half the trouble.

In cooking an old chicken or cooking dried beans, a pinch of soda will shorten the time for cooking.

It takes less sugar for fruit and preserves if put in after they are thoroughly cooked.

A pinch of salt added to the flour for gravy will beat into a smoother paste when water is added.

It is said that perspiration stains on a corset cover can be removed by boiling the garment in water with a handful of green peach leaves.

"We country folks have the best of it When all else fails, we can eat the forest preserves."

"I don't see that you have the best of it," retorted the city fellow. "We have our subway jam."—Washington Herald.

The Ten Commandments of Tolstoi.

To those who live in the country: (1) Breathe fresh air day and night. (2) Practice some sort of outdoor exercise daily. (3) Let your meals be moderate and simple; drink milk rather than alcohol. (4) Harden yourself to the cold by washing in cold water; take a warm bath once a week. (5) Be lightly and loosely clothed. (6) Let your house be dry, roomy, and sunny; own it yourself. (7) Practice strict cleanliness, morals included, as a remedy against epidemics of disease. (8) Hard and regular work is consolation in sorrow, a curb to joy, and a preservative against bodily and spiritual sickness. (9) When work is done, avoid noisy diversions. Devote your leisure to the family; your nights to sleep. (10) In order to be well, work according to your strength, and do good according to your means.

Rubbing Away the Wrinkles.

"I owe my longevity to much pedestrianism and careful dieting," said William Schmidt, aged 81 years, a veteran of the Civil War. The soldier fighter does not look to be a year more than 65 years, having a smooth face and clear eye.

Asked how he accounted for the absence of any wrinkles in his face, he said: "Well, that is easily explained. Any person advancing to a ripe old age can prevent the presence of this objectionable facial feature by simply brushing or rubbing the wrinkles upward at every chance instead of downward or across. That is the secret of the whole thing. My grandfather lived to greatly advanced years and never showed a wrinkle, and he passed the secret to my father, who in turn gave it to me, and now I pass it on. Away with wrinkles, let us have no more of them. The upper stroke does the business, but the rubbing must be done continually."—Philadelphia Record.

The Judge Felt Safe.

"Some of the West India islanders have learned that when a foreigner misbehaves on their shores it is better to suffer in silence than to mete out punishment at the risk of a descending gunboat from the miscreant's native land," said Frank H. Griffiths, of Kingston, Jamaica. "A judge in Hayti, however, recently took occasion to pay off old scores and to redeem his self-respect in the case of an offender brought before him.

"To his first question, as to the nationality of the accused, the interpreter had answered that the prisoner was from Switzerland.

"'Switzerland,' said the judge, 'and Switzerland has no sea-coast, has it?'

"'No sea-coast, your honor,' said the interpreter.

"'And no navy,' continued the judge.

"'And no navy, your honor,' was the reply.

"'Very well, then,' said the judge, 'give him one year at hard labor.'"—Washington Herald.

Horticultural.

"It's no use," sighs the nature wizard. "I may as well give up."

"What is bothering you?" we ask sympathetically.

"I got started a few years ago on a whim of mine. I took a head of cabbage and crossed it with a white potato and grew eyes on it; then I crossed that with a cornstalk and grew ears on it; then I crossed that with a squash and grew a neck on it; then I crossed that with a cocoanut and grew hair on it—but hanged if I can figure out what to do for a nose and mouth."—Life.

A great many good dogs are spoiled by getting the notion of running out and barking at everybody who goes along. You can break a dog of this by shutting him up every time immediately after he does the wrong thing. Don't let one single time go by. A pup that has the habit of jumping up and wiping his paws on you can be cured by treading on his hind feet when he does it.

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OUR YOUNG FOLKS' DEPARTMENT.

Conducted By M. Russell James

Poultry Course for Young Folks.

DESCRIPTION OF BREEDS.

CLASS V.—POLISH.

The Polish is another of the very old breeds of fowl. The exact origin of these beautiful fowls is unknown. They are found in Russia and all parts of Europe, and "Crested" fowls are mentioned by writers of the sixteenth century. This breed is somewhat like in the Leghorn in size and shape, but its distinguishing characteristic is a large crest or topknot and a small V-shaped comb; three of the varieties are also furnished with beards or mufflers. The Polish of the present day may be considered the perfection of beauty in its line worked out by the fancier of all countries and times. In the Polish class there are eight varieties and but on breed. The varieties are represented by the Golden, Silver, White, Buff Laced, and White Crested Black.

Polish fowls are good layers of medium-sized eggs and non-sitters; their flesh is fine-grained and sweet. But they are not a utility fowl. The large crest, though a fine ornament, is a hindrance to their vision and activity and hardiness. If the crest becomes soaked with water serious sickness or death may be the result. Their coops and houses must be extra dry and they must be protected from dampness and rain at all times. Extra care is also required in raising the chicks. They are bred principally for pleasure and the show-room, and their beauty well repays the breeder, as has been proved by the hold they have retained for centuries upon lovers of feathered beauties. For the young folks no more beautiful pets can be found than a pair of one of the pure-bred varieties of Polish fowls. By careful breeding and attention they might win prizes in this class at the shows, and in this way obtain a market for surplus breeding stock and hatching eggs at prices which would make their pets a profit as well as a pleasure.

The Call of the Ranch.

"Have you felt the charm of the desert—
The lure of the cactus land—
When cloud ships white and fleecy
Cast shadows o'er the sand?
Have you seen the smile of the desert,
At the close of a restful day?
Each breeze goes by like a woman's sigh,
And here you would live alway."

That society and pleasure are the things of strongest appeal to girls, and necessity their only incentive to taking up the world's work is disproved in the case of at least one girl. Miss Eleanor Hall is the daughter of one of the wealthy men of Kansas City. When she graduated from Wellesley College two years ago she might have taken up a life of ease and pleasure, but she did no such thing.

When she was a little girl in pinafores her father was a Texas ranchman and she lived on a great stock ranch in Santa Saba county. Along with her brothers she learned to ride a broncho and to be in at the round-ups, and she grew up a part of the free wild life about her. In her elegant city home to which the family removed several years ago that life still called her. She longed for those wide prairies when springtime carpeted them in a kaleidoscope of colors and made every breath a fragrance, or even when the drouth and sandstorm of the later season made them a desert.

WHAT WOULD SHE HAVE?

In answer to that question she asked that she and her two younger brothers might have the ranch at Richland Springs. Sure she might if she would conduct its affairs herself. Mr. Hall had long been looking for a competent manager for the place.

It was no light task which Miss Eleanor undertook. The ranch had run down from years of partial neglect; the squatters and ranchmen of Santa Saba county made disparaging remarks about the "Hall children," as they slightingly called them, and even the Mexicans looked askance at the slender flaxen-haired girl and her two pale-faced brothers, and consequently there was trouble at the outset. The ranch hands, successors of the ancient "cow punchers," thought they knew better how the place should be conducted than their bosses and sometimes talked back. All the wandering vagabonds in central Texas, says the New York World, made it a point to drop in to meals and refuse either to work or be ousted. The local banks set up a wail of hard times and refused credit. But this young girl forced success in spite of all. The four thousand acres of the Hall ranch depended for stock water upon a creek which ran through the range. Occasionally this creek dried up, but no one took the trouble to mention this danger to the young owners. The common notion seemed to be that the "Hall kids would wake up some fine morning and find themselves with 200 head of live stock, and no water with which to wet their whistles."

One day, however, Miss Hall recalled that when she was a little girl on that same ranch the stream went dry. The vision of hundreds of cattle standing around a pool of muddy water and lowing madly for a drink came back to her after all those years. In a day or two several wheel scrapers arrived on the ranch and began damming up the narrow valley of Richland creek. It was an expensive job, but it quadrupled the value of the range. The dam caught up the waters of the lazy flowing branch into a vast reservoir several hundred yards wide and half a mile long.

Thus by sticking at the helm and keeping her weather eye on the shallows Miss Hall has not only kept the ranch afloat, but has made it pay. Not only can she ride a horse better and further than other women, but she can raise a Texas mule and then find a market for him. At the ranch she is boss of the ranch hands, takes care of the ranch house, sets the selling price of the horses and mules, and O. K.'s all business transactions. She is busy and happy, lives sixteen miles from a railroad town and intends to remain there indefinitely. During the summer she takes a run up to her home in Kansas City, where the society girls envy the freshness of her face with its becoming dash of tan, and think she might bring some of the latter to pass around. But the brown-stone house and the society of her girl friends cannot keep her from returning to her work at the ranch.

We know our girls will be interested in reading of this one who is accomplishing things in life, and who has learned so young that happiness is found only in regular and useful work; and that while pleasure is good as a recreation it becomes insipid when it is made the chief business of living.

This Monkey Wears Shoes.

Baldy, the intelligent chimpanzee at the Bronx Zoo in New York, is to be dressed like a boy, including shoes and hat. It was easy to fit him in clothing, but it was hard when it came to the shoes. So Baldy encased in a red sweater, was seated by the side of Curator Ditmar in an auto and taken to a shop in Park avenue to be measured for a pair of shoes. All the small boys and girls in the neighborhood, with a generous sprinkling of older folk, gathered in front of the shop to see Baldy. After his foot measurement was taken, Baldy walked out and climbed into the auto. By this time the crowd was so big that the machine could not move until a policeman cleared a road. Then Baldy was taken home for dinner. He chattered that he had had a fine ride.

A lumberman was thunderstruck on reading a telegram which ran:

"Twins this morning—more later.
"Sadie."

A Boy Inventor.

In Flatbush, Long Island, according to the New York Herald, there lives a mechanical genius. He is Willie Vanderver, only twelve years old, who has already invented almost everything from a kite to a flying machine, but his latest achievement is a sailing craft on wheels. In a trial spin recently he ran his sail-wagon out on Ocean avenue in front of his home, hoisted his sails and away he went down the avenue at twenty miles an hour, passing horses and autos.

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THE MARKETS.

San Francisco, Sept. 6, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

A slight reduction has been made in the quotations on White Australian and Northern Club wheat, but the market in general is firm, the local demand being well maintained. There is more strength to the Northern market than for some time past, with increasing demand and no pressure to sell.

California Club	$1.45	@1.50
Sonora	Nominal	
White Australian	1.50	@1.55
Northern Club		1.50
Northern Bluestem	1.65	@1.70
Northern Red	1.60	@1.65

BARLEY.

Prices on all grades remain as last quoted. There has been a little weakening of futures, but the spot grain is steady, all offerings being held at full values. The shipping movement is keeping up on a large scale, with continued demand for export, and there is also considerable local activity in feed and brewing grades.

Brewing and Shipping	$1.62½	@1.67½
Choice Feed, per ctl	1.60	@1.62½
Common Feed	1.45	@1.50

OATS.

Red seed oats are now beginning to move in quite a large way, the prices standing as before. Other descriptions are very firm, with an advance in black oats. A few white oats are offered at appearing quotations.

Red Feed	$1.65	@1.75
Gray		1.65
White	1.62½	@1.65
Black	1.70	@1.75
Red Seed	1.75	@2.00

CORN.

There is no quotable change in prices, though Eastern corn is stronger than for some time past. Arrivals here are light, and trading is limited.

Cal. Small Yellow	$1.75	@1.80
Eastern Yellow		1.70
Eastern White		1.70

RYE.

Offerings of this grain are very small, and the market is inactive, as for some time past. Prices are unchanged.

Rye, per ctl	$1.55	@1.65

BEANS.

Quotations have been changed on most descriptions, but the figures named are of little use as an indication of real values, as the market is very unsettled and subject to considerable change within the next few weeks. Buyers are disposed to hold off from the market, awaiting the appearance of new crop, and aside from a fair movement of whites and a few small sales of bayos very little business has been done of late. White beans are fairly strong, and garvanzos are quoted a little higher, but otherwise the market is rather easy, with lower prices on several lines. Local dealers estimate that there will be about 600,000 bags more beans produced in this State than last year, and look for lower prices accordingly. Limas and blackeyes are now being threshed, and some are said to have been shipped, though no new stock has so far appeared on this market. Spot prices on both varieties are lower, and a still further decline is expected as soon as any large quantity of new stock arrives.

Bayos, per ctl	$3.75	@4.00
Blackeyes	5.00	@5.25
Cranberry Beans	3.60	@3.80
Garvanzos	3.00	@3.25
Horse Beans	2.50	@2.75
Small Whites	3.75	@3.85
Large Whites	3.60	@3.75
Limas	5.50	@5.60
Pea		4.25
Pink	4.60	@4.75
Red Kidneys	5.75	@5.85

SEEDS.

A little brown mustard has arrived of late, but the value is unsettled, the old quotation being little more than nominal. So far there is no large demand for any description. Canary and hemp are higher.

Alfalfa	Nominal	
Broomcorn Seed, per ton	$25.00	
Brown Mustard, per lb	5½c	
Canary	4	@ 4½c
Hemp	4	@ 4½c
Millet	3	@ 3½c
Timothy	Nominal	
Yellow Mustard	5¾c	
Dried Peas, per ctl	3.75	@ 4.00

FLOUR.

The market remains active and fairly firm at the former level, with no new feature.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.60	@4.80

Hay and Feedstuffs.

HAY.

A still further increase in shipments to this market is reported, but the demand is extremely active, and no difficulty has been experienced in disposing of all arrivals promptly. Conditions are unusual for this season, the firmness of present prices indicating an actual shortage in the crop. Several dealers, who attempted to bear the market when the crop was harevsted, are now on the other side of the market, and have succeeded in getting a further advance over last week's quotations on the better grade of wheat hay. The fields are being rapidly cleaned up, and higher prices are being paid in the country for the little that remains. Alfalfa remains rather slow, as dealers are still unwilling to pay the prices generally asked.

Choice Wheat	$16.00	@17.50
Good Wheat Hay	12.00	@16.00
Other Grade Wheat	8.00	@12.00
Wheat and Oats	8.00	@15.00
Tame Oats	9.00	@15.00
Wild Oats	7.00	@12.00
Alfalfa	8.00	@11.50
Stock Hay	5.00	@ 7.00
Straw, per bale	35	@ 60c

FEEDSTUFFS.

Prices remain as before, the market being firm on the principal varieties. There is an active demand for all lines of feed.

Alfalfa Meal, per ton	$16.00	@18.00
Bran, per ton	28.00	@29.00
Cocoanut Cake or Meal	25.50	@26.50
Cracked Corn	38.00	@39.00
Middlings	34.00	@36.00
Mixed Feeds	28.00	@30.00
Rolled Barley	32.00	@33.00
Rolled Oats	32.00	@33.00
Shorts	31.00	@32.00

Garden Truck.

VEGETABLES.

Onions show no further change, though the market is fairly steady as quoted. Arrivals of garden truck have been large all week, and prices in general continue low, a heavy oversupply after the holiday having caused a decline in several lines. It has been almost impossible to clean up the market from day to day, and only the best offerings find anything like a ready sale. Tomatoes are still in heavy supply, and while some of the best lots may sell above quotations, most of the arrivals are going at bottom prices. Cucumbers also are low and weak. Green peas and string beans are unchanged, some fancy offerings of the latter bringing a premium, and green limas are a little higher. Arrivals of green corn have been less excessive for the last few days, and prices show some improvement. Eggplant, summer squash, and cauliflower are easy at lower prices.

Onions: Yellow, ctl	70	@ 75c
Garlic, per lb	2	@ 4c
Green Peas, per sack	$ 2.00	@ 2.25
Tomatoes, per box	25	@ 40c
Cucumbers, per box	40	@ 50c
Cabbage		85c
Carrots, per sack		75c
Cauliflower, per doz	50	@ 60c
String Beans, sack	1.00	@ 1.25
Lima Beans, per lb	4	@ 4½c
Summer Squash, per box	25	@ 35c
Okra, per box	65	@ 75c
Green Corn, per sack	75c	@ 1.25
Eggplant, per box	50	@ 65c
Green Peppers, per box	35	@ 50c

POTATOES.

The situation in river, Salinas, and local stock is unchanged, though the feeling is perhaps a little steadier. Sweet potatoes are coming in freely at present, and prices have been considerably reduced.

River Whites	$ 1.00	@ 1.15
Sweet Potatoes, per ctl	1.85	@ 2.00
Salinas Burbanks	1.60	@ 2.00

Dairy Produce.

POULTRY.

Arrivals of Eastern stock are rather large, and with about the usual arrivals of local chickens there is little demand for anything but large hens, plump broilers and large young roosters. Other lines are slow, and are frequently sold below quotations. There is a continued demand for large young turkeys, or very small ones, but few are offered.

Large Broilers	$ 3.50	@ 4.00
Small Broilers	2.50	@ 3.00
Fryers	4.50	@ 5.50
Hens, extra	8.00	@ 9.00
Hens, large	5.00	@ 6.00
Small Hens	4.00	@ 4.50
Old Roosters	4.00	@ 4.50
Young Roosters	6.00	@ 7.00
Young Roosters, full grown	8.00	@ 9.00
Squabs	2.00	@ 2.50
Geese, per pair	2.00	@ 2.50
Ducks	4.00	@ 7.00
Turkeys, live, per lb	25	@ 28c

BUTTER.

A slight improvement has been noted since the holiday, as there has been no great surplus of high-grade fresh stock, and there is a fair demand from other points. Firsts are rather easy at the moment, while other grades are unchanged.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	25½	25½	25½	..	26	26
Prime Firsts	24½	24½	24½	..	24½	24½
Firsts	24	24	24½	..	24	23½
Seconds	22	22	22	..	22	22
No. 1 Packing stock	20	20	20	..	20	20
East Ladles Extras	21½	21½	21½	..	21½	21½

EGGS.

Arrivals the first of the week were below expectations, and the market opened very firm, with prices somewhat higher than a week ago for extras. The outlook for the next few days, however, is rather uncertain. Selected pullets are lower, and other grades remain as before.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	30½	31	31	..	31½	31½
Prime Firsts	28	28	28	..	28	29
Firsts	27	27	27	..	27	27
Seconds	19½	19½	19½	..	19½	19½
Selected Pullets	23½	23½	23	..	23	23
Eastern	15	15	15	..	15	15

CHEESE.

The only change is a slight advance in new fancy flats. There is little feature to the market at the moment, Monterey cheese finding a fair market, as reported last week.

Fancy California Flats, per lb	14	c
Storage	14	c
Firsts	12½	c
New Young Americas, fancy	15	c
Monterey or Jack Cheese	12@12½	c

Deciduous Fruits.

FRESH FRUITS.

Several lines of tree fruits are doing a little better this week, though the market is still oversupplied, and there was a particularly heavy overstock on Tuesday. Some descriptions of apples are lower, but Bartlett pears are doing rather better. Arrivals of ripe fruit have decreased, and most of what comes in can be sold to canners at about $20 per ton, while green pears find a good demand in the regular trade. Peaches are still plentiful, but the best offerings bring better prices, and nectarines are also stronger. Arrivals of figs have been extremely heavy, and the movement is slow, though values stand as before. Nutmeg melons are still plentiful and cheap, and cantaloupes are lower. Strawberries, raspberries, and huckleberries are all considerably lower, and it is impossible to get former values for seedless grapes, which are coming forward in large quantities. Tokays are appearing in considerable quantities, and with only moderate demand the prices are low.

Watermelons, per doz	$ 1.50	@ 2.25
Cantaloupes, standard crate	50c	@ 1.00
Nutmegs, box	25	@ 50c
Raspberries, chest	5.00	@ 8.00
Blackberries, chest	3.00	@ 4.00
Strawberries, chest	3.00	@ 5.00
Huckleberries, lb.	10	@ 15c
Apples—		
Fancy Gravensteins, box	$ 1.10	@ 1.65
Choice	60c	@ 1.00
Other varieties	1.00	@ 1.35
Peaches, lug box	1.00	@ 1.50
Small box	40	@ 75c
Plums, crate	40	@ 75c
Nectarines, crate	75c	@ 1.00
Figs, drawer	50c	@ 1.00
Pears, Bartlett, box	75c	@ 1.50
Quinces, box	75c	@ 1.00
Other varieties	65	@ 85c
Grapes—		
Seedless, crate	60	@ 75c
Other varieties	35	@ 40c
Tokays		50c

Dried Fruits.

The early buying movement in most lines appears to be about over, as there is at present little inquiry from the principal consuming markets, and the jobbing trade in general is slow to pay the current prices. Packers accordingly describe the market as weak, though it is too early to form any definite idea of the conditions which will govern prices later in the fall. There is apparently a general effort in the trade to secure supplies at lower prices than growers have so far been willing to accept, and it is a question which side will be able to hold off longer. In the meantime, trading in the country is slow, and may remain so for some time to come. Packers have again reduced their offers on apricots, notwithstanding the known scarcity, and peaches and apples are also quoted lower this week, though it is doubtful whether any peaches can be bought under 10c. Prunes are unchanged. Packers are still selling stock bought early in the season at low prices, while goods remaining in growers' hands are firmly held. There appears to be more than the usual amount of shrinkage in drying. The raisin situation remains about as before, with very little inquiry from the East, and from present appearances the crop movement will be rather late. The New York Journal of Commerce says:

"The market on forward shipments is in an unsettled condition, due to the lack of buying interest, and, according to some reports, because of bearish influence exercised by packers with a view to weakening the stand of growers. The latter, having, according to report, disposed of the bulk of the crop, have fixed prices on the balance much above packers' present f. o. b. quotations, and seem determined to hold on to what they have left until the packers come up to their views. There is little or no interest shown in future apricots, and in spite of the reports of a short crop there is an easier tone to the f. o. b. market. Some Southern 'cots offer for prompt shipment from the Coast at 15c for choice. There have been some arrivals of new fruit, most of which has been distributed for consumption, but at least one car is offered ex dock New York at 16¾c for choice, 17½c for extra choice and 17¾c for fancy. Peaches are dull in all positions, but there is no pressure to sell. According to reports from the Coast the stock is mostly out of growers' hands and is controlled by two packers, who are at odds on the question of prices. In California raisins either for immediate or future shipment comparatively little is being done. Packers seem to be more interested in breaking down the stiff views of growers than in getting business on finished goods. The growers are not apparently easily to be swerved from their determination to demand from the packers at least a 4¾c sweatbox price, and as that would mean a considerable loss to the latter in filling contracts already made or in booking new orders, the packers do not seem to be eager to get business. There is a strong but quiet market for seedless California raisins of all kinds."

Evap. Apples, 1911, per lb	9	@10 c
Apricots	13	@14 c
Figs, new crop	5	@ 7½c
Peaches, new crop	9½	@10 c
Prunes, 4-size basis, new crop contracts		5½c
Pears, new crop	8	@ 9 c
Raisins—		
Loose Muscatels, in sweatbox	4	@ 4½c
Thompson's Seedless	6	@ 6¼c
Seedless Sultanas	5	@ 5½c

Citrus Fruits.

Prices stand as before on all descriptions. There is not much feature to the San Francisco market, the demand at present being rather light.

Valencias, choice to fancy	$ 3.50	@ 4.50
Grapefruit	3.00	@ 3.50
Limes	5.50	@ 6.00
Lemons	1.50	@ 5.50

Nuts, Honey, Hops, Etc.

NUTS.

A few of the new-crop almonds have been shipped, though nothing has so far been shown in the open market here. Sales, however, are fairly active both here and in the country. Walnuts continue nominal, with nothing offered on the spot.

Almonds, 1911 crop—	
Nonpareils	18½c
I X L	17¼c
Ne Plus Ultra	16½c
Drakes	14½c

Languedoc		14½c
Hardshells	8	@ 8½c
Walnuts—Softshell, No. 1		15 c
Standard		14½c
Softshell, No. 2		11 c
Budded		17½c

HONEY.

Slightly lower prices prevail in the local market, though the movement is about up to the average for this season. Shipments are going out rapidly from producing districts, and the crop is expected to clean up before long.

Comb, white	13	@15 c
Extracted, water white	8	@ 9 c
Amber	7	@ 7½c
Off grades	5	@ 6 c

BEESWAX.

The top price on light stock has been reduced, as there is practically nothing that will bring above the present quotation. Trading is limited, as for some time past.

Light	28	@30 c
Dark	23	@26 c

HOPS.

The market is in a rather unsettled condition, the views of buyers varying considerably as to actual values. Some recent sales have been reported around the top quotation, but local buyers regard that figure as excessive, and are inclined to hold off from the market.

1911 crop	35	@40 c

Live Stock.

The market shows little feature, being practically as last reported, though supplies were rather light at the beginning of the week. There is a little more activity in hogs, both supply and demand being more in evidence than for some time past. Large dressed veal is lower.

Gross weight:		
Steers: No. 1	5	@ 5½c
No. 2	4¾	@ 5 c
Cows and Heifers: No. 1	4¼	@ 4½c
No. 2	4	@ 4¼c
Bulls and Stags	2	@ 3 c
Calves: Light	6½	@ 6¾c
Medium	6	@ 6¼c
Hogs: Grain-fed, heavy		7¼c
150 to 250 lbs	7¼	@ 7½c
100 to 150 lbs		7 c
Small prime wethers	3¾	@ 4 c
Large prime wethers	3¾	@ 4 c
Ewes	3¼	@ 3½c
Lambs	5	@ 5¼c

DRESSED MEAT.

Steers	8¾	@ 9¼c
Cows	7½	@ 8½c
Heifers	7½	@ 8½c
Veal, large	9½	@10½c
Mutton: Wethers	8	@ 8½c
Ewes	7½	@ 8 c
Lambs	10	@10½c
Hogs, dressed	10½	@11½c

WOOL

So far no prices have been made on fall clips, and the market is without life, California wool being generally neglected. Buyers are expected to be in the market before long, however.

Spring Clip—		
Choice Southern, Year's staple	10	@12½c
7 months	8	@11 c
Lambs, spring	8	@10 c
Northern, year's staple	14	@16 c

HIDES.

No further changes in prices are noted and the market is less active than last month.

Heavy Steers, over 56 lbs		11½c
Medium		11 c
Light Steers, under 48 lbs		10½c
Heavy Cows, over 50 lbs		10½c
Light Cows, 30 to 50 lbs		9½c
Kip		11½c
Veal		16 c
Calf		16 c
Dry—		
Dry Hides	17½	@18½c
Dry Bulls		15½c
Dry Kip, 10 to 15	18	@18½c
Dry Veal, 5 to 10		19½c
Dry Calf, 7 down	23	@23½c
Sheep Skins—		
Long Wools	$ 0.85	@ 1.25
Medium Wool, 6 to 9 mos	50	@ 75c
Short Wool, 3 to 6 mos	30	@ 50c
Lambs	35	@ 50c

HORSES.

Horses showing any class and weighing 1100 pounds or over are finding a fairly ready market locally, though it is still almost impossible to sell ordinary range stock at anything like satisfactory prices. The only really strong demand, as for some time past, is for desirable drafters, chunks and wagon horses, offerings of which are still limited.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	235@285
Chunks, 1350 to 1500 lbs	200@250
Wagon Horses, 1250 to 1350 lbs	150@200
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	100@125
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

Deciduous Fruit Shipments.

Sacramento, Cal., Sept. 2, 1911.

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, September 1, 1911, as reported by the California Fruit Distributors:

Peaches—85¼ cars. As indicated last week, there has been a heavy decline in shipments of this variety, amounting to nearly 150 cars. Salways are going forward in a small way, and will be in larger volume next week. There are also a few clings available. Owing to large sales of all varieties of peaches to canners and the low prices prevailing for this fruit in Eastern markets, it is not likely that more than two or at the outside three hundred cars of peaches will be shipped from this State during the remainder of the season. The principal supply of Salways during the next week will come from Placer county.

Plums—63¼ cars. This variety shows a falling off of more than 50% from last week. It is not likely there will be more than 40 cars shipped out during the next seven days. Most sections have completed the shipment of this variety.

Pears—159 cars. A decline of over 100 cars from last week is noted here. Bartletts are coming almost entirely from the mountain sections. A few fall pears are going forward from the Santa Clara and San Lorenzo districts. Winter Nellis are reported to be of fine quality and a fairly good crop. Comice are generally reported a short crop.

Grapes—343½ cars. Malagas still continue offering from the San Joaquin valley. Principal movement, however, is in Tokays. Florin and Lodi are now shipping the latter in considerable quantity. The movement will undoubtedly be heavy next week and during the remainder of the season. We have the best crop of grapes ever raised in the State, and of the finest quality. Prices will be exceedingly reasonable.

Total shipments to September 4, 6756 cars, as against 8271 cars to the same date last season.

Reports from the Eastern auctions would indicate that the very low prices which obtained for the past two weeks were over with. At New York on September 5 the sales at auction were as follows: Bartlett pears, 65c@$2.05; Malaga grapes, $1.05@1.35; Thompson's Seedless grapes, $1.10; Gros prunes, 90c@$1.05; Kelsey plums, 75c; Giant prunes, 75c; Grank Duke plums, $1.05; Lovell peaches, 65c; Elberta peaches, 70c@$1.10; Tokay grapes, $1.25@1.35; Cornichon grapes, $1.30; Crawford peaches, 75c; Italian prunes, 90c@$1.10.

PUBLISHER'S DEPARTMENT.

A great change in strawberry culture is promised by A. F. Etter, of Humboldt county, who has been hybridizing berries for twenty years at his home place. Mr. Etter was in our office last week with samples and photographs of his most advanced varieties of strawberries, and promised us that as soon as possible he would give us an article detailing the progress made. Many of our readers will remember an article along these lines from Mr. Etter some time ago, and we are sure they will be glad to hear of his work to date. To take care of the fruit raised on his place and in his vicinity, Mr. Etter has contracted for the erection of a "Likfresh" drying machine.

As the planting season approaches, we would like to call the attention of nurserymen and tree growers to the value of the Pacific Rural Press as an advertising medium. If you will have trees to sell this year, we believe it will pay you to get your announcement before buyers early in the season.

Did you notice the new "liner" advertising column we carried in our last issue? If not, it will pay to look it over in this paper. If you have some article to sell or wish to hire help or to be employed, try it at once—rates are but 1½c per word.

H. B. Thobury, of Los Angeles, recently returned from Missouri with a carload of jacks. He also brought out two mules, five and six years old, from a Belgian mare weighing 1760 pounds and a jack weighing 1280 pounds. The animals themselves weighing 1930 and 1810 pounds. They took first prize in the recent Royal show at Denver, and were brought to the State Fair at Sacramento four days after arriving at Los Angeles.

A. A. Low, of Ripon, is the owner of several three-months-old pigs weighing nearly 100 pounds each. They are Berkshires and are still with their dam.

CLASSIFIED ADVERTISEMENTS.

Rate, 1½c. per word. No order for less than 25c. per week. If you have anything to sell, or want anything, use these columns.

POSITIONS WANTED.

By capable young man, position as manager or foreman on fruit ranch. References. Address, Box 61, R. F. D., Aptos, Cal.

Land-owners needing a foreman or superintendent will be put in communication with an experienced and hustling man by addressing this office. Address Box 49, Pacific Rural Press, 420 Market St., San Francisco.

Young ranch manager can quality as partner in development of either range or intensive proposition; reputation established; would lease large area or manage estate on salary and percentage basis; references and evidence of ability at hand. W. A. F., 1011 Front St., Sacramento, Cal.

FOR SALE—MISCELLANEOUS.

Air-slacked lime; gypsum-manure in car lots. Special terms for an early reply. Dept. A, 733 Merchants' Exchange, San Francisco.

TRACTION ENGINE MEN, ATTENTION! For sale, two 10-disc Spalding-Robbins disc plows with 26-inch discs which will cut 14 feet wide and from 3 to 10 inches deep. Most perfect traction engine plow made. Plowing hard dry land is where this plow excels all others. Address, "Plow," 62 Post St. (Room 232), San Francisco.

FARM LANDS.

Sacramento Valley land; best and cheapest land in the market today; excellent for hogs, alfalfa, dairying, fruits, vegetables; irrigated and sub-irrigated; no failure of crops. W. H. Meyers, 755 Phelan Bldg., San Francisco.

$1000. About 20 acres suitable for fruits, dairy and poultry, ½ mile from Nevada City, Cal. Excellent local market. Good 5-room house and buildings. Ideal climate, fine scenery. Plenty of wood. Water for irrigation. A comfortable home that will make you a good living. A bargain. Address, Owner, care Pacific Rural Press, San Francisco.

$1500. Eighty acres in Browns Valley Irrigation District, near Marysville, Cal. Thirty acres cultivated, balance oak timber and pasture; 8-room house; school across the road. Address, Owner, care Pacific Rural Press, San Franscisco.

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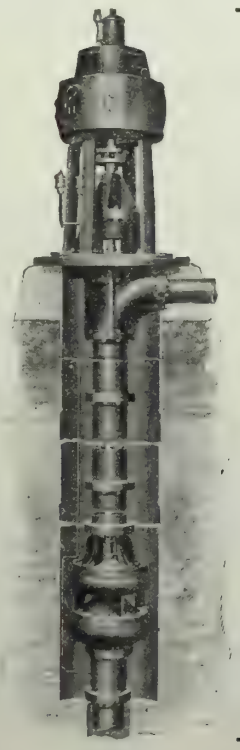
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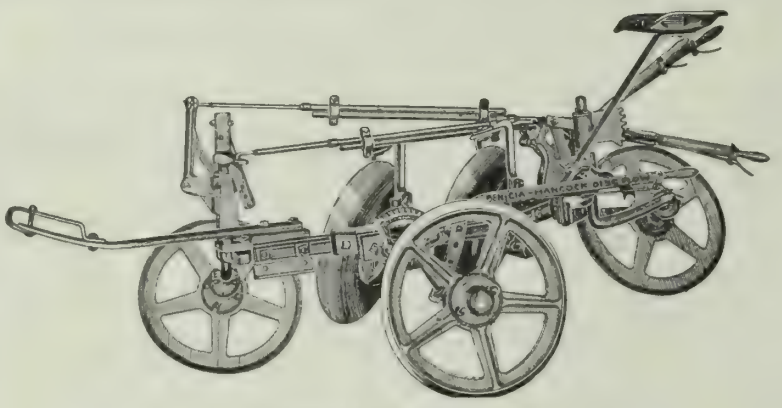
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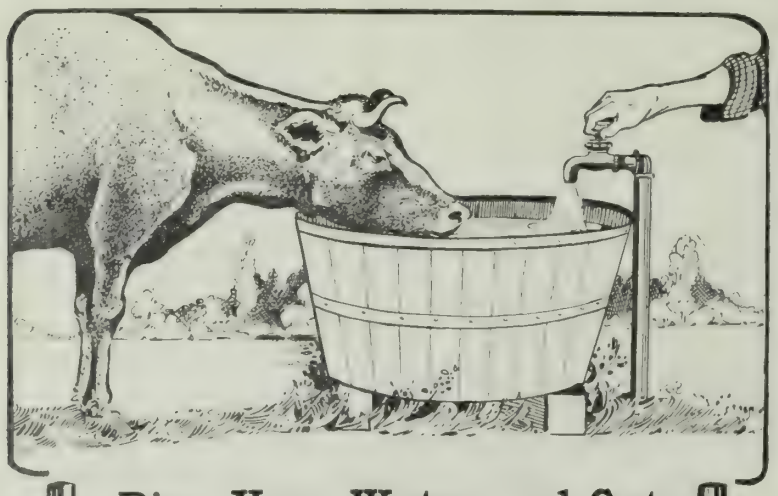
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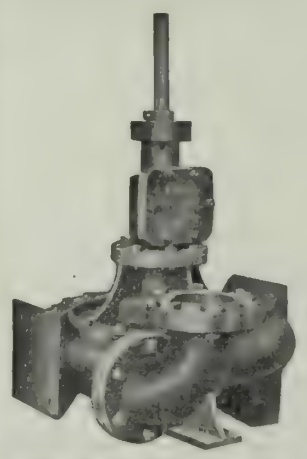
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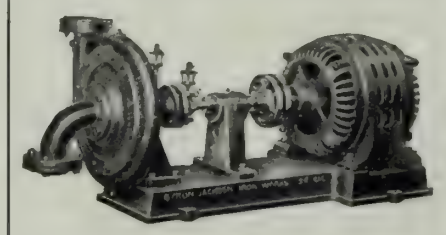
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The Krogh New Water Balanced Vertical Pump contains many new and valuable improvements, same being fully explained in our Bulletin R-10, which will be mailed upon request.

We have a branch in Los Angeles at 206 N. Los Angeles Street.

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Patented Automatic Water Balance Irrigation Pump, direct-connected to electric motor; self-operating; ideal; will require no attention.

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Electric motors and centrifugal pumps make an ideal combination for irrigation work

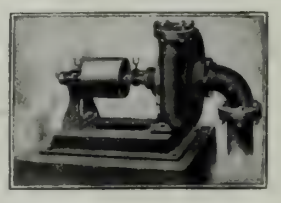
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THE PACIFIC RURAL PRESS

Vol. LXXXII. No. 12. SAN FRANCISCO, SATURDAY, SEPTEMBER 16, 1911. Forty-first Year.

CALIFORNIA STATE

The Commercial Advantage of the Control of Tuberculosis in Dairy Herds.

By Professor C. M. HARING, D.V.M., of the University of California.

A consideration of the bovine tuberculosis problem in its purely economic aspect is difficult. With the data at present available, it is impossible to estimate how much money would be gained by a systematic campaign by all of the States, looking toward the complete eradication of the disease. Neither is adequate information available concerning the productive advantage of sound herds over infected ones. A general idea of the prevalence of bovine tuberculosis in this country, can be obtained from reports of the Bureau of Animal Industry from the various State Agricultural Experiment Stations, from the State Live Stock Sanitary Boards, and from State Veterinarians. The United States Bureau of Animal Industry estimates that 10% of all the dairy cows in the United States have tuberculosis; and it is well known that in some sections the percentage of dairy cows which react to tuberculin is three times this.

Losses Through Tuberculosis.—Dr. A. D. Melvin, Chief of the Bureau of Animal Industry, United States Department of Agriculture, compiled some interesting statistics concerning the financial loss in the United States due to tuberculosis. These he presented at the sixth International Congress on Tuberculosis, at Washington, D. C., in 1908. Dr. Melvin is in a position to speak with more authority on the subject than anyone else in America, as he has the best facilities for obtaining the data. He says:

"While the financial loss caused by tuberculosis of farm animals cannot be calculated with exactness, a study of the subject affords a basis for estimates sufficiently close to show that it is a serious drain on the live stock industry."

Following is his estimate of the annual financial loss in the United States due to bovine tuberculosis:

Probable losses in non-inspected Loss from condemnation of beef in federal abattoirs.....	$710,667
Loss from condemnation of pork in federal abattoirs.....	1,401,723
Probable losses in non-inspected abattoirs if inspection existed	1,720,000
Depreciation of value and losses because of tuberculosis infection in beef and dairy herds.	8,094,998
Loss from decreased productiveness, breeding value, cost of maintaining inspections, and sanitary service and destruction of cattle in States at present trying to eradicate the disease	2,117,612
Total annual loss.....	$14,000,000

What Eradication Would Cost.—These statistics do not show the true commercial importance of the disease. They do not answer the questions we most want to know, namely: Would it be economical for the State to eradicate tuberculosis? Would it be economical for the average dairyman to eradicate tuberculosis? Would the cost be more than the increased production from the sound herds obtained? According to Dr. Melvin's statements, it would be an economic advantage to the public at large if the disease could be entirely eradicated. However, he fails to estimate the sum of money necessary to accomplish this.



No. 1. Tuberculous Grade Dairy Cow. Her Physical Condition is Such That She is not Marketable for Beef.



No. 2. Tuberculous Scrub Dairy Cow. Her Physical Condition was so Good That She was Marketed for Beef, But, on Being Killed, She was Found to be More Extensively Diseased Than No. 1.

From the last Year Book of the United States Department of Agriculture I have obtained the following figures:

Number and Value of Cattle in the United States in 1910.—Number of milk cows, 21,810,000; average farm value, $35.79; total value, $780,308,000. Number of other cows, 47,279,000; average farm value, $19.41; total value, $917,453,000.

Number and Value of Cattle in California in 1910.—Number of milk cows, 453,000; average farm value, $38.40; total value, $17,357,000. Number of other cows, 1,120,000; average farm value, $20.10; total value, $22,512,000.

Number and Value of Cattle in New York State in 1910.—Number of milk cows, 1,789,000; average farm value, $34.25; total value, $61,273,000. Number of other cows, 898,000; average farm value, $16.50; total value, $14,817,000.

After a careful consideration by experts it has been estimated that the cost of testing all of the cattle in New York State and reimbursing the owners for two-thirds of the value of the animals, minus the amount realized from the sale of carcases for beef, would be $8,000,000. On that basis, it would cost California $2,000,000 to go over the State once, and, for the United States, it would cost $100,000,000.

Although the tuberculin test is the best known means of detecting tuberculosis in cattle, experience has shown that we cannot depend on a single test to clean out tuberculosis from a badly infected herd, even under the most favorable conditions. After a herd has been tested, and every reacting animal removed, re-infection may take place; and, at a subsequent test, six months or a year later, a number of the remaining cows may react. It is only by repeated tests followed by the removal of the reacting cattle, and through the disinfection of all buildings and corrals occupied by them, that infected dairies can get rid of all their tuberculous animals. There are other methods mentioned later for dealing with bovine tuberculosis which need not be considered in estimating the cost of an attempt by the State to eradicate the disease from dairies. The expense, then, of eradicating bovine tuberculosis in this State would not be simply the $2,000,000 necessary to have all the cattle tested and reimburse the owners in part for the loss of condemned animals, but this testing would have to be repeated several times. It is doubtful, even then, if the disease could be entirely eradicated in this way, although its frequency would be greatly reduced.

Let us pass on now from the estimate of the cost in general to a consideration of what it would cost the dairyman who owns the cows. To obtain and maintain a herd free from tuberculosis means considerable expense, and the average dairyman fails to see much advantage or large economic returns from a sound herd. An analysis of his situation may help us to understand why.

Economic Importance of Tuberculosis in Pure-Bred Herds.—Dairies may be divided into four classes with respect to the quality and productive efficiency of the cows. First, although not necessarily the best under all circumstanaces, is the pure-bred herd. To the owners of most pure-bred herds the milk or butter-fat production of the herd is a matter of secondary importance the chief source of income being from the sale of the animals for breeding purposes. Tuberculosis is a problem of more economic importance in pure-bred herds than in other classes of dairies because the animals are valuable as individuals. When a pure-bred dairy cow develops clinical tuberculosis the loss to the owner amounts to the entire value of the animal which may vary from $100 to $1000 or more. At the "Breeders' Consignment Sale" at Syracuse, N. Y., on June 8, a ten months old bull calf sold for $10,000. When a scrub cow develops clinical tuberculosis the loss should be from $25 to $60, but usually it is not, for she is sold to a cheap butcher for from $15 to $30. That is one argument advanced by unprogressive dairymen against the adoption of pure-bred dairy stock.

Laws prohibiting the interstate shipment of cattle unless they have passed a tuberculin test have been enacted by many States. At the last session of the California legislature a law was passed prohibiting the importation of stock unless tested by a trained veterinarian. This legislation directly affects the owner of pure-bred stock, as he depends largely on the sale of stock which is to be shipped interstate. In addition to the above reasons which render it economical for the owner of pure-bred stock to eradicate tuberculosis is the requirement of many buyers who insist that their animals be purchased subject to test. It is not the loss from tuberculosis that the owner of the pure-bred herd fears most. If his herd is badly tuberculous the thing he most fears is publicity. The reputation of the breeder of fine stock and the reputation of every one of his animals is injured by a general knowledge of the presence of disease in his herd. It was not actually proven personal merit that caused the bids on the calf at the Breeders' Consignment Sale to mount up to $10,000. It was the reputation of his mother, and grandmother, and great-grandmother, who, by the way, was a California cow. However, tuberculosis is not so great an injury to a cow's reputa-

(*Continued on Page 231.*)

Pacific Rural Press

Issued Every Week at 420 Market Street, San Francisco.

TWO DOLLARS PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

PACIFIC RURAL PRESS CO. - - - PUBLISHERS

Advertising rates made known on application.

E. J. WICKSON - - - - - - - Editor
FRANK HONEYWELL - - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Sept. 13, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.16	.32	.49	64	46
Red Bluff	00	.04	.14	90	50
Sacramento	00	00	.09	88	50
San Francisco	00	T	.01	72	52
San Jose	00	00	.12	86	42
Fresno	00	T	00	92	54
Independence	00	.10	00	86	46
San Luis Obispo	00	T	.06	82	42
Los Angeles	00	T	00	82	56
San Diego	00	.12	00	74	54

The Week.

Now that the fairs are nearly over, and the clouds are rolling over the mountains and the aviators flying through them in their cross-continent volatilities, thoughts naturally turn to the autumnal equinox and the dawning of a new spring time in California. The feel of the rains is in the air. Already showers have fallen in the northern counties and weather forecasts for central California have promised but not produced them. It is fortunately that way usually, for it generally takes the climate of California a few days or weeks to catch up with what is prescribed for it as seasonable. Besides we are not sighing for very early rains; there is still much fruit to gather and much field produce to be moved to cover, and there is little profit anyway in September rains which waste their substance on the arid air. Still we must ease our conscience by expression of the usual warning that rains are due and that the wise farmer who wishes to get exposed property out of their reach or to get the most money out of crops by early tillage and early planting, which are both too good to be lost by unreadiness in this State, must bestir himself, cease his midsummer recreations and get everything in shape for a new year's production. For, let the newcomer be advised, we are approaching the beginning of the growing year and not the closing of it, as wintry-climate calculations are, and now is the time to plan and prepare to purchase tillage and sowing implements and supplies and to start the brisk fall trade which is so essential to the business success of manufacturers and purveyors. It is the right time of the year to give extra attention to our advertising pages to see who offers the best things in lands, implements, trees and plants, seeds, live stock for coming pasturage, and, in fact, the whole list of farming supplies without which in good readiness no man can farm satisfactorily and profitably. This is the duty which precedes the rains—and the rains are on their way.

Mr. Kipling Not a Reciprocator.

It seems that Mr. Rudyard Kipling does not reciprocate the kindly feeling which the Congress of the United States has proclaimed for Canada. Whether Canada will follow the view of President Taft or Mr. Kipling seems to be considerably in doubt, for there has been lively campaigning pro and con in preparation for an election which will give Canadians a chance to vote their will on reciprocity before we reach another issue, if we mistake not. Editorially we shall wear no crepe if the Canadians knock reciprocity into a cocked hat, because, in its essence, reciprocity is a half-loaf device of the free-traders, and, in its operation, will help certain interests which are not largely agricultural. For this reason we do not care what Mr. Kipling does to it. We are inclined to believe that it may be a thing of the soul, as Mr. Kipling suggests, but we are not ready to go quite as far as he does, and denounce it as an affair of lost souls—as he does in these words: "I do not understand how 9,000,000 people can enter into such arrangements as are proposed with 90,000,000 strangers on an open frontier of 4000 miles and at the same time preserve their national integrity. It is her own soul that Canada risks today. Once that soul is pawned for any consideration, Canada must inevitably conform to commercial, legal, financial, social and ethical standards which will be imposed upon her by the sheer admitted weight of the United States."

In these words Mr. Kipling seems to pay an unconscious tribute to the United States, for we must be of superb national potency if some subtle and irresistible influence can proceed from the products we buy and sell to the utter destruction of patriotism and loyalty in the peoples with whom we trade. If in his phenomenal poetic insight Mr. Kipling discerns this, all other emperors as well as he of Great Britain should give heed to it; and if Mr. Kipling should throw his idea of American prepotency into a poem there would be a shaking of thrones in the face of which all existing tremors would seem tokens of solidarity. To be truthful, as is our wont, we must admit that we had no idea that we were so great, and had never conceived such an impressive prophecy that the world is ours, as Mr. Kipling inadvertently voices.

Mr. Kipling's Confusion of Ideas.

It is a little difficult to see how Mr. Kipling can drop from this lofty conception of American supremacy to such an erroneous notion of American conditions, and one is left to wonder how a people so outrageously profligate can be so great as to inspire such wholesome fear. For, continuing his appeal to Canadian patriotism and loyalty, Mr. Kipling writes: "If these proposals [of reciprocity] had been made a generation ago, or if the Dominion were today poor, depressed and without hope, one would, perhaps, understand their being discussed; but Canada is none of these things. Why, then, when she has made herself what she is, should she throw the enormous gifts of her inheritance and her future into the hands of a people who, by their haste and waste, have so dissipated their own resources that even before national middle age they are driven to seek virgin fields for cheaper food and living?"

The fact is of course that Americans are going to Canada for nothing of the kind; their aim is higher living, as it always has been since the American settlers began to move westward from the Atlantic settlements. And it has always been attained. The movement has built up the superior civilization and wealth of the West. Canada, for the development of its far western territory, can find no such capable and powerful people anywhere else in the world. The United States can ill afford to lose them. It is not at all necessary that they should go to Canada, nor will they remain there long; the movement southward through the Pacific Coast States, to secure more delightful livings, by those who have made a good turn in Canada is large and marked. Mr. Kipling should weep not because these Americans are likely to crowd out soulful Canadians or exclude others of whom the mother country may desire to make Canadians; the Americans will simply skin them all alive and return to invest their gains in this country; they are built that way. We are evidently influenced in this view by Mr. Kipling's declaration about the "sheer admitted weight of the United States."

The Value of Dissipated Resources.

But what a mistake Mr. Kipling makes in his conception of Americans as moving upon Canada because they have dissipated their own resources and therefore forced to seek food elsewhere. The Americans who have gone in largest numbers to Canada are from the prairie States. These States are not declining in production, but are rapidly increasing therein and land values are advancing, according to the census of 1910, most surprisingly. All the agricultural lands of the United States have more than doubled in value during a decade—from 9½ billions of dollars in 1900 to 20½ billions in 1910. The percentages of increased value during the decade, in States whence most new-Canadians have gone, are as follows: North Dakota, 321%; Nebraska, 231%; Kansas, 188%; Iowa, 123%; Missouri, 107%; Illinois, 104%; Indiana, 93%; Minnesota, 82%; Wisconsin, 71%, etc. This is the region where, according to Mr. Kipling, "a people by haste and waste have so dissipated their own natural resources that they are driven even before national middle age to seek virgin fields." Oh, Mr. Kipling! They have so dissipated their natural resources that they have been able to sell out their lands for several times their former value and they are now taking a chance at Canadian cheap lands, expecting to turn another such a trick within a decade. The American people for a century has been buying low, selling high, and moving on—with barrels of gold or bales of high-interest-bearing notes as personal baggage. That is the way they are going to Canada, and that is the way they will be coming out of it again, all the time living higher and selling higher-priced lands. Mr. Kipling may be wise to fear them in connection with the emotional lambs of his flock—but they are not hungry wolves, as his poetic soul conceives; they do not win by "sheer, admitted weight"—they shear with a fine hand. We reciprocate Mr. Kipling's sentiment concerning them—but not for his reasons.

The Farmer as a Capitalist.

Speaking about the gold which pioneering farmers get from land-dealing reminds us of another notion which is not included in Mr. Kipling's prose-poem upon American farming, but which bears some relation to it, viz: the American farmer belongs to the capitalistic class and not to the laboring class, and capitalists do not move like the hordes of Tartary, whose antics seem to have suggested the picture which Mr. Kipling has in his mind. Just as soon as a farmer begins to own land and produce on his own account he becomes a capitalist, with all the troubles thereunto pertaining. Take the case of Mr. George Shima, who has been called the "potato king," at Stockton. Some may think that Mr. Shima, as a Japanese, might have kingly control over his labor supply, but Mr. Shima says he is not making the money he should in the potato-growing business. The laborers, most of whom are Japanese, have become so Americanized, he says, that they frequently strike for higher wages and few hours and one thing and another. "It's discouraging," says Mr. Shima. "All the time they strike. No money in the potato business when all the time

the men strike. Then the men are not as good as they used to be. They get lazy and careless. Still, it is not so bad as other lines of business. Some men have more trouble with strikes than I do." He has been reading probably what the papers have been saying about Mr. Kruttschnitt. Mr. Shima's philosophy inculcates resignation. Mr. Kipling may need it before he finishes with American aggression in Canada.

Is Farming to Be a Great Trust?

Of course Mr. Kipling's swan-song for Canada and Mr. Shima's lamentations as a suffering capitalist prepare us for another great shock which comes in the form of a prophecy by the Tennessee president of the Farmers' Union, Mr. Brooks, who declared last week that "the farms of America will be owned and controlled by the trusts within the next thirty years if farmers do not co-operate and conserve their efforts." Mr. Brooks also declared that the farmers must change their methods and assist one another, or they will soon be the playthings of the interests. He pointed out that the farmers are losing a billion dollars annually in the value of their holdings, while the trusts, on the other hand, are gaining a like sum. Mr. Brooks and Mr. Kipling seem to come up neck and neck against the census of 1910, which, as we have already explained, shows a wonderful increase and not a decrease of farm values. Mr. Brooks also receives a side stroke from the same census because it declares that out of a million and a half farms operated by their owners, in both 1900 and 1910, there were less than a thousand which went away from ownership-operation during the decade. Things may therefore be going Mr. Brook's way, but very slowly—so slowly that it would take over 1500 years for American farmers to lose ownership of their farms at the current rate of transfer to non-operating owners; and, coming to think of it, it will probably take about the same length of time for Mr. Kipling's apprehension of the soul-loss of Canadians to be realized.

Our Editorials as a Factor in Health-Cure.

Turning now from all the problems which a froward world forces upon us, we are greatly encouraged by the assurance that the soothing meditations which we hammer out in these columns are being recognized as valuable in the less-medicine treatments which are prolonging human life. A subscriber, whose service in support of this journal is of as long standing as is his reputation for truth in this State, recently wrote: "My wife has not been very well for some time and therefore does not read a great deal, but she always insists upon reading the RURAL PRESS. When I handed her the last issue with the remark that the editorials were a little longer than usual, she took the paper with animation, saying: 'If the editorials are longer, it is all right; I always read everything in those columns'." We are glad to know that the lady's restoration to perfect health is only a matter of a few more issues of this journal.

Queries and Replies.

Treatment of Alkali.

To the Editor: I am advised that in some cases alkali may be drained and that in others it is treated with gypsum. But as to the application of either, I have not found, in my limited search, directions as to how it is done, and what the cost will be.—Reader, San Diego.

Gypsum is not a cure for alkali, but simply a means of transforming black alkali into white, which is less corrosive and therefore less destructive to plants, but there may be easily too much white alkali present—so much that the land would be made sterile by it. You cannot remove alkali by flooding unless two conditions can be assured: first, that the water is itself free from alkali before application to the land; second, that you underdrain the land at a depth of from three to four feet with tile, so that the fresh water on the surface can flow through the soil into the drains, carrying away from the land the alkali, which it dissolves in its course. To flood land even with fresh water without making arrangements for carrying off the alkali water below, is to increase the alkali on the surface as the water evaporates, and such treatment does land injury rather than benefit. We cannot give you any estimate as to the cost of washing out. It depends altogether upon local conditions: whether you use hand work or machinery for the ditching, and what your water will cost.

Dry Plowing for Soil and Weed Growth.

To the Editor: Is there any scientific reason to support the belief here that it is injurious to the soil to plow it at this time of year for seeding to grain this fall and winter? Will dry-plowing now cause a worse growth of filth after the rains than the customary fallowing in the spring? Should the stubble be burned, or plowed under? —Farmer, Woodland.

The points against dry-plowing to which you allude may arise from two claims or beliefs: first, that turning up land to the sun has a tendency to "burn out the humus"; second, that dry-plowing may leave the land so rough and cloddy that a small rainfall is currently lost by evaporation and leaves less moisture available for a crop than if it is plowed in the usual way after the rains. The first claim is probably largely fanciful, so far as an upturning in the reduced sunshine of the autumn goes. Whatever there may be in it would occur in vastly increased degree in a properly worked summer-fallow, and even that is negligible, because of the greater advantage which the summer-fallow yields. There may be cases in which one will get less growth on dry-plowing than on winter plowing, if the land is rough and the rain scant, and yet dry-plowing before the rains is a foundation for moisture reception and retention—if the land is not only plowed, but is also harrowed or otherwise worked down out of its large cloddy condition. When that is done, dry-plowing may be a great help toward early sowing and large growth afterward. As for weeds, dry-plowing may help their starting, but that is an advantage and not otherwise, because they can be destroyed by cultivation before sowing. If the land is full of weed seed, the best thing to do is to start it and kill it. The trouble with dry-plowing probably arises, not from the plowing, but from lack of work enough between the plowing and the sowing. Stubble should often be burned: it depends upon the soil and the rainfall. On a heavy soil with a good rainfall, plowing-in stubble is an addition to the humus of the soil, because conditions favor its reduction to that form, and there is moisture enough to accomplish that and promote also a satisfactory growth of the new crop.

Gum Disease.

To the Editor: I have the Experiment Station Bulletin No. 200, "Gum Diseases of Citrus Trees in California?" Will the same treatment be appropriate for gum disease of peach and apricot trees?—Grower, Los Gatos.

The same principles apply as to other trees, but the orange tree is a very strong tree and shows greater recuperative power under treatment. In the case of peaches and apricots the trouble is more apt to be general disorganization of the root system, rather than a local disease of part of it, as is sometimes the case in citrus trees. For this reason, treatment involves cure of unfavorable moisture conditions, arranging by drainage to see that the soil never holds too much water and by cultivation and irrigation to see that it does not at any time become too dry. This is also true of citrus trees if the disorganization is not merely local near the ground surface.

Eucalyptus Clearing.

To the Editor: Kindly inform me what is best to do with land that is poor or worn out after a heavy growth of eucalptus. I would like to get the land in condition for a vegetable garden. —Reader, Oakland.

The best treatment for land which has carried eucalyptus is to break it up deeply as soon as moist enough to work well, cut out all roots possible, so that their decay may not carry fungus to the plants you desire to grow, and work in as much stable manure as you can get. A depth of several inches of manure over the whole field is desirable from a market gardener's point of view. Such material is much better than commercial fertilizers because it adds humus, which increases the friability of the soil as well as furnishing plant food. If the soil is heavy the use of five hundred pounds of ordinary builders' lime to the acre at the beginning of the rainy season would be very desirable.

Waterproof Cloth—Market Prices.

To the Editor: In your issue of September 9 you give a recipe for waterproofing cloth. After having been treated in the manner there described, will the cloth be soft and pliable, or hard and brittel, so as to break or crack? Would a piece of canvas treated in the way described make a good storm lap-robe for driving? Also, in your market reports you head your report "Unless otherwise noted quotations represent prices paid to the growers." Does that mean the price paid for the article delivered in San Francisco: f. o. b. cars or boat; at place of shipment, or on the ranch? Unless one knows on which basis your quotations rest, one cannot figure accurately from your quotations.—Reader, Redding.

The waterproofing of cloth was for covering a hot-bed or cold-frame in propagation of plants. How it would act in folding or creasing frequently we do not know. Nothing but trial would tell. Our market prices are for San Francisco and refer, therefore, to produce delivered in San Francisco for sale here.

The Corn-Ear Worm.

To the Editor: Do you know any way to get rid of worms in sweet corn? I raised some very good corn this year, but nearly every ear has a worm, and about half of them are so badly eaten or soiled as to be entirely unfit for use. If you can suggest any way to eliminate them I would be very glad to hear about it. How would spraying with some of the fruit-tree sprays do just as the silk comes out?—Newcomer, Glenn county.

Everything that anyone could think of has been tried and no satisfactory preventive has yet been demonstrated. Spraying on the silk was the first thing tried and nothing found which would kill the insect and save the corn. It would take a page or two of the paper to tell all the things that have been tried to kill, catch, divert or otherwise discourage this pest. You can usually get a clean late crop by late sowing if the fall frosts do not catch the corn. Probably some one will demonstrate a recourse some day, but such has not yet arrived.

Analysis of Irrigation Water.

To the Editor: Can you tell me through the RURAL PRESS if I can have well water examined or analyzed, and where, for alkali or anything that would make it unfit for irrigating? The soil has never been irrigated and the water tastes of alkali.—Subscriber, South Dos Palos.

Analyses of water proposed for drinking or irrigation are made free by the University Experiment Station at Berkeley, but before sending, you should write the station to get instructions about taking a satisfactory sample, etc.

Importance of Rotation in Sugar Beet Growing.

[We have often mentioned the undesirability of growing beets continuously on the same land, and yet some growers will do it. Just now in several parts of the State it is becoming more disastrous because of the infestation of the ground with nematodes which practically destroy the crop when sufficiently numerous. So far as now known, the ground is best cleared by growing other crops which they cannot live upon. This being the case, we hope our beet growing readers will give heed to reasons for rotation which are to be added to the advantage of escaping such a serious pest. Such reasons we find pointedly stated by Mr. Truman G. Palmer in a document submitted to Congress in July of the present year by Senator Smoot of Utah, from which we quote.—EDITOR.]

American and European Policies.—"So many tons of beets per acre at so much per ton" is the first thing considered in America and the last thing in Europe, and if sugar beets failed to yield a greater direct profit than do other crops, the average American farmer abandons the culture and applies himself to growing the more easily produced cereals, while the European farmer will grow beets at a considerable direct loss rather than to abandon the culture, well knowing that he will far more than make up any losses on the beet crop by the increased yields of other crops with which, for three years, he follows beets. It unquestionably is true that, because of the exceedingly low price of sugar, Europe long ago would have ceased to produce sugar for export, if not for home consumption, had it not been that beet culture so greatly increases the yield of all other crops.

Instead of growing beets on the same soil year after year, the European farmer rotates them with other crops, sowing them on the same soil as infrequently as possible, in order to benefit the maximum area, never losing sight of or sacrificing the advantages to accrue for the following three years, while tens of thousands of American farmers, sowing beets only for the direct returns, sow them on the same soil year after year, thereby not only losing the greatest profit beet culture affords, but gradually wearing out their soils as they surely will be worn out by cropping them constantly to any one thing year after year without rotation.

In every community where sugar beets are produced, there are farmers who, by personal experience, have learned the truths which Napoleon proclaimed a century ago, and their number is increasing yearly, but there are thousands who still miss the main feature in the culture of sugar beets as thoroughly as one would miss it who said that a farmer painted his barn red in order to provide a red building to gaze at. With the European farmer the main purpose in planting sugar beets is to increase the yield of his other crops by rotation with the beets, just as the primary purpose of painting a barn red or yellow is to preserve the wood. With the European farmer, the direct returns from a crop of beets are as truly an incident as is the color of the barn.

Letters and reports received from farmers located in beet districts from Ohio on the east to Washington on the west are sufficient to show that with the spread of the beet-sugar industry and the consequent adoption of proper cultural methods, the farmers of the United States can render their soils even more productive than are the rejuvenated soils of Europe, and that the beneficial results to be secured from the introduction of this crop are not confined to restricted localities.

While corresponding closely with other reports on file, the number of reports is too small to be used as a basis for an accurate calculation, but that the results obtained by these farmers approximate the results that are obtained by other equally intelligent farmers and which would be obtained by them generally with the further expansion of the beet-sugar industry, there is no reason to doubt.

How Beet Growing Helps Other Crops.—The average of these 30 reports shows that at the time these farmers introduced beet culture, their yield of wheat was 92% above the United States average yield for 1907, their yield of barley was 37% higher, and their yield of oats was 70% higher than the United States average. Notwithstanding this fact, by the introduction of beet culture as a rotating crop, they increased their acreage yield of wheat 42.5%, their barley 78.6%, and their oats 71.8%. If, through the general introduction of beet culture, all of our farmers should increase their yields of wheat, barley, and oats a like number of bushels per acre, based on 1909 farm prices, they would be richer by a billion and a quarter dollars a year, and if they brought their yields up to those now secured by these farmers, their extra yield of these crops, on the same acreage, would be worth $2,000,000,000 a year.

The average acreage yield of sugar beets secured by these farmers was 14½ tons per acre. One report on alfalfa shows an increase of 1 ton and another of 2 tons per acre, while one report on beans shows an increase of 5 bushels per acre and another 6 bushels. One report on potatoes shows an increase from a merely nominal yield, to 200 sacks, or nearly three times the average United States yield. Whether with the general introduction of sugar-beet culture, the acreage yields of all our farmers would be increased as much, or more or less, cannot be determined. That they could do it, there is no question, but that some still would farm in a shiftless manner, is altogether probable.

Averages of the reports show the average acreage yield of wheat, barley, and oats, prior and subsequent to the introduction of sugar beets as a rotating crop in the year 1907:

	Wheat.	Barley.	Oats.
Average United States yield per acre, bushels.....	15.8	24.3	30.3
Average German yield per acre, bushels	30.5	39.4	59.1
Excess German yield per acre, bushels	14.7	15.1	28.8
Excess German yield per acre, per cent.....	93.0	62.0	95.0
Average yield per acre prior to sugar beets, bushels...	26.9	32.7	40.2
Average yield per acre after sugar beets, bushels.....	43.6	58.4	69.1
Excess yield per acre by rotating with sugar beets, bushels	16.7	25.7	28.9
Increase in yield per acre, per cent	42.5	78.6	71.8
Yield per acre in excess of U. S. average, bushels...	27.8	34.1	38.8
Excess of U. S. average yield, per cent.....176.0		140.0	127.0
Yield per acre in excess of German av. yield, bushels	13.1	19.0	10.0
Excess of German av. yield, per cent	43.0	48.0	16.0

Included in the foregoing tabulation is the report of D. J. Murphy, of Chico, superintendent of the heirs of James Phelan, operating an 8000-acre farm with 3000 acres under cultivation, who has grown sugar beets for five years and has 600 acres to beets. He secures a yield of 12 to 20 tons and practices a rotation system consisting of wheat, followed by barley, then pasture of voluntary wheat or barley, followed by sugar beets. Plows 12 inches deep. Reports an increase in yield of wheat, due to sugar-beet rotation, from 10 to 12 bags of 138 pounds each to 15 bags of 140 pounds each; of barley, from 16 bags of 108 pounds each to 24 bags of 108 pounds each.

SOIL CONDITIONS NEEDING CORRECTION.

To the Editor: I wonder if you can help me to solve the following problem. I have an orange grove the greater portion of which shows much mottling and in which there are some very poor stunted trees. In furtherance of my attempt to discover the cause, I have taken a post-hole auger and tested the condition of the soil in several places. I first selected the two worst trees in the grove, which happened to be next each other. They are more like corn brooms set on end than orange trees; having nothing but a tuft of stiff short growths standing quite upright and very yellow, instead of the luxuriant drooping twigs natural to the orange tree. I made a hole from 3 feet to 3 feet 6 inches deep half way between these two trees, in the line of the trees, not in the space where the irrigation furrows run. I found this quite wet until at 3-foot depth the soil was saturated.

I next selected the two best trees I could find. These happened to be quite near the bad ones and next each other. I made a similar hole, and found the soil quite dry for at least 2 feet down and then just a trace of dampness. The soil in the space where the irrigating furrows run was nicely damp, but not over wet.

I repeated this with two more good trees in another row with similar results.

In the next row to these, and only one tree farther along the row, came two very poor trees, and here the soil was wet, but not quite so bad as in the first instance. I continued right through the grove with very similar results. I enclose a rough diagram of part of the orchard, showing how the trees are located.

From this it appears that the poor trees are waterlogged and that this has caused them to be stunted. Do you think I am correct? And, if so, can you suggest a remedy?

It appears to me impossible to keep the water from isolated trees when irrigating, and to give less water to all would probably injure the rest. Moreover, in winter when the ground is wet with rain, these waterlogged trees would be kept very wet indeed.

Also, can you suggest an explanation of the wet spots being of so small an area, with dry spots so very near? Is lime or gypsum of any use in such a case? GROWER.

Riverside county.

[We have read with much interest your letter and studied the accompanying diagram. They seem to be a perfect demonstration that your orchard needs underdrainage, and your difficulty would probably disappear if you could lay tile to a depth of 3½ feet, so as to reach the spots where the water accumulates and connect them in such a way as to get a good outflow for the surplus water. So far as the trees are marked in your map, this would seem to be feasible, but you must determine elevations so as to know in what directions to lead your drains. This, of course, we cannot determine from a flat map.

One could not tell exactly why water gathers in these places without subterranean vision. If you have such drainage as is proposed for the bad places, you can irrigate the balance of the trees more rationally and safely than when you know you are ruining one part of the orchard in an effort to improve the other No application will be of any particular value until drainage is provided and soil-moisture conditions made uniformly good.—EDITOR.]

COLORS IN FRUITS AND HONEY.

To the Editor: Many times there have appeared in the agricultural papers articles commenting upon the slow sale of varieties of fruits which do not bear high color; we all know that many highly colored varieties of fruits, such as apples, pears, and peaches, are not as rich in flavor or as eatable as some of the plainer and less colored varieties. At the fruit exhibit of the State Fair at Sacramento last week, I observed that nearly every exhibitor took special pains to set forward the highly colored varieties. Now, is this not a mistake? Should the public be blamed for calling for and selecting these highly colored fruits, when the growers make every effort to advertise only the highly colored stock? Would it not be a good thing to do and

advisable for the growers to show some of the lesser colored fruits and educate the public to the fact that it is not always the highly colored varieties that are the best to buy?

Another exhibit, very interesting and instructive, was the collection of varieties of honey, showing the color, flavor, and physical peculiarities of the varieties of honey from the different parts of the United States, with data as to the flowers furnishing the honey. Quite a collection of California wildflowers were shown with specimens of the honey which these flowers furnish. All this was very interesting and instructive, and goes to show that many of the immense fields of weeds which we look upon as a curse and a nuisance are during the whole season furnishing these excellent honeys. Two notable examples were the common yellow tar weed and the blue curls. The latter plant has a rather offensive and disagreeable odor, but the honey produced from it is excellent in quality and light in color, which is also true of the yellow tar weed. This matter of native wildflowers is very interesting and instructive. I do not recall that this subject has at any time been treated in the PACIFIC RURAL PRESS. It looks as if it would be an interesting field for somebody to take up and cover exhaustively. It may be that we have at our doors much valuable material which we look upon as absolutely worthless in our native flora. J. A. SANFORD.

Stockton, Cal.

[These are very interesting suggestions. Of course, an exhibit must attract, and we know no way that the color charm can be taken out of the human eye. Does Mr. Sanford put the most moving medicines in his show-windows or his highest colored merchandise? The recognition of the value of the lower colored fruits is, however, not uncertain: the value of the Bellefleur and Yellow Newtown Pippin apples is evidence of that. The University Experiment Station will soon publish a bulletin on California honey plants which will contain a vast amount of information about otherwise ignoble plants.—EDITOR.]

MELONS ARE "FRUITS", NOT "VEGETABLES."

To the Editor: We had an argument the other day amongst us produce men whether the watermelon and cantaloupe belong to the vegetable or fruit kingdom. Kindly inform me at your earliest convenience and greatly oblige.

San Francisco. MERCHANT.

The melons are unquestionably "fruits" and not "vegetables." A New York "exclusive fruit house", a few years ago, included watermelons in its stock and was taken to task for having departed from the "exclusive" line. To decide the matter the U. S. Department of Agriculture was appealed to, and Wm. A. Taylor, at that time Assistant Pomologist, replied as follows:

"With regard to the question whether the watermelon is properly classed as a fruit or as a vegetable, I would say that while there is much difference of opinion among horticulturists, the weight of authority appears to favor the contention that they should be classed as fruits. Melons (muskmelons and watermelons) are included under fruits in all the editions of Downing's Fruits and Fruit Trees of America, which is generally accepted as the leading authority on fruits in this country. They are so listed in the American dictionaries and usually quoted with fruits in price-currents and other commercial publications in this country. The legal status of the watermelon as a fruit appears to have been clearly established by a decision of the General Board of Appraisers rendered December 30, 1891, on appeal of the case of Thos. H. Burgess against the collector of customs at Nogales, Arizona, in which the decision was, in effect, that the watermelon is known technically, popularly, and commercially as a fruit and therefore dutiable as a green fruit rather than as a vegetable.

"Whether this definition would hold as regards other countries than the United States is somewhat uncertain, as the prevailing customs regarding such matters differ very much in different countries. Thus in France the strawberry and pineapple are commonly catalogued with vegetables both in trade catalogues and in competitive exhibits."

[In our own books we have deliberately departed from this classification from a cultural point of view. The growing methods for melons unquestionably approach vegetables rather than tree, vine, or bush fruits, and so we treat them in our "California Vegetables." The commercial view is distinctly different, and it is that which our correspondent evidently desires.—EDITOR.]

WALNUTS IN THE SAN JOAQUIN.

To the Editor: I would like to ask your opinion as to whether English walnuts would do well in the west side of Stanislaus county and what you think of the feasibility of pumping water out of the San Joaquin river and raising it four times to get it three miles upon the land. I am not satisfied that the soil is first-class, but would like more information on above features. Would walnuts burn or blight in that climate? The soil is about 30 feet deep and of a rather heavy loam with some gravel mixed through it.

Oakland. ENQUIRER.

[There is no reason the water should not be pumped as proposed, providing the outfit for power, pump, etc., is a good one. Such deep soil as you describe, with the assurance of water as it may be needed, would furnish conditions favorable for walnut growing. As to the behavior of the trees, we cannot definitely state. As some of the places in that region have been long planted, we should endeavor to find walnut trees of some little age which would show whether there is much trouble from sunburning or not. Of course, one has to be on the lookout for that danger when he gets away from the cooling influences which come through the gaps in the coast range and the greater atmospheric moisture from proximity to the rivers and overflowed lands. On the strictly dry plains there is more or less trouble with walnut burning, and no one can definitely know about it except by observation of trees which have been growing for a number of years and the accounts of their condition during the heated period.—EDITOR.]

WALNUTS IN BRITISH COLUMBIA.

To the Editor: I believe the walnut is grown much more extensively in your State than on all other parts of the continent, and I want to ask you if it does fairly well on deep sandy soils.

I may say that I have a few Franquettes that are hardy and thirfty on fairly good soils, and they have shown themselves very drought resistant as compared with apples, and their behavior has led me to think perhaps they would do as well or better than the apple on my light types of soils. I have as well as the sandy soil a clay with gravelly subsoil from 18 inches to about 3 feet down. The apple, with good care and good watering, does well as clover and alfalfa do.

These soils I have found improve very quickly by applying stable manure and green manuring. If you could tell me if you think the walnut would do well with good treatment on these soils I would be greatly obliged. PLANTER.

Peachland, B. C.

[We hesitate to advise you about the walnut. It will succeed with us on deep sandy soils, providing moisture is always present in the right amount, neither too much nor too little. We should hesitate to plant walnuts on land that was too dry for apples. Besides this, you have to determine by the behavior of trees old enough to bear, whether they can be trusted to bear or not. You will need a late bloomer perhaps even more than we do, and the Franquette is a late bloomer and safe with us, but whether it would be safe with you could only be told by experience or by a study of frost records for the immediate place you propose to plant. We have no doubt the trees would grow well under the conditions which you describe, but we do not know whether they would bear enough to make them worth having. You can get Franquette nuts for seed from the California growers, but why do you use English walnut seedlings? We are using seedlings of the California black walnut, grafting them with the Fanquette and other varieties. We do not trust the Franquette or any other nut on its own seedling roots except in some parts of southern California where the seedling has proved to be satisfactory and grafted trees are coming to be more popular there also.—EDITOR.]

PRUNE TREES IN A WET PLACE.

To the Editor: I wish your advice about our prune trees. Cache creek flooded us this winter to a depth of from 1 to 3 feet. Usually we irrigate about June 1, but this year, owing to so much flood water, we thought it best to omit irrigating. Soon after the trees leafed out we noticed a large number of trees scattered all over the orchard which had but puny yellow leaves, also little or no fruit, and they have been sick-looking all year; most of the fruit in the meantime dropping. It looks very serious to me right now. I thought it might be sour sap—the hot spell late in March forcing the sap unnaturally and the cold spell during and after April driving it back. I cannot think what else it is. Can you give me any idea what it is, and the best thing to do? GROWER.

Woodland.

[We can only suggest that trees which manifest such sickness as you describe should have been cut back earlier in the season to reduce the burden upon the roots, which are probably out of condition because of the winter flooding, the distress of the tree being aggravated by the spring temperature fluctuations which you mention. The soil under such trees should now be examined by digging to a depth of three feet or so, and if found rather dry, irrigation water should be applied to such arees as soon as possible, otherwise you are likely to lose them all, because by their injured root system they cannot take moisture as widely as would a tree with a strong root system. Cutting back and irrigation are the only things which we can now suggest as likely to save these trees, and this treatment should probably have been applied weeks ago.—EDITOR.]

SEEDLESS GRAPEFRUIT OF SIAM.

Vice Consul General Carl C. Hansen at Bangkok sends the State Department some interesting facts about the seedless pomelos of Siam furnished him by J. C. Barnett, agricultural adviser to the Siamese Government. His satements about this citrus fruit, known in the United States mainly as grapefruit, follow:

There are three kinds of seedless pomelos in Siam, all presenting the same outward appearance, but differing in flavor and inside appearance; two kinds have a sweet taste, but the one has a white meat and the other a red meat; the third kind has a white meat, but the taste strongly approaches sour. They are all more or less round (ball shaped), having diameters of 4 to 6 inches. The white is more prolific than the red. The trees grow 10 to 15 feet high, begin bearing at 4 years old, and continue to bear for more than a quarter of a century. One tree ordinarily produces about 100 pomelos in one year. During the dry season the pomelos yield no seed, but during a rainy season they sometimes contain many seeds. The trees like salt water. When the orchards are not overflowed by the sea water, it is the custom to apply about two pounds of salt to each tree.

[This is to us rather a new idea in citrus growing. We have never thought of using salt marsh for these fruits—in fact, we have been getting away from it about as far as possible. Who knows more about it?—EDITOR.]

AGRICULTURAL REVIEW.

With the Fruit Men.

The Butte county supervisors will purchase a fumigating outfit for the citrus growers and charge a reasonable fee for its use.

The Selma cannery was forced to call for help from Fresno after the opening of school had taken away many of the young people working there.

A native black ant that destroys scale insects on citrus trees has been found at Sundale, Butte county, by S. M. Van Esler.

In the monthly report of Commissioner Gallaway of Sonoma county it is stated that cool weather has caused much aphis on both apples and hops, for which spraying was done. Otherwise conditions are fine and crops heavy, except with grapes, which are spotted.

A large exhibit of apples is to be sent to the Watsonville apple show from Humboldt county. The premiun list for the show has been issued. Cash prizes of $2500 will be given.

Apple shipments from Watsonville are delayed by cool weather, but 15 carloads going out by Sept 9, against 300 in 1910, and some of these were rejected for being too unripe.

The Live Oak-Pennington Almond Association has erected a warehouse and will do its own bleaching.

The dried fruit prices appear to be about the same as last week, with somewhat better demand following the recovery from the bad slump in fresh fruit prices in the East. The dried peaches in the San Joaquin are being rapidly bought up from all who will sell at 10 cents. Several big sales have also been made with raisins at 4½, while prunes appear to be selling readily at 5½. It is claimed that nearly all the apricots have been sold, although no word has arrived here of big sales by the associations in Southern California recently at present prices.

A Chinese fruit company at Dutch Flat, Placer county, is building a large dryer. A cannery will probably be added later.

As the drying season for the prunes advances a much greater shrinkage than was first expected is found with a corresponding decrease in the size of the crop. The basis price of 5½ cents has not changed but heavier premiums are said to be offered for the larger sizes, with the packers having difficulty in filling contracts with their buyers.

A sport of the Silver Prune, which it is thought will be quite valuable for shipping has been produced by J. G. Grundel of the Alhambra valley, Contra Costa county. The fruit was found about eight years ago in an orchard at Alma in the Santa Cruz mountains and was grafted on a plum tree on Mr. Grundel's place, later being moved to its present location, where it has borne plentifully for the first time. The fruit is a tokay color, and is otherwise identcal with the present stock. Only grafts are living now, there being no whole tree of it.

Notes on Grapes.

Reports of a large crop of grapes in central California are verified by Horticultural Commissioner Frank Swett of Contra Costa county, who has completed a four days' inspection trip through the interior valley from Stanislaus county north to Chico and down the west side.

While the grape crop in the southern part of San Joaquin was hard hit by spring frosts, less damage seems to have been done in the rest of the valley, Tokays promising the best crop in history. The quality and coloring will also be better than usual.

Wine grapes are also stated to be bearing very well in the valley and will carry much more acid than usual as a result of the cool weather this summer. Neither table nor wine grapes have suffered from disease to any extent, although there has been some mildew in a number of places.

The cool weather here and hot weather in the East has tended to bring the ripening of grapes both here and there together and some difficulty may be had in disposing of the table grapes profitably, although the fine quality will assist somewhat.

The grape crop in the coast counties has been affected by a decreasing acreage, due partly to the phylloxera, and the lessened output will offset to some extent the large crop of the big valley. The short crop in the southern San Joaquin will also be offset by a larger crop than usual in southern California.

In the consular report for September 8 the following wine grape prospects are reported from foreign countries: Italy will have a much larger crop than in 1910, but still below normal; the consular district of Nantes will produce a less than average crop; Germany expects only one-half to two-thirds of normal output. In Portugal the crop will be slightly less than a fair average, and crops in Servia and Switzerland are promising well.

A large number of Greeks are being brought into the raisin district to assist in harvesting the grapes and are taking the place of Japanese.

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Fruit Growers' Talks

No. 5—Who's Who in Our Organization.

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All Stockholders: Los Angeles, August 31, 1910.

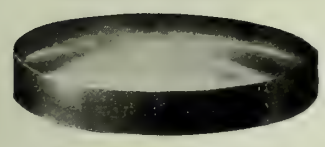
In view of the large damage by frost during the last two seasons, the Supply Company has made investigations of the various methods of orchard heating, and some time ago appointed a committee to investigate the matter and make a report.

The report of the committee has been received, and they unanimously recommend the adoption of the "Bolton Orchard Heater," which is flaring in shape, with carbureting and air passages, and soot arrester to regulate combustion and arrest the soot, and with a cover to protect against water.

The committee reports that it is their judgment and the judgment of those who have witnessed the demonstration, that this is the best and most efficient heater on the market, and that its points of superiority are—the fuel economy, the length of time that they burn, the small amount of soot given off, and their effectiveness in giving out heat. It is estimated that $2.00 an acre per night will cover the fuel cost for these pots, and at this nominal expense, every Association orchard should be protected.

The demonstrations for this pot have been made at Pomona and Corona, where the principal growers can give information to all those desiring it. Yours truly,

FRUIT GROWERS SUPPLY CO.,
(Signed) A. E. Barnes, Secretary.





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F. H. HAMMER, Southern California Representative

Cool weather is retarding both the picking and curing of raisin grapes in Fresno county, and a few growers are picking their grapes before they are fully ripe to avoid possible early rains. The raisins, like prunes, are said to be drying light, owing to the cool season.

In Yolo and Sutter counties much of a large crop of Thompsons Seedless grapes have been shipped green instead of being dried for raisins.

The grape growers of Santa Clara county have decided that $18 should be asked for common varieties of wine grapes and $24 for choice.

The price of wine grapes in the San Joaquin valley appears to be $10 and $11 per ton delivered, with cull Tokays bringing from $5 to $7.

The wine grape pool of 1000 tons at Kerman, Fresno county, has been sold to the independent wineries for $10 per ton. Last year the price in the vicinity was $8.

David Lubin of Sacramento and the International Institute of Agriculture, in an address at Fresno recently, stated that accurate information regarding the size of last year's grape crop, such as the PACIFIC RURAL PRESS is attempting to give now for all local crops, would have doubled grape prices here a year ago.

A large amount of raisin bread is to be distributed during the land shows in the East by the Fresno Chamber of Commerce.

According to A. V. Stubenrauch, in charge of the pre-cooling investigations at Lodi, no definite results from the pre-cooling of grapes will be obtained until next year.

There has been more mildew in the vineyards of Livermore valley this year than usual, and the crop will be much below average. In the vineyards along the hills below Mission San Jose the yield of grapes will be large.

General Agriculture.

The first car of 1911 cotton from Imperial valley has been sent to Bremen, Germany, and the first lot of cottonseed oil to a Los Angeles soap company. The volunteer acreage is increasing the predicted output greatly and all fields are in fine condition. In the Palo Verde valley cotton is being harvested for the first time, and ginning on a local gin will begin October 1.

A heavy crop of Egyptian corn is being harvested from the Huron country of the lower San Joaquin. No floods have occurred and every acre planted is said to be in good condition.

A large amount of the hops that are being picked are being sent to Europe at once by many growers who usually hold their crops for some time.

The condition of various crops throughout the country on September 1 is given by the crop reporting board of the U. S. Department of Agriculture in comparison with September 1, 1910, as follows: Potatoes, 59.8% and 70.5% of perfect; wheat, 35.5% and 69.8%; oats, 64.5% and 83.3%; corn, 70.3% and 70.2%; and apples, 56.2% and 46.8%.

W. E. Lovdal has 1600 acres of land in reclamation districts 785 and 537, Yolo county, which he will plant to fruit and alfalfa.

The study of agriculture has been adopted at the Union High School at Col-City, Colusa county. A. H. Baird will be the instructor in the subject.

The Santa Rosa Grange has endorsed the movement for smaller grain sacks. The proposed sacks are to hold only 100 pounds of wheat instead of 130 and 140 pounds.

A bulletin of the U. S. Department of Agriculture at Washington on the condition of foreign crops indicates that in Europe the crop will be slightly larger than usual. The same thing is true in Canada. In Russia prolonged drouth has caused great loss and a big shortage will result. In the Argentine and Chile, where the seasons are reversed, conditions are favorable for the next crop.

Miscellaneous.

For preliminary work on the reclamation of the Yolo basin, $250,000 has been subscribed. To complete the project will cost $15,000,000.

The highest temperature for August in Kings county, according to County Treasurer L. C. Dunham was 94 degrees. In Fresno the weather averaged four degrees below normal, with 100 per cent of sunshine. In Oregon the weather has been warmer than average.

In the squirrel eradication work in Fresno county 6975 inspections of property have been made, 2285 second inspections and 4450 warnings served.

The Webster ranch near Wheatland has been sold and will be irrigated and subdivided.

Plans for an irrigation district at Woodbridge, San Joaquin county, have been dropped.

A heavy artesian flow has been found on the Lankershim ranch in the San Fernando valley.

The University of Arizona has issued a bulletin on the ripening of the date, which applies to both Arizona and the southern part of this State.

Residents of Bangor, Butte county, have requested the supervisors to place a bounty on jack rabbits, owing to destruction done by them.

An alfalfa meal factory has just been completed at Salida, Stanislaus county. The Orland mill is also completed and in operation.

The board of education of Santa Clara county has requested that all country schools be beautified by gardens as much as possible.

The Southern Pacific will colonize soon a 7700-acre tract near Seco, Kern county.

Property owners on 78,720 acres of land in Stanislaus county will levy a voluntary tax of 5 cents an acre on themselves to assist the government in killing squirrels.

The Board of Supervisors of Tulare county has passed a resolution asking the assistance of the federal government in the work of squirrel eradication, especially on government land in that county.

A four-stand cotton gin is to be constructed by L. E. Srack at Blythe, Imperial county, and will be in operation by October 15.

According to a report prepared for the University of California there are 250,000 acres in the citrus belt of Kern county. The report states that in the past year 50 carloads of citrus trees were planted in the county.

Diseased squirrels have been found in the Tule River Indian reservation, and it is thought that they are infected with the bubonic plague.

The town of Lindsay, Fresno county, decided to purchase 50 acres of the Navarre ranch, three miles north of town, to use as a sewage farm.

A comprehensive summary of the game laws of the United States has been issued as a Farmers' Bulletin by the Department of Agriculture.

The striking of artesian water at Germantown, Glenn county, has resulted in the letting of several more contracts for wells.

The increased use of pump irrigation around Dixon, Solano county, has resulted in making a total of 75 different plants in the neighborhood.

A Dissent From the Doctrine of Protection.

To the Editor: In your issue of August 12 occurs this sentence: "Protection to American industries and development of them by protection is no more a political question than patriotism is: In fact, protection is merely the economic phase of patriotism." It is very kind of your paper to remind us of such fundamental facts from time to time, lest we forget them. In this "heydey of doctrinaires and theorists" one might be led to believe that protectionism is something more, or something less, than merely an economic phase of patriotism.

In fact, the writer, who once upon a time was a believer in the superstition of protectionism, has already been so far misguided as to believe it is much more than your editorial would have one believe. A system of protection that enabled the lumber combines to jack up the price of a certain grade of lumber from $12 per thousand to $30, and under which the United States Steel Corporation raised the price of pig iron from $9.50 to $24.50 per ton, and which enables the sugar trust to exact from all the people 50 to 60% more for their sugar than they would otherwise have to pay, does not appeal to the writer as being an expression of pure patriotism. O Patriotism, what sins have been committed in thy name! Then again one is sometimes led to reflect on the effect of this beneficent system on the California fruit growers: how it increases the cost to the canners of our fruits of their tin cans, their sugar, the lumber of which their boxes are made, and everything else that goes into the expenses of getting the fruit from the grower to the fellow who eats it. If the canners were relieved of this burden of unnecessary expense, tariff cost, on all these things, could they not pay us a little more for our fruits without raising the price to the consumer?

If you answer "no", then would they not be able to name lower prices to the trade, and thus widen the market and increase the consumption of California canned fruits? This increased demand would inevitably raise the price which fruit farmers would get for their product.

Then again, if our railroads could get their steel rails, and lumber, and ties, and all other materials that go into the making of rolling stock and constructing railroads as cheaply as American tariff-protected combines sell such commodities to foreign railroads, then they could and would carry our fruits to market for a much smaller charge than they now exact for that service. This they could do without reducing dividends, or causing other financial embarrassment, because of the lower cost to them of performing the service. It sometimes occurs to the normal mind that this reduced cost of transportation might increase the price that shippers could pay to the fruit farmer, or else reduce the cost to the consumer, either of which would be a distinct gain over present conditions.

It would seem to one in a position to take a broad view of the matter, that a tariff which is levied on nearly everything under the sun for the express purpose of making everything under the sun dearer and harder to get—it would seem that such a system must add largely to the cost of producing, not only fruits, but practically everything else. How such a fiscal system can aid the average California fruit grower is a problem that has never yet been solved to the satisfaction of thoughtful people who have no financial axes to grind nor political aspirations to be advanced. These same "doctrinaires and economic theorists" have so far misled some public-spirited and patriotic people as to cause them to believe that protectionism, as it is practiced in this so-called land of the free, is rather a manifestation of heartless greed than the "economic phase of patriotism". It is conceded, however, that a large per cent of its devotees worship it as a sort of fetich, something to be revered without rhyme or reason.

The writer has lived long enough, and observed closely enough, to know that the predictions of calamity, and the lugubrious prophecies of the abomination of desolation, so freely indulged in by the reactionary portion of the newspaper press of the country whenever a reduction of the people's tariff burdens is suggested, never come true. All such prophets have proved to be false prophets. Take a few instances: When the tariff tax was removed from quinine, and again when binder twine was taken from the tax list and placed on the free list, and still again when copper in plates, bars, ingots, or pigs was made free of tax; when each of these changes transpired, which occurred at different times, there went up such a wail of despair from these organs of class legislation as few people are privileged to hear in a lifetime. These organs told the people, when they had overcome their agitation sufficiently to tell anything, that the factories engaged in making these things would all be closed, their employees all be turned out to starve, and then our people would buy cheap, free-trade quinine, copper, and binder twine for a short time—yes, a very short time—and then those wicked foreigners would raise prices on us, and the outrageously high prices they would make us pay would be a caution, or words to that effect. And all this punishment in the way of high prices inflicted upon us because we were so foolish as to remove the protection the monopolistic combines which were using the protective tariff to shelter themselves from foreign competition, while they exacted all the traffic would bear in the way of exorbitant profits.

Time and experience have shown the falsity of their sensational prophecies. Each and every prediction of disaster so freely made by these advocates of trade restriction has been utterly and thoroughly disproved by the test of actual experience.

Now observe the results: Quinine, which had been retailing at $1.50 to $5 an ounce, now retails for 35c. to 50c. an ounce. Copper now sells for 12½c. per pound as against 19c. before the removal of the tax. Binder twine sells lower than before, and we hear no complaints from the users of this article as we did before.

Now observe these facts: Before the tariff was taken off of these commodities, quinine sold much cheaper abroad than at home; American copper sold, delivered, in Europe for 3c. a pound less than the price American users were compelled to pay for it; binder twine was made almost exclusively for the home market. Now quinine, binder twine, and copper are produced in our country, not only for the home market, but for the world's markets as well. Copper is now exported to the extent of hundreds of thousands of tons per annum; binder twine in thousands of tons in a single shipment.

All three of these lines of production have flourished since the change as they never flourished before; they have all enormously increased their output, enormously increased the numbers of their employees, and largely increased the wages of the workers in their manufacturing establishments.

Now, what of all this? What does it prove, or tend to prove? It certainly tends to prove that American producers are neither infants nor paupers. Take away the nursing bottle and they will soon prove themselves to be adults. Take away from the absorbers of wealth the power which the tariff gives them to burden production, and production will advance by leaps and bounds.

A CONSTANT READER.

Concord, Cal., Aug. 27.

[We cheerfully give our readers the same liberty which we claim for ourselves: to state what we believe as forcibly as we can. Constant Reader is welcome to his place at the bat. Who strikes next?—EDITOR.]

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It is well worth your while to verify this statement, and when in doubt as to the Sodium Chloride content of a Cyanide, have a reputable chemist furnish you an analysis. It may prove a good investment.

The Roessler & Hasslacher Chemical Co.'s Special Fumigating Cyanide of Potassium 98-99 per cent and Cyanide of Sodium 128-130 per cent is manufactured expressly for fumigating. Contains no excess of chloride of sodium. It generates quickly. Reliable, Efficient, Economical.

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Still the Best Fruit Dip

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Rural Education Conference.

The California Country Life Committee, created by action of the First State Country Life Conference, held under the auspices of the University of California at Davis last year, and in accordance with resolutions there adopted, issues a call for the appointment of delegates to a Rural Education Conference at University Farm, Davis, Saturday, October 14, 1911, beginning at 10:30 a.m.

While the purpose of the Committee is to further the whole development of country life in this State, the immediate object of this conference will be to discuss the needs of rural schools and, if deemed advisable, make recommendations to proper authorities, looking toward a redirection of this important branch of the public school system. It is charged both in this State and throughout the Nation, that rural schools fail to fulfill their best mission because they do not teach in terms of daily life of pupils, nor seek to interest and instruct in rural pursuits, nor impress the value and importance of country opportunities, nor inculcate country ideals.

These charges, if true, constitute a serious indictment, and we believe they should be given careful consideration. We should also learn what is being done by various agencies toward improvement and redirection of rural schools. All these points are to be presented and discussed at the conference in order that united action be secured and sure progress attained.

To the end that the conference may be truly representative of those most directly interested in the rural schools, delegates to this conference are invited as follows. The delegates are to be appointed or elected, each with alternate, as follows:

Five at large by the Governor of the State.

One by each subordinate and Pomona Grange.

One by each local and County Farmers' Union.

One by each Chamber of Commerce Board of Trade, or Improvement Club.

One by the Commonwealth Club of California.

One by each of the six districts of California Federation of Women's Clubs.

One by each High School teaching or contemplating teaching agriculture.

One by each State Normal School.

One by Council of Education of California Teachers' Association.

A rural schoolteacher and a rural school trustee to represent the County Trustee Institutes, by each County Superintendent of Schools.

Of course, all interested are invited to attend as well as those regularly appointed as delegates.

The conference will be held at University Farm, Davis, on October 14, when the Farmers' Short Courses are in session, which begin October 2 and continue to November 18. A rate of one and one-third fare for the round trip to Davis from all points in California is then in effect on all railroads. Luncheon for delegates at University Farm dining-hall 50 cents per plate. Afternoon session will be around the tables.

W. A. BEARD,
Sacramento, Chairman.
LEROY ANDERSON,
Berkeley, Secretary.

AN ENGLISH VIEW OF HOPS.

Considering the reduced hop acreage of this country and the supposed reduction in the demand for beer through the progress of the prohibition movement, the following comments by the London Farm and Home are rather startling:

There is a notable increase in the consumption of beer here and upon the Continent, while in America the addition is huge. No material increase in our acreage is apparent, and the Continent and America show none. Market possibilities during the ensuing twelve months consequently present interesting features.

The general situation is, therefore, an interesting study, one which should repay grower and brewer to consider, in this sense, that it would pay brewers to induce a large acreage to be cultivated, and for growers—well, reasonably-minded men may easily assume the capacity of human ingenuity when a man is in a tight corner.

Our market is in an active state. High prices are made for the very few 1910's that are available; and there is a great move in old hops, which have risen 30s. per cwt. in ten days. The supply is the smallest ever known. Everything now points to expanding prices, and with new hops at the highest price experienced for many years, the older dates are still very cheap relatively. The stringency now in being cannot be obviated for years without a materially increased acreage, and to accomplish this must surely be the policy of brewers.

EUROPEAN FOUL-BROOD REPORTED.

Mr. L. J. Ray of Monrovia reports to Gleanings that Dr. Phillips, apiarist of the Washington Department, has found that the sample brood sent him is affected with European foul-brood. Mr. Ray adds: 'We are re-queening our apiary with young Italians and are giving some of the worst diseased colonies the McEvoy treatment. We have sent word to the county inspector to have him examine other apiaries in this vicinity, as a number of bee-keepers have complained of chilled brood and pickled brood ever since early spring. We have reason to believe that the malady is present in a number of apiaries in this locality."

In connection with this statement, the editor of Gleanings says: "If European foul-brood has gotten a foothold in California, the bee-keepers of tha State should bestir themselves from one end of it to the other to hold it in check. While it is easier to cure than the American type if the disease, it spreads more rapidly. Californit bee-keepers should get rid of their old black and hybrid stock, and introduce Italians."

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PEAS OR RAPE?

To the Editor: Which makes the best early hay pasturage, peas or dwarf Essex rape? And when should either be sown in the San Joaquin valley near Porterville? The soil is sandy loam.

Porterville, Cal. SUBSCRIBER.

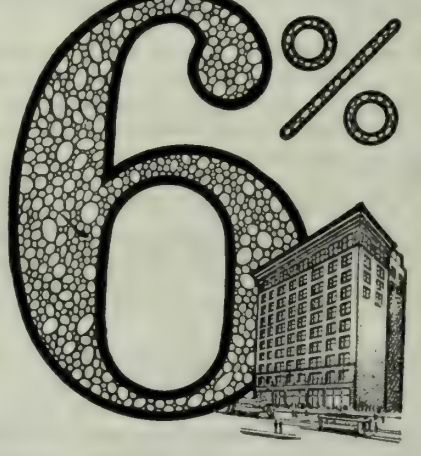
[We do not know which would be the more satisfactory. Will some reader who has tried both give us his conclusions? Both plants can be sown at the beginning of the rainy season in your district—especially on such soil as you describe—and should make good winter pasturage if the moisture comes along regularly.—EDITOR.]

Complete returns from raisin districts in all parts of the world, which have just been compiled by George Robertson, State Statistician, show that the reports of a short crop by the PACIFIC RURAL PRESS were fully correct, and that everything justifies expectation of good prices and a clean-up of the present crop before that of 1912 comes in. The report issued by Mr. Robertson states that for the first time in five years the production will fall below 100,000,000, the present crop being estimated at 96,000,000 pounds, as against 44,000,000 pounds more in 1909, and 16,000,000 pounds more in 1910. Seedless verieties are especially short. In some cases Thompsons and Sultanas are stated to be from 50 to 65% below the average. Malagas are also reported to be only about half a crop as regards raisins. The latest news from Spain indicates that the crop there will be a little larger than in 1910, but much below that of 1909. In Smyrna similar conditions are expected. The Greek currant crop will be about half way between the crops of 1909 and 1910, last year being a short year all over. Compared with the year 1909, the estimated world crop of raisins this year is said to show a deficiency of 48,000 tons, or, including Greek currants, the shortage amounts to about 93,000 tons, or equals only about 70% of that of 1909.

A shipment of walnuts from Shanghai was kept out by the State quarantine officers last week on account of the presence of a worm which attacks the nuts after being stored for a long time. The worm has not yet obtained a foothold in this State. No further shipments will probably be held up this year as all the nuts received will be from the crop of 1911, which is much earlier here than the first lot to arrive September 16. These nuts are very similiar to local varieties, although separated from them for more than a thousand years. They are brought there and sold here at a less price than California nuts.

In the report of the Horticultural Commissioner of Santa Barbara county the walnuts now ripe are said to be of very fine quality and full of meat. The commissioner's office is to co-operate with the Johnson Fruit Company in newly undertaken work against the purple, red and yellow scale. P. H. Timberlake, who has been studying parasites in the county, has found several very effective ones.





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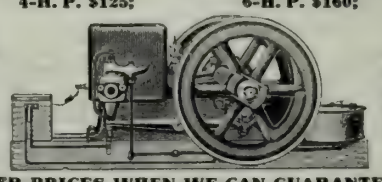
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COMMERCIAL ADVANTAGE OF THE CONTROL OF TUBERCULOSIS IN DAIRY HERDS.

(*Continued From Page 221.*)

tion as it ought to be. A cow from a herd known to contain tuberculous animals will usually sell for as much as an equally desirable cow from a herd the owner of which prides himsef on its freedom from disease.

ECONOMIC IMPORTANCE OF TUBERCULOSIS IN DAIRIES CONSISTING OF GRADE COWS.—The second, and, from a commercial standpoint, the most important class of dairies consists of grade cows. Many of thee dairies are very fine, the average production exceeding that of some pure-bred herds. By the use of pure-bred bulls, judicious breeding and a careful weeding out of unprofitable cows by means of the Babcock test, a maximum of profit can be obtained. The average owner of a herd which has been improved in this way is seldom willing to apply the tuberculin test and remove the reacting cows, for this would probably result in the weeding out of many of the most profitable animals, the loss of which would more than counterbalance any losses due to disease. Even if the reacting cows were sold for beef at a good price, the balance would still be against the tuberculin test, provided a large proportion of the animals were reactors.

PLANS FOR ERADICATION.—The International Commission on the Control of Bovine Tuberculosis has formulated a plan for dealing with the disease. This is most applicable to the two classes of dairies already discussed. It is as follows: The eradication of tuberculosis from infected herds requires for conservation of the herd different procedures, according to the extent of the infection. For a guide to the control of the disease tuberculous herds may be divided into three groups, namely:

First—Where 40% or more of the animals are infected.

Second—Where a small percentage (15% or less) of the animals are affected.

Third—Where a larger number (15 to 50%) of the animals are diseased.

In eliminating tuberculosis from infected herds the following procedure is recommended:

GROUP I.

In herds where a tuberculin test shows 50% or more of the animals to be infected should be treated as entirely tuberculous. The procedure here is as follows:

First—Eliminate by slaughter all animals giving evidence of the disease on physical examination.

Second—Build up an entirely new herd from the offspring. The calves should be separated from their dames immediately after birth and raised on pasteurized milk, or on that of healthy nurse cows. This new herd must be kept separate from any reacting animals.

Third—The young animals should be tested with tuberculin at about six months old, and when reactors are found at the first or any subsequent test, the others should be retested not more than six months later. When there are no more reactors at the six months test, annual tests should thereafter be made. All reacting animals should at once be separated from the new herd and the stables which they have occupied thoroughly disinfected.

Fourth—When the newly developed sound herd has become of sufficient size, the tuberculous herd can be eliminated by slaughter under inspection for beef.

GROUP II.

First—The reacting animals should be separated from the non-reacting ones, and kept constantly apart from them at pasture, in yard and in stable.

(a) Pasture—The reactors should be kept in a separate pasture. This pasture should be some distance from the other, or so fenced that it would be impossible for the infected and non-infected animals to get their heads together.

(b) Water—When possible, reacting cattle should not be watered at running streams which afterward flow directly through fields occupied by sound cattle. The water from drinking troughs used by infected animals should not be allowed to flow into stables, fields or yards occupied by sound animals.

(c) Stable—Reacting cattle should be kept in barns or stables entirely separate from the ones occupied by the sound animals.

Second—Calves of the reacting cows should be removed from their dams immediately after birth. Milk fed to these calves should be from healthy cows; otherwise it must be properly pasteurized. These calves should not come in contact with the reacting animals.

Third—The non-reacting animals should be tested with tuberculin once in six months, and when reactors are found at the first six months, or at any subsequent test, the others should be tested not more than six months later. When there are no more reactors at the six months' test, annual tests should thereafter be made. All reacting animals should at once be separated from the new herd, and the stables which they have occupied thoroughly disinfected.

Fourth—The milk of the reacting animals may be pasteurized and used.

Fifth—Any reacting animal which develops clinical symptoms of tuberculosis should be promptly slaughtered.

Sixth—An animal that has once reacted to tuberculin should, under no circumstances be placed in a sound herd.

Seventh—As soon as the sound herd has become well established, infected animals should be slaughtered, under proper inspection.

Herds that come under this group should be dealt with, either as in Group II, where the herd is separated, or as in Group I, where all of the animals are considered as suspicious, and an entirely new herd developed from the offspring.

Unlike the breeder of pure-breds, the average owner of grade cows has no reputation to lose. With the present apathy of the public toward bovine tuberculosis, he has little to fear. He often exercises a certain amount of control by removing animals at the first indication of physical decline, and, because of this, he is frequently able to keep his herd looking in as good condition as that of the dairyman who regularly applies the tuberculin test and removes all the reactors. What he fears most is legislation. The owner of valuable grade cows is always the worst sufferer from the enforcement of tuberculin-test ordinances. He is constantly on guard, and his attitude is voiced by the following, taken from the Pacific Dairy Review of May 18, 1911:

"While the dairymen of San Joaquin county were paying little attention to what was going on in the Board of Supervisors of that county, it enacted a rather drastic ordinance in regard to regulating dairies at the suggestion of the County Board of Health. About the first they knew about it, was when the County Health Officer, Dr. Wm. Friedberger, made it known that he was about to see that it was complied with. Then dairymen found out that they could not conduct their business without a permit, which permit they could only obtain and hold by complying with the numerous requirements of the ordinance, including one that enables the Health Officer to apply the tuberculin test to the cows. The result is that the dairymen have had a belated awakening, and they contend that the ordinance is unreasonable, and they want to have it repealed. As San Joaquin is a big dairy county and the voters being mainly farmers, they will probably be able to make the Board of Supervisors heed their opposition. A number of meetings have been held by dairymen, but no definite action has been taken, in view of the fact that the officers have not as yet forced the issue."

A EUROPEAN PLAN.—A plan has been devised by Professor Ostertage, of Berlin, Germany, which does not require the frequent use of the tuberculin test. It is being favorably received by dairymen in Europe. It consists in eliminating by slaughter, all clinical cases of tuberculosis, removing the calves promptly after birth from their dams and keeping them separated for some months, after which, they may be placed with the other cattle. During this early period the calves are to be fed on the milk of sound cows, or on the pasteurized (heated to 85° C.) milk of the infected ones. It is considered somewhat safer to prolong the separation until a sound herd is built up. When cattle owners desire to do so, they have their herds tested with tuberculin, but as a rule they do not separate the reactors from the others. The herds are examined frequently by skilled veterinarians, and all the animals that exhibit symptoms of tuberculosis are immediately eliminated either by sale or slaughter. In this way, it is believed that the disease will be kept in check, and eventually the infected animals will disappear. Ostertage thinks that tuberculosis can be eradicated by promptly removing the clinical cases with the simultaneous raising of young cattle free from infection.

ECONOMIC IMPORTANCE OF TUBERCULOSIS IN DAIRIES CONSISTING OF SCRUB COWS.—The third kind of dairy consists of scrub cows. There may be a few animals showing evidence of Holstein or Jersey blood, but most of them are just cows. For years they have been in the majority in this State and have been called native cows. Many of them are fair milkers, but some do not pay for their feed. These have been called robber cows, or guests. With the introduction of the Babcock test, the dairymen are learning to detect these robber cows. As a rule, the native or scrub cow is more suited for beef than the pure-bred or grade. Tuberculosis is not a cause for much loss, for the cows are worth nearly as much for beef as for dairy purposes; and some skilled dairymen with infected herds consider it poor judgment to let a case of tuberculosis get so advanced that the animal is not salable for beef. In these herds of duo-purpose cows (beef or dairy) the tuberculin test is in some instances being used with good economic results as a guide in marketing cattle. Last week I had occasion to visit, in a professional way, a large dairy in Marin county operated by a Portuguese of more than average ability. We autopsied a cow suspected of death from plant poisoning. To my surprise, the owner predicted that we would also find her tuberculous. I had not observed any clinical symptoms of the disease, although I had carefully examined the animal previous to death. We found her to be slightly tuberculous. On further inquiry, the dairyman admitted that he was using the tuberculin test. He had been instructed by a Portuguese veterinarian. He also showed me his guide, a copy of a bulletin on bovine tuberculosis, No. 199, of the California Agricultural Experiment Station. This dairyman did not use the test with the object of eradicating the disease, but simply as a means of satisfying himself as to which animals were tuberculous, and as an aid in disposing of animals for beef in the most economical way.

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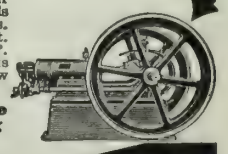
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Condensed Milk in the Orient.

It is very clear that all profitable uses for milk beyond butter-making should always receive attention on this coast. Our butter product is increasing very fast and is likely any time to demand distant marketing. It is therefore desirable to look closely into other commercial uses for our milk product. In some dairy counties milk condensing is proceeding satisfactorily. How much more can be profitably done? One answer to the question must come from the Orient. Commercial Agent L. M. Wood sends the following to the State Department at Washington:

Condensed milk is an export from the United States that has a promising future in the Orient, but which is not receiving the attention it deserves to secure the best results. Much better returns would be evident if manufacturers acquainted themselves with the peculiar requirements of the markets to be served, or which are now being served, and placed the product in the hands of American representatives, soliciting information as to brands and territory that might be profitably worked, and allowing reasonably elastic terms and expenses. It is quite natural that foreign representatives, no matter how honorable and accurate in their commercial relations, display a national prejudice. If they are agents for other goods of the same class as those handled for United States manufacturers, they are naturally inclined to push those of their own country, allowing the American goods, in some cases, to stay on the shelves or using them by comparison to push other products. In one or two instances foreign agents have admitted to me that they secured the agency for American articles to prevent competitors from getting it, as well as for using the margins allowed to secure greater concessions from their own country's manufacturers. American manufacturers in other lines should keep these features in mind if they desire seriously to serve and develop oriental markets.

Increase in Japanese Imports.—A remarkable increase in the condensed-milk trade was found in Formosa. Formosa imported 7490 doen tins in 1909, valued at $11,465, and for 1910 the imports were 31,328 dozen tins, valued at $47,299. This shows that the sales quadrupled in a year, and from invoices shown me by the two principal firms in Taipeh the increase for 1911 will be at least 25% if the demand continues as during the first quarter. An imitation of a New York brand, put up in Japan, had been sold in 1909, but the quality was unsatisfactory and the concern went into bankruptcy.

Although the United States supplied over three-fifths of Japan's purchases of condensed milk in 1910, its gain in trade was only $105,346, or 16.7%; at the same time Great Britain, with about half the volume of business enjoyed by the United States, gained $141,845, or 61.5%. Switzerland's trade declined about $60,000 in 1909 and $64,974 last year, the latter being a loss of over 50%.

Canada, although favored by location as a shipper to Japan, did not quite hold its small volume of business. Norway made a remarkable increase in its trade in 1909, but its loss in 1910 was still more remarkable. Germany's trade has steadily declined during the last three years. France dropped heavily in 1909 and disappeared from the market last year. Denmark appeared last year as a small shipper.

Domestic Production.—Under the new Japanese tariff, which went into effect July 17, the duty on condensed milk has been advanced from 12 sen 3 rin per dozen 1-pound cans, equal to 1.35576 yen per picul (132.27 pounds), to 5.55 yen per picul. In other words, the old duty was 67.728 cents per picul and the new duty is $2.7639 per picul, or an increase from 6.1254 cents to 25.0752 cents per dozen 1-pound cans.

While reducing the imports to some extent for a time, it can hardly be anticipated that the increase of duty will have the desired effect, or that the native plants, five or six in number, will be able to supply even the home demand. In the first place, Japan has no pasture lands, if one excepts a few at Hokkaido, where the largest comprises about 100 acres; the privately owned rice, vegetable and grain holdings in the valleys and on the mountain sides average probably less than an acre, cut into small sections by miniature dikes for effective irrigation. Next, the milk cows of Japan are not of the kind, or sufficient in number, to care for the condensed-milk demand, and it is a question if they or the native factories can keep up with the natural increase in population. According to official reports the number of milk cows in Japan was 33,154 in 1905, 37,238 in 1906, 42,120 in 1907 and 42,153 in 1908.

In Japan many mothers are obliged to work in the mills, factories and other places where their children cannot accompany them, and there is, moreover, a steadily increasing march from the farms to the cities with the hope of an opportunity to earn larger wages. Aside from the effect such change of population may have on other features of Japan's life and commerce, it will naturally increase the demand for condensed milk.

Trade Can Be Increased.—Manufacturers of condensed milk in the United States can, I believe, do much to increase sales in Japan and the whole Orient by adopting some of the suggestions mentioned as to representation, advertising, etc. Advertising is absent in both Japanese and English papers in the Orient. The one American factory that has followed the policy outlined has a well-established trade, selling more of its product than the total milk produced in Japan in a year, and the demand is increasing satisfactorily. An English milk comes next, sales of which show an equal increase because of liberal and extensive advertising and the continual solicitation of the Japanese, Korean and Manchurian country by several travelers of the American branch house having an exclusive agency for the territory named. Other American brands are sold, and more could be if they were given proper representation and were aggressively advertised. Advertising is necessary in the Orient to establish confidence in a brand, but once established a brand is hard to displace.

A STERILE COW.

To the Editor: I have a very fine Jersey cow, purchased one year ago. The party from whom I got the cow said she had not been fresh for a year at that time. I have had her to the bull every month since last November, and can't seem to get her with calf. Can you mention any medicine or anything that will do her good? She is too valuable to kill and is without a fault of any kind.

Boulder Creek. A Subscriber.

ANSWER BY DR. PYLE.

In an isolated case of this kind I think there is probably some disease of the generative organs or some condition whereby the impregnation cannot occur even when the animal is bred. The ovaries may be cystic; there may be chronic inflammation of the womb and possibly the mouth of the womb was injured at last calf birth and the scar prevents its admitting the fertilizing cells. If possible, a veterinarian should make a careful examination of this cow in order to determine what the trouble is. However, this treatment may be tried: About the time of coming in heat, give the cow a large dose of glaubers salts (one pound) and the nux vomica and iron treatment advised for a similar case previously in these columns. Before breeding the cow, apply a little extract of belladonna and glycerine to the mouth of the womb and breed a few hours after.

Chas. A. Pyle,
Pathologist, S. F. Vet. College.
1818 Market St., S. F.



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FOR

CATTLE POULTRY SWINE

FOR PRICES SEE OR WRITE

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HENRY WHEATLEY

SALVADOR STOCK FARM, NAPA,

Importer and Breeder of Shire Horses, will leave for England shortly after the State Fair, and will bring back a high class shipment of Shire Stallions, arriving about the middle of November.

They will be sold with a State license under the new stallion law, at moderate prices.

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From above herd I offer for sale a few choice bull calves from such sires and grand sires as

IMP. LORD KITCHENER—11369

Winner of the grand champion prize at Sacramento State Fairs 1909-1910, and

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Winner of the first prize 1906, Island of Guernsey.

For further particulars write to above address. Inspection solicited.



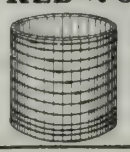
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I deal direct with the consumer. If I had agents to sell my product it would mean that I must add to my price as much as the agents' commission would be. My lumber is brought direct from the forest. Latest improved machinery. Up-to-date methods. Redwood Tanks, Picking Boxes, Peach Boxes, Drying Trays, Egg Cases. A tank 5 ft. diameter, 2½ ft. deep, $7.50. A tank 6 ft. diameter, 2½ ft. deep, $10.50. Large stock of tanks of various sizes in stock. Anything made to order on short notice. Spraying tanks. Grape Stakes.

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GOMBAULT'S
Caustic Balsam
A Safe, Speedy, and Positive Cure



The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle, SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish*
Every bottle sold is warranted to give satisfaction Price $1.50 per bottle, Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland, O.

PAID HIM TO CHOOSE
SHARPLES
Tubular Cream Separator

Has anyone tried to convince you that disks or other contraptions are needed in modern cream separators? If so, read this:

West Newfield, Me.

The Sharples Separator Co.:

The Tubular Separator I bought of you paid for itself in six months with only six cows and left a balance to the credit of the Tubular of $14.00. People came to my house, saw the Tubular at work, and purchased a Tubular for themselves; others that had separators of another make, after seeing the Tubular at work and the ease with which the bowl was cleaned, traded their separators for a Tubular. GEO. T. WILSON.

Geo. T. Wilson personally appeared before me and declared the above statements to be the fact.

Luther E. Sanborn, Justice of the Peace.

It paid Mr. Wilson to choose the Tubular, for Tubulars have twice the skimming force of others and repeatedly pay for themselves by saving what others lose. Dairy Tubulars contain no disks—wear a lifetime—are guaranteed forever by America's oldest and world's biggest separator concern. You will finally have a Tubular. Buy The World's Best first. Save yourself the expense of discarding some cheap or complicated separator. Other separators taken in exchange. Write for free trial and catalog 131.

THE SHARPLES SEPARATOR CO.
WEST CHESTER, PA.
Chicago, Ill., San Francisco, Cal., Portland, Ore.
Toronto, Can. Winnipeg, Can.

BE READY
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H.H.H
LINIMENT
SHOULD BE IN EVERY HOME AS A SAFE-GUARD AGAINST SORE THROAT, SWELLINGS, SPRAINS, RHEUMATISM, NEURALGIA, STIFF JOINTS, LAMENESS, STOMACH CRAMPS, DIARRHOEA, Etc.
50¢ AND $1 SIZES
THE STOCKMAN'S STAND-BY FOR SUCCESS IN VETERINARY USES
IT DOES THE WORK.

CATTLE WAX FAT ON CACTUS

Burbank's Spineless Cactus furnishes succulent feed the entire year. The ideal feed with concentrates or alfalfa hay. Increases flow of milk. Will it pay to plant it? Figure it out then write us for quotations, and plant now.

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257 MARKET STREET
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37 FIRST STREET SAN FRANCISCO
Blake, Moffitt & Towne, Los Angeles
Blake, McFall & Co., Portland, Ore

LIVE STOCK NOTES.

A number of deaths among cattle and other stock from anthrax and pneumonia are reported in Fresno county by Health Officer Dr. W. T. Burks. Most of the cases were reported to Dr. Burks as rabies, but on investigation proved to be other diseases. One case of glanders has been found in the county recently by Dr. B. Williams, county veterinarian.

Great loss to sheep and stock men in Germany has resulted recently from the foot-and-mouth disease.

T. B. Gibson, of Woodland, is exhibiting some of his best stock in the State and county fairs of Oregon.

Dr. O. M. Colburn, of Woodland, has purchased 440 acres of the R. E. Cannell ranch in western Yolo county for a stock ranch.

A large acreage in Yuba county between Marysville and Wheatland has been purchased by a Miss Steen of Berkeley for a stock farm for thoroughbred animals.

William Brockman of Susanville, Lassen county, recently sold 200 young Percheron geldings to Alexander Rife of Los Angeles for an average price of $200 each.

Cattle sales around Eureka, Nevada, are being made at $28 to $30 for stock cattle and $32 to $35 for steers. High prices for beef cattle are also the rule in the northern part of the State and ranchers who make a practice of fattening steers for the market are said to have a hard time to get cattle at a low enough price to suit them.

The Cedar Stock Company of Redding last week received three Short-horn bulls from T. B. Gibson of Woodland.

Over 200 head of cattle have been sent by J. S. Jones of Paso Robles to Salinas to be fattened on beet pulp. The opening of sugar mills in other places has also caused a migration of cattle to them for the beet pulp.

Cattle shipments from Porterville have already amounted to more in value this year than the last citrus crop of Tulare county.

Eighty Rambouillet rams have been purchased by Parker Whitney of Rocklin from Bullard Bros. of Woodland.

The Brown flock of 2200 sheep will be moved from the mountains to their winter range near Honcut, Butte county, about September 20. The flocks around Meadow Lake, Plumas county, have already been sent down to the foothills.

Dr. George Gordon, Kings county live stock inspector, in his monthly report to the supervisors states that cases of black leg, glanders, hog cholera and rabies have recently been found in the county. Arrangements have been made with packing houses at Los Angeles and the bay cities to be notified of the receipt of any diseased animals from the county, so that the disease can be checked at once.

DAIRY NOTES.

Edward Gilson of Corcoran has closed his dairy and auctioned off his 129 cows. The animals sold for $105 down, the average price being $70.

A. B. Kendall, of Modesto, sold four of his Holstein heifer calves for $705 at the State Fair.

More active work against milk dealers who adulterate dairy products handled by them is being taken up by the State Dairy Bureau since the new law went into effect and more inspectors were appointed. The inspection of dairies has resulted in improving the original output, and the efforts are now being made to see that this gets into the hands of the consumer in as good shape as it leaves the dairies. Recently warrants were sworn out by Col. D. J. Bryant for restaurant keepers for selling milk with too little butter-fat and milk solids. Others were arrested for selling milk produced in unsanitary dairies.

Salvatore Sol, a cattleman of Central America, has recently purchased several Red Poll bulls from F. A. Meacham of Petaluma. Merino sheep have recently been sold from the ranch of Hoekl Bros. of Cloverdale and M. Nobles of Plantation, Mendocino county.

The Ayreshire cow Mary Bryant, which has won a number of prizes at State Fairs here and holds high records for milk production, has been sold to Dr. J. H. Hester of Santa Barbara to Rev. A. H. Smith of Pasadena.

Prices for milkers and springers in Chicago, according to recent quotations, ran from $30 for the poorest to $70 for the best grade Holsteins.

Census reports from Wisconsin show that the number of cows increased, from 1900 to 1910, from 998,397 to 1,471,591; butter, from 61,813,502 to 105,307,357 pounds, and cheese from 77,748,680 to 145,171,035 pounds. A large amount of condensing is also being done now.

The making of buttermilk cheese in creameries is recommended in a recent bulletin from the Wisconsin Experiment Station.

Numerous cases of typhoid in Klamath Falls, Ore., have caused warnings to be sent out to several dairymen, ordering them to clean up.

The inspection of dairies in Kings county, according to Dr. George Gordon, live stock inspector, has caused much cleaning up and building of new dairy houses.

Several dairymen of San Luis Obispo county are leaving with their herds for Imperial valley to continue business there.

BURBANK'S CACTUS.

To the Editor: Would it pay to grow Burbank's spineless cactus in this locality? I have three types of soil, viz: gravelly clay loam, brownish clay loam and black adobe. NEWCOMER.

Glenn county.

[Mr. Burbank's varieties would doubtless grow well on all your soils, but whether they would pay you depends upon what you do with them. The value of this plant to a grower must be determined by his experience; therefore it is enterprising to make trials and not depend upon what people may say, unless you are sure that they speak from trial, and thus perhaps save you from making one, but then—oh, well, try it yourself; that is the best way.—EDITOR.]

Consul John F. Jewell of Melbourne, Australia, states in the consular reports that eucalyptus fence-posts are very cheap and highly esteemed in that country, of which they are native. Posts below 4 by 3 inches sell for $2.68 per 100 superficial feet and larger sizes from $2.92 upward. The posts are said to be very durable and practically impervious to weather conditions.

Residents of Imperial county are claiming that the large amount of irrigation done in recent years has changed the climate of the valley, quoting as a proof that in 1902 there was a variation in temperature from 22 to 126 degrees, while this year the greatest variation was only from 32 to 114. Other changes have also been noted.

The Standish Water Company of Lassen county has 3000 acres of land which they will put into alfalfa next spring. The land will be irrigated by a pumping plant which has just been completed.

KENDALL'S SPAVIN CURE



—has saved thousands of dollars and thousands of horses. The old reliable cure for Spavin, Ringbone, Splint or any lameness. For sale at all druggists. Price $1 per bottle, 6 for $5. "Treatise on the Horse" free at druggists or write to Dr. B. J. KENDALL COMPANY, Enosburg Falls, Vt., U. S. A. 6

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This is It
The Blue Pail

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GOING EAST
VIA
LOS ANGELES
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SALT LAKE ROUTE
COSTS NO MORE

than other ways, and you may travel in the popular Los Angeles Limited, three days to Chicago.

ASK MR. CASEY
At 680 Market St., San Francisco, for particulars.

Cutter's Anthrax and Blackleg Vaccines

are given the preference by 80 per cent of California stockmen because they give better results than others do.

Write for Prices, Testimonials and our New Booklet on Anthrax and Blackleg

THE CUTTER LABORATORY
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HERCULES HARNESS SADDLES HORSE COLLARS
They Last Longer
The only sure way to get a HOME Industry Harness is to look for the Hercules stamp
Made by W. DAVIS & SONS, San Francisco, Cal.
Your Dealer has our Catalogue

Live Stock Awards at the Fair.

From the live stock awards at the State Fair, the following occur to us as especially interesting to our readers:

HOLSTEIN FRIESIANS.—Among the Holstein-Friesians the Stanford University herd of Vina won firsts in aged bulls, two-year-old bulls, and aged herd; seconds in two-year-old cows, calf herd, and twin produce of dam; thirds in aged cows, breeder's young herd and produce of dam. The aged bull was Grand Champion and Senior Champion.

R. W. Morris & Sons of Woodland won first in yearling bulls, bull calves, aged cows, two-year-old cows, yearling cows, breeder's young herd, calf herd, get of sire, produce of dam and twin produce of dam; seconds in yearling bulls, bull calves, yearling cows, cow calves, aged herd, and get of sire; third in bull calves, two-year-old calves, yearling cows and cow calves.

McAllister & Sons of Chino won first for heifer calf, the calf being Grand Champion cow and Junior Champion cow.

The University of Nevada won first in yearling cows; seconds in aged bulls, aged cows, breeder's young herd and produce of dam, and thirds in two-year-old bulls, aged herd and get of sire.

T. D. Gilkerson of Stratford won third for yearling bulls, and M. M. Holdridge of San Jose third for senior bulls.

JERSEYS.—Among the Jerseys the H. N. Locke company of Lockeford won firsts in aged bulls and two-year-olds; seconds in yearling bulls and aged herds; thirds in yearling bulls, aged cows, two-year-old cows, yearling cows, and produce of dam.

A. G. Domes of McCoy, Ore., won first in yearling bulls, bull calves, yearling cows, aged herd, breeder's young herd, and produce of dam; seconds in aged bulls, bull calves, aged cows, yearling cows, cow and calf, and get of sire; thirds in bull calves, aged cows, and get of sire.

Guy H. Miller of Modesto won firsts in aged cows, two-year-old cows and get of sire; seconds in two-year-old calves and produce of dam.

J. B. & J. E. Thorpe of Stockton received first for cow and calf.

W. J. Hackett of Ceres won second in breeder's young herd and third for cow and calf.

L. J. Dobler of Turlock received second for two-year-old bulls.

GUERNSEYS.—Among the Guernseys C. G. Lathrop of Stanford University took all awards, while U. G. and Jennie Strader of Ceres did the same for Dutch Belted cattle; W. J. Domes of McCoy, Ore., for Ayreshires, and R. R. Cartwright of Modesto for Red Polled cattle.

SHORT-HORNS.—Among the Short-horns T. S. Glide of Davis took firsts in aged bulls, two-year-olds, junior yearlings, senior calf, aged cows, yearling heifers, and calf heifers; seconds in junior yearling bulls and junior yearling heifers; thirds in junior yearling bulls; and second in four animals, the get of one sire.

The Howard Cattle Co. of San Francisco took first in senior yearling bulls; seconds in aged bulls, two-year-old bulls, aged cows and senior heifer calves; thirds in senior bull calves, aged cows, two-year-old cows, senior yearling cows, junior yearling heifers and senior yearling heifers; fourths in senior bull calves, junior yearling heifers and senior calf heifers; also firsts in aged herd and breeder's young herd, second in calf herd and two animals the produce of one cow; and third in four animals, the get of one sire.

J. H. Glide of Dixon received firsts for two-year-old bull, junior bull calf, aged cow, senior yearling heifers, and four animals from one sire; second for two-year-old cows and aged herd.

T. B. Gibson of Woodland won firsts with two-year-old cow, two animals the produce of one cow, calf herd, and senior calf heifers; seconds with junior bull calf, senior yearling heifer, junior heifer calf, breeder's young herd and calf herd; thirds for two animals the produce of one cow; fourth in senior heifer calf, and fifth in senior bull calf and senior heifer calf.

Harbinson Bros. of Sacramento received second for senior bull calf and fourth for aged cows.

J. W. Goodwin of Redwood City received second for senior yearling heifer.

HEREFORDS.—Among the Herefords, the Simon Newman Company of Newman won firsts in yearling bulls, yearling cows, and cow calves; seconds in yearling bulls, yearling cows, bull calves, and cow calves.

Bemerly & Duke of Woodland won firsts in aged bull, aged cows, two-year-old cows, and second in aged cows.

The University of Nevada took first for bull calf and third for yearling cow.

SHEEP AWARDS.—Among the sheep, T. S Glide of Davis took all awards with his French Merinos, while Bullard Bros. of Woodland did the same with their Rambouillets.

Shropshire awards were divided between Bishop Bros. of San Ramon and T. S. Glide, the University of Nevada and E. A. Bridgeford of San Francisco also being represented.

The University of Nevada took all prizes for Hampshire Downs except three seconds and three thirds to Ed. Schoel of Albany, Oregon. The same university also divided prizes with J. G. Saxe Hubbard of Corvallis, Oregon, with Southdown sheep. The University also received all prizes for Cheviots and Dorset Horns.

J. B. Stump of Monmouth, Oregon, took all prizes for Cotswold sheep, while M. S. Woodcock of Corvallis, Oregon, did the same in the Lincoln exhibit.

C. P. Bailey & Sons' Company of San Jose received all awards for Persian sheep and split even with John B. Stump of Oregon with the Angora goats.

PRIZES FOR SWINE.—M. Bassett of Hanford made almost a clean sweep with his Poland-Chinas, the University of Nevada getting second in young boars, and T. H. Murphy of Perkins third for aged sows.

In the Berkshire exhibits first prizes were won by the University of Nevada, A. B. Humphrey of Mayhew, G. A. and H. S. Murphy of Perkins, and T. I. Levy of Ripon.

OTHER SWINE AWARDS.—The Duroc-Jersey awards were divided between J. K. Fraser and Geo. W. McGuire, both of Albany, Oregon, while W. J. Domes took the majority of the Hampshire awards, the Fair Oaks Stock Farm receiving several prizes also.

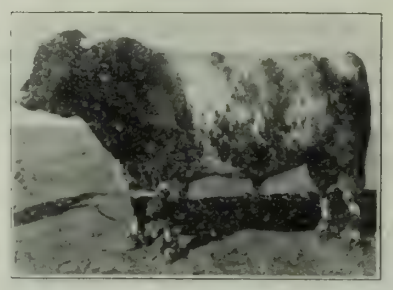
Most of the White Chester awards went to Oregon exhibitors, M. H. Holdredge of San Jose and Thos. Rees of Stockton also taking prizes with exhibits.

BYRONDALE JERSEY HERD

For Sale—A solid colored Jersey bull calf, dropped Sept. 1, 1911. Sired by Raleigh's King 84893, out of a richly bred cow. First check for $25 gets him if taken immediately.

T. B. PURVINE, Petaluma, Cal.
R. F. D. No. 4, Box 195.

"ENGINEERING ON THE FARM"
SENT FREE
KERNS-SESSIONS, Engineers
Postal Telegraph Bldg., San Francisco



King Lancaster, Grand Champion Bull, California State Fair, 1909-1910-1911.
The only Bull three times Grand Champion at the Fair.

FOR SALE:
100 Short-Horn Bulls
Sired by grandsons of **King Edward, Hillcrest Hero, Choice Goods** and other prize-winning Bulls.
ALSO
300 Blacow Robert Glide French Merino Rams
Single or carload lots. For further particulars write
THORNTON S. GLIDE, Davis, Cal.



America's Leading Horse Importers

At the six World's Fairs since 1900, our Percheron Stallions have won every Championship, and every first prize except two.

At the recent California State Fair our Percherons and French Coach Stallions won 14 Gold Medals and both Championships.

When you want the best come to us.

McLAUGHLIN BROS.,
OAKLAND, CALIFORNIA COLUMBUS, OHIO

To The Deciduous Fruit Growers Of California

While you are getting the returns from your 1911 crop your attention is invited to the following excerpt from "California Cultivator," August 31st. Speaking of cover crop fertilizing it says:—

"Probably it has obtained a greater hold in citrus orchards than in deciduous, but even with deciduous fruit growers the practice is increasing and would increase with greater rapidity were the deciduous orchards in the northern part of the State but supplied with irrigating water which could be used at planting time." Yet the additional profits for one year will more than repay the first cost of a complete irrigating system for most orchards.

Now is the time to plan for the 1912 crop. Begin today by investigating the irrigation possibilities in your orchard. You will find a copy of

AGRICULTURAL PUMPS

helpful. Your name and address brings it.

GEO. E. DOW PUMPING ENGINE CO.

412 Sheldon Building, San Francisco
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Should you be interested in deep well pumping, ask for full details concerning the
DOW NON-PULSATING PUMP

FARMERS EDUCATIONAL AND CO-OPERATIVE UNION OF AMERICA

All that its name implies. An up-to-date farmers organization extending over twenty-six States. California Divison now well established. Send for particulars State Secretary, Farmers Union, Box 68, Imperial, Cal.

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LANDSCAPE ARCHITECT
Plans furnished suiting locality and owner's taste. Plans from $10 up.
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Grounds laid out and supervised, $10 a day.
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One Week FREE
Send for catalog—select the violin—try it for a week in your own home. If not perfectly satisfactory send it back at our expense.
ROOT VIOLINS
have a strong tone; are easy to play and finely finished. They have given satisfaction for more than fifty years. They sell themselves, so we want them to talk in your home. Prices from $5 to $150. Send for Free catalog, beautifully illustrated in colors.
E. T. Root & Sons, 1524 E. 55 St., Chicago



Egg City Hatchery
Orders booked for spring delivery of baby chicks. Our specialties are Rhode Island Reds and S. C. White Leghorns.
W. L. SALES,
722 3rd St., Petaluma.

SQUABS PAY—UNLIMITED DEMAND. Pure Belgian Carneaux; young, $10 doz.; large crosses, $7 doz; hens, $3 pair. BOLTON SQUAB FACTORY, Healdsburg, Cal.

POULTRY DEPARTMENT.

Conducted By M. RUSSELL JAMES.

THE MOLTING SEASON.

Feathers are in full fly in the poultry yard at this season, for the hen is turning her attention to new clothes. It is a season trying alike to the hens and the hen-keepers. The latter look with disfavor upon their ragged and unprofitable flock and begrudge the hens a lay-off just when "egg is eggs." The former, if they could present their side of the case, might truthfully say that they had worked like slaves and worn their old clothes for a year or thereabouts and that they richly deserve a leave of absence with full pay meantime. In their own interest poultry keepers should give the molters more rather than less care, and the sooner the hens will be back on their old job of filling the egg basket.

A PHYSICAL TEST.

Molting is not a disease, but the full molt is a pretty accurate test of the fowl's condition and stamina. Birds that have laid well and gone through their pullet year in apparently good health will often develop various diseases at this season. This is due to some disease tendency, weakness of certain organs; in short, to lack of stamina and endurance. A vigorous fowl will go through the molt with little inconvenience. Only fowls of this class should be kept through the molt. The culling out of all fowls which show signs of a break in the health and strength at this season will go far toward the building up of a vigorous flock

In our yards three years ago 10 per cent of the hens showed some sign of weakness or disease when they went into the molt, although they had seemed in the best of health previously and had made a record in laying for the year. Last year there were very few such cases. This season there has not been a single case so far and the flock is half through molting. Even the hens that are almost naked are bright and lively, and when let out on range will flap their ragged wings and run and play like pullets. This has come about through keeping only the vigorous fowls.

There is also another reason for culling the flock closely this year. That all feed stuffs will be unusually high is acknowledged by agricultural experts both East and West. It will not pay to feed any but vigorous producers. Cull closely.

CARE OF MOLTING HENS.

If the chickens are kept under proper conditions, little change is required at molting time. At all times fowls require that their houses be free from drafts, but open to the fresh air and kept dry and clean and free from vermin. Male birds should be allowed with the flock only during the breeding season and then only in the breeding pens. To keep a lot of cockerels and roosters among molting hens is downright cruelty as well as unprofitable poultry-keeping. Occasionally a hen will shed her coat like a garment and be left literally naked. She is a pitiful creature for a while, and afraid and ashamed she will slink out of sight, not daring to make her way among the other fowls for even a bite of food. A bird in this condition should be placed by herself in a warm coop and well fed. In a week or so she will have grown some clothing and may be returned to the flock.

In a well-fed flock little change is likewise required in the feeding. At all times fowls should have all the hard grain and tender green feed they will eat at night with enough for their early breakfast left over. Their later breakfast may consist of some kind of scratch feed or sprouted grain, and about noon they should have a full feed of appetizing mash. This mash should be made a little richer in animal food for the molters; linseed meal is highly recommended, and a little may be added to the mash, but if there is looseness of the bowels cut it out. Many of such concentrated foods, though rich in nutriment, cause indigestion and liver complaint. Always salt the mash the same as for one's own use and a few chopped red pepper pods may be added for the molters, especially on damp chilly days.

QUESTIONS AND ANSWERS.

As to Shorts and Fuel Oil.—J. T. W., of San Gabriel, Cal., writes: "Kindly state the difference between shorts and middlings. Our mills here say they are one and the same. If you should mix one-fourth bran and three-fourths middlings as spoken of in a recent issue of your paper in regard to the Australian egg-laying competitions, you would have a sticky stuff which a chicken couldn't eat.

"Again, you speak of fuel oil as a spray for mites, and to mix three pounds of red metallic to the gallon for the outside of house. Are crude petroleum and fuel oil the same? Presume the red metallic would give a brown cast. What would we have to use with petroleum to get green, and about how would expense compare with the red metallic?"

Wheat in the milling is made into four commercial products—bran, shorts, middlings, flour. Bran is the outer coat of the grain; shorts is the finer bran together with the coarser portions of the kernel; middlings contain more gluten and less starch than flour and might be termed coarse flour. The protein value of shorts and middlings is exactly the same, but the latter rates higher in carbohydrates and fat. In England there is a difference in some of the milling terms, and in the report of the Australian contest, the ingredients of the mash read, 'three-fourths *pollards* to one-fourth bran." Later the proportion of pollards was increased, and it is evident that this millstuff corresponds with our shorts, as shorts is just about right to use by itself for poultry food, thus doing away with the need of either middlings or bran. Our inquirer is right about the above proportion of bran and middlings making a "sticky stuff" not fit for chickens. Poultry folks should make it a hard and fast rule never to give the fowls any food which is at all sticky.

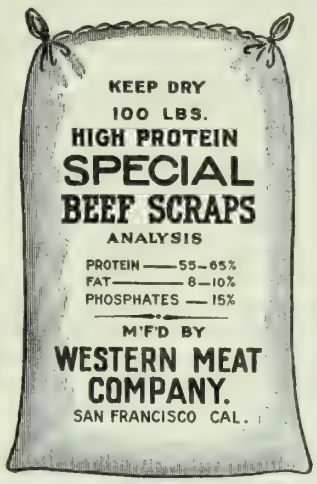
Fuel oil is crude petroleum thinned and prepared for burning in engines. It is smooth and about the consistency of molasses. It cannot be used as a spray unless made very thin with distillate or cheap coal oil. The better way is to apply it with a large paint brush. Only dark colors in painting can be had from petroleum mixtures, as both petroleum and fuel oil make a very dark stain in themselves; in fact, the fuel oil thinned a little makes an excellent walnut stain which may be used for that purpose for staining flower boxes, screens, or for anything where a cheap stain to improve the appearance or preserve the wood is required. Prince's brown metallic comes a little higher than red metallic, but gives a brighter color. In using as a paint two coats should be applied for best results; but the first coat must be allowed to thoroughly dry before putting on the second one. This requires time, for all the petroleum mixtures dry very slowly. This is where the fuel oil gets the mites, ticks and fleas when applied to the inside walls.

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Be wise today; tomorrow's sun
In brilliant splendor may arise,
And find thee with thy work undone,
With lifeless, cold, unseeing eyes;
Neglect no duty in the way,
Be wise today! Be wise today!

Be true today; the crooked mind
A labyrinth of mischief makes;
When lost therein, 'tis hard to find
The path of rectitude, when wakes
The outraged sleeper, Conscience. Nay,
Be true today! Be true today!

Be kind today; the flying years
Shall bear dear ones to homes above;
For late may be tomorrow's tears,
Tomorrow's tardy words of love;
The moments pass so swift away,
Be kind today! Be kind today!
—Household Journal.

Cheering the Brave in Heart.

Some people who have not the habit of whistling to keep up their courage get the impression that he who whistles always has his courage up. They fail to see that some natures refuse to be downed or to down others, but keep up a lively show of good cheer regardless of what the facts may be. When all the time these very whistlers may at heart be as heavy as lead, and in need of every bit of sympathy and encouragement possible.

This is hardly fair.

It's a mighty fine thing to just remember that human beings, generally speaking, are about evenly served with reasons for joy and reasons for sorrow; if it looks different to you, it is because you cannot see underneath the surface; it happens to be your lot to have a surface complaint while your neighbor has one that is deep-seated; that is all the difference. And the kind word, the helpful talk, the little act of consideration, may touch a starved need in that woman who seems so cheery, quite as much as they do in you, whose face is drawn with care lines.

A physical illustration comes to mind: A certain woman went about all her life doing little thoughtful kindnesses to ailing folks. At her death it was discovered that she had secretly nursed a slow-growing cancer for a quarter of a century; a loathsome disease from which she must have suffered tortures beyond the conception of those to whom she ministered. Every one had envied her her wealth and comfortable existence. It had never occurred to anyone to lift the veil and find a reason for her intense sympathy with physical suffering; or, better still, to take it for granted that there was a good reason. They had let her live and die among them, bestowing her strength upon them, and never once questioning her life—her need of sympathetic visitors, of a word of cheer, of a new book or a bracing article to read.

It is well to go through life on the principle that every human being has a cross; whether or not you can see it, it is there; so be kind and offer little attentions—in the dark. Do not deny to brave spirits the uplift you give so readily to those whose grief advertises themselves.—The Housekeeper.

To Parents.

Give your girls and boys a happy childhood. At the longest that period is all too brief; they can be care-free such a little while, let them enjoy it while they may. A lady remarked to a friend one day, who had commented upon the happy home life her children enjoyed: "I have no happy childhood to look back upon myself. My mother died when I was very young; after her death, until I had a home of my own, a husband and children to love, my life was a most unhappy one—just an outreach after love. It has cast a shadow over my whole life. While others recall happy incidents connected with their childhood, I only shudder to look back. I can and do enjoy my life since a wife and mother, every hour of it, even when ill; still, if ever I turn to look backward, there is that terrible, dark background. Doubtless this experience has enabled me to better understand how important an influence our childhood has upon our whole after life. I am anxious that my little ones shall have a happy childhood to look backward to."—Household Journal.

The Blackbird a Wonderful Musician.

One April while studying bird voices in a wood near a breezy upland in Banffshire, says a naturalist in the Scotsman, I was startled by a whistler who produced, again and again, six notes of the opening phrases of the fine English song, "Should He Upbraid." No professional clarinet player could have rendered the phrase with closer attention to quality of tone and to exactness of time and pitch.

Some years ago, in the month of June, I attended a concert in the Luxemburg gardens, which may be considered the central point of the Latin Quarter in Paris. The performers were the band of the Garde Republicaine (the finest band in the world) and the program they submitted consisted wholly of extracts from Beethoven's works. While the adagio of the "Sonate Pathetique" was being played, a blackbird sitting high in a tree near the bandstand accompanied the instruments and stopped when they did. He sang during the whole movement—beautiful, leisurely snatches of melody. His notes seemed like an instrument added to the band. The way in which his extempore melody fitted in with Beethoven's composition was perfectly marvelous.

That summer in Paris I often had occasion to pass through a torpid old street in the Latin Quarter. In this street a cobbler, a former bugler in a cuirassier regiment, had his booth. Above the booth hung a large wicker cage in which was a blackbird with a tremendous voice—a "hundred-throated" bird, to borrow the adjective with which Tennyson qualifies the nightingale. The former bugler had taught his merle (French word for blackbird) a cavalry call, and many times during the day the street reverberated with the blood-stirring sounds.

One broiling day in July, an old abbe stopped in front of the cobbler's stall and began to mop his crimson face. "Monsieur," he said to the cobbler, "accept my congratulations; your merle is the most eloquent preacher in Paris, for his notes are a battle-call to the strong and a sursum corda (life up your hearts) to the despairing!"

Recipes for Peach Desserts.

Dutch Peach Cake.—To a cup and a half of milk add the yolks of two eggs, a teaspoonful of melted butter and a half teaspoonful of salt. Mix thoroughly and then sift in two cups of flour with three tablespoonfuls of baking powder; beat rapidly and fold in the stiffly beaten whites of two eggs. Turn into a shallow greased baking pan and cover the top thickly with pared, cored and quartered peaches. Dust with a half cup of sugar and bake in a moderate oven until the peaches are tender, which will require about thirty minutes.

Rice and Peach Dumplings.—Wash half a pound of rice, drain and put it in boiling water to boil for twenty or thirty minutes, then drain again. Have ready some squares of cheesecloth. Spread a thin layer of rice in the center of each and put in one small stoned peach; fold the rice over and tie securely. Boil the dumplings briskly for fifteen minutes and serve with cream and sugar.

Peach Shortcake.—With one quart of flour sift two heaping teaspoonfuls of baking powder and an even one of salt. Put in enough milk to make a soft dough; knead lightly, roll out one inch thick and cut to fit the baking pan. Brush with milk and fold it over. Bake for twenty minutes or until a delicate brown in a quick oven, then raise the upper half and butter the inside. Fill with chopped sweetened peaches, lay on the upper crust, dust with sugar and serve with cream.

Peaches and Rice.—Peel, core and cut in quarters six or eight large, firm peaches; cook them in a granite saucepan with half a teacupful of granulated sugar and the same amount of water. Clean and wash six ounces of rice and cook it in a double boiler with a pint of milk; add sugar when the rice is quite tender, sufficient to suit the taste; flavor with lemon or vanilla; finish with a little good cream and a piece of butter the size of a walnut. Form the rice on a dish in a manner to suit the fancy and surround it with the quartered peaches and pour the syrup in which they were cooked over the whole.

Peach Cobbler.—Make the crust with one and a half cupfuls of flour, one and a half tablespoonfuls of butter, six tablespoonfuls of ice water, a fourth of a teaspoonful of salt and one-quarter teaspoonful of baking powder. Have the mixing bowl real cold and do not handle more than necessary. Sift the flour, salt and baking powder together and work in the butter with the hands. Cut in the water with a knife. Line a pudding pan with this and also cut six or seven strips about an inch wide and ten or twelve inches long; lay them in a flat pan. Bake the bottom crust and the strips in a quick oven until a delicate brown. Have ready some sliced peaches which have been sweetened and stewed slightly, the syrup being just a little bit thickened with flour. Leave the bottom crust in the pan and pour the peaches in. Lay the strips lattice-wise across the top, breaking off the ends to fit the pan. It may be served either hot or cold.—Post.

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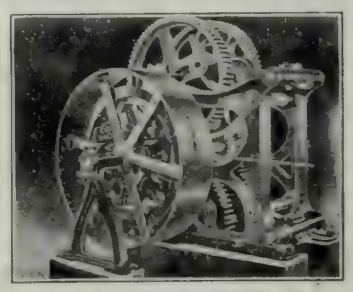
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OUR YOUNG FOLKS' DEPARTMENT.

Conducted By M. Russell James

Poultry Course for Young Folks.

DESCRIPTION OF BREEDS.

CLASS VI—DUTCH.

Hamburgs.—It was a cock of this breed which Chaucer has immortalized in the Canterbury Tales. That the Golden Penciled Hamburgs were bred in parts of England in those early days is certain, but there is no certainty as to the origin of the breed. To English fanciers, however, is due the honor of producing the beautiful Spangled varieties.

The Hamburgs are trim, sprightly birds like the Leghorns, but smaller than the latter. They have a neat rose comb, square in front and terminating at the rear in a spike inclined slightly upward. The coral-like beauty of this comb is well described by Chaucer:

"His comb was redder than the fine
corall,
Embattled as it were a castel wall."

The carriage of the Hamburgs is proud and graceful; earlobes smooth and round and pure white; shanks and toes leaden blue. As to their coloring in the six varieties it has been said: "The world's greatest artists never so harmoniously, so skillfully, or so beautifully blended colors upon the canvas as they have been blended and harmonized in the plumage of the Hamburg fowls." This breed is naturally the fanciers' delight and makes up a large class in the shows of America and England. But it is also one of the most remarkable as an egg producer. The egg is white-shelled and attractive, the only drawback being its smallness. This, however, may be remedied somewhat by selecting as breeders those birds laying the largest eggs. Perhaps in no other breed of fowls is such rare beauty combined with fairly good utility qualities. They are fowls which will add attractiveness to an attractive suburban home and at the same time keep the table supplied with fresh eggs.

The six varieties of this breed are the Golden Spangled, Silver Spangled. Golden Penciled, Silver Penciled, Black, White.

The Silver Spangled is the most popular variety in this country. In this variety the neck and back of the male is white with each feather ending in an elongated black spangle; each feather of breast, fluff and body must end in a large black spangle; tail and coverts silvery white ending in black spangles. The female is spangled in a similar manner.

The Origin of Corn.

Plant experimenters have succeeded in developing corn backward until all the ears were on the top of the stalk and so small that the stalk easily could carry them in that position. By constantly selecting the smallest kernels of nubbins, the corn was led backward gradually through its history until it became not much larger than a good-sized head of timothy grass and the kernels of rice. This experiment proved corn to be what some of the botanists claim—an evolution of some of the grasses of southern Mexico. It is thought the plant was brought from the South by migrating tribes, finally being adopted by the Indians of Florida, and by them and other Indians developed through long periods of years into the staple article of food for the territory now occupied by the United States.

When the English and French entered their great struggle for the possession of what is now America, says the Globe-Democrat, immense cornfields were found as far north as New York and Massachusetts. Massasoit fed his white friends on corn, and later sweet corn was found in Massachusetts. The pioneers soon learned how to prepare this new grain for food, and without it they could never have made their passage westward through the wilderness.

IMPROVEMENT BY SELECTION.

The experiment in developing corn backward illustrates the importance of selecting the best of its kind in grain or other plants for seeding purposes. There are two means of selection: first, by sorting the large, plump, perfect grains or seeds from the small, shriveled, imperfect ones; second, by looking for the fine, thrifty growing plants in the garden or field and marking them so that their yield may be saved for planting. In this work, and especially in the field of selection, the boys and girls on the farm can be a wonderful help. Here is what your Uncle Sam says in a late bulletin on this point:

GIVE THE BOYS AND GIRLS A CHANCE.

Complaint is commonly made that the children are not interested in the farm and that many of them leave it as soon as possible. Interest can be awakened by giving the boys and girls something definite to do in the way of improving the farm and its products. Once started, they should be encouraged to feel responsible for results. They should also receive money in return, however small, for the improvement resulting from their efforts.

The formation of various boys' and girls' clubs, especially those for the growing of corn, is helping to create interest in the things of the farm. They are real steps in the right direction and should be extended to cover all farm crops, poultry and live stock. But it is not necessary to await the formation of a neighborhood club in order to interest the boy in selecting better seed. Help him to make selections from the year's crop. Let him prepare it for storing over winter. Set aside a field on which he can plant it the following spring. Plant alongside it some unselected seed. Assist him in comparing the two fields. Encourage him if striking results are not obtained the first year. Give him a fair share of the profit when profit results from his labors. The best result will be the increase of interest and knowledge in the boy.

The Champion Corn Grower.

The boy who is known as the champion corn-grower, says an exchange, has an unusual juvenile distinction and one, on the whole, quite as well worth having as that of winning the hundred-yard dash for "the school" or paying more fines than the other fellows for auto speeding.

Jerry Moore, the sixteen-year-old South Carolina boy referred to in the above, holds the world's record for corn raising, having produced 228 bushels on a single acre. At Columbus, Ohio, a banquet was given in his honor, but when he was called upon to tell how he did it, he hid his face in his arm in boyish confusion.

HOW HE DID IT.

It was by downright hard work directed by scientific knowledge that Jerry produced his record corn crop. He spent $90 on fertilizers and hauled 700 loads of rich earth onto his prize acre. But the crop paid him a net profit of $130. And Jerry has become a real hero throughout the country. The average yield of corn in his State has been but 8 bushels to the acre. The average yield for the whole country is 26 bushels per acre.

Our Young Folks Heard From.

Fresno, Cal., Sept. 2, 1911.

To the Young Folks' Department:

I live in the country and am ten years old. I am in the fourth grade at the McKinley school. I have lots of friends in school. I go to school on a wheel. I have a piano and take music lessons from my schoolteacher's sister.

We have lots of trees and pretty flowers around our house. We have two horses, a cow and a calf, some pigs and chickens. This summer we took a trip to Yosemite Valley. It is just grand up there. There were eight in our crowd and we had a good time. I must close for this time.

Ida Marie Irish.

Concord, Cal., Sept. 4, 1911.

Dear Pacific Rural Press:

It has been so long since I wrote last that I suppose you have forgotten me, but I have not forgotten you. I am going to school again and am in the fifth grade. I have not written because I have been busy with my school work.

I have read the story "On the Old Mississippi" and think it very nice. It is the best story that I have read since that one about the Indian princess, and I wish you would have lot more like it in our department of the Rural Press.

On the Fourth of July all of our family went up to Ramona Park and had lots of fun. About two months ago we had the threshers at our place, and papa said the crop turned out fine, what there was of it. Papa attended the State Fair, and said it was fine and that he never saw better races. He thinks it was because there was no "pool selling." I do not know what that means, but that was what he said.

I remain as ever,

Yours truly,
Hilda T. Gehringer.

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THE MARKETS.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

White Australian has been marked up a little this week, other grades standing as before. There is a very fair local buying movement, and the situation in the North is very strong, with heavy purchases by both millmen and exporters.

California Club	$1.45	@1.50
Sonora	Nominal	
White Australian	1.55	@1.60
Northern Club		1.50
Northern Bluestem	1.65	@1.70
Northern Red	1.60	@1.65

BARLEY.

There is a little easier feeling in barley than for some time past, and choice feed shows a slight decline, $1.60 being about the highest price paid in the local market. The demand for feed, however, is keeping up very well, and the export movement continues heavy. A little chevalier is appearing at $1.85 to $1.90.

Brewing and Shipping	$1.62½	@1.67½
Choice Feed, per ctl	1.55	@1.60
Common Feed	1.45	@1.50

OATS.

All prices stand as last quoted. The market is comparatively active, with large sales of red oats for both feed and seed at full quotations.

Red Feed	$1.65	@1.75
Gray		1.65
White	1.62½	@1.65
Black	1.70	@1.75
Red Seed	1.75	@2.00

CORN.

Prices remain the same as for some time past, but the local market is quiet, with little demand and no heavy offerings of either local or Eastern grades.

Cal. Small Yellow	$1.75	@1.80
Eastern Yellow		1.70
Eastern White		1.70

RYE.

Values are almost entirely nominal, as there is no trading of any consequence. Some cheap stock is offered, but finds no demand.

Rye, per ctl	$1.55	@1.65

BEANS.

The only stock out of the new crop to arrive in this market so far consists of a few small lots of whites and bayos, and the amount is too small to have any appreciable effect on the market. Bayos, however, are expected to be quite plentiful in a few weeks, and with considerable old stock on hand, prices are considerably lower. On other lines prices have stood unchanged for the last week. White beans continue quite firm, but in other lines there is a feeling of weakness, and lower prices are predicted by local dealers. The market remains quiet, as the majority of buyers are inclined to hold off until the season's production in all lines is pretty definitely known. The bean acreage in the Valley district is said to be the largest in several years, and the yield seems to be heavy, though harvesting will not be completed before next month. According to reports from the lima bean district, the crop has been severely damaged in the last week or so, and considerable reduction will have to be made in early estimates of the crop. The trade, however, regards this report rather skeptically, and purchases are mostly confined to immediate requirements.

Bayos, per ctl	$3.75	@4.00
Blackeyes	4.75	@4.85
Cranberry Beans	3.60	@3.80
Garvanzos	3.00	@3.25
Horse Beans	2.50	@2.75
Small Whites	3.75	@3.85
Large Whites	3.60	@3.75
Limas	5.50	@5.60
Pea		4.25
Pink	4.60	@4.75
Red Kidneys	5.75	@5.85

SEEDS.

Values remain largely nominal, as there has been comparatively little movement in any line, and no general demand is expected for some time.

Alfalfa	Nominal	
Broomcorn Seed, per ton	$25.00	
Brown Mustard, per lb	5½c	
Canary	4	@ 4½c
Hemp	4	@ 4½c
Millet	3	@ 3½c
Timothy	Nominal	
Yellow Mustard	5¾c	
Dried Peas, per ctl	3.75@	4.00

FLOUR.

Local grades remain as before, but prices are firmly held. Northern grades have been advanced, owing partly to the heavy demand for export.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.80	@5.00

Hay and Feedstuffs.

HAY.

Arrivals have dropped off considerably this week, though there is still fully as much hay coming in as usual at this season. Dealers find no difficulty in disposing of all arrivals, and in fact it is becoming apparent that there is a real shortage of some descriptions. Those who have held their choice wheat and oat hay are now able to realize very satisfactory prices, and even the best wild oat hay is bringing an advance. Conditions appear favorable for still further advances. There is, however, very little hay still unsold in the fields, and the small lots remaining are being eagerly picked up by both local and outside dealers. The lower grades find less demand, but may find a better market later in the season. Straw finds a better demand than for some time past. Alfalfa is bringing good prices at many country points, but receives little interest here.

Choice Wheat	$17.00@18.50
Good Wheat Hay	12.00@16.50
Other Grade Wheat	8.00@12.00
Wheat and Oats	8.00@15.00
Tame Oats	9.00@15.50
Wild Oats	7.00@13.00
Alfalfa	8.00@11.50
Stock Hay	5.00@ 7.00
Straw, per bale	35@ 65c

FEEDSTUFFS.

All prices stand as for several weeks past. All lines are moving well, but some local dealers report a heavier demand for bran, shorts, and middlings, to which many consumers are returning after experimenting with cheaper feeds.

Alfalfa Meal, per ton	$16.00@18.00
Bran, per ton	28.00@29.00
Cocoanut Cake or Meal	25.50@26.50
Cracked Corn	38.00@39.00
Middlings	34.00@36.00
Mixed Feeds	28.00@30.00
Rolled Barley	32.00@33.00
Rolled Oats	32.00@33.00
Shorts	31.00@32.00

Garden Truck.

VEGETABLES.

There has been quite a lively demand for onions this week, resulting in some improvement in prices. Receipts of many lines of vegetables are less excessive than for some time past, and while the market is still well supplied, a number of lines are bringing better values. Tomatoes are still about the weakest article on the list, as the supply is greater than can be cleaned up from day to day. The best offerings, however, bring a slight advance. Arrivals of green corn have been moderate, and prices are well maintained at the former level. Green peas are not coming in very freely and are considerably higher, while green lima beans are lower. Summer squash is moving off well at an advance, while green peppers are rather easy. Cabbage and cauliflower are a little lower.

Onions: Yellow, ctl	75@	85c
Garlic, per lb	3@	4c
Green Peas, per lb	3@	4c
Tomatoes, per box	25@	50c
Cucumbers, per box	50@	75c
Cabbage		75c
Carrots, per sack		75c
Cauliflower, per doz		50c
String Beans, sack	1.00@	1.25
Lima Beans, per lb	2½@	3½c
Summer Squash, per box	40@	50c
Okra, per box	65@	75c
Green Corn, per sack	75c@	1.25
Eggplant, per box	60@	75c
Green Peppers, per box	30@	50c

POTATOES.

There has been a heavy demand for shipment for the last few days, and the market is fairly strong, but large arrivals of river stock have prevented any advance in this line. Salinas Burbanks, however, are higher. Sweet potatoes are plentiful and weak.

River Whites	$ 1.00@	1.15
Sweet Potatoes, per ctl	1.60@	1.90
Salinas Burbanks	1.75@	2.00

Dairy Produce.

POULTRY.

Prices show no improvement, but at the moment the market is in a little better condition than last week, as Eastern stock has not been very plentiful. There was, however, some holdover from last week, and further arrivals are expected. Supplies of local stock are just sufficient for current needs, and plump broilers, fat hens, large roosters and ducks find a ready demand. Turkeys are steady at a slight reduction.

Large Broilers	$ 3.50@	4.00
Small Broilers	2.50@	3.00
Fryers	4.50@	5.50
Hens, extra	8.00@	9.00
Hens, large	5.00@	6.00
Small Hens	4.00@	4.50
Old Roosters	4.00@	4.50
Young Roosters	6.00@	7.00
Young Roosters, full grown	8.00@	9.00
Squabs	2.00@	2.50
Geese, per pair	2.00@	3.00
Ducks	4.00@	7.00
Turkeys, live, per lb	24@	27c

BUTTER.

Butter has been in good demand, and prices on extras have ruled higher than last week, prime firsts also showing some advance in the last two days. The lower grades stand as before.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	26	27	..	27	27½	27½
Prime Firsts	24½	24½	..	24½	25	25
Firsts	23½	23½	..	23½	23½	23½
Seconds	22	22	..	22	22	22
No. 1 Packing stock	20	20	..	20	20	20
East Ladies Extras	21½	21½	..	21½	21½	21½

EGGS.

The better grades of eggs have been advancing pretty steadily, but extras have now reached a level at which some fluctuations may be expected. Prime firsts, selected pullets, and Eastern stock are al. higher.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	32	33	..	35	34	36
Prime Firsts	30	30	..	30	30	30
Firsts	27	27	..	27	27	27
Seconds	19½	19½	..	19½	19½	19½
Selected Pullets	23	23½	..	25	25	25
Eastern	15	15	..	15	16	16

CHEESE.

New cheese is moving well at present, with better prices for flat firsts and Y. A.s, though Monterey cheese is quite a fraction lower. Offerings of this variety, however, are less excessive than a few weeks ago.

Fancy California Flats, per lb	14 c
Storage	14 c
Firsts	13 c
New Young Americas, fancy	16 c
Monterey or Jack Cheese	12 c

Deciduous Fruits.

FRESH FRUITS.

Supplies of several lines of fruit are too heavy to bring very satisfactory prices in the local market, though values on some descriptions are better than last week. Watermelons are very plentiful and lower, cantaloupes and nutmegs also being cheap, as for some time past. The berry market also is easy, huckelberries being lower, though strawberries are doing a little better. Muscat grapes are offered quite freely, but are in good demand at fair prices, while Isabellas are pretty firm. Other grapes, however, are cheap. The best Gravenstein apples are firmly held, but 4½-tier stock is easier. A few bellefleurs are moving at full quotations. Bartlett pears are considerably higher, as no ripe stock is coming in at present. Arrivals of Salway peaches have been excessive, but other descriptions are doing fairly well. There is still an oversupply of figs, which are lower than last week.

Watermelons, per doz	$ 1.25@	2.00
Cantaloupes, standard crate	50c@	1.00
Nutmegs, box	25@	50c
Raspberries, chest	5.00@	8.00
Blackberries, chest	3.00@	4.00
Strawberries, chest	3.50@	5.00
Huckleberries, lb.	8@	12½
Apples—		
Fancy Gravensteins, box	$ 1.00@	1.65
Choice	60c@	1.00
Other varieties	1.00@	1.25
Peaches, lug box	1.00@	1.25
Small box	40@	85c
Plums, crate	40@	75c
Figs, drawer	40@	90c
Pears, Bartlett, box	1.25@	1.60
Other varieties	65@	85c
Quinces, box	75c@	1.00
Grapes—		
Muscat, crate	85c@	1.00
Isabella	90c@	1.00
Other varieties	50@	75c

Dried Fruits.

There seems to be a little more inquiry for some lines of fruits this week, though the market in general remains quiet and packers are apparently not in any hurry to increase their holdings. Growers are still holding a considerable proportion of the crop, especially of peaches and prunes, at higher prices than the packers are willing to pay, and action is being delayed in the hope that growers will weaken in their attitude. Quotations on most lines remain about the same as last week, though the output of evaporated apples in some quarters is turning out larger than early estimates, and offers for this fruit have been reduced. Some business in prunes is also reported at ¼c decline, though 5½c is still the ruling quotation, and no great amount is to be had at that. The curing of raisins has started, though the weather so far has been very poor for this purpose. The outlook for raisins is extremely uncertain and will depend largely on weather conditions from now on. So far the packers have been unwilling to offer more than the present quotations, which are at variance with the views of most growers, causing continued delay in the disposal of the crop. The New York Journal of Commerce says:

"While the undertone of the market for California prunes for September or later shipment from the Coast of the new crop is firm, prices are irregular, and it is difficult, if not impossible, to quote prices that will be a certain guide to the buyer. The irregularity of f. o. b. quotations is attributed to the character of this season's crop. It is grading out larger in some sizes and smaller in others than was expected. Perhaps the closest that can be approached to the actual market is 5½c to 5⅝c f. o. b. four-size bag basis, with a premium on ¼c to ½c on 40s and ¾c to 1c on 30s. There appears to be more pressure to sell apricots and peaches, and packers seem ready to make concessions, but their efforts have met with no response from buyers here. The market for the 1911 crop of seeded raisins is unsettled, due to slack buying interest, but more particularly, according to common report, to efforts made by packers to bear sweatbox prices. The growers, however, are tenaciously holding out for their figures, and it is said to be doubtful if packers can secure any quantity of muscatels of 1911 growth at less than 4¾c, while in some quarters a 5c basis is predicted as a probability of the near future."

Evap. Apples, 1911, per lb	8½@	9½c
Apricots	13	@14 c
Figs, new crop	5	@ 7½c
Peaches, new crop	9½@	10 c
Prunes, 4-size basis, new crop contracts	5¼@	5½c
Pears, new crop	8	@ 9 c
Raisins—		
Loose Muscatels, in sweatbox	4	@ 4½c
Thompson's Seedless	6	@ 6¼c
Seedless Sultanas	5	@ 5½c

Citrus Fruits.

Technically the citrus season closed for shipments from California on September 1, but, as a matter of fact, about 20 cars of oranges are going forward daily, and of course lemons also. During the year ending with August there were shipped from southern California 46,000 carloads of citrus fruit, valued at $50,000,000. The shipments have broken all records for quantity, and the value of them shows an increase of $20,000,000 over last year. The real closing time for the year is October 31, and from now till then there will be many hundreds of cars of valencia oranges and lemons marketed.

At the present time the Eastern auctions are in good shape. On Monday, September 11, at New York, fancy valencias brought $6.99, while the poorest standards brought $1.70 per box. Other auction points showed about the same prices. For lemons the prices averaged from $2.50 to $3.70. It is now a foregone conclusion that the balance of good fruit to be shipped will bring good prices.

The movement of valencia oranges in the San Francisco market is about up to the average for this time of year, and prices remain steady as last quoted. Grapefruit finds a steady demand, and the best offerings are a little higher. Lemons and limes are unchanged.

Valencias, choice to fancy	$ 3.50@	4.50
Grapefruit	3.00@	4.00
Limes	5.50@	6.00
Lemons	1.50@	5.50

Nuts, Honey, Hops, Etc.

NUTS.

New almonds are moving off fairly well. The Durham crop, which is larger than usual, has been taken by a local packer on private terms. Spot supplies are scarce, and there is a fair demand in the general trade, though most buyers are operating in a conservative way. Walnuts on the spot are little more than nominal, but some new crop stock is expected on the market within the next month.

Almonds, 1911 crop—	
Nonpareils	18½c
I X L	17¼c
Ne Plus Ultra	16½c
Drakes	14½c
Languedoc	14½c
Hardshells	8 @ 8½c
Walnuts—Softshell, No. 1	15 c
Standard	14½c
Softshell, No. 2	11 c
Budded	17½c

HONEY.

The local market is quiet, values standing as before. The crop is moving off steadily in the country, however, much of the stock being shipped East direct from producing centers.

Comb, white	13 @15 c
Extracted, water white	8 @ 9 c
Amber	7 @ 7½c
Off grades	5 @ 6 c

BEESWAX.

A little inquiry is coming out, and some new stock is offered, but there is no general movement. Prices stand as last quoted.

Light	28 @30 c
Dark	23 @26 c

HOPS.

There has been very little movement in the California market for the last week. The top price named a few weeks ago is no longer quoted, as no recent sales have been made at that figure, and dealers consider it higher than conditions warrant. Crops still unsold, however, are very firmly held.

1911 crop	35 @40 c

Live Stock.

Prices on both live stock and dressed meat remain as last quoted, and the market shows very little feature. Arrivals of hogs about balance the demand, while cattle, sheep and calves are firm. Quite a lot of sheep are being shipped from the Humboldt district at present.

Gross weight:	
Steers: No. 1	5 @ 5½c
No. 2	4¾@ 5 c
Cows and Heifers: No. 1	4¼@ 4½c
No. 2	4 @ 4¼c
Bulls and Stags	2 @ 3 c
Calves: Light	6½@ 6¾c
Medium	6 @ 6¼c
Hogs: Grain-fed, heavy	7¼c
150 to 250 lbs	7¼@ 7½c
100 to 150 lbs	7 c
Small prime wethers	3¾@ 4 c
Large prime wethers	3¾@ 4 c
Ewes	3¼@ 3½c
Lambs	5 @ 5¼c

DRESSED MEAT.

Steers	8¾@ 9¼c
Cows	7½@ 8½c
Heifers	7½@ 8½c
Veal, large	9½@10½c
Mutton: Wethers	8 @ 8½c
Ewes	7½@ 8 c
Lambs	10 @10½c
Hogs, dressed	10½@11½c

WOOL.

The market remains dull and largely nominal, as local buyers are holding off, and no prices have been established on the fall clip.

Spring Clip—	
Choice Southern, Year's sta-	
Northern, year's staple	14 @16 c
ple	10 @12½c
7 months	8 @11 c
Lambs, spring	8 @10 c

HIDES.

While prices remain about as before, there is still a weak feeling in the market, and buyers are holding off in expectation of a further decline.

Heavy Steers, over 56 lbs.	11½c
Medium	11 c
Light Steers, under 48 lbs.	10½c
Heavy Cows, over 50 lbs.	10½c
Light Cows, 30 to 50 lbs.	9½c
Kip	11½c
Veal	16 c
Calf	16 c
Dry—	
Dry Hides	17½@18½c
Dry Bulls	15½c
Dry Kip, 10 to 15	18 @18½c
Dry Veal, 5 to 10	19½c
Dry Calf, 7 down	23 @23½c
Sheep Skins—	
Long Wools	$ 0.85@ 1.25
Medium Wool, 6 to 9 mos.	50@ 75c
Short Wool, 3 to 6 mos.	30@ 50c
Lambs	35@ 50c

HORSES.

The prices realized at recent sales have been below expectations, and quotations on most classes of stock show considerable reduction, heavy drafters being the only class to show any firmness. The local trade, however, expects former prices to be restored before long. At present quotations the local demand appears to be fairly active, and recent offerings have received considerable attention.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	210@250
Chunks, 1350 to 1500 lbs	175@225
Wagon Horses, 1250 to 1350 lbs.	120@175
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	110@125
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

SPECIAL DECIDUOUS MARKET

Sacramento, Cal., Sept. 9, 1911.

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, September 8, 1911, as reported by the California Fruit Distributors:

Peaches.—81 cars. Practically the same number of carloads were shipped this week as last. The heavy movement of Salways is now finished, and has been of very small volume, owing to the low prices prevailing in the East and a good demand for canning peaches at home. There are still a few more carloads of peaches to be shipped, but they will cut very little figure.

Plums—22 cars. Shipment of this variety is now nearly concluded. There will be a few scattering carloads for some time yet, but no more straight cars can be loaded in California this season.

Pears—85 cars. Mountain Bartletts are still going forward, but not in large quantities. Fall and winter pears are moving to a limited extent. Improved market conditions would stimulate the shipments of the later varieties.

Grapes—398 cars. Tokays are now going forward in heavy volume. Malagas are offering in a more limited way. A few Black Prince and Muscat are still available. Principal grape shipments are now being made from Lodi and Florin. At both places the grapes are unusually fine, the berries large, and color everything that can be desired. Grape movement will continue in heavy volume for the next month, weather permitting.

Weather conditions still continue fine, but a few clouds in the sky and a chill in the atmosphere in the morning indicates the early approach of fall. A long dry season will be necessary if we are able to move out the large crop of grapes now hanging on the vines.

Total shipments to Sept. 11, 7275 cars; total shipments to same date 1910, 8790 cars.

At New York auction on Monday, September 11, 59 cars were sold. The demand was moderate and prices a shade lower. Malaga grapes, 75c@$1.10; Fresno Beauty, $1.45; Bartlett pears, $1.25@1.90; Seckles, $1.25 per half box; Hardys, $1.35; Tokay Grapes, $1.05@1.25; Thompsons, $1.15; Italians, 95c; Elberta peaches, 90c.

On Sept. 11 at Chicago, 42 cars were sold. The market was weak on grapes; weather cool and pleasant; doing better on pears. Bartlett pears, $1.40@2.15; Malaga grapes, 60c@$1.05; Elbertas, 75@95c; Tokay grapes, 70c@1.10; Hardys, $1.35; Seckles, half box, 70c; Italians, $1.

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Two new advertisements appear in this issue of a financial nature, which will interest those looking for openings to place their money. The 6% bonds of the Realty Syndicate of Oakland look attractive, and the Wells Fargo Nevada National Bank of San Francisco wishes your account. This latter institution is one of the solid, old financial depositories of the Coast.

Hale Bros. & Co. of San Francisco have an announcement in this issue asking you to send for their new catalouge. This is one of the big department stores with several branches in the State. Read their ad. and send for the catalogue.

Don't get the notion into your head that the PACIFIC RURAL PRESS is not gaining in subscribers because we have not said much about it lately. The facts are that we are making decided gains every week. Also remember that we are the publishers of "California Fruits" and "California Vegetables", both by Prof. E. J. Wickson, and have plenty in stock to meet the calls for them. We are sending out lots of them these days and would be pleased to fill your orders.

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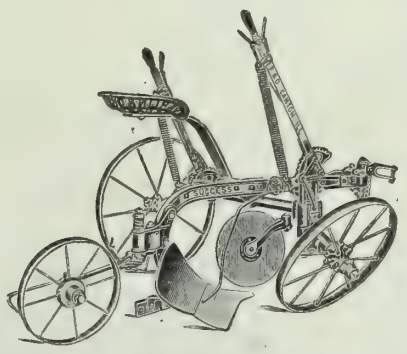


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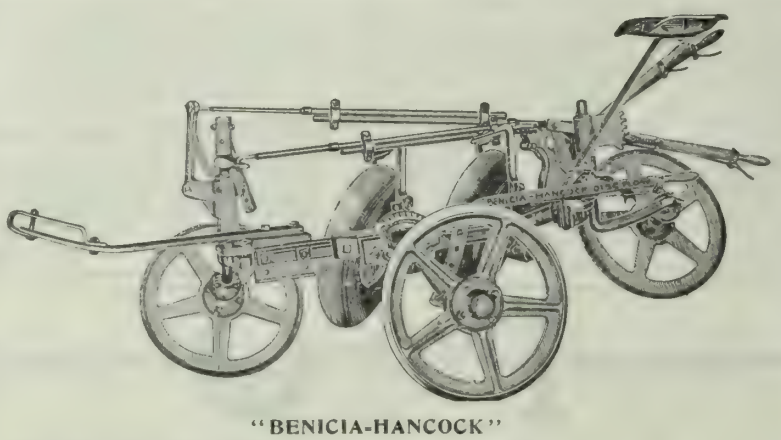
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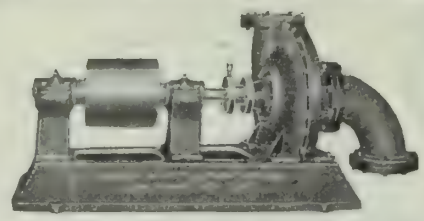
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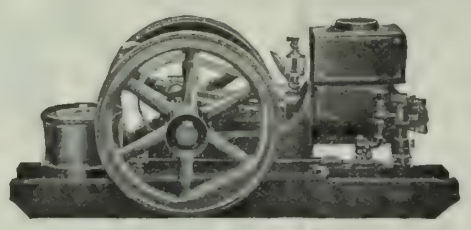
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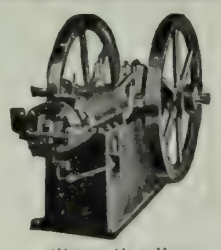
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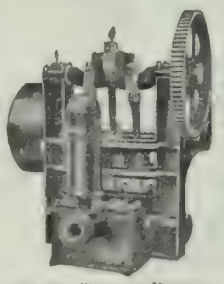
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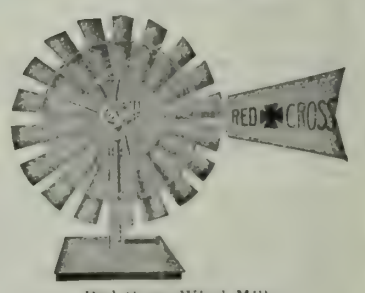
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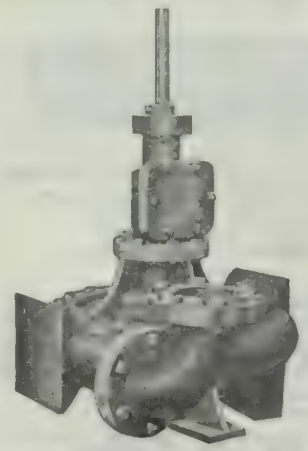
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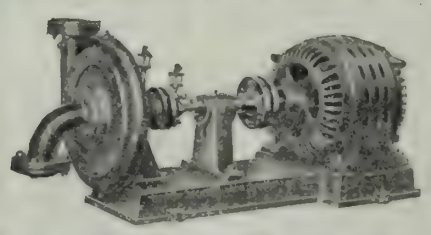
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THE PACIFIC RURAL PRESS

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IMPROVING ALMOND METHODS.

Written for the PACIFIC RURAL PRESS by Mr. D. J. WHITNEY.

A combination of all the improved methods of almond harvesting has been put into operation by George W. Pierce of Davis, this year, which has proved such a success that many other members of the Davis Almond Association have been using it also.

The sheet upon which the almonds are knocked from the tree is attached to a 1x4 running along the middle of a 24-foot box about 3 feet wide, which can be hauled from either end between rows in the orchard. The 1x4 is so attached to the box that it swings from one side to the other, according as the sheet is moved. Only one sheet is used, but the farther half of this is divided so as to allow it to go around the trunk of the tree, the edges coming together again when it is laid. After the almonds are knocked upon it the sheet is then taken by the ends and brought to the box or trough, the nuts falling into it without any trouble.

Instead, however, of having the horses pull the box along to the next tree the men with the ends of sheet keep going until the sheet is laid under the tree on the other side, all the almonds going into the box, the 1x4 swinging over to the other side and leaving the box open for a workman to sack the nuts that have been gathered, and the harvesting goes an as before. The box is then hauled to the next pair of trees. By this system the hauling is reduced to one-half, and the work is much simpler and quicker done. Working from either side of the box, there is no occasion for turning it at the end of the row, and all that is needed is to hitch the horses to the other end of it.



Almond-Bordered Avenue in a Lodi Vineyard: Blooming Time.

The Harvesting Pole.—Another improvement in harvesting methods used on the Pierce and other ranches in the vicinity is in the poles used to beat the trees. Since the local almond association was formed, and even before, the members have been individually and officially experimenting with the proper kind of poles to use in beating the trees, and finally the tamarack pole has been unanimously accepted as the best kind to use. The experiments have been conducted in connection with the Almond Exchange, and this year tamarack poles have been sent to each association of the exchange. There have not been, however, enough poles to supply all growers who desired them.

The ideal pole is one that is light, limber, tough and practically unbreakable, and to obtain the proper combination of the above qualities bamboo poles and poles of every possible native wood have been tested, with the final decision in favor of tamarack.

Unbleached Almonds.—Another subject with which the Almond Exchange has been carefully considering is the matter of unbleached almonds. The bleaching has been done solely for the purpose of making the nuts more attractive appearing, and injured rather than improved the keeping qualities and flavor when there was any effect that way. An occasional overdose of sulphur also lessened the price considerably. Until recently even the nuts going to the confectioner, where the "ultimate consumer" never saw the bleached surface, were sulphured. As a result of the efforts of the association there have already been important sales through the Exchange of unbleached nuts, one of 4½ tons being sent to Los Angeles from Mr. Pierce's orchard. As the saving in cost of bleaching is practically nothing, the efforts of the Exchange have been solely toward the benefit of the consumer, except as that benefit reacts on the grower.

Hulling the Nuts.—The hulling of the nuts on the ranch is also interesting as showing convenience and efficiency in operation. The huller is located in a shed on the banks of Putah creek, and is run by electricity.

The nuts are hulled immediately after harvesting, when they hull cleaner and easier than after standing for even a day later. Fortunately on most ranches the same expedition is shown, although a few growers still make work for themselves and injure their output by a delay in this matter. The hulls, "sticktights" and refuse generally is led out on one draper and falls over the banks of the creek, where the ranch sheep gather to pick out the tender hulls and tasty morsels. When the nuts are at their best only one man is needed to pick out the "sticktights" and good nuts coming through, while later several more have to be added.

The hulls are also picked off the other draper and are brought back to the machine to be carried off on its return trip. The nuts are dumped on to a tray, or stack of trays, standing on a car, and after all the trays have been filled the car is wheeled out for the nuts to be dried. The drying takes two or three days, the nuts being raked over several times in the meantime. The trays are set close together, so that the raking can be done without any of the nuts being spilled.

The Economics of It.—The cost of handling the nuts from the time they are ready for harvesting until they are fully dried is approximately $85 per ton, or 4¼ cents per pound, while a number of years ago, when labor was less expensive, it was a cent less. The cost varies somewhat with the size of the crop, height of trees, and similar factors. Although the price of the most expensive nuts is half as much again as the cheapest kind, it is usually the case that the cheaper nuts pay more per acre than the other. At the same time the buyer gets more for his money with the dearer varieties, as there is much more meat to the nut, and the quality is better.

The crops usually vary in that part of Yolo county from 500 to 1500 pounds per acre, the last named being exceptionally good, though ton crops have occasionally been harvested. The prices now run from 14½ to 18½ cents, according to the Almond Exchange prices, with hardshells much below the last named figure, and with the Exchange handling a large percentage of the crop no great fall in price may be expected.

(*Continued on Page 245.*)

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Sept. 19, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.02	.34	.75	66	46
Red Bluff	00	.04	.29	88	52
Sacramento	00	00	.16	88	52
San Francisco	00	T	.04	82	50
San Jose	00	00	.19	86	42
Fresno	00	T	.01	92	54
Independence	00	.10	00	84	46
San Luis Obispo	00	T	.17	86	46
Los Angeles	00	T	00	86	54
San Diego	00	.12	00	76	58

The Week.

The California farmers' leisure time is at hand—that is, the half-leisure which is as near to idleness as the ever-active California climate provides for. The harvests are largely over, the rains are distant—possibly even remote. It is a time given to the California farmer to doze or to dare, as his temperament provides. He can doze over the constitutional amendments in preparation for voting upon them at the special election of October 10—and we defy him to do much more with them when he comes into possession of the roll of wall-paper bearing their waste of verbiage which his county clerk will soon be sending him. Of course, in discharge of our civic duty, we exhort him to read, ponder and inwardly reflect and to vote upon them conscientiously and intelligently, as a good citizen should, and we call our readers to witness that we now discharge that civic duty—bang!—and the reader can doze again.

But it is rather more inspiring to be daring than to be dozing, and there is surely enough provocation to do it. The activity in agricultural affairs, to which we frequently allude, is constantly increasing. Land-hunting by investors continues, and naturally there is great interest in great rural improvements. The California Conservation Commission has energetically attacked the question of water rights in this State to determine how much water is available for irrigation in this State, how much is actually and legally owned by individuals and corporations, how much belongs to the State, and what can be done with it all for the greatest good of the people and the State. The California Highway Commission is asking every man to demonstrate why a great State road should pass his front gate. Hosts of people are appointing representatives or are packing their own grips in preparation for the great Country Life Conference which will assemble at the University Farm on October 14 to demonstrate ways in which education, which must be the chief moving factor in industrial development, can be made to best serve its great opportunity. Other organized undertakings are also pushing forward in their several lines, all of which bear upon agriculture, and the busy practical man can find much interest and advantage in giving attention to some of them as the demands upon his time may slacken somewhat. To get a broader view, to see more clearly the relation of things, to knock up against his fellow man and learning to team work with him in the promotion of some desirable public affair—all these things are instructive in the best pursuit of private enterprise which shall make its returns more satisfactory. If one gets in the way of daring in such undertakings he will find less joy in dozing—even when the sun is hot and the air is dry and the autumn feeling reduces the circulation while one is waiting for the rains.

Sugar Beets and Rotation.

We hope readers in sugar-beet districts have been thinking a good deal about the relation of rotation of crops to sugar-beet production, to which we gave a leading place in last week's issue. In the past there have been a number of instances where lands given to sugar beets have been turned to other uses and the beet utterly banished therefrom. Sometimes this has been justified by the results afterward attained by other crops, and we are not bringing any arraignment against the revolutionists who decided upon such a radical policy. There remains, however, the question about how far proper rotation would not only have made revolution unnecessary and undesirable. The European demonstration that the beet is desirable because of the effect of its culture and growth in increasing the producing power of the soil for other crops, should certainly receive attention in this State. We are prompted to make this reference to the matter which we published last week because of the current report that the entire acreage recently given to sugar beets in the Pleasanton district of Alameda county has been leased to a tenant who will immediately take steps to turn the place into one of the largest hop and grain ranches in this district. There may be, of course, some impending change in the existing beet-sugar manufacture which makes the change in crops imperative, but from the simple point of view of the land it is unfortunate to have such fine land revert to the old practice of continuous hay and grain growing, simply because there will be less and less grain and hay from land farmed that way, and one of the best recent things about the Livermore valley has been its diversification of products. Of the area which can be profitably put into hops we have nothing to say, except that it is usually the wrong time to plant hops when prices are high, because everyone else is doing that at the same time and hops naturally go low soon afterward. We are quite sure, however, if the lands which went into beets some years ago had been rationally farmed with suitable rotations, their condition would be better now and possibly the reasons for their radical change of crop at the present time would have been obviated. However that may be, their remanding to grain for another period of skinning will not be desirable, although at first their product of grain will, of course, be at first notably increased by their experience with the beet. But then something should be done for the land—either stock grazing or legume growing should come in before long. Rotations are not sufficiently heeded in California.

Getting Even With Mr. Kipling.

But the foregoing solid chunk of farming wisdom makes us dozy ourselves. We awaken at the thought of what the American people are doing to Mr. Kipling for calling them a people "who by their haste and waste, have so dissipated their own resources that even before national middle age they are driven to seek virgin fields for cheaper food and living." It does not yet appear what they will do ultimately, but we get intimations thereof. A writer for the Ohio Farm and Fireside limbers up a little in this way: "You can be pretty certain about a man's virtues after he is dead; he just naturally had 'em, and it would be a mean person who would raise question about it. I recollect how Rudyard Kipling had pneumonia a number of years ago, and in the days when we were sure he wasn't going to survive, we all wrote pieces about him saying that he was the only poet ever—certainly the onliest since Shakespeare. Well, Rudyard got well, and he hasn't written a respectable piece of poetry since, or a decent bit of economics. He has degenerated into a rank Tory who seems honestly to believe that whatever is wrong is right, and whatever might be made better oughtn't to be." This will certainly do for a starter on the American side of the line. What the Canadians will do with Mr. Kipling for his Toryism depends upon how the election goes this week. Reports at the moment are strongly in favor of the success of the liberals—but we must not rejoice too much, for we are not in favor of reciprocity. We had actually forgotten that for the sake of getting even with Mr. Kipling.

The World's Potatoes.

Speaking again of the cheaper living which Mr. Kipling credits us with such speed for, there are arising some interesting phases of that. They are having some trouble about it in New York, where the people are excited lest prices be higher this winter than last. Prices will be higher, the economic experts say, in some instances above those of last winter; but they add that the man who sets his table with plain, everyday fare, avoiding fancy brands and near-luxuries, may await the approach of cold weather without undue anxiety. It is pointed out that, generally speaking, with the exception of coffee, sugar, potatoes and a few canned vegetables, the present month of September was ushered in with conditions more favorable to the consumer than was the case a year ago. Indications are that the shortage of potatoes is serious, not only in this country, but in Great Britain and Germany. In the fall of last year one could buy good potatoes in the Eastern fields at 55 cents a bushel; today the prices range from 85 cents to more than $1. In California it appears that Mr. George Shima is not such a suffering capitalist as noted last week, for it is now reported from Stockton that he will sell half a million dollars worth from his 4000 acres in the delicacy.

Agricultural Aspect of Moving Pictures.

We are culpable in the conduct of this page, which undertakes to regulate all the affairs of the human race, because we have not said the last word on the drama—neither the legitimate nor the other kind, which takes its name from the first syllable of that word. We are out of patience with this other kind because our Greek taste is offended by the popular demand for pudginess which exalts the type of the piano support instead of the lily stem—but we do not intend to speak anatomically now. We have always been deeply connected with the close connection between agriculture and the drama, which arose in the cart of Thespis and followed along through the festivals of Demeter and of Bacchus—all farming, and not always dry farming either. But we are set at the agricultural aspect of the drama because of the popularity of moving picture shows, which are surely the drama of today, if you count the eyes which look upon them. And the moving picture came straight from modern farming. The first moving pictures were taken on the Stanford ranch at Palo Alto, and came about because the late Senator Stanford desired to see what a horse did

when he trotted and he had money enough to pay for it. Old timers will recall the results. An instantaneous exposure showed a horse in a position which no artist ever drew, and a series of such exposures showed a series of pictures wholly unrecognized by artists. To demonstrate their truth, however, they were kinematted in front of a screen, and surely enough the horse trotted all right when the speed of the pictures was correct. From all this came in time the moving pictures which are now so popular that they are even talking about preaching with them. It is poetic justice that agriculture having given mankind the moving picture is about to collect royalty thereon. Mr. Francis Hope of the California Development Board, who is going through the East to tell the people more about California has an outfit of moving-picture films which he will use to good advantage. It is also interesting that in Europe also moving pictures are to be speeded for industry. It is reported from Berlin that to help the spread of higher education among the masses some of the most eminent men of learning and practical achievement in Germany have volunteered to take part in getting up a great series of moving-picture shows to be given in various cities of the empire. The pictures to be displayed will illustrate a variety of subjects relating to science, art and manufactures and the charm of rural life. Surely the back to the farm movement will be expedited by the display of country scenes and open-air activities. The Stanford trotters have struck a new gait in these remote times.

Phases of the Sulphur Question.

President Taft has officially and in long message approved our recommendation that Dr. Wiley should not be expelled from the service of the United States on a technicality. He is unquestionably right. In the matter of hiring an expert assistant he overstepped a rule, but he did it for the good of the cause. We have no doubt of it. But Mr. Taft puts a Delphic utterance into his message in these words: "The broader issues raised by the investigation, which have a much weightier relation than this one to the general efficiency of the department, may require much more radical action than the question I have considered and decided." The interesting thing about this is that it leaves the factions of pro-and-anti-Wiley just in the same position they were before. The pro-Wileys say that this statement indicates a serious shake-up in the department next winter. The anti-Wileys claim that the President will throw him out on a Jonah-plunge for the good of the department. We do not know anything about it, and probably reflect the attitude of most Californians when we say that they have no issue against Dr. Wiley except his unreasonableness and prejudice on the sulphur question. During President Taft's coming visit to California some effort may be made to impress this view. Last week the Fresno County Chamber of Commerce wired resolutions to President Taft asking that hearing be given to the fruit industry of California on the sulphuring question, urging that the interest at stake was too great to be passed upon without full knowledge. The San Jose commercial organizations hold the same view, for they have jointly sent to President Taft an appeal that he do not settle the sulphuring question until the Remsen board has been heard from, and they urge the views of the local fruit growers, whose interests they say are worthy of consideration, in view of the fact that $11,000,000 worth of fruit was grown in the Santa Clara valley this year. Californians do not love Dr. Wiley less, but they do love the honorable industry which they have built up more. And thus the matter may stand until next winter.

Queries and Replies.

Pruning Roses.

To the Editor: Why do the rose bushes throw out so many strong shoots with numbers of buds all on the top of shoot and great ugly thorns, while no new growth is showing at the tips of the lower branches as is usual? They look like the water sprouts that come out near the ground. When is the proper time to prune?—Amateur, Lordsburg.

Your roses burst out because they have not been systematically pruned to promote a low growth and to secure regular break of new wood from lower points. A neglected rose bush will, if root and soil conditions are favorable, take growth into its own hands and break out almost anywhere, manifesting its joy in escaping restraint by such a rank growth as you describe. You should prune your roses when they are as nearly dormant as possible, during the winter season, cutting out old wood and saving new when it is in the right place, keeping the bushes rather low and reducing the number of branches so that all new shoots shall be vigorous and strong. The bushes should be pruned again about August, so that a new growth of wood for fall blooming shall be encouraged. When roses are regularly pruned in this way twice a year, the amount of pruning will be less and the bushes kept in good shape and the right amount of bearing wood secured with much less effort. The longevity of the bushes is also promoted by this systematic pruning and the size of the flower is increased.

Improving Heavy Soil.

To the Editor: Kindly let me know if beach sand will do adobe or clay soil any good. It gets hard at times and I thought that if I was to put beach sand in the ground the salt in the sand would do the ground harm. If so, what is best for the soil?—Suburban, Sausalito.

It is certainly desirable to mix sand with heavy soil for the purpose of making it lighter—that is, better drained and more friable and therefore improving it for the growth of plants. Sometimes beach sand contains a good deal of salt, which, however, is readily removed by fresh water, and sand hauled and exposed to the rains rapidly loses any excess of salt it may contain. Probably with such an amount of sand as you are likely to use to mix with your adobe, there is not danger at all from salt. Even if such sand should contain considerable salt, if applied at the beginning of the rainy season it would be so quickly distributed as to not constitute a menace to the growth of plants. The worst adobe can be transformed into a most beautiful garden soil by the application of sand and stable manure.

Potato Growing.

To the Editor: I have ten acres of land in Placer county which I propose to put in to potatoes next spring. In a recent issue of Pacific Rural Press I read about the selection of seed potatoes in which it spoke of selecting the most desirable from the healthiest-looking plants, as a whole, but not the best from a plant producing potatoes of different sizes and shapes. But as I must buy my seed potatoes, I will have to take what I can get; therefore such selection rests altogether with the man from whom I buy. I am not a farmer, but bought this land with the resolution to become one. It has been recommended to me to put potatoes in as early as January. It seems to me that January is rather early; however, it is said that this land is in the orange belt and practically free from frost.—Beginner, Oakland.

The suggestions on selection to which you refer in the Pacific Rural Press are, of course, for those who have had some experience in growing potatoes and are saving seed from their own fields for their own use. Whether you can plant potatoes to advantage in January or not depends upon the temperatures which you are likely to meet after that date, also whether the ground is warm enough in January, because there is no advantage in planting in cold ground nor in soil that is too wet at the time. The earliest potatoes, of course, come from planting much earlier than January; usually as soon as the ground is moistened enough in the autumn. The potato will stand some frost, but such planting is, of course, not feasible in places which are under hard freezing. Quite a full description of the growing of potatoes and other vegetables is given in our book on "California Vegetables."

Handling Young Alfalfa.

To the Editor: I have 12 acres of alfalfa, sown last February, that is doing very well for the first year. My soil is sandy loam with light traces of white alkali, although it does not seem to be detrimental to the growth thus far. I am in the dairy business and will have by winter enough manure to top-dress the field. Would it be good policy to use the manure, or would it be more satisfactory to top-dress with gypsum? Would it injure alfalfa to pasture lightly after the last cutting?—Grower, Allensworth.

Presumably your soil contains enough lime, and therefore the application of gypsum at this time of the year would not be necessary. It may be desirable to top-dress with gypsum near the end of the rainy season to stimulate the growth of the plant. Gypsum, however, has no effect upon white alkali. So far as alkali goes, gypsum merely changes black alkali into white, thus making it less corrosive.

There would be no objection to pasturing lightly this fall. Be careful, however, to keep off the stock while the land is wet and not to overstock so as to injure root crowns by tramping. The manure can be used as a top dressing during the rainy season, unless you think it better to save it for the growth of other crops. Alfalfa is so deep rooting where conditions are favorable that it does not require fertilization usually on land which has been used for a long time for grain or other shallow-rooting plants.

Smilax Growing.

To the Editor: I would ask how to cultivate smilax to sell for decorating. Is it as salable as in the past? How low does it grow before it will make vines large enough to cut, if started from seed? Is there a market for the seed and what is it sold for in bulk? I have a few pounds of seed, but can find no market for it. If it is profitable to grow it for decorating, I would be glad to do so.—Beginner, Pasadena.

Smilax plants from February seed sowing should make a good run for cutting in the autumn. It must be grown on strings for ease of handling and convenience in use. It grows well in the shade in most parts of California, or in a lath house, without artificial heat.

Unless you can sell smilax to Los Angeles decorators, there is no encouragement to undertake the commercial growth of the plant. It thrives in nearly all parts of the coast district, and all that can be profitably sold in San Francisco can be grown in sight of the city. We are not sure how fashionable smilax may be at the present moment, but it remains a standard article. It may, however, not be used enough in a district to make a special growth of it very profitable, and this you must ascertain by local inquiry. As for the demand for smilax seed, you can get information concerning the Eastern demand for it by writing to seedsmen advertising in our columns, for they all have dealings in the Eastern trade and can place to advantage what is in demand at a distance.

Winter Gardening in California.

Written for the PACIFIC RURAL PRESS
By Mr. G. H. HOPKINS of Burbank.

How about that winter garden? You who have water should get busy. Many people, especially those who have only recently arrived in our State, do not plan on starting a garden until spring; while the fact is that something can be planted every month in the year. For vegetables one can now plant onion sets, peas, string beans (in some localities), cabbage, cauliflower, celery, rhubarb, and strawberries.

In the flower garden, sow seeds of pansies, sweet peas, and other hardy annuals and perennials.

Garden Peas.—As far as we can learn, the Yorkshire Hero gives the best satisfaction everywhere in California, and if planted now should give a crop before the coldest weather comes on. The American Wonder is planted considerably. It is delicious in flavor, but compared with the Hero its yield is insignificant. However, it matures quicker and if planted at the same time will give quicker returns. The Telephone is also a fine pea, yielding large crops of peas that are sweet and buttery. They require bushing.

Wax Beans.—Of the wax beans, the Ventura Wonder Wax is probably the hardiest, and if planted now in any of the foothill localities will be pretty sure to make a crop. Wax beans delight in frequent stirring of the soil, and this will help to hurry them along to early maturity.

Cabbage and Cauliflower.—The Early Winningstadt is the general favorite among cabbage growers around Los Angeles and is really one of the best for the market garden, as it is one of the best shippers we know of. For the family or home garden we think there is no cabbage that is quite so nice eating as the Early Jersey Wakefield, which is rich and tender. Its small size is the only thing against it as a market cabbage. There are many people who do not care for cauliflower. For varieties try Henderson's Early Snowball and Early Erfurt. Late cauliflower is better planted in the spring. Both cabbage and cauliflower may be sown in a seed bed and transplanted; cabbages in rows 2½ or 3 ft. apart and about 18 inches in the row; cauliflower may be planted about 2½ feet apart.

Rhubarb.—Great changes have been made in rhubarb. Where one used to enjoy it for only a few short weeks in the spring, one can now have pie-plant pie nearly every month in the year by giving it proper attention. If planted now and good-sized roots are used, it will only be a short time before the stalks will be large enough to use. The ground should be plowed deep and well fertilized if not already made rich by former applications. Cultivate and harrow thoroughly until the soil is in prime condition. Plant Burbank's Crimson Winter in rows 4 feet apart and 2½ feet apart in the row. If started before the rains, give them plenty of water and frequent cultivation, and you will be rewarded with an early crop. During early winter and spring when fresh fruit is scarce, rhubarb comes in very nice. For home use, one to two dozen roots will furnish an ordinary family with sufficient supply for the table. In many localities it is a paying crop to raise for market, and after first cost of roots, can be raised cheaply and with little help. All seed stalks should be removed as soon as they appear.

Strawberries.—While many people prefer to wait until the rains come before planting strawberries on account of the expense of irrigating, we figure that it is all right to plant in the fall as early as one can get the plants. Whether for the home garden or for market, the more growth they can get in the fall the better will be the crop the succeeding season. Where planted for market, all blossoms that appear during the fall or winter should be picked off, so that the vine or plant will get the benefit of all the growth. For the home garden, where one wants a few berries, it would be all right to let them make berries, so that if not too cold the table can be supplied with berries at a time when the old home back East is likely to be under a mantle of snow.

New Varieties in Vegetables.—It is not safe to bank on novelties to the exclusion of old and well-known varieties, yet we believe it all right to try some of the new kinds in a small way. There is always more or less pleasure in planting something new, which one can watch and care for. As all know, the unexpected does sometimes happen, and we may get something that will do better in our particular locality than any before tried. Therefore, we are going to try some of the new offerings in vegetables and flowers, and if anything can be learned that is likely to interest RURAL PRESS readers we will make it known.

Roses.—In order to have bloom this fall, roses should be attended to now by spading up the dirt around them and giving them plenty of water. In watering roses one should give them a good soaking and then give them no more for three weeks. They root quite deeply, and watering them as one would flowers will not do. It will be a good idea to give them some fertilizer. Spading in well-rotted cow manure is considered the best. Not having well-rotted manure, spade in a little blood meal. This is a good fertilizer for roses, giving results quickly.

Sweet Peas.—Sweet peas should be planted now. Plant, if possible, in trenches with well-rotted manure in the bottom. Fill up with the surface soil, covering the seed about three inches. There is probably no other place where sweet peas thrive so well as in California. This is, no doubt, the reason why almost all the seed sold is raised here in our State. They require lots of water and it is better to run the water along the plants in furrows rather than to water with a sprinkler. If kept well watered and the flowers picked off so that none will go to seed, one can have a wonderful display of bloom for a long time. Among sweet peas there are three types which are considered the best, namely, the Spencer, the Eckford, and the Unwin type. Of the late introductions in Spencer we will mention a few: Apple Blossom, crimson pink and white shaded; Asta Ohn, blossoms of beautiful mauve and lavender; Beatrice Spencer, white tinted with soft pink and buff on the standard, and each wing having a blotch of bright pink near the base; Captain of the Blues, standard purple, wings blue; Countess Spencer, bright pink; John Ingham, rose carmine; Helen Lewis, standard crimson; and others. Of the Eckfords, we will mention Agnes Eckford, bright rose pink; Earl Cromer, crimson wine color; Henry Eckford, almost pure orange; Queen of Spain, soft pink, suffused salmon; Sybil Eckford, buff and light pink. Among the best of the Unwin type there are Frank Dolby, purplish lavender; Nova Unwin, pure white; Mrs. Alfred Watkins, soft pink; and Phillis Unwin, light magenta rose and carmine. Of all the strains, the Spencer type undoubtedly gives the largest blossom, and is also considerably higher in price than the others. The tall growing sorts need support, so that a trellis should be built for them or the seed planted alongside a fence.

BUILDING UP THE APPLE TREE.

The account which Mr. W. G. Brierly gives the Rural New Yorker of the way the characteristically low-headed and strongly branched tree of the Pacific Coast is built up is not new in method, but the description is clear and may be helpful to some of our newer subscribers who will be planting apples this winter.

The Start.—We find that the one-year whip, and a good, healthy, well-developed one, too, of about four to five feet in height, one-half inch to five-eighths of an inch in diameter six inches from the ground, makes the best start for the tree. Here in the West we want a low head, as it protects the tree from injury by winds and also makes spraying, thinning and picking easier and cheaper, which are important items in the commercial orchard. To get this low head the whip is best pruned back to a point somewhere between 18 and 24 inches from the ground, after the tree is well set. The varying height allows for the selection of enough vigorous buds to insure the formation of enough main or scaffold branches.

The First Pruning.—During the first season the growth is allowed to develop without direction other than what might be termed "weeding" out the weak or otherwise undesirable shoots. In the winter following, this growth is carefully examined in order to select the five to seven most desirable shoots for the development of the "head." These shoots, or young branches, should be spaced well up and down the trunk, the object being not to have them start too near together, as that invariably produces weakness in the head of the tree. To balance the head, these shoots should radiate evenly around the trunk, much as the spokes of a wheel. The uppermost shoot is left as a sort of "leader," although there is no intention to develop a tall tree or a heavy center. The idea of this "leader" is to keep the scaffold spread out, as was said before, to prevent weakness, and to fill the center partly. It is really the development made necessary by the endeavor to produce all that a given area can possibly produce. If the trees are started with the "vase"-shaped head, there is much valuable space in the center which might be producing fruit, so this leader is trained with this idea in mind. It is very necessary, however, to be careful not to get the center too thick, as more harm will result from underdevelopment or undercoloring than the extra bearing area possibly could balance. Also, if too thick, the spraying is more unsatisfactory, and less thoroughly done. On each of these scaffold branches, then, enough buds should be left to insure a proper development of top. The branches should be pruned back severely, though, as the intention is to stimulate wood growth to give strength to the tree. It is well, also, to give a somewhat conical shape to this pruned head, although it is difficult to get this in every tree. The leader is left usually from 12 to 18 inches, and the lower branches or laterals about 10 or 12 inches in length.

Summer Pruning.—During the growing season after this the care is much the same as during the first season as regards the "weeding out" of undesirable shoots. It is during this season, also, that the work known as "summer pruning" should commence, to induce early bearing if the grower wishes his trees to bear early. Personally I do not favor this method in the extreme, except with trees such as the Spitzenberg or Spy, that are usually late bearers; that is, in the West they often do not bear until seven or eight years of age. Most of the other varieties bear at four or five years, anyway, so the summer pruning is not greatly needed.

As the tree grows older the tendency should be to do most of the pruning in the summer and only a little in the winter, as this will prevent the tree from expending energy in developing shoots which are later cut away. In general, the object in so pruning a young tree is to induce thrift, stocky development, a well-shaped, well-balanced head, and to avoid weaknesses that are so common in apple trees.

SCALES ON WALNUT TREES.

The presence of two scale insects in quantity on walnut trees in Contra Costa county has caused preparation for active work against them to be undertaken by County Horticultural Commissioner Frank T. Swett and inspectors. The scales in question are the frosty scale (Eulecanium pruniosum) and the black and white scale (Eulecanium serasorum), although one or two other scales are present in small quantity.

Thus far the walnut blight has been the only walnut pest that has called for active work in walnut orchards, but recently these scales have been increasing with sufficient rapidity in a few places to do an appreciable amount of harm.

Winter sprays have been used effectively against them in one or two instances and will be used again. To facilitate this work a map has been made of all places where these scales have been found on walnut trees in the country in sufficient number to cause alarm, and in each of these places spraying will be done to keep the insects from gaining a good foothold in the county.

In southern California the frosted scale is often found in large quantity, but is usually kept in

control by two parasites, the cocophagus lecani and the tomocera Californica, and no spraying has had to be done.

IMPROVING ALMOND METHODS.

(*Continued From Page 241.*)

Broken Nuts and Culls.—Some of the nuts are broken in hulling and the meats have to be sold alone. The "sticktights" have also to be shelled, but prices for shelled almonds are usually so good that no great loss is sustained by having to handle them. Of the 30-ton crop on the Pierce ranch only about 50 pounds of meat (a very good record) was produced by the huller, while the "sticktights" raised this amount to 500 pounds.

There has been much planting of these trees during the past two years, and most of the nurseries have been sold out, but the lack of labor is so far the greatest problem to be met, since both the quality of the nuts will suffer and the expense of harvesting will be increased if labor cannot be obtained on time. The danger of overproduction is remote, as only in California can nuts be produced successfully, and a tariff does not exclude the importation of several million dollars worth of foreign almonds every year, making this a crop for which a market can be found without danger of surplus nuts and a collapse of prices.

The Almond Exchange.—The Almond Exchange is now the controlling factor in the almond market, about 60 per cent of the growers being members of the associations of which the exchange is composed. The Exchange disposed of a good sized crop last year, has set the price for this year's crop, and claims to have sold half of it.

The Exchange is a co-operative concern, marketing like the regular fruit houses, through brokers in all parts of the country. The members of each association pool their nuts and profits are divided among them, the methods being practically the same as in the California Fruit Growers' Exchange, the difference of marketing almonds and citrus fruits making a slight difference in methods.

Quarterly meetings are held by the Exchange, delegates being sent from the associations, which are in all parts of the State where almonds are extensively grown. At the meetings methods both of marketing and culture are discussed, and experiences passed on by the delegates to the individual members of the associations. As was stated above the question of poles and bleaching were two of the subjects especially considered this year. By this method it is hoped not only to improve the marketing, but also the culture, and thus to raise the whole standard of the industry.

AN OLD DEVICE APPROVED.

A subscriber, Mr. H. W. Jones of Livermore, called at our office today and told us of an ingenious and effective method he adopted for keeping birds from damaging his fruit. Across his orchard he strung wires a little higher than the trees, from which, at intervals of four or five feet, he has strings or light wire about three feet long. at the end of each is tied a piece of flat tin. These are kept in constant motion by the wind. Since this installation Mr. Jones says he has not been troubled with bird pests.

Little Known Semi-Tropicals.

Mr. F. W. Popenoe of Pasadena, as our readers already know from our publication of his writings, is making a most commendable study of semi-tropical fruits in California, and his monographs as appearing in the Journal of Economic Botany of Pomona College will not only help California growers, but give our State new standing in the advanced circles of semi-tropical pomology. He gives close attention not only to culture but to commercial outlook. His latest contribution consists of notes in the Western Empire concerning three plants which are worth better knowing:

An Avocado Experiment.—The United States Department of Agriculture has recently sent to southern California a large number of budded avocados which are to be planted by co-operators in different localities. The shipment consisted of four sets of about eighty trees each, one set going to each of the following localities: San Bernardino, Pasadena, Whittier and Altadena. These trees were propagated at the Department's Subtropical Laboratory at Miami, Florida, and contain the cream of all the Florida varieties, named and unnamed, and also desirable varieties from other parts of the world, including Guatamela, Mexico, Cuba, Hawaii, Bahama islands and Canary islands. All of the standard Florida varieties, Pollock, Trapp, Mitchell, Baldwin, Family, Webster, Blackman and Peacock are included in each set. The purpose of the department in sending out this material is to assist in the development of the avocado industry here by giving a thorough trial to the Florida varieties to determine whether they are suitable for commercial culture in southern California and also to try out types from other localities mentioned.

The Litchi.—The cultivation of the Litchi (Chinese nut) forms an important industry in China. The dried product is familiar to almost every one in California, but it is well to note that the fruit when fresh is quite a different article from the dried "nuts" so common here around the Chinese New Year. All past experiments indicate that the Litchi would be a success in the warmer portions of southern California, and grafted plants have recently been introduced with the idea of making a definite test of the proposition. A few seedlings in different localities have made a very satisfactory growth and a tree of the closely allied Longan at Hollywood has been producing regularly for a number of years. The Litchi cannot be depended upon when grown from seed, and although a number of grafted plants were introduced from China quite a few years ago none of them lived, and the only test of the tree has been supplied by the seedlings. Since the Department of Agriculture has taken the matter up and is propagating grafted trees of the choicest varieties, it is probable that the tree will become established here and a limited but remunerative industry may be developed.

The Feijoa.—For the past few years the Feijoa Sellowiana has been attracting increasing interest as a commercial possibility for all parts of California, and it has now reached the point where small plantations are being made. It is only ten years since this plant was first introduced to California, but the time has been sufficient to prove it admirably adapted to the climatic conditions of nearly all parts of the State, and to demonstrate that the fruit is of such superior quality and value as to warrant its cultivation on an extensive scale.

The feijoa is allied to the gauvas and closely resembles the latter in growth and character. The shrub grows to a six or eight-foot height, or under the most favorable circumstances, to ten or twelve feet, and is so ornamental that it would be well worthy of cultivation if it produced no fruit. The leaves are small and leathery, glossy green above and white beneath. The flowers are very attractive, the long tuft of crimson stamens contrasting brilliantly with the silvery white petals, and forming a very striking combination.

But as closely as the feijoa resembles the guavas in foliage and flowers, it far surpasses any of them in the value of its fruit. There is no doubt that an almost unlimited market could be developed for the fruit, and as it stands shipping perfectly there is no reason why feijoa culture should not play an important part in California horticulture. The fruits ripen in December, another point in their favor, as at this season the markets of the country are shy of almost all other fruits and the demand for feijoas would be great.

Hitherto the feijoa has had no "common" name, but it has now been christened "pineapple guava," and it is expected it will be popularly known under this name in the future. In the land of its nativity the name "guayaba" is applied to it by the inhabitants, this being the same name applied to the guavas. Being so closely allied to the guava it can correctly be called a guava, and the distinctly pineapple flavor of the fruit has suggested that appellation.

THE FLORIDA GREEN ORANGE LAW.

California orange growers in the early districts will proceed with their early marketing and usual method of developing color because they are sure that the fruit will contain the sugar which makes it mature and wholesome. When this is the case the development of color is not objectionable. If, however, there should be treatment of green fruit we may ere long have to come to the handling of it and protection of the consumer against it by some such law as is now in operation in Florida, to wit:

An act to prohibit certain disposition of citrus fruits which are immature or otherwise unfit for consumption, and the misbranding of citrus fruits.

Section 1. That it shall be unlawful for anyone to sell, offer for sale, ship or deliver for shipment any citrus fruits which are immature or otherwise unfit for consumption, and for anyone to receive any such fruits under a contract of sale, or for the purpose of sale, or of offering for sale, or for shipment or delivery for shipment. This section shall not apply to sales or contracts for sales of citrus fruits on the trees under this section; nor shall it apply to common carriers or their agents who are not interested in such fruits and who are merely receiving the same for transportation.

Sec. 2. It shall be unlawful for any one to misbrand any package or any wrapper containing citrus fruits; and all citrus fruits shall be deemed misbranded if the package or the wrapper shall bear any statement, design or device regarding the fruit therein contained which is false or misleading either as to the name, size, quality, or brand of such fruit, or as to the locality in which it was grown.

Sec. 3. Whoever shall violate any of the provisions of this Act shall be punished by a fine not exceeding $1000 or by imprisonment for not more than six months, or by both such fine and imprisonment; and the fruit whether immature or otherwise unfit for consumption, or misbranded, shall be subject to seizure and disposition as in the case of adulterated or misbranded foods and drugs.

HOW ABOUT FLORIDA ORANGES.

Judging by a letter in the Florida Grower, it may be that the producers of that State may take up a campaign of abuse of California fruit with which they come in competition. It is proposed that the public be placarded in this way:

"Florida oranges contain 41% more juice than California navels. The juice contains the only nutriment in the orange. A box of Florida oranges is 15% larger than the standard California box."

"A standard box of California navels weighs about 72 pounds and contains about three gallons of juice. A standard box of Florida oranges weighs about 85 to 100 pounds and contains from 4¾ to 5 gallons of juice."

"Nine Florida oranges are equivalent to about a dozen California oranges."

"A California navel may look prettier, but beauty is only skin deep. For the best flavor and nutriment buy Florida oranges and get 41% more juice and a 15% larger box. The juice is the only nutritive part of the orange. The best way to eat an orange is to drink the juice."

[We do not believe any trade can be permanently built up by knocking competitors. We would like to know what basis of fair and authoritative comparison warrants the statements quoted above. We have never heard of any expert or disinterested test yielding any such results.—EDITOR.]

THE SULPHURING HOUSE DOOR.

An air-tight door for the sulphuring house can be made by nailing a strip of rubber hose around the opening so that the door will just fit when pressed in tight. The door will, of course, have to be smaller than it would be if the hose was not nailed on. Then by closing the door tightly and locking it in place it is practically impossible for more air to get in or the fumes to escape.

Since some air is necessary or the sulphur will not burn, either all cracks in the door cannot be stopped up, or a small opening should be made in the side of the shed with a sliding door that can be used to regulate the amount of air that can come in.

AGRICULTURAL REVIEW.

With the Fruit Men.

One bunch of dates from Yuma recently was picked weighing 112 pounds.

The fig-packing season has started, and driers are said to have difficulty in securing sufficient help.

From 10 acres of peaches near Selma, Fresno county, S. C. Nielson claims to have realized $4890 this year.

A heavy apple yield in the Yucaipa valley, San Bernardino county, is reported by Horticultural Inspector Codd.

According to the Kansas Horticultural Society, the apple, pear, and peach crops are far less than in 1910. Grapes are a little short also.

A sliding scale for dried peaches at 9 cents for immediate delivery, 9½ cents in October and 10 cents in December is said to have been fixed by the North Ontario Fruit Co., which has bought most of the peaches in the San Joaquin valley.

John Scroggs, formerly state gardener, now a nurseryman, states that the greater part of the orders for fruit trees coming to nurserymen of the State are for fruit that can be canned as well as shipped fresh. Bartletts and cling peaches appear to be most in favor.

That doing without pruning is sometimes an aid to peach trees was shown on the ranch of G. J. Harkelroad of River Bend, Kings county, where unpruned trees are loaded with fruit, while neighboring orchards have a very slack crop.

According to a booklet just issued by the Lindsay, Tulare county, Board of Trade, the orange acreage in the vicinity is second only to that of Riverside, there being 12,000 acres in oranges, only 4000 of which are in full bearing and 3500 just beginning to bear.

A new basis of scoring apples is to be adopted at the Apple Show in Watsonville this year. Perfect score will be 1000 points, 600 being given for perfect fruit, 100 each for uniform size and for color, and 200 for pack. For each wormy apple 40 points will be subtracted.

The boys of the Boys and Girls Aid Society of San Francisco who have been picking berries at Sebastopol since June 1, returned to the city September 14, having earned $4650, $3000 of which is above expenses and will be divided among them.

G. P. Rixford, special agent of the U. S. Department of Agriculture, was at Loomis last week aiding in the work of packing and precooling of fresh figs to be shipped to Eastern markets. The shipments were in the nature of experiments to see if figs can be profitably sent East in fresh condition.

The Almond Growers' Exchange reports that deliveries of the Nonpareil, IXL, and Ne Plus varieties are proving shorter than the growers' estimates, and all orders are being received subject to the ability of the Exchange to get the goods. Sales of Drakes and ther cheaper varieties are still being made. The first shipments of the 1911 crop left on the steamer the 16th, and cars are now being shipped also. Reports of smaller prices for almonds in Spain have been found to be incorrect.

According to a report just issued by the State Horticultural Commissioner of Utah, there were 458,366 apple trees planted in the State during the spring of this year, and 212,232 peach trees, 54,765 cherry trees, 30,606 pear trees, 12,059 apricot trees, and 14,101 plum and prune trees. It is estimated that about 10,300 trees of the above varieties were planted in districts from which no report was made. The above planting is less than that of 1910, but greater than that of any other year except 1910. Crops in general are lighter than a year ago, although, with better care, the quality of fruit is superior.

Horticultural Commissioner Beers, of Santa Barbara county, has inspected orchards at Gaviota to see if the Mediterranean fruit-fly could have entered California there on sailing vessels from Hawaii, but could find no trace of the insect. Inspection of all vessels coming from the islands will be made in the future at that point.

Notes on Grapes.

A large number of Tokays are being put in sawdust for winter sale, the fine quality of the fruit promising well for prices.

The smaller amount of sugar in all grapes in the big valley is said to be reducing the size of the raisin crop, the grapes drying smaller than usual.

The shipment of Tokays was cut down for a time recently to allow prices to pick up. It was claimed that the low prices were partly due to the shipment of many unripe grapes.

The committee appointed to decide upon the Nutting plan for a raisin exchange in Fresno, met recently to examine into further data upon the subject, and a final decision regarding the matter is expected soon.

George V. Rude, of the McPherrin ranch northeast of El Centro, Imperial county, is to plant out a large acreage in Persian grapes No. 21 next season. The Persian grapes are proving extremely good in Imperial county, although in the rest of the State the climate has not been satisfactory for their development.

The San Joaquin County Table Grape Growers' Association has filed a complaint with the Interstate Commerce Commission, alleging that there is a discrimination in the rates on table grapes against Lodi in comparison with several other neighboring towns. The charge for the pre-icing of cars is especially complained of.

H. J. Corcoran, grape grower, attorney and retired manager of the California Navigation & Improvement Company, has charged the "independents" and the California Wine Association with conspiring to keep the price of grapes down, and called upon the attorney-general to prosecute them for a combine in restraint of trade.

The difficulty between the independent winemen and the California Wine Association still appears to be as bad as ever, the independent men recently meeting in San Francisco, although the result of their conference has not been made public. It is claimed that the Wine Association is cutting down prices too much both to the grower and buyer, and that the prices are hardly high enough to justify more planting of vineyards. Members of the Association claim that overproduction alone has hurt prices.

General Agriculture.

A heavy frost near Healdsburg has cut down the tomato crop about one-fourth.

Carson Cook, of Stockton, is displaying at his office 12 potatoes from one hill on the Rindge Tract No. 29, weighing 10½ pounds.

The large acreage in the Livermore valley, Alameda county, formerly planted to sugar beets, is to be set out to hops by Antone Goulart.

The California Fruit Canners' Association is attempting to contract for a large acreage near Concord, to supply tomatoes for their cannery at Antioch.

Sugar-beet growers around Huntington Beach and other points in Orange county met recently to form a growers' association for the purpose of securing better prices. Growers in other places are expected to join, and as there are four factories in easy shipping distance, it is thought that this object can be secured if sufficient growers join the association.

George Shima, the Stockton potato grower, is said to be in line to make $500,000 this year from potatoes, while others are expecting to profit similarly.

A new variety of lima bean is to be distributed by the University of California in small quantity this fall. It was developed under the direction of Prof. G. W. Shaw and is said to bear very heavily.

Harvesting has begun in the bean fields of Ventura county, a bumper crop being in prospect with only early rains to fear. The weather has been ideal for harvesting so far and the quality is exceptionally fine.

The benefit of using alfalfa as a cover crop was shown this year at the Chico Plant Introduction Station, where chul wheat raised on alfalfa land produced 88 bushels per acre and other wheats in proportion, while similar land on which no alfalfa had been grown produced less than half as much.

A new weed for this State and one that would prove extremely difficult to control, the "ground burr nut," has been discovered near Dinuba, Tulare county, near freight sheds. It is thought that it will be destroyed before the seed is matured, as this is the first season it has been known, and only a few plants were found.

Driers have been built at the Chino and Santa Ana beet-sugar factories for the purpose of drying the beet pulp which remains after the sugar has been extracted. The pulp has been fed to cattle, although there is often in sugar factories considerable waste through fermentation. The drying of the pulp will prevent this waste and make it possible to keep the pulp for a time without injury. The material will be pressed and sacked and will sell for about $20 per ton.

Miscellaneous.

The pure food Industrial Exposition and Prune Carnival opened last week at San Jose.

Ranchers at Meloland, Imperial county, are endeavoring to secure the new experiment station at that place.

The thirty-first annual session of the Farmers' National Congress will meet in Columbus, Ohio, from October 12 to 16.

Farmers' Institutes were given by the University in San Joaquin county this week at Linden, Manteca, and Escalon.

A meeting of the beemen of Ventura county has been called for the 23rd at Santa Paula to devise methods of fighting the black brood.

Reginald Bland has purchased 108 acres of land in the San Luis Rey valley, near Oceanside, San Diego county, which he will plant to winter rhubarb. Wells are being sunk to supply water for the crop, water also being supplied from land with a water right near by. The present acreage in southern California is said to be but 400 acres, so the present planting should have a considerable effect on the output. J. B. Wagner of Pasadena, is to plant out 20 acres more this year.

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University Farm Short Courses in Agriculture.

Written for the PACIFIC RURAL PRESS by Dr. LEROY ANDERSON, Superintendent.

Agricultural Experiment Stations since their general establishment in 1887 have made many discoveries worth millions of dollars annually to farmers, and accordingly to the prosperity of the whole nation. The discoveries made have reached the farmers through the press, through bulletins issued by the Stations, and through instruction in class rooms and laboratories given directly to students by experimenters. All these means are useful and valuable, but the most lasting impressions are received by those who have met the experimenter in his own laboratory and on his own ground. It was formerly thought that the student in school or college must be a young person, but Farmers Short Courses have proven that any one may be a student, no matter what the age. At the University Farm at Davis last year, we had some as young as 18, some as young as 70. Enthusiasm and interest did not wane with gray hairs, nor did youth excel middle and old age in eagerness for knowledge nor in power of absorption.

The Short Courses at Davis this year promise to be more attractive and instructive than in 1910, and fully as well attended. One new course, especially for the dairy farmer, has been added and is for two weeks beginning Monday, October 16. It will treat of all the phases of work that the dairy farmer comes in contact with, from raising feed to selecting cows feeding and milking them, operating the separator, and handling and testing the milk and cream.

The farmer who uses water should begin his short-course work on October 2, when one week is devoted to irrigation practice, especially relating to use of levels, staking out fields, measuring water and preparing the land for irrigation. This is followed by a week of study on forage crops and grasses, cereals, soils and fertilization. Professor Wickson lectures daily during this week, the only time he will be able to attend the courses.

Breeds of live stock, other than dairy cattle, are studied during the two weeks beginning October 30. Beef cattle, sheep, swine, horses and mules are discussed as to market types, breed, feeding, care and handling. The student spends some four hours daily scoring and judging the different classes of stock and in studying methods of treating common diseases and usual injuries.

Beginning the same date, October 30, the fruit and vine growers come in for two weeks of study and practice in their chosen line. Cultural methods, including cover crops, irrigation, fertilizers, spraying, budding and grafting receive much attention. Protection against fungus and bacterial diseases and against all manner of insects form a large part of the lectures and field practice. Twenty acres of vineyard and fifteen of orchard planted during the past three years, besides nurseries and propagation beds, furnish a valuable degree of field study.

Poultry men and women have unusual facilities for learning poultry keeping from the ground up or for catching on to many new wrinkles. In a course beginning October 2, the student warms the incubator and gives it daily attention until the chicks are hatched. Then the thrice daily duty is to feed and care for them in the brooder until the term ends. There are different varieties of incubators, brooders and houses, so the student enjoys a wide observation. This six weeks student is on the ground to indulge fully in a two week's course of lectures and demonstrations beginning October 16. These days are packed full of work on breeds and breeding, feeding, judging, incubating and brooding, poultry insects, diseases and other tnings.

Women's work will occupy the attention of all concerned therein for one week beginning October 9. Discussions and lectures will be given on planning the rural house, its arrangement and sanitation, including septic tanks, mosquitos and flies, sanitary milk supply and the like. About half the time is to be devoted to practical work in sewing—probably a course in making shirt waists.

The butter and cheese maker has a course of seven weeks which begins October 2. His course is primarily for those who are engaged in making butter or cheese, or working in a milk depot. It is the manufacturing end of the dairy business as distinguished from the producing end, which is treated in the dairy farming short course. The University Farm creamery is an up-to-date plant, making 300 to 400 pounds daily of high-grade pasteurized butter, and is therefore splendidly equipped to give the best instruction to buttermakers. Its cheesemaking apparatus is of the newest types and the cheese thus far made has been of excellent quality. There ought to be more cheese made in California.



University Farm Sheep Barn.



University Farm Creamery and Stock Pavilion.



Veterinary Building, University Farm.



Horse Barn, University Farm.



University Dairy Barn and Concrete Silo.

All these short courses are open to any man or woman, young or old, who is not over 70 years of age. They are practically free—a fee of only $1 a week being charged, except that the creamery course fee is $10. Board and room are obtained in Davis at $1 per day or less. The railroads give a round trip rate to Davis of one and one-third fare during the short courses. Any one going for a few days or a week has the privilege of these rates by asking any agent where ticket is purchased for a receipt certificate.

Don't forget the dates of the courses:

Rural Education Conference—Saturday, October 14.

General Agriculture—Two weeks, October 2 to 13.

Dairy Manufactures—Seven weeks, October 2 to November 18.

Household Economics—One week, October 9 to 13.

Poultry Husbandry.—Incubation and care of chicks, six weeks, October 2 to November 10; lectures and demonstrations, two weeks, October 16 to 28.

Dairy Farming—Two weeks, October 16 to 28.

Animal Industry and Veterinary

(*Continued on Page 259.*)

MELILOTUS CLOVER

THE FAVORITE COVER CROP

This most wonderful of nitrogen gathering plants possesses also the advantage of a deep root system which brings up the potash and phosphorus in dense soils. As a producer of humus and nitrogen for orchards it has no superior. Alkali land is made rich and productive with a few crops of Melilotus clover.

Planting season is near and the prices on our splendid fresh, re-cleaned seed will be attractive to you. Send for our booklet on Melilotus clover, entitled "The Great Cover Crop."

We carry full stocks of all other cover crop seed—Vetch, Burr Clover, Fenugreek, Peas, Beans, etc. Write for prices and further information.

"FARMOGERM" is a practical culture of nitrogen gathering bacteria which is easily applied and will increase a cover crop fifty to two hundred per cent. Our booklet on this subject is intensely interesting. Write Dept. O for a free copy.

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Our finely illustrated booklet, "Citrus Fruits," covering the industry from the seed to the market, mailed to any address on receipt of 25c in stamps.

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HAVE YOU ALFALFA SEED?

Send for free leaflet describing our process of

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20 years experience enables us to furnish the **best absolutely**.
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CORNER MISSION STREET AND LOS ROBLES AVE., SOUTH PASADENA, CAL.

Gas—Steam—Electricity.

Written for the PACIFIC RURAL PRESS by Mr. C. R. SESSIONS of San Francisco.

What power shall be used to run the pump which lifts the water up into the irrigating ditches? That is the question. Sometimes one power is clearly the best, and at other times the advantage in favor of any one power is so small that practically there is no choice.

Just as the relative value of several fractions is not apparent until they have been reduced to a common denominator, just so will the merit of these different powers be clearly seen only when they have been measured by a common standard—total cost of a horse-power for one hour. To attempt to arrive at a comparison through a consideration of gen eralities is idle and valueless. Such a comparison is usually advanced by some prejudiced interest and has resulted in many a heated and futile discussion, ending in unpleasantness.

COST OF A HORSE-POWER.—The total cost of a horse-power for one hour (horse-power hour, for short) includes beside the cost of the fuel or electric current, the cost of attendance, supplies, repairs, interest on the investment, depreciation, taxes, and insurance. The cost of fuel, attendance, supplies and repairs is sometimes called operating expense and the remaining items are called fixed charges. The main point is that the cost of fuel is not the only cost. In some instances the cost of fuel and wages is of the least importance and the fixed charges govern the selection of the power and the machinery. Independence is another item to be considered. It is hard to estimate in dollars and cents and it means more to some people than it does to others.

THE QUESTION OF FUEL.—The cost of the fuel is different in different localities and varies, of course, with the market. In the case of a steam engine this cost depends upon such factors as the size and type of boilers and engines, and the price of fuel oil per barrel, coal per ton, or wood per cord. It is hard to give any hard and fast rule by which this cost can be figured, but the following data will help to give a general idea of it. For steaming purposes one barrel of California crude oil is roughly equal to one-quarter of a ton of bituminous coal, or one-half of a cord of pine wood. In a 100 horse-power plant having good boilers and a compound condensing high-speed engine, about 165 horse-power hours can be developed with one barrel of oil. With a single non-condensing engine only about 115 horse-power hours would be developed. With oil at $1 a barrel the fuel cost for the condensing plant is about six-tenths of a cent per horse-power hour and about nine-tenths of a cent for the non-condensing plant. The cost of freight, hauling and handling must be added to the cost of the fuel. This varies between wide limits, but in any concrete case can be accurately figured. Steam must be raised to start with, and kept up when the engine is not running. This is called the "stand-by" expense, and must be figured in with the cost of the fuel. In plants where the engine is not running continuously this expense is important.

Distillate is sold in steel drums holding about 100 gallons, and costs 6½ cents per gallon f. o. b. San Francisco. In carload lots of thirty or more drums or in tanks of 10,000 gallons or more this price is reduced to 6 cents. A full drum weighs about 8½ pounds to the gallon. The drums and distillate take a third-class freight rate with a charge of 15% of the rate for the return of the empty drums. This return freight on the drums, which is a small amount, is in some parts of the country where competition is strong, paid by the oil company. To this cost must be added the expense of hauling and handling. Some of the smaller refineries market what they call a No. 2 distillate, which is cheaper but dirty and of varying composition. It is sold locally. When distillate is spoken of generally, engine distillate, or what was formerly known as No. 1 distillate, is meant. This is the distillate of commerce. Stove distillate, a still lower and cheaper grade, is used in some special engines. This is a by-product, and both the supply and price are uncertain. A gas engine will develop one effective horse-power for one hour with a consumption of one-eighth to one-tenth of a gallon of engine distillate. With the distillate at 8 cents a gallon, a horse-power hour will cost less than one cent.

Electricity is sold for so much a kilowatt per hour, determined by a meter reading on the power company's side of transformers. A kilowatt—a thousand watts—or a K. W. for short, is equal to one and one-third horse-power, very nearly. There is a loss in the transformers and the motor, so that a K. W. is equal to about one and one-seventh of an effective horse-power. The rate depends upon the amount of current used and the locality, varying from one to three and four cents per K. W. hour. At two cents per K. W. a horse-power hour will cost about one and three-quarter cents. Electricity is sometimes sold on what is called a flat rate—so much for a horse-power for a

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Neglected properties put on paying basis. Management for absent owners, or put in shape to sell. Acquainted with real and personal property values, soils, etc. Surveys and subdivisions.

month or year whether the power is used or not. Such a rate gives a power company an opportunity to market a surplus of power during part of the year and save the cost of meters, accounting, etc. It is fixed by guessing at what the customer will probably use, and is a good thing for both parties.

ATTENDANCE.—The cost of attendance is the cost of the time of the man who attends to the engine—the wages of the engineer. This is least on a large plant and most on a steam plant operated intermittently. If the plant is run all year or the engineer can be kept busy by having something else to do during the slack months, then a good man can be hired who will work for moderate wages, because he has a steady job. A man picked up for a few months each year must be paid more, and, because he is not familiar with the plant, time and fuel are wasted before he can get down to business. An experienced man should be hired to run a steam plant, because a boiler is a dangerous thing if neglected, and the high first cost of machinery makes it necessary that it be taken care of properly. An owner usually has no choice in this matter, because government regulations and the demands of the insurance people make this imperative.

A gas engine needs less attention than the steam plant, and the motor least of all. Some one has said that a child can run a gas engine, and someone else has said that all that is necessary to run a motor is to throw in the switch. It has been said that the moon is made of green cheese, and also that there are bags of gold hanging on the ends of the rainbow. Revolving parts must be watched and all machinery should be given attention, and the man who does not do this is taking a long chance—"monkeying with the buzz-saw." A gas engine must be lubricated and the bearings kept up so that there is no knocking. Cooling water must cool and the igniters must be clean. A motor must be kept clean and dry and be oiled and some one should be around to throw in the switch when the power comes back on the line or the circuit breaker has been tripped. Serious accidents should not happen to a well built gas engine. About the worst that can happen is that it will stop. In the beginning the gas engine was not understood, and the stories that are heard of its being "contrary and pesky" are told of the old engines, which like the first automobiles were sworn at by the men who tried to run them and laughed at by the people who looked on. The new engines, which are honestly built by a manufacturer who can make enough money to stay in business so that you can get spare parts, are reliable and a good investment.

A farmer can run his motor himself. Sometimes he runs his gas engine. If he runs his steam plant his time is pretty well taken up and he can do little else. With a little supervision a boy that you would pay two to three dollars a day to will take good care of a gas engine plant. A man to run a steam plant might get four dollars a day or more. On a 100 horse-power gas engine plant running ten hours a day the cost of attendance is about one-third of a cent for a horse-power hour, and for a 40 horse-power steam plant running the same number of hours a day this cost is about one cent per horse-power hour.

(To Be Continued.)

ANSWERS BY MR. SESSIONS.

To the Editor: Can you tell me if a centrifugal pump would be satisfactory in a pit 50 feet deep? SUBSCRIBER.

Dos Palos.

A vertical centrifugal pump will be satisfactory. It may be driven by a motor directly connected to the shaft at the surface of the ground or by a quarter turn belt from a motor, gas engine or steam engine.

To the Editor: If a pump and an engine will draw and discharge 60 gallons of water per minute from a well 80 ft. deep, how much per minute should it pump from a depth of 12 feet? SUBSCRIBER.

Oakland.

If this is a centrifugal pump and if 60 gallons per minute is its normal capacity, then it will pump very little more under a 12-foot head. If the pump is of the piston type, because more power will be available at the lower head, then the pump may be run faster and a little more water pumped. In either case the size of the pump limits the quantity of water pumped.

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WE will mail you a package of FLOWER SEEDS containing a dozen or more old-fashioned hardy Annuals, such as PHLOX, POPPIES, CANDYTUFT, MARIGOLD, COSMOS, MIGNONETTE, Etc.

You can sow this package of choice seeds in out-of-the-way corners of the garden, in odd beds around young trees or on embankments and with little cultivation you will have a mass of gorgeous and continuous blooms, sweetly fragrant, all through summer, till killed by frost.

This package will be sent to any address for 10c. in stamps or coin. Write Dept. B

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For over a decade the leading seedmen on the Pacific Coast.

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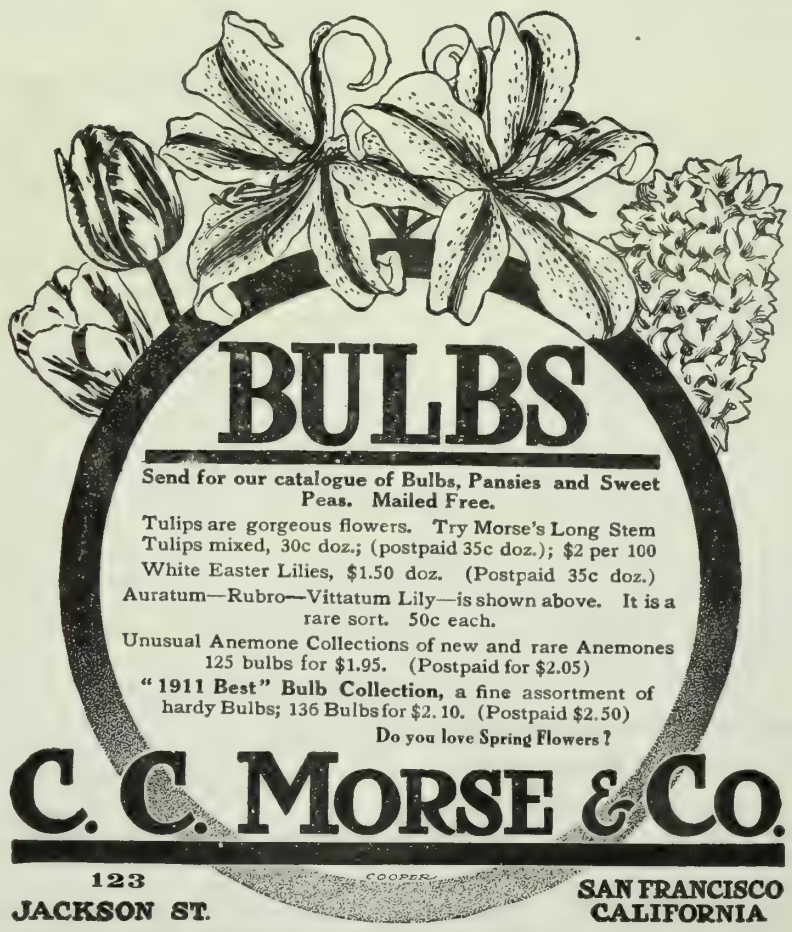
It is well worth your while to verify this statement, and when in doubt as to the Sodium Chloride content of a Cyanide, have a reputable chemist furnish you an analysis. It may prove a good investment.

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By capable young man, position as manager or foreman on fruit ranch. References. Address, Box 61, R. F. D., Aptos, Cal.

LAND OWNERS needing a superintendent or agriculturist will be put in communication with a competent and hustling man by addressing this office. Address Box 49, Pacific Rural Press.

WANTED—Man, 25 to 40, to take partner, gardening, caretaking, vegetable and poultry enterprise on private place; must be sober, earnest and ablebodied; year's employment. Address, HOMOHR, 2527 Channing Way, Berkeley.

Can make things grow and show you results; a thoroughly theoretical and practical farm superintendent desires a position where he can show his worth in commercial profits to his employer; salary no object; best U. of Cal. recommendations. Box 22, Pacific Rural Press.

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Air-slacked lime; gypsum-manure in car lots. Special terms for an early reply. Dept. A, 733 Merchants' Exchange, San Francisco.

TRACTION ENGINE MEN, ATTENTION! For sale, two 10-disc Spalding-Robbins disc plows with 26-inch discs which will cut 14 feet wide and from 3 to 10 inches deep. Most perfect traction engine plow made. Plowing hard dry land is where this plow excels all others. Address, "Plow," 62 Post St. (Room 232), San Francisco.

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Sacramento Valley land; best and cheapest land in the market today; excellent for hogs, alfalfa, dairying, fruits, vegetables; irrigated and sub-irrigated; no failure of crops. W. H. Meyers, 755 Phelan Bldg., San Francisco.

$1000. About 20 acres suitable for fruits, dairy and poultry, ½ mile from Nevada City, Cal. Excellent local market. Good 5-room house and buildings. Ideal climate, fine scenery. Plenty of wood. Water for irrigation. A comfortable home that will make you a good living. A bargain. Address, Owner, care Pacific Rural Press, San Francisco.

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Best dairy ranch in Glenn county; 200 acres of black sandy loam, 80 acres of it is sub-irrigated. This tract is green all year round; it grows fine potatoes and corn without irrigation, which can be seen growing on the ranch now. Receipts for milk from 15 cows averaged $180 per month. There are two large barns for the stock and hay, large house and many other smaller buildings, and fine shade trees on the ranch. This ranch is only two and a half miles from Hamilton Sugar Factory, where there is good market for milk and other farm products. I am not able to handle this ranch on account of other business, therefore I will sell it at very low price. Above is subject to sale or withdrawal from market. Write or call on W. J. BULIN, Hamilton City, Cal.

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PRUNES AT SIX CENTS.

A complete verification of the prune crop estimate of the PACIFIC RURAL PRESS is being given since drying began and the price has gone up accordingly. Many sales have been made at a 6-cent basis, with 8 cents being offered for 30-40's. Some sales of orchard run are said to have been made at 6¼ and 6½ cents for crops of no better than average quality.

These prices are of course due largely to the heavy shrinkage and the partial failure of the European crop, but one of the main reasons is that some packers have sold in the expectation of a large crop and are short as many prunes as they can well hope to obtain. Most of the crop is out of the growers' hands now and there may hardly be enough to make up the deficiency with which the packers are met. It is stated that offers of 1 and 2 cents are being made by the packers to customer to cancel contracts, and still higher prices to the grower are hoped for by some persons as a result. At all events prices for large sizes promise well on account of the heavy shrinkage that has been experienced.

Since drying has commenced the packers' estimates have fallen from about 200,000,000 pounds to 120,000,000 and 130,000,000 pounds. In the Santa Clara valley, where the estimate of this paper was about 70,000,000 pounds, only about 65,000,000 is expected. These figures may have to be changed, of course, when all returns are in for the year.

SAN JOAQUIN COUNTY FAIR.

At Stockton last week the agricultural wealth of the delta district of San Joaquin county was on display and many thousands of visitors attested their appreciation. In the big tent in Court House Square was quartered the products grown in the county, besides the merchants' offerings. Lodi easily led the other districts in effectiveness and beauty of its display, which consisted in part of a monster arch in Mission style, decorated with Tokay and other varieties of grapes. To gain some conception of the size of the arch, it is only necessary to say that five tons of grapes were used in its decoration. As was to be expected, the farm products shown were very fine specimens, consisting of fruits of all kinds, vegetables of every variety and cereals and grasses of every class grown in the State.

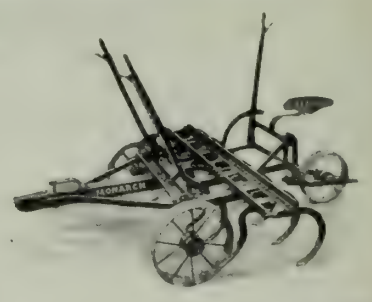
In the second tent was assembled the stock, and while the number of exhibits was not large, yet the quality was A-1. A lot of fine horses of various breeds made a good showing. Locke of Lockeford and J. A. Thorpe each had good Jersey cattle there. A. M. Henry of Farmington, the Locust Grove Farm of Ripon, and a firm from Modesto, each had splendid exhibits of animated pork.

In the poultry department the interest was well sustained through the week. William A. French was the efficient superintendent in charge and he was on hand at all times looking after the comfort of the birds and ready to impart information. In this department there were 27 exhibitors, all from the country, comprising 290 fowls, embracing chickens, ducks, geese. The way Mr. French handled the work was a delight to the exhibitors and visitors. San Joaquin did well at its first county fair.

The consular reports state that the opening price of Muscat raisins at Denia, Spain, is expected to be $4.50 per hundredweight, ungraded but packed for shipment.

According to a recent consular report, the Grecian currant crop is estimated at 250,000,000 Venetian pounds (1.05 avoirdupois pounds), as compared with 370,000,000 pounds in 1910-11.

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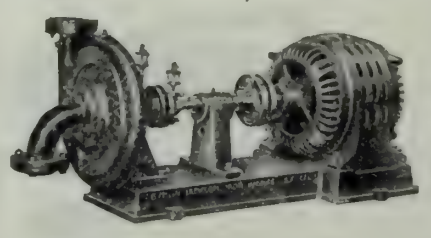
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Private Baths

Conveniently situated for wholesale and shopping districts.

RATES: 50 Cents to $1.50 Per Night.

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Hard to Beat

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Use of Hog Cholera Serum.

The demonstration of the application of the anti-hog cholera serum before the veterinarians attending the quarterly meeting of the State Veterinarian Association marked the opening of the distribution of the serum, as provided by the State legislature.

The demonstration before the veterinaries was required owing to the difficulty of appplying the serum properly, except by skilled operators, or after thorough instruction as to the finer points of the method, as it has been found that much damage can be done by unskilled handling of the serum.

Complete directions may be secured by application to the Agriculture Experiment Station of the University of California at Berkeley, and the reasons for applying and the methods for use are as follows:

The serum is not a cure but a preventative of the disease, and is to be used as a rule only to protect healthy hogs in a herd where the disease has broken out, or where there is danger of exposure to it. The serum is furnished at a cost price to any hog raiser in the State whose hogs are in danger, the cost at present being 50 cents to $1.75 a dose, according to the size of the hog. This price will probably be reduced about 20% later when a large amount of serum is produced. Small amounts are to be furnished free to bona-fide hog raisers of the State.

When the owner applies the serum it is necessary to purchase a syringe which at cost price will be $4 to $6, and some disinfectant, while there will be no necessity of purchasing a syringe if a veterinary is employed, the veterinary fee and cost of serum being all the expense.

METHODS.—There are two methods of application, one with serum alone and the second with serum and cholera virus, the latter being permitted only in the hands of licensed veterinarians on acount of the danger of spreading the disease. The first protects for a few months, while the second is claimed to give lifelong protection.

The cost of application may be expected to prevent the use of the serum except when cholera is in the vicinity, when the saving that will result from its use will more than repay one for the trouble and expense of applying it.

The serum was discovered through investigations by the U. S. Department of Agriculture lasting over a series of years and has been employed in the East for about three years with results that show a saving in hogs exposed to disease of 85% to 95%.

The serum is obtained by making a hog immune to the disease, and after his immunity has been proved injecting some virulent blood into him. The hog is then in a condition when his blood prevents the development of the cholera; some blood is drawn from him and the serum extracted from it. This serum is expected to confer a part of the same immunity it contains upon the hogs into which it is injected.

APPLYING THE SERUM.—As soon as a rancher's hogs are in danger it is hoped that he will apply for the serum, and he can either have the application blanks on hand or send for them to the University. The application must be made on regular blanks in order that the amount of serum to be sent and other necessary information known.

It is also required that the applicant report results of treatment and the course of the disease in his hogs once a week for a month after. As previously stated it is necessary to send for a syringe with the serum if a suitable one is not on hand or a veterinary not engaged to make the test. As full information can be given upon paper regarding the test will be sent with the serum if requested, two recent circulars dealing with this trouble.

When cholera exists in the district, but the serum is not to be used, the preventative measures that are recommended are as complete cleanliness as can be obtained with hogs and any methods that will improve their general health and vitality.

This condition powder is recommended by the University, to be given once a day in the food at the rate of a large teaspoonful to each 200 pounds weight of hog: Wood charcoal, 1 lb., sulphur, 1 lb., common salt, 2 lb., bi-carbonate of soda, 2 lb., cryposulphite of soda, 2 lb., sulphate of soda, 1 lb., and sulphide of antimony, 1 lb. This is, however, no substitute for the serum, which should be used whenever cholera appears in the herd or immediate vicinity.

The State Veterinarian and County Veterinarians or live stock inspectors should always be notified of the presence of the disease and will do what is possible to check the disease and prevent its spread. These officials will also have on hand application blanks. In urgent cases the serum will be sent without any formal application blank being filled out, provided the applicant give his name, address and the number and total weight of his hogs.

DIAGNOSING THE COMPLAINT.—That the rancher occasionally has difficulty in properly diagnosing the cholera when it appears is shown by the following inquiry which came recently:

"I would like to have you tell me through your valuable paper what is the trouble with my hogs, and what to do for them. They first have a hacking cough and fall off in flesh, eyes water and become gummed and sometimes the eyelids will stick together, have good appetites all the time, but dwindle away and get thinner all the time. Some of them seem to be crazy, not knowing which way to go and when trying to get to the feed will stagger and fall down and roll over many times before getting to the trough to eat.

"It seems contagious. Young pigs get it more than old ones. Kindly answer by next issue and oblige."

The symptons are typical of the chronic form of cholera and the disease was so diagnosed by Dr. C. A. Pyle of the San Francisco Veterinary College, to whom all veterinary questions are submitted, and the advice given similar to that stated above.

PRESIDENT GOODING TO PRESIDENT TAFT.

"As president of the National Wool Growers' Association I most earnestly protest against the ill-advised La Follette measure as passed by the Senate. Any tariff legislation on the wool schedule previous to the report of the tariff board is dangerous to the advancement of a great principle that you have inaugurated for the adjustment of tariff legislation and would delay what should be a great principle of government in this country for many years. There can be no better evidence of the need of a tariff board than the hasty and ill-advised measure just passed by the Senate. The wool growers have not had an opportunity to present their case to the American people. We have been waiting with confidence for the report of the tariff board and have assisted in every way the work of this board, believing that their report would be accepted by the American people and bring about permanent settlement so much needed to give stability and prosperity to all industries. I appeal to you, Mr. President, in the name of the nearly one million wool growers of the country, who earnestly pray that you will allow no measure affecting the wool industry to become a law until all the facts as to the cost of production of wool and cloth have been submitted to Congress." [This protest was addressed to President Taft before he vetoed the bill which called forth the protest.—EDITOR.]

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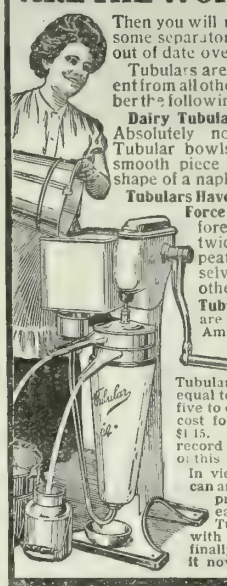
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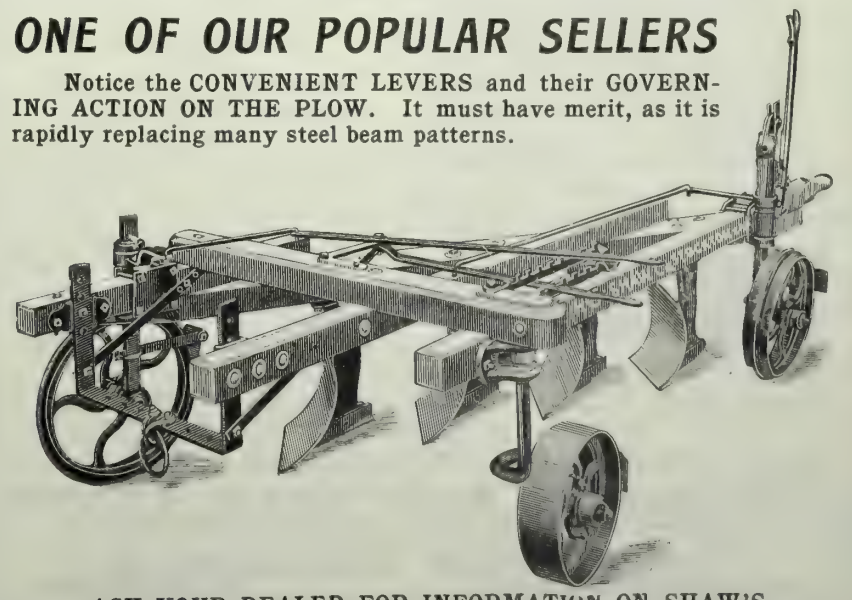
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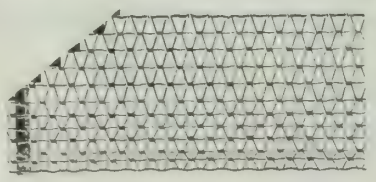
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The Commercial Advantage of the Control of Tuberculosis in Dairy Herds.

By Professor C. M. HARING, D.V.M., of the University of California.

(Concluded From Page 231 of Last Issue.)

THE ECONOMIC IMPORTANCE OF TUBERCULOSIS IN DAIRIES PRODUCING MARKET MILK.—The fourth class of dairy is the one supplying market milk to the larger cities and towns. The distinguishing characteristic which causes me to put these dairies in a separate class, is the fact that in California few calves are raised in the average dairy of this type. They are kept up by the purchase of fresh cows. This purchase of cows, combined with the manner in which the cows are handled is favorable to the introduction and spread of tuberculosis. Since these dairies depend upon the three classes previously mentioned, for their cows, they have to take what they can get. I have reason to believe that they frequently buy animals known to be tuberculous. Their loss from tuberculosis, however, is not as great as would be expected, because the animals are turned over for beef before advanced clinical symptoms develop. Let me illustrate a condition which exists. In 1907, I had occasion to test fifty cows at a large dairy in South San Francisco. These fifty cows were selected from a herd of over four hundred by an experienced buyer, his purpose being to obtain cows which would pass the test. None of the animals were apparently diseased, all being in good flesh. Of the fifty selected, forty-one reacted to the test. The buyer for this dairy told me that they did not keep their cows on the average longer than two calvings. They found it more practicable to dispose of them for beef in two or three years instead of keeping them longer and running the risk of their breaking down. The herd was constantly renewed by the purchase of fresh cows.

WOULD STATE CONTROL OF TUBERCULOSIS PAY IN A COMMERCIAL WAY?—Would it pay in a commercial way to eradicate bovine tuberculosis? Dr. Melvin says it would. He estimates the annual loss, but fails to show how to proceed with the eradication or to estimate the cost. He says that the eradication of bovine tuberculosis is largely a public health measure, and that it is only reasonable that the State should compensate at least in part, the persons whose cattle are slaughtered. The International Commission on tuberculosis dodges the question in the following words:

"It was felt, in view of the prevalence of the disease, especially in some localities and among certain classes of cattle, the difficulty of providing a sufficient number of trained officials, and the large economic questions involved, to say nothing of the enormous expenditure, it would be unwise, for the present, at least, to seriously discuss a policy of universal compulsory testing and slaughter. Such a policy might, perhaps, be adopted with advantage by a small community, or in one in which the disease existed to a very limited extent, but speaking generally, especially in view of past experiences in this line, it was thought better to omit it entirely from the recommendations of the commission.

"The great dairy industry ignores conditions as much as possible, and a majority of its dairymen by word and act indicate that they do not believe it would pay them individually to make the attempt to eradicate tuberculosis."

The reason for the indifference of the dairymen to the prevalence and dangers of bovine tuberculosis has been very concisely explained in a recent address by Dr. Henry B. Favill, as follows:

"What farmers are shown is the mass of cattle, most of them in apparent health, which react to tuberculin, and they see if they follow them to slaughter, a majority of cases in which the disease is apparently insignificant and sometimes quite absent.

"Let us draw a parallel in human affairs. Suppose very few people ever died of consumption, but were carried off by some other process before their disease was very evident. Suppose, in addition to that, all people were subjected to tuberculin test, and it were found, as it would be, that somewnere from 60 to 90% reacted at some time or other in life, and that of these, a large percentage yet recovered; would it not be infinitely difficut in the absence of death from the disease, to impress the public with its gravity?"

Physicians veterinarians, and a portion of the general public are coming to believe that milk supply free from tuberculosis would pay. They base their belief, not on the value of cows, but on the value of human lives. When the dairyman fails to recognize the dangers of milk from tuberculous cows, and the sanitarian fails to recognize the property rights of the dairyman, a clash results. These clashes have been frequent for the past thirty years, and, in most instances, the dairymen have eventually won out.

The leading scientific authorities on the subject of bovine tuberculosis fail to suggest a practical scheme for the control of bovine tuberculosis through legislation. It has been truly said that you cannot legislate bovine tuberculosis out of existence. Attempts to eradicate tuburculosis by State and National legislation and official inspection have utterly failed. At the present time, according to M. H. Reynolds, in his "Bovine Tuberculosis Legislation" (Proceedings of the American Medical Association, 1910), twenty-five States have legal provision for tuberculin test of dairy and breeding cattle imported, but very few of these are making an attempt to control tuberculosis among their own cattle. The tendency in legislation, both in our own States and in Europe, is to avoid compulsory testing.

EDUCATION AS A FACTOR IN TUBERCULOSIS CONTROL.—Experience has shown that, in order to avoid friction and failure, legislation with reference to tuberculosis must be prepared with due consideration for the condition of public sentiment, which is influenced by information on the subject. Educational measures must precede and be a part of any public measure against the disease.

In Denmark and Wisconsin, according to reports, educational measures, combined with State aid, have succeeded in holding the disease in check, and in some counties in Wisconsin, the disease has been utterly eradicated. In Wisconsin the dairymen have been educated up to the point of accepting legislation which prohibits the sale of cattle for breeding or milking purposes, unless they are proven free from tuberculosis by the tuberculin test. Education of the consumer regarding the dangers from bovine tuberculosis is of as much importance as the education of the dairyman.

The patrons of the dairies producing "certified milk" and "inspected milk," pay an additional price which defrays the cost of production. The only schemes for obtaining a milk supply free from the

germs of tuberculosis which, in a general way, are succeeding at present, are the certified and inspected milk systems. The production of certified milk and inspected milk is based upon good commercial principles. The purchaser pays the extra cost. Education is the means by which the purchaser is induced to pay the extra cost.

When the medical profession finally agrees that milk from tuberculosis cows is dangerous, and doctors are able to convince the public that their opinion is well founded the problem will be easily solved. The solution of the problem will come about through the commercial inducements of the dairymen. The dairyman with the clean herd will have the advantage. With the present condition of apathy on the part of the general public, it is impossible to accomplish much, because there is little commercial advantage to the dairyman in having a clean herd. What incentive is offered to the owner of a dairy herd that is free from disease, to keep it so, when he must meet in competition the products of the diseased herds?

How, under present conditions, can the average dairyman purchase cows that he knows to be free from tuberculosis?

One of the great obstacles to tuberculosis eradication measures is the lack of "tested" cows with which to supply the defficiency brought about by the enforcement of the tuberculin test. The education of the consumer to pay the extra price for clean milk from healthy cows, is answering the first question. Wise legislation and State aid to the dairyman, will answer the second.

STATE AID TO DAIRYMEN FOR THE PURPOSE OF CONTROLLING TUBERCULOSIS.—The idea of public aid for dairymen who desire to eradicate tuberculosis is being looked on with increasing favor. Several States aid dairymen by providing for the free tuberculin testing of dairy herds upon application. I believe California could profitably do more than this. Instead of reimbursing in part for loss of animals condemned, as many States do, would it not be better to aid the dairymen in securing tested cattle to take their place? Instead of throwing away money in a useless attempt to clean up or clean out badly infected dairies, why not use the public funds to aid and encourage the dairyman who wants to maintain a clean dairy free from tuberculosis?

In attempts to eradicate tuberculosis from badly infected dairies, the authorities will always have the opposition of the owner. On the other hand, State aid to build up dairy herds that are free from tuberculosis would be sure to have the support of the dairymen concerned. In the past the incentive for combating the disease has usually come from the health officers, and, so far as the profits of the dairyman have been concerned, the cure has been worse than the disease. The destructive course in dealing with bovine tuberculosis in the past, has not only failed to make headway against the spread of the disease, but has caused great commercial losses to dairymen by the destruction of a multitude of cows, including numerous choice pure-breds, whose potential value as breeding animals would have had a lasting influence for good in agriculture.

Why not try a policy of conservation? Millions are legally spent by the government in bounties for beet sugar factories, on the plea that it encourages an important industry and cheapens our food supply. Money has been appropriated to distribute anti-hog serum free to hog raisers for similar reasons. Why would not State aid in eradicating tuberculosis by means of free tuberculin testing, assistance and protection in purchasing tested cows, and free veterinary assistance to dairymen who desire to eradicate tuberculosis by the Bang and Ostertag system be even more justifiable? Aid from the public funds for this purpose would be justifiable because of the encouragement that it would give to stock raising and dairying, the improvement it would produce in an important part of the food supply of the people, and, most important of all, the good it would do in the conservation of human health and life.

LIVE STOCK NOTES.

Owing to the number of fires occurring recently on ranges in lower Alameda county, the Stockmen's Protective Association is taking steps to prohibit any hunting on land owned by stockmen, either in or out of the Association, during the dry season.

Seven mules and two horses were recently killed under orders from the State Veterinarian's office at Downieville, owing to their being attacked by glanders. Cases in other parts of the State are occasionally found, but the disease is much less prevalent than it was before the law ordering the destruction of glandered horses went into effect.

W. F. Stanley of Fort Bidwell, Modoc county, has sold the mohair from 900 Angora goats at 36 cents a pound. The goats averaged nearly $1.25 each, including both does and kids. The shearing was done with machines.

H. V. Traynham of College City, Colusa county, has secured 17 head of thoroughbred Hampshire sheep to head his flocks. The animals were secured from the Four Oaks Stock Company of Woodland.

Clarence Nissen of Woodland has shipped 50 head of his Spanish Merino bucks to Red Bluff to be added to his range flocks. The flocks will be moved to the Yolo county range after shearing.

Peter Saxe & Sons of San Francisco will ship to Guatamala by the next steamer a splendidly mated pair of black carriage horses.

DAIRY NOTES.

William Clark of Petrolia, Humboldt county, has received a number of blooded dairy calves to add to his herd. He has been exhibiting them at the fair held last week at Ferndale.

The Central Creamery and other city creameries receiving cream from country dairies in different parts of the State have appealed to the Interstate Commerce Commission to have the express and freight rates on cream reduced, alleging that they are too high. In case the rates are reduced the benefits will go largely to the producer, since the price paid is usually a price delivered, although it will permit the city creameries to buy more cream and benefit them in their competition with the country creameries.

Heavy shipments of dairy cattle are being made into Imperial valley, from Saturday to Monday recently eight cars being delivered at Holtville.

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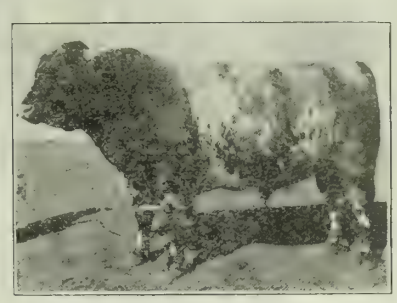


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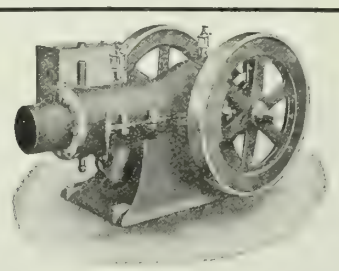
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FRENCH MERINOS IN CALIFORNIA.

California was breeding and distributing French Merino sheep 20 years before they attracted much attention in other parts of the country, and California is doing the same thing now that they are popular all over the western half of the country. Why this breed has gained such favor is told in this way in the Shepherd's Journal by the well known ovine writer, Mr. Roscot M. Wood: The beginning of a new era was in 1893, and disastrous as was that year to the American sheepmen yet it brought to his attention the "elephantine" mutton Merino, the Ram bouillet. For at this time likewise was the development of the mutton market greatly accelerated, and with the low prices for wool in those times it really seemed as if the product of sheep was all mutton instead of wool, as it had been for a short time before. It was natural for sheepmen then to want mutton, and some found the English mutton breeds the best way to secure the desired results. Some located under peculiarly favorable climatic or market conditions, developed their breeding along such lines, notably the early-lamb raisers of Idaho.

But the great majority of sheepmen who run their bands under general range conditions, and especially in the Northwest, where sheep were fast displacing cattle, required a sheep that produced wool as well as mutton; for the wool was needed for the protection of the sheep as well as a source of income, while the mutton factor must needs be regarded, for now that was become the end of all sheep. Then in connection with the raising of sheep on the range came another great factor which precluded the average man running sheep of the mutton breeds, and that was the necessity of a preponderance of Merino blood in the ewe bands to maintain the herding qualities, the ease of handling and the ability to thrive and do well in large numbers, and the adaptability to changing conditions of feed and climate. These are characteristics which are peculiarly inherent to a Merino sheep and have been bred and intensified for centuries.

The rangeman must have Merino blood in his flocks. The Rambouillet is a pure bred Merino, with all the essential merino characteristics. He produces a good fleece of fine wool of good staple, and at the same time grows a good carcass of mutton. For the rangeman who replenishes his ewe flock from the increase and still is not so situated as to run a wether band, the wether lambs bring nearly if not fully as much as do lambs from mutton rams, while the ewe lambs are far more valuable. Many Eastern farmers prefer these Rambouillet lambs for feeders, as they make economical gains and feed well and very evenly as a flock.

So firmly has the Rambouillet intrenched himself as the sheep for the range that the Federal Government in its work at the Wyoming Experiment station of attempting to develop an ideal range sheep recognized him as such by using the best rams of the breed as the basis of their work.

As long as the United States produces sheep under conditions at all approaching those now existing, the Rambouillet is sure to maintain his pre-eminent position as a general purpose sheep and a profit producer.

COW PEAS AND ALFALFA.

Mr. C. A. Colemore, of the Trumbull Seed Co., tells the Pacific Dairy Review what he recently saw at the University Farm. Among the forage crops now being experimented with were several varieties of cow peas, which at the present time are but little planted in California, with the exception of the black-eye bean, which is by no means the most noble exponent of this type. In point of tonnage this variety is far exceeded by the Wonderful, Whip-poor-will, New Era and Red Ripper. The writer has seen plants of these varieties exceeding twenty feet in length.

Another very interesting exhibit was a field of Arabian alfalfa which appears to be much superior to the ordinary alfalfa now generally planted. The plant is much taller, more sturdy, and while at first glance the thick stems might appear to be woody, a closer examination will reveal the fact that they are quite succulent and tender. Being a more thrifty grower than ordinary alfalfa the Arabian variety will yield greater tonnage per acre and is commended by the University authorities for more extended trial throughout the State.

WHITEWASH SHOULD FLOW WELL.

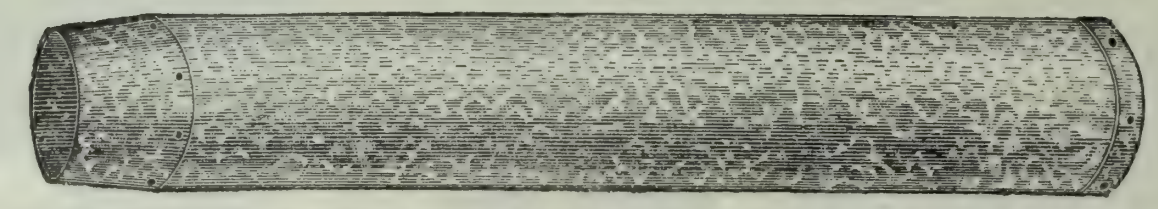
To the Editor: Would you mind telling us if in using whitewash, the wash should be used as the formula leaves it, or if it should be thinned at all? The writer has had the idea that whitewash is sometimes used too thick the same as paint. Is this your experience?

LEONARD COATES NURSERY CO.,
Morganhill.

It surely should be thinned to flow well. The water in the recipe is not intended to be a fixed quantity but enough to bring ingredients into proper relation.—Editor]

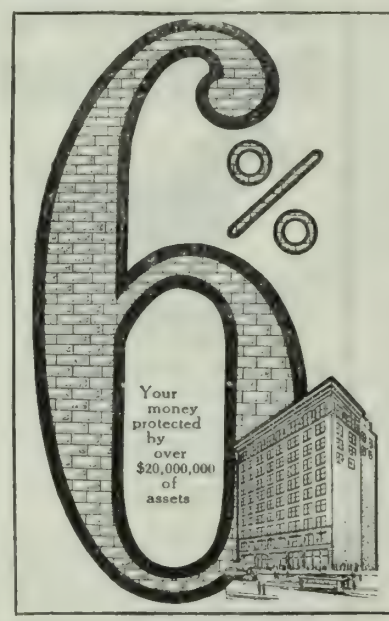
Work began recently on the dam across the Stanislaus river, from which water to irrigate 70,000 acres in the South San Joaquin irrigation district will be secured. The dam is to be built of concrete and will be 75 feet high. It will have a capacity of 134,000 acre feet.

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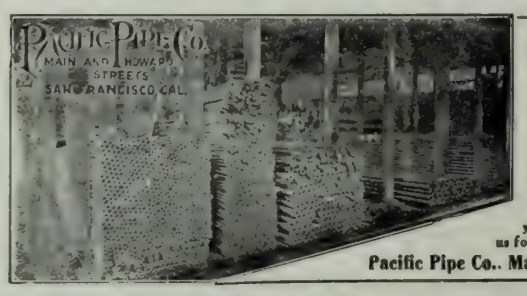


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POULTRY DEPARTMENT.

Conducted By M. RUSSELL JAMES.

THE INTELLIGENCE OF FOWLS.

The domestic hen is credited with little or no brains. To this lack in the "upper story" is ascribed her complete domestication, which has allowed her to be used and put upon by man, a degradation to which more brainy birds do not submit. But is this the correct view? Rather, has she not shown true philosophy in making the best of what she could not help? For having more avoirdupois and less wing than most other birds, she was more sought after and less able to escape captivity, and so did the next best thing—made herself at home with her captors and necessary to them.



Reasoning Over the Operation of the Norman Feeder.

The truth is that fowls, along with other animals, have more sense than their keepers are aware of. Human egotism claims reason as man's exclusive possession and allows only instinct to the lower animal; and mankind considers other creatures as mere things without soul or sense and almost without feeling, and created especially for his use—and his abuse, too often. But persons of keener and more sympathetic insight know that even a fowl is curiously like a human in possessing individuality and many other mind faculties.

Thus in a hatch of chicks raised to maturity one may see all the diversities of character found in a school of children. The brave, the cowardly, the domineering, the timid, the amiable, the ill-natured, the graceful, the ungainly—all may be seen in just a hatch of chickens. This is what makes poultry breeding or any other productive work so interesting to the true student of nature, the intelligent worker, while to another it is mere drudgery. All work, even the highest professions, is drudgery, unless we bring to it intelligence, insight, liking.

DO FOWLS REASON?

One of the most interesting things we have found in trying out the Norwich automatic feeder in our poultry yards is proof that fowls do reason from effect to cause, if not from cause to effect. The bar suspended from the feed-box must be moved in order to bring down the grain, and is consequently filled with corn to get the fowls to peck at it; but our fowls have never seemed to notice this, or if they did just at first, they paid no attention to it afterward; for instead of pecking at the bar they catch it over the top with the curve of the beak and pull it, just as we would do. A fowl will give it a quick pull then run to pick up the grain. If the motion has not been strong enough to bring any grain, the fowl will turn back half impatiently and give a harder pull, very like a person would do. When the dropped grain is eaten, the same fowl or another, if it happens to be nearer, goes and gives the bar another pull, the others waiting for it to do so. Also, they are careful to have the bar broadside to them, never trying to pull it from the end. It is a clear case of reasoning back to the cause of the grain dropping and the best way to work it, and proves wonderfully interesting to onlookers. Here again we see the difference in individual fowls. A few "catch on" at once, some are much slower, and others do not learn at all, but watch for the smarter ones to do the trick, when they are "Johnnie on the spot" to pick up the downfall.

In one of the breeding pens is a very officious cock that makes a great showing of finding tidbits for his hens, calling so loudly that the whole country may know what a smart and gallant cock he is When the feeder was put into his pen he was the first to catch on to the trick of working it, and it was highly amusing to see him twang the bar, then back away with a grand flourish and call loudly for his hens, saying in effect: "I have provided the feast; come on, ladies, help yourselves." As soon as they cleaned up the grain, he would step up and give another pull at the bar. Some people may call that instinct, but we call it reason.

SIMPLE AND ECONOMICAL.

In this connection it may be said, in answer to an inquiry as to the practical value of the feeder mentioned, that we find it a simple and economical solution of the problem of furnishing grain and exercise to yarded fowls and at the same time cutting out hangers-on and also eliminating the danger of filth and mildew from the litter or scratching material. Practical poultrymen know that for best results fowls should always have access to hard grain which may be obtained only by effort. Heretofore, no feed hopper on the market has met this requirement, the feed in such being too easily obtained and also wasted by the fowls, and not being fully protected from dust and dampness, sparrows, mice, etc. In the Norwich automatic feeder the grain is held in a tight galvanized vessel, and by a device as simple as it is ingenious only a few kernels may be released at a time. This, however, can be regulated to let down either a few kernels or quite a shower. By keeping the ground or floor directly around the feeder clean, the fowls get their food perfectly clean and dry at all times. To supply more exercise requires but a small amount of straw or litter for the grain to drop upon.

So far the sparrows have not learned to operate the feeder, but, like the Japanese with the Government fortifications, they are studying it.

OUR WILD GRASSES.

In our rainy season when the grasses grow rank and lush and cover the mountains, the foothills and the valleys, and even the isles of the sea, with greenness, all grasses look alike and all look good. And all are good at that season; tender and appetizing for cattle and poultry to pasture on, and refreshing and agreeable for ourselves to look upon and walk upon and roll upon. But later—ah, then there's a difference in grasses we find—then come the prickers and stickers which work through our clothing into our tender flesh like vicious live things and think nothing of putting out the eye of a fowl. For a fact, there are more species of grasses on this coast which develop vicious tendencies than we ever before met with. There are broncho grass, cat-tails and others—oh, lots of others—and all are tipped with spears and javelins; but we are not writing a scientific article on the grasses of this coast and their vicious tendencies; we simply mention these things by the way in our joy at finding one species of wild grasses that is good from start to finish. That is the wild rye grass which springs up everywhere with a little encouragement and will go far toward choking out its vicious relatives aling with vicious weeds.

The accompanying cut is from a photo which we took of a patch of this wild rye grass in the corner of the garden that had never been cultivated or irrigated. It had headed but was still green and tender when the picture was taken, though it had been weeks since the rains ceased.



An Uncultivated and Unirrigated Patch of Wild Rye Grass.

Cattle, bird, fowl, everything, along with ourselves, delight in this grass. Green or dry, stock or seed, all goes and all is good. It is an all-around good grass for farmer and poultry raiser, and all should take pains to cultivate it in place of the vicious grasses and weeds that spring up about the premises.

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The Home Circle.

Come, Little Chap.

Come, little chap, to this shoulder of mine,
Come with your smiles and singing;
List to a lullaby tender, divine,
Where the dream-shadows are winging.
Come, little fellow, and let me enfold you;
Come to arms that are longing to hold you;
Put your wee hands in my own, while you stray
Into dreamland that calls you away.

Come little chap, with the drooping brown eyes,
Nidding and nodding and binking;
Tell me of what, in the far-away skies,
Just at this moment you're thinking.
Is it of wee little fairies that love you?
Or of bright stars that are gleaming above you?
Tell me, you toddler from Wide Awake land,
What are your pleasures in Nodaway strand?

Come little chap, let us gallop away
Into the dusk and the gloaming;
Out where the Sand Men and dream faces stay;
Out where the elf-men are roaming.
Come, little fellow, so tired and sleepy,
List to a cradle song, soothing and creepy.
Close you brown eyes while the dream-whistles blow
Lullabys tender and hushabys low.

—E. A. Brininstool.

The World Hates a Quitter.

So long as you won't acknowledge it, you haven't failed. Suppose one thing has gone wrong—make something else go right. This is such a busy world that we haven't time to recall unimportant things, and if you don't keep reminding us, we'll forget all about the incident.

But if you walk around with the badge of despair in your face and reference to the past in your talk, how can we help remembering? Your greatest trouble is egotism. You overestimate your status in the scheme of life. You imagine that your misfortunes are just as fresh in every one else's thoughts, but if you want the truth, we don't know that you are living except when you force us to realize that you are alive.

The fact that all creation has made up its mind that you are done for doesn't settle your fate one jot. You are the only man who can decide. The world does not condemn you when you fail, trying, so long as you don't fail, crying. It does hate a quitter.

A prize fight is not a pretty thing, but it is a man's lesson. No matter how many knockdowns a pugilist gets, he has not lost so long as he is not knocked out. If you want to see how your fellows judge you, watch them hiss the man who throws up the sponge while he had a chance.

We all fail, even those of us whose careers have seemed to be unbroken successes, but we kept the secret tightly locked in our own bosoms and managed to laugh to the world until we had it laughing with us instead of at us.—Sidney Arnold.

A Hard Job.

A man who was on trial for murder bribed an Irishman on the jury, for $100, to work for a verdict of manslaughter. The verdict was so returned. At the first opportunity the prisoner thanked the jury and asked:

"Well, Pat, did you have a very hard time of it?"

"Shure an' Oi did thot," replied Pat; "the other eleven wanted to acquit yez."

How One Mother Pleased Her Boy.

A mother with an only son to whom she was devoted planned this party for a surprise. The guests were the members of his baseball nine, and they were invited to luncheon at 12 prompt. Places were found at the table by the position the boy held on the team and cards were fans with simply the word "pitcher," "catcher," etc., on them. For menu cards there were booklets of the team's colors which read "official score." There were nine courses or "innings." I give them entire, but the eatables were not on the cards given the boys, and guessing what came next broke up any stiffness that there might have been. The favors were tickets to a big game which the boy's father provided as his share of the treat, and a doting aunt had a tin horn for each tied with long streamers of the nine's colors. The mother said afterward that she never gave a party with such enthusiastic guests, who relieved her afterward of all responsibility for their entertainment.

The menu for the baseball luncheon was as follows:

FIRST INNING.
First strike.....(Oyster cocktail)
SECOND INNING.
Where the losing team lands.....(Soup)
THIRD INNING.
Caught on the fly.....(Small trout with diamonds of crisp toast)
FOURTH INNING.
A sacrifice. (Lamb chops with potato balls)
FIFTH INNING.
A "fowl ball"..(Chicken croquettes with French peas)
SIXTH INNING.
The umpire when we lose..(Lobster salad and cheese straws)
SEVENTH INNING.
A fine diamond...(Ice cream in diamond shape slices. Cakes)
EIGHTH INNING.
Necessary for good playing...(Preserved ginger with wafers and coffee)
NINTH INNING.
Everybody scores...(Passing the favors)

—St. Paul Pioneer Press.

The Farm Breakfast.

Fruit and berries should form a part of every farm breakfast, and be served fresh in season. A generous dish of sliced, ripe tomatoes is beautiful and healthful.

Ripe cantaloupe with sugar and cream is delicious. It may be cut in narrow strips from end to end of the fruit, pared and sliced or chopped into coarse, irregular pieces without mashing, heaped in an ornamental dish, sprinkled with white sugar and covered with cream. Serve tomatoes with potatoes, and cantaloupe or berries with cream with rolls.

It requires care and forethought to have the early breakfast a success, but any extra trouble is really worth while.

Above all, do not think that because you live on a farm and the breakfast is served at 5:30 or 6 in the morning that a soiled cloth or none at all, and a haphazard arrangement of dishes and food is excusable. Far from it! Some things are excusable—elaborately prepared food and fancy dishes and dressing may be lacking, and should be, but extreme neatness and dainty arrangement—never.—Gertrude Lambert.

If a woman wants to save herself washing and ironing, there are innumerable ways of managing it without going dirty. Silk shirt-waists for wear under jackets, instead of thin white ones, thin silk jackets made of discarded waists to protect the best waists under jackets, and many other things, save on the laundry work. Black petticoats that shed the dust instead of white ones, bloomers for the little folks to save the clean undergarments, straight curtains instead of ruffled ones, linen instead of cotton dish towels, and hosts of other devices might be mentioned, but the bright woman will think many of them out for herself once she gets started. One thing should never be done to economize work, and that is the substitution of the red table cloth for the white one, or the white oil cloth. There is no excuse for this, as it does not save time or labor, and it does work havoc with the table manners and self-respect of the entire family. Stick to the white cloth through thick and thin, and believe me there are plenty of ways for saving washing and ironing that will give you time for plenty of clean garments and a dainty table, and bring you joy and satisfaction besides, without discarding the daintiness of the place around which your family gathers three times each day.—Exchange.

An Interesting Game.

Pass the little pocket note tablets representing slates, if these can be obtained without too much trouble in the neighborhood one lives in, or if not obtainable substitute cards. On one side of the slate or card is written the following list of jumbled terms, the reverse side being intended for the answers. The guests are asked to find in each jumbled term some word appropriate to a school entertainment.

1, Ltesa; 2, Oskob; 3, Sapm; 4, Secilnp; 5, Hclak; 6, yhprgeaog; 7, Bdaockrlba; 8, Appre; 9, Lstaa; 10, Oypcsoobk; 11, Kedss; 12, Mpeslxae.

Ten minutes are allowed for disentangling these hidden terms, the prize for the best list prepared in that time being a pretty inkstand of the unspillable order. Each guest also receives his little slate tablet to be cleansed and used as a souvenir.

The answers to the puzzled terms, by the way, may help out the future entertainer who adopts this idea for her party. They are: 1, Slate; 2, Books; 3, Maps; 4, Pencils; 5, Chalk; 6, geography; 7, Blackboard; 8, Paper; 9, Atlas; 10, Copybook; 11, Desks; 12, Examples.

A Sure Test.

On a pleasant Sunday afternoon an old German and his youngest son were seated in the village inn. The father had partaken liberally of the home-brewed beer, and was warning his son against the evils of intemperance. "Never drink too much, my son. A gentleman stops when he has enough. To be drunk is a disgrace."

"Yes, father; but how can I tell when I have enough or am drunk?"

The old man pointed with his finger. "Do you see those two men sitting in the corner? If you could see four men there, you would be drunk."

The boy looked long and earnestly. "Yes, father, but—but—there is only one man in that corner."—Lippincott's.

Plants Received by Mail.

Plants that have been received by mail should be plunged in tepid water for 20 minutes; then pot in fresh, suitable earth, being careful to afford good drainage, and water thoroughly. In potting, it is important to press the soil in firmly about the roots. Shade for a few days and keep in a place well protected from wind. Roses and other plants designed for bedding should be immersed in water, then planted, firming the soil well, watering and protecting from sun and rain till the plants become established.

Lay up treasures in good books, and keep them where you can use them. Read some good thing every night before you go to bed, and you will soon have a mind stored with good and wholesome thoughts that will rob old age of all its terrors. No one is ever alone who knows good books.

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OUR YOUNG FOLKS' DEPARTMENT.

Conducted By M. Russell James

Roasted Potatoes.

Ah, you should taste them when roasted!
(Chestnuts are not half so good.)
And you would find that I've boasted
Less than I should.
To make the meal for Sunday noon;
And if ever you eat one, let me beg
You to manage it just as you would an egg;
Take a pat of butter, a silver spoon,
And wrap your napkin round the shell—
Have you seen a humming-bird probe the bell
Of white-liped morning-glory?
Well, that's the rest of the story!

—J. G. Holland.

Poultry Course for Young Folks.

DESCRIPTION OF BREEDS.

Class VIII—French.—This class is made up of four breeds—Houdans, Crevcoeurs, La Fleche, Faverolles. The fowls of these breeds are of medium size and exceptionally good as table fowls, the French people having always given more attention to market poultry than has any other nation.

The Houdans.—This is the most popular and profitable of the French breeds of fowl, being excellent alike for egg-production and table purposes. The Houdans are hardy fowls and prolific layers of large white eggs, while their full-meated breasts, small bones and fine-grained flesh place them among the best of table fowls. Like the Leghorn, they are active and sprightly and non-sitters. In color they are black and white with the black predominating, one white-tipped feather to every three solid black ones. They have a beard as well as a crest that nearly hides the face; their shanks and toes are smooth and pinkish-white shaded by lead color; they have five toes like the Dorkings, and the accepted theory is that they were originally produced by a cross of the Dorking and Polish. For more than two hundred years they have been the leading market fowl of France, their name being derived from a town in that county. Their fine utility qualities are established traits produced by the careful poultry breeders of France, but the honor of producing their beauty points belongs to American fanciers. Fifty years ago when first introduced into America, the Houdan was a fowl with a small topknot, a large strawberry comb, and speckled in three colors—black, white and straw color. The pure-bred Houdan of today as seen in our show rooms is a beautiful bird with a large crest falling backward over the neck, a small V-shaped comb, and flowing plumage of black and white with exact and uniform markings. The standard weight is 7 pounds for cock and 6 for hen.

Nature's Wonderful Ways.

The most interesting point in studying the habits of plants and animals is the wonderful way in which Nature has made everything contribute to the use of something else. In thousands of cunning ways she has made her creatures work for each other willy-nilly.

THE SMYRNA FIG.

Our country imports four million pounds of these figs each year; yet portions of California, Arizona and Texas are just suited to their production. For a good many years the horticulturists of California had been trying without success to produce this delicious fruit. The trees grew and flourished, but the fruit would not set. And why? The development and perfection of this tropical fruit depend upon a small insect with a long name—the blastophagas. It was Prof. Swingle of the Agricultural Department at Washington who succeeded in introducing this insect in these Smyrna orchards, and now our State bids fair to raise figs as fine as those grown in the Turkish province of Smryna. In writing of the work of our government in introducing these tropical fruits into the great Southwest, F. G. Carpenter has this to say of the blastophagas:

"I wonder if you have ever heard of the blastophagas. It is a little insect like a wasp, only much smaller. Its chief job in life is carrying the pollen from the male fig tree to the female fig tree and thereby fertilizing the fruit. Without it is fertilized with this pollen the fruit will not remain on the tree and is of no commercial value. Now, the blastophagas is like the boll weevil in that it will feed upon but one crop. The boll weevil will eat nothing but cotton. The blastophagas can live on nothing but the Smyrna fig; it can be born only in the caprifig, which is the male variety of the Smyrna fig, and the figs of the male tree are seemingly good for nothing else but to serve as a breeding ground for this insect. The blossoms of both the male and female fig tree is the shape of a bell with a narrow mouth. The inside of this bell-like blossom is covered with minute flowers. Now in the male blossom these inside flowers are so short that when the wasp deposits its eggs they reach the fruit and soon hatch therein and crawl forth as wasps like their mother. If one of these caprifigs is cut open before it is ripe it will be seen to be full of grains like seeds. These grains are minute galls, each of which contains a fig insect. When the insects are ready to bite their way out of the galls the mouth of the caprifig opens and a ring of male flowers situated below it begin to shed pollen abundantly. As the insects crawl out they get coated with this pollen and carry it to the female flowers which line the blossoms on the female tree. These minute flowers are longer than those on the male tree. They are so long that when the wasp deposits its eggs in them the eggs do not reach the fruit, but dry up and die. However, the wasps scatter the pollen with which they are coated over the blossoms, thus fertilizing the fruit. The work of laying eggs on the female trees is a deception which Nature practises upon the wasps; but it works all right, for there are enough eggs hatched from those laid on the male tree to perpetuate the race of wasps and supply pollen carriers for the figs of the future."

The Boy Scouts.

The origin and aim of this juvenile organization are not generally known. One sees mention of the Boy Scouts in papers occasionally and perhaps meets the boys in neat uniform in the city streets or in the woods and fields, and considers it merely an outing affair for those boys who can afford it, with pleasure as its sole aim. This is a misconception. Pleasure does indeed enter largely into it, but as a result rather than an aim.

THE AIM OF THE ORGANIZATION.

To promote the ability in boys to do things for themselves and for others is the chief aim of the Boy Scouts. Summed up in the word "scoutcraft," the method consists of first aid to the injured, life-saving, signaling, cycling, seamanship, campcraft, woodcraft, nature study, chivalry, patriotism. While the object is all toward peace and not military, the fine military virtues of discipline, obedience, neatness and order are inculcated, and endurance, self-reliance, self-control and an effort to help others are prime objectives of scoutcraft. As much as possible the boys live out-of-doors, camping, hiking and learning lessons of woods and fields.

THE SCOUT LAW.

A scout's honor is to be trusted on penalty of relinquishing his scout badge. He must be loyal to his parents and leaders, helpful and friendly to brother scouts, courteous and polite to all, especially to women and children, old age, invalids, cripples; kind to animals, and he must be obedient and cheerful in the performance of duty; thrifty and saving, but he must not take any rewards for being helpful. Money for scout expenses should be earned by the scouts themselves.

THE SCOUT'S PLEDGE.

"On my honor I promise that I will do my best,

"1. To do my duty to God and my country;

"2. To help other people at all times;

"3. To obey the Scout law."

The Boy Scout movement was started in England under the organization of the founder, General Sir Robert Baden-Powell. In America the movement has been organized by representatives of such organizations as the Boys' Clubs, Y. M. C. A., Public Schools' Athletic League, Sunday Schools, social settlements, Young Men's Catholic Association, and others. The Boy Scouts of America enroll approximately half a million boys.

"I regard conversation as a gift," remarked the studious woman.

"It usually is," replied Miss Cayenne. "If people had to pay for it there would be much less of it."

Whiniver anybody offers to give ye sometin' f'r nawthin' or somethin' f'r less thin it's worth, or more f'r somethin thin it's worth, don't take any chances—yell f'r a polisman.—Mr. Dooley.

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from the East to

CALIFORNIA

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SAN FRANCISCO, CALIFORNIA

THE MARKETS.

(Unless otherwise noted, quotations represent prices paid to the growers.)

San Francisco, Sept. 20, 1911.

Cereals.

WHEAT.

A further advance is noted in white Australian, though all other prices remain as before in the local market. Local milling interests are buying freely, both here and in the North. Oregon country markets are weaker, causing a slower movement at Northern trading centers.

California Club	$1.45	@1.50
Sonora	Nominal	
White Australian	1.60	@1.65
Northern Club		1.50
Northern Bluestem	1.65	@1.70
Northern Red	1.60	@1.65

BARLEY.

Prices show no change, but the market is fairly firm, with considerable trading at outside points. The local demand for feed is also very fair, and some barley is being exported. The greatest movement at present, however, is to the East.

Brewing and Shipping	$1.62½	@1.67½
Choice Feed, per ctl	1.55	@1.60
Common Feed	1.45	@1.50

OATS.

The movement has quieted down somewhat, as offerings are comparatively light. There is a good demand for seed grades, however, and with about the usual inquiry for feed the market is in a strong position.

Red Feed	$1.65	@1.75
Gray		1.65
White	1.62½	@1.65
Black	1.70	@1.75
Red Seed	1.75	@2.00

CORN.

There is little feature to the market, local demand being light, while spot offerings are limited. Prices are steadily maintained.

Cal. Small Yellow	$1.75	@1.80
Eastern Yellow		1.70
Eastern White		1.70

RYE.

Remains dull and largely nominal, with very little desirable grain to be had.

Rye, per ctl	$1.55	@1.65

BEANS.

Offerings of new crop white and bayo beans are slowly increasing, and a few new blackeyes have appeared in the market, but the new goods are not yet moving to any great extent. The market is still unsettled, as indicated by numerous sharp changes in price, and the general tendency is downward, as plenty of new stock will be coming out in the next few weeks, and in the face of a rather large crop in most lines there is no very strong demand. Buyers are still inclined to limit their operations to immediate needs until values become more definitely established, and there is enough old stock to satisfy most pressing requirements. Offerings of new blackeyes have already been sufficient to cause a sharp decline, and pink beans also are much lower than for some time past. Limas have been marked down about 25c., as the consuming demand has not yet revived to any great extent, and considerable new stock is about ready for shipment. According to local dealers, still lower prices may be expected in most lines. Garvanzos, however, are a little higher.

Bayos, per ctl	$3.75	@4.00
Blackeyes	4.00	@4.25
Cranberry Beans	3.60	@3.80
Garvanzos	3.00	@3.50
Horse Beans	2.50	@2.75
Small Whites	3.75	@3.85
Large Whites	3.60	@3.75
Limas	5.25	@5.35
Pea		4.25
Pink	4.25	@4.35
Red Kidneys	5.75	@5.85

SEEDS.

A little alfalfa is coming in, but there has not yet been enough demand to establish very definite values. Quite a large movement is expected, however, within the next month or two. Offerings of dried peas are very light, and are held at extreme prices, which buyers are not willing to pay. Other descriptions are quoted as before, but there is little trading.

Alfalfa		17½c
Broomcorn Seed, per ton		$25.00
Brown Mustard, per lb		5½c
Canary	4	@ 4½c
Hemp	4	@ 4½c
Millet	3	@ 3½c
Timothy	Nominal	
Yellow Mustard		5¾c

FLOUR.

All prices are firmly held, and local trading is fairly active. There is also some export movement from this market and shipments from Northern ports are very heavy.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.80	@5.00

Hay and Feedstuffs.

HAY.

Hay is still coming in very freely, although the arrivals consist mostly of the lower grades, with quite a lot of alfalfa. The fields are now pretty closely cleaned up, as both local and outside buyers have been very active of late. There is a strong demand for choice hay all over the State, and with limited offerings, the price continues to advance. In fact, higher prices are quoted this week for practically everything except alfalfa, which is still rather slow in the local market. The shipping business has not been much of a feature this season, but the local and country demand has been unusually strong, and local dealers predict a further advance all along the line.

Choice Wheat	$17.50	@19.00
Good Wheat Hay	13.00	@17.00
Other Grade Wheat	9.00	@12.00
Wheat and Oats	10.00	@16.00
Tame Oats	10.00	@16.00
Wild Oats	8.00	@13.00
Alfalfa	8.00	@11.50
Stock Hay	6.00	@ 7.50
Straw, per bale	35	@ 65c

FEEDSTUFFS.

Prices have remained stationary for some time. Everything under this head finds a fairly active market, rolled barley, bran and middlings being especially strong.

Alfalfa Meal, per ton	$16.00	@18.00
Bran, per ton	28.00	@29.00
Cocoanut Cake or Meal	25.50	@26.50
Cracked Corn	38.00	@39.00
Middlings	34.00	@36.00
Mixed Feeds	28.00	@30.00
Rolled Barley	32.00	@33.00
Rolled Oats	32.00	@33.00
Shorts	31.00	@32.00

Garden Truck.

VEGETABLES.

Onions continue in good demand, large shipping orders keeping this market pretty well cleaned up, and prices show some improvement. Garlic is steady as formerly quoted. Receipts of general garden truck are still rather large, some lines being offered in excessive quantities, although several descriptions are higher. Tomatoes have dropped below the last quotations, as the recent warm weather around the bay has brought in excessive quantities of overripe stock. Summer squash is also lower and weak, with large offerings of ordinary stock, and some decline is also noted in okra and eggplant. Green peppers are unchanged. Cucumbers are a little stronger, and green corn has shown a ready response to the diminishing arrivals. The better offerings of string beans are also higher, while green limas have again declined.

Onions: Yellow, ctl	80	@ 85c
Garlic, per lb	3	@ 4c
Green Peas, per lb	3	@ 4c
Tomatoes, per box	20	@ 40c
Cucumbers, per box	60	@ 85c
Cabbage		75c
Carrots, per sack		75c
Cauliflower, per doz		50c
String Beans, lb	1	@ 3c
Lima Beans, per lb	2	@ 3c
Summer Squash, per box	30	@ 40c
Okra, per box	50	@ 60c
Green Corn, per sack	1.00	@ 1.40
Eggplant, per box	50	@ 65c
Green Peppers, per box	30	@ 50c

POTATOES.

No further change is noted in either river or Salinas stock, prices being steadily maintained, with a very fair demand both for the routine trade and for shipment. Sweets are not coming in so freely, and a little better prices are obtained.

River Whites	$ 1.00	@ 1.15
Sweet Potatoes, per ctl	1.75	@ 1.90
Salinas Burbanks	1.75	@ 2.00

Dairy Produce.

POULTRY.

All prices remain as before, though the market is rather easier than at last report. Eastern stock is again coming in freely, but finds sufficient demand to prevent any burdensome accumulation. Offerings of local stock are a little larger, but fat hens and broilers find a ready market.

Large Broilers	$ 3.50	@ 4.00
Small Broilers	2.50	@ 3.00
Fryers	4.50	@ 5.50
Hens, extra	8.00	@ 9.00
Hens, large	5.00	@ 6.00
Small Hens	4.00	@ 4.50
Old Roosters	4.00	@ 4.50
Young Roosters	6.00	@ 7.00
Young Roosters, full grown	8.00	@ 9.00
Squabs	2.00	@ 2.50
Geese, per pair	2.00	@ 3.00
Ducks	4.00	@ 7.00
Turkeys, live, per lb	24	@ 27c

BUTTER.

A slight but persistent upward tendency is noted in the better grades, with a very fair demand both locally and from outside points. Extras were lower last Saturday, but the general level of prices is higher than a week ago, firsts being marked up to 24c.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	27½	27½	26½	27	27	27½
Prime Firsts	25	25	25	25	25	25
Firsts	23½	23½	23½	23½	24	24
Seconds	22	22	22	22	22	22
No. 1 Packing stock	20	20	20	20	20	20
East Ladles Extras	21½	21½	21½	21½	21½	21½

EGGS.

Trading on the Exchange has been very active of late, with a heavy demand both for local and shipping trade, and several grades are considerably higher. The greatest advance is in firsts, though seconds and selected pullets are both considerably higher. Eastern stock is unchanged.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	36	36½	36½	37½	39½	40
Prime Firsts	30	30	..	..	..	..
Firsts	27	27	27	27	27	35
Seconds	19½	19½	19½	19½	19½	21
Selected Pullets	25	25	27	27½	28½	29½
Eastern	16	16	16	16	16	16

CHEESE.

All lines have found an active demand for the last week, fancy local flats and Y. A.'s both being higher. The market for Monterey cheese also shows some improvement, as arrivals have dropped off considerably of late.

Fancy California Flats, per lb	14½c
Storage	14 c
Firsts	13 c
New Young Americas, fancy	16½c
Monterey or Jack Cheese	12@12½c

Deciduous Fruits.

FRESH FRUITS.

Prices in general remain weak, in many cases being below last week's level, as most seasonable fruits are arriving in larger quantities than the market can absorb. Watermelons and nutmegs are easy as last quoted, while cantaloupes are considerably higher. The berry market is decidedly weak, with lower prices for all lines, and considerable stock is going to the canners. Apples are steady, with some demand for shipment and no particular pressure to sell. Peaches in small and lug boxes are lower, though carriers are fairly steady. Figs and plums are also weak, with more stock offered than can be readily moved. Figs also are cheap, recent arrivals being unusually heavy, and quinces are offered at easy prices. A few pomegranates are coming in. All lines of grapes are lower, and offerings of cheap wine grapes are increasing.

Watermelons, per doz	$ 1.25	@ 2.00
Cantaloupes, standard crate	1.00	@ 1.25
Nutmegs, box	25	@ 50c
Raspberries, chest	4.50	@ 8.00
Blackberries, chest	2.50	@ 4.00
Strawberries, chest	3.00	@ 4.00
Huckleberries, lb.	8	@ 12c
Apples—		
Fancy Gravensteins, box	$ 1.00	@ 1.65
Choice	60c	@ 1.00
Other varieties	1.00	@ 1.25
Peaches, lug box	75c	@ 1.00
Small box	40	@ 65c
Plums, crate	50	@ 65c
Figs, drawer	40	@ 75c
Pears, Bartlett, box	1.00	@ 1.50
Other varieties	75c	@ 1.00
Quinces, box	60	@ 85c
Grapes—		
Muscat, crate	60	@ 75c
Isabella	85c	@ 1.00
Other varieties	40	@ 65c
Pomegranates, box	50	@ 75c

Dried Fruits.

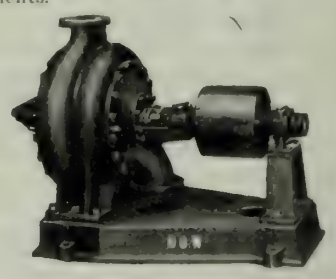
The market for several lines continues rather quiet, and local packers are quoting still lower prices on apples, figs, and peaches. Figs, however, are said to be already pretty well cleaned up, and conditions in general seem favorable for more strength in the peach market, as inquiries from the trade all over the country are increasing. The only really strong feature of the market at present is prunes, for which there has been a strong export demand. The packers have been compelled to get into the market, and as the growers are still firm in their views, it is impossible to get anything under 5½c. A price of 6c is reported in some parts of the country, but is not confirmed by local packers. Large sizes, however, are

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The important factor is the cost of pumping, whether you use gas engine or motor. This expense continues year after year, and is the principal item to investigate. The points to observe is the simplicity of the pump selected. Automatic devices are sure to come to grief, and greatly increase the cost of pumping. The pump to choose is one that has no delicate parts to cut or wear and that is built with plenty of metal, carefully distributed, a rigid shaft and large oil reservoirs. Such a pump will last a lifetime, will pump as much water five years after installation as the first season, and will do it with the same amount of power, and, when carefully designed, pump more water with less power than any other type.

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seen to be very scarce, and some advance can doubtless be obtained for such stock. Apricots are firm, but dull at present quotations, as buyers and sellers are coniderably apart in their views. Reports on peaches are conflicting. Packers are evidently trying to bring prices down, but the growers are in no hurry to sell, and a more active demand is reported in some parts of the country. There is very little movement of raisins, though the feeling in the market is firmer, owing to a poor beginning of the drying season. The New York Journal of Commerce says:

"The market for 1911 California prunes has received an additional upward impetus by renewed inquiry from Europe, especially France and Germany, which is attributed to the fact that the crops in France, Bosnia and Servia are turning out even shorter than had been expected. There are few sellers who are willing to sell straight cars of 40s and none who would consider bids of less than 7c basis f. o. b. Coast. The sizes from 100s down are scarce on this crop, and there is not a little inquiry for them, but the views of holders restrict business.

"Apricots are dull and the market on the Coast appears to be easy. Offerings have been made from one quarter at 14c f. o. b. California for equal quantities of Southern fruit in choice, extra choice and fancy. Peaches seem to attract little attention from the trade here, but advices from the Coast are to the effect that while some packers are trying to depress the market, the underlying conditions, based on the shortage in this year's crop, are strong and that higher prices are likely to be seen in the near future, since the distributing trade has by no means covered its normal requirements as yet and Coast stocks are pretty well controlled."

Evap. Apples, 1911, per lb...	8	@	9½c
Apricots	13	@	14 c
Figs, new crop	5	@	6 c
Peaches, new crop	9	@	9½c
Prunes, 4-size basis, new crop contracts			5½c
Pears, new crop	8	@	9 c
Raisins—			
Loose Muscatels, in sweatbox	4	@	4½c
Thompson's Seedless	6	@	6¼c
Seedless Sultanas	5	@	5½c

Citrus Fruits.

Oranges are still going East from the State at the rate of about 20 cars a day, and lemons are averaging about 15 cars. The Eastern auctions are paying good prices for good fruit. At New York on Monday, fancy valencias brought from $4.40 to $6.15 per box, choice sold for $4 to $4.65, and standards from $1.85 to $4. Lemons averaged from $4.55 to $5.20.

At Boston, on the same date, the prices averaged well with New York, the range being from $2.30 to $4.35 per box for valencias.

At Philadelphia the prices were somewhat lower. Valencias sold for $1.75 up to $4.65, and lemons averaged from $2.60 to $4.85 per box.

Total shipments from southern California for the season to September 16 were: oranges, 36,032 cars; lemons, 6328 cars.

Valencia oranges and grapefruit are moving fairly well in the San Francisco market, though the large offerings of deciduous fruits naturally take attention away from the citrus lines. There has also been a very fair local demand for lemons for the last week. Mexican limes are plentiful and lower.

Valencias, choice to fancy...	$ 3.50	@	4.50
Grapefruit	3.00	@	4.00
Limes	5.00	@	5.50
Lemons	1.50	@	5.50

Nuts, Honey, Hops, Etc.

NUTS.

It is difficult to tell anything about the outlook for walnut prices, but the crop is said to be in good shape in France, as well as in this State. The spot market, however, is bare. Spot almonds are still scarce, and new crop offerings find a quiet but steady demand at about the quoted prices.

Almonds, 1911 crop—			
Nonpareils			18½c
I X L			17¼c
Ne Plus Ultra			16½c
Drakes			14½c
Languedoc			14½c
Hardshells	8	@	8½c
Walnuts—Softshell, No. 1...			15 c
Standard			14½c
Softshell, No. 2			11 c
Budded			17½c

HONEY.

The local market remains quiet and featureless, with prices steadily held. There is a very fair demand through the country, 6c being the prevailing price for good extracted honey, though many beemen are holding for an advance.

Comb, white	13	@	15 c
Extracted, water white	8	@	9 c
Amber	7	@	7½c
Off grades	5	@	6 c

BEESWAX.

Quite a lot of Manchurian wax has arrived, but is not moving owing to suspicion as to its quality. Otherwise there is little movement, and prices are about as before.

Light	28	@	30 c
Dark	23	@	26 c

HOPS.

The market is now dull, with quotations almost entirely nominal. Growers who have not already sold are in no hurry, and many name 40c as the price expected, though this figure has not been paid for a week or so.

1911 crop	35	@	40 c

Live Stock.

DRESSED MEAT.

Quite a lot of fat beef cattle have been marketed recently in the northern mountain counties, and a recent sale of steers at Big Meadows is reported at 10c. Local prices are a little stronger than for some time past, though lambs are easy. Large hogs are plentiful, but the price shows no quotable change. Dressed veal is higher.

Gross weight:			
Steers: No. 1	5¼	@	5¾c
No. 2	5	@	5¼c
Cows and Heifers: No. 1	4¼	@	4½c
No. 2	4	@	4¼c
Bulls and Stags	2	@	3 c
Calves: Light	6½	@	6¾c
Medium	6	@	6¼c
Hogs: Grain-fed, heavy			7¼c
150 to 250 lbs	7¼	@	7½c
100 to 150 lbs			7 c
Small prime wethers	3¾	@	4 c
Large prime wethers	3¾	@	4 c
Ewes	3¼	@	3½c
Lambs	4¾	@	5 c
Steers	8¾	@	9¼c
Cows	7½	@	8½c
Heifers	7½	@	8½c
Veal, large	10	@	11 c
Mutton: Wethers	8	@	8½c
Ewes	7½	@	8 c
Lambs	10	@	10½c
Hogs, dressed	10½	@	11½c

WOOL.

The market remains largely nominal pending the establishment of prices on the fall clip. Buyers appear to be taking very little interest in new offerings.

Spring Clip—			
Choice Southern, Year's sta-			
Northern, year's staple	14	@	16 c
ple	10	@	12½c
7 months	8	@	11 c
Lambs, spring	8	@	10 c

HIDES.

The market remains weak, with a downward tendency in prices, but no quotable change has so far been made.

Heavy Steers, over 56 lbs..			11½c
Medium			11 c
Light Steers, under 48 lbs.			10½c
Heavy Cows, over 50 lbs..			10½c
Light Cows, 30 to 50 lbs..			9½c
Kip			11½c
Veal			16 c
Calf			16 c
Dry—			
Dry Hides	17½	@	18½c
Dry Bulls			15½c
Dry Kip, 10 to 15	18	@	18½c
Dry Veal, 5 to 10			19½c
Dry Calf, 7 down	23	@	23½c
Sheep Skins—			
Long Wools	$ 0.85	@	1.25
Medium Wool, 6 to 9 mos..	50	@	75c
Short Wool, 3 to 6 mos...	30	@	50c
Lambs	35	@	50c

HORSES.

Recent sales have been within the range of quotations, which are somewhat lower than a few weeks ago. Full values are readily obtained for good heavy stock of the more desirable classes, and there is also some demand for ordinary range horses, though more have been coming in than could well be disposed of.

Desirable Drafters, 1700 lb. up.	$300@350
Light Drafters, 1500 to 1650	210@250
Chunks, 1350 to 1500 lbs	175@225
Wagon Horses, 1250 to 1350 lbs.	120@175
Delivery Horses, 1050 to 1250...	125@150
Desirable Farm Mares	110@125
Old Mares	90@115

MULES.

200 lbs.	$240@290
100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

SPECIAL DECIDUOUS MARKET

Sacramento, Cal., Sept. 16, 1911.

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, September 15, 1911, as furnished by the California Fruit Distributors:

Peaches—38½ cars. This shipment was made up principally of Salways, with a few Clings. Placer county is now practically done with both varieties. There are still a few Salways left in one or two sections, but probably there will not be more than 25 carloads of them altogether. The movement therefore is practically concluded for the season.

Plums—11¾ cars. This shipment is just about one-half of that of the previous week. There are very few plums left, and it is likely that the coming week will see their finish.

Pears—65½ cars. Bartletts are now nearly gone. Fall and winter pears are coming forward slowly, but will be in greater evidence the next two weeks. Fall pears are of unusually good quality.

Grapes—508½ cars. It is probable that shipment of this variety is now as great as it will be at any time during the season. Tokays continue to be the principal variety offered, although there are still a few Cornichons and Malagas. More of both varieties would be available if the demand justified. Owing to the very low prices prevailing for grapes in all Eastern markets, growers are generally restricting their shipments, and it is expected that there will be considerably less fruit of this variety forwarded during the coming week than in the one just passed. Grapes are now just approaching their full maturity, and will be of far better quality from this on than at any previous time in the season.

Total shipments to Sept. 18, 8001 cars; total shipments to same date in 1910, 9093 cars.

At the New York auctions, Tuesday, Sept. 19, the following prices were received: Bartlett pears, $2.00@2.75; Malaga grapes, 85c@$1.15; Italians, $1; Elberta peaches, 65c; Tokay grapes, 80c@$1.05; Hardys, $1.70; Thompsons, 80c; d'Anjou, extra fancy $3.15, fancy $2.70; choice $2.30.

UNIVERSITY FARM SHORT COURSES.

(*Continued From Page 247.*)

Science—Two weeks, October 30 to November 11.

Horticulture, Viticulture an Entomology—Two weeks, October 30 to November 11.

The attendance last year was 156. Surely there are enough men and women vitally interested in their work to take as many as 200 to Davis this year. The writer will give prompt attention to inquiries for further details, and may be addressed at College of Agriculture, Berkeley, California.

The Agricultural Club of the University of California is arranging to place a bronze bust of Professor Eugene W. Hilgard, for many years head of the Experiment Station at Berkeley and of the College of Agriculture there, in the new Agricultural Building, now being erected at a cost of $200,000.

PUBLISHER'S DEPARTMENT.

New advertisements in this issue will be noticed from the Oakdale Milling Co. who offer seed oats; the West India Gardens, of Pasadena, feature the semitropical Fejoia; G. H. Hopkins, formerly located at Burbank, has moved to Tropico, where he has his berry plants ready for distribution; the H. C. Shaw Co. of Stockton has two advertisments telling of its agricultural implements. This is one of the strong, well-established firms of the State and deserves the large business offered it.

Since moving to our new location on Market street we are having many more callers, also we notice much heavier office sales of our fruit and agricultural books. We are now well fixed to take care of all business offered and will be pleased to see patrons when they visit San Francisco. Come in and get acquainted.



Irrigation Problems

The continual cleaning-out of weedy ditches is but one of the disagreeable and expensive features of old-style Irrigation Methods.

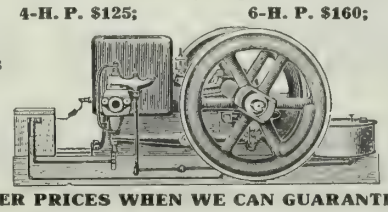
Why waste time and money in this way, or in costly experimenting, when the experience and advice of Irrigation Experts is yours for the asking.

The "K. T. SYSTEM" will solve this, and all your Irrigation Problems. Just ask for the 6th Edition of our Brown Book (free).

THE KELLAR-THOMASON MFG. COMPANY
1234 EAST 28th ST., LOS ANGELES, CAL.

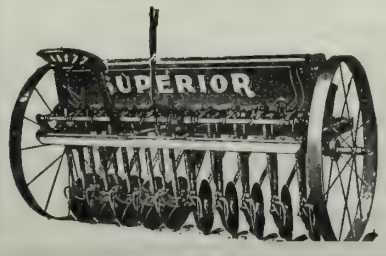
WITTE DISTILLATE ENGINES
The Best General Utility Engine on the Market
2-H. P. $75; 4-H. P. $125; 6-H. P. $160; 8-H. P. $225.

Guaranteed for 5 years to deliver the actual horse power as stamped on the name plate.



An up-to-date engine; snappy, vigorous and powerful. Simple, reliable and durable.

WHY PAY HIGHER PRICES WHEN WE CAN GUARANTEE SATISFACTION
Write for particulars, stating size wanted
NORMAN B. MILLER, Machinery Merchant
7th Floor, Hooker & Lent Bdg., 503 Market St., San Francisco
PUMP JACKS, PUMPS, BELTING, ETC.



Superior Grain Drills
Plain and Fertilizing
The best equipped drill offered today. Sold by us for years. Let us tell you about it or ask your dealer to order one.
THE H. C. SHAW CO., Stockton, Cal.

MT. DIABLO CEMENT

best for foundations, dairy floors, fruit dryer floors, etc., etc.

SANTA CRUZ LIME

best for bricklaying and plastering.

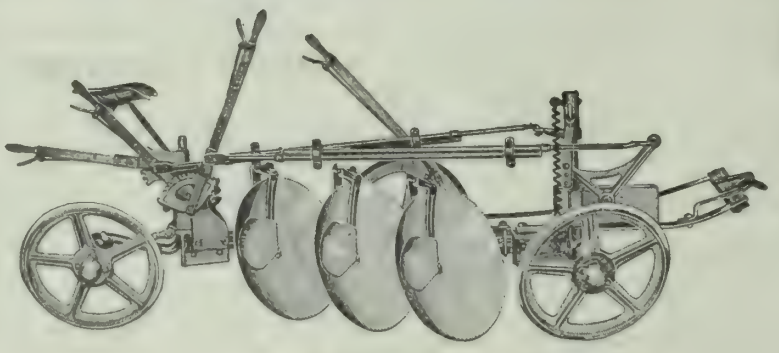
MT. DIABLO ◇ LIME

best for spraying and whitewashing.

WRITE FOR INFORMATION AND PRICES ON ALL BUILDING MATERIAL.

HENRY COWELL LIME & CEMENT COMPANY

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3-DISC SIZE

THE BENICIA-HANCOCK DISC PLOW

"THAT GOOD PLOW"

CAN YOU BEAT IT?

A Plow which pleases every farmer.
One which is built exactly right.
One which is easiest to operate.
One which has the lightest draft.
One which has the fewest parts.
One which requires least repairs.
One which saves both time and money.
One that is cheapest in the long run.

WHEN BUYING JUST SAY BENICIA-HANCOCK.

FOR PRICES AND PARTICULARS WRITE

BENICIA IRON WORKS, Benicia, Cal.



KROGH PATENT WATER BALANCED VERTICAL PUMP

KROGH'S NEW VERTICAL PUMP

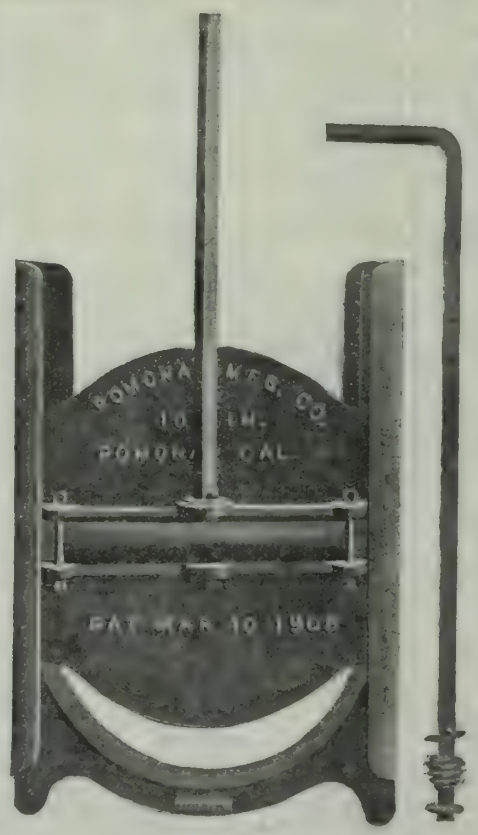
The Krogh New Water Balanced Vertical Pump contains many new and valuable improvements, same being fully explained in our Bulletin R-10, which will be mailed upon request.

We have a branch in Los Angeles at 206 N. Los Angeles Street.

The pump can be seen in operation at our place of business.

KROGH MANUFACTURING CO.,

149 Beale St., San Francisco.



GIVE THE POMONA PATENT PRESSURE GATE A TRIAL.

No rubber or wooden facing to rot or wear out. Absolutely water tight when closed. Locking mechanism is protected against rust or clogging with sand or dirt. Simple in construction. Cheap in price and as durable as solid iron.

THE LOCKING DEVICE

Is the simplest made, merely a tapering screw with split tapering nut socket. It locks the cover in any desired position or locks the faces, making an ABSOLUTELY WATER TIGHT JOINT.

TWO FOOT HANDLE FURNISHED WITH EVERY PRESSURE GATE FREE.

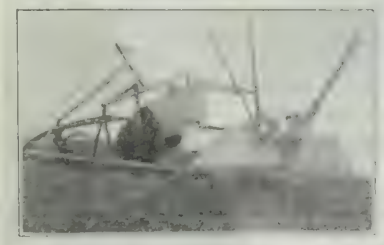
ALSO A FULL LINE OF CIRCULAR VALVES FOR ORCHARD AND ALFALFA IRRIGATION CARRIED IN STOCK.

Write for descriptive circular and price list.

POMONA MFG. CO.

POMONA, CAL.

THE IMPERIAL LAND GRADER



The only grader and scraper combined that moves earth and levels the ground perfectly and with ease.

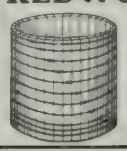
GASOLINE ENGINES. CENTRIFUGAL PUMPS.
TRACTION ENGINES. ELECTRIC MOTORS.

ALL KINDS OF MACHINERY REPAIRS ON SHORT NOTICE.

DIXON IRON WORKS,

DIXON, CAL.

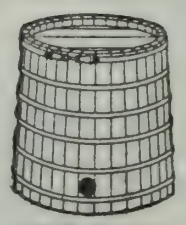
REDWOOD TANKS



I deal direct with the consumer. If I had agents to sell my product it would mean that I must add to my price as much as the agents' commission would be. My lumber is brought direct from the forest. Latest improved machinery. Up-to-date methods. Redwood Tanks, Pickling Boxes, Peach Boxes, Drying Trays, Egg Cases. A tank 6 ft. diameter, 2½ ft. deep, $7.50. A tank 6 ft. diameter, 2½ ft. deep, $10.50. Large stock of tanks of various sizes in stock. Anything made to order on short notice. Spraying tanks. Grape Stakes.

R. F. WILSON, 447 W. Main St., Stockton, Cal.

Tanks Tanks



WINE TANK.

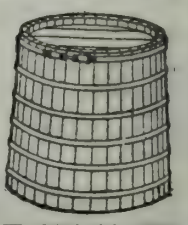
WINDELER'S PLANING MILL AND COOPERAGE

GEO. WINDELER, Prop.

Water Tanks, Wine Tanks, made from carefully selected stock by careful and experienced workmen. "Tanks that are well made last a long time." It will pay you to get my prices before buying.

GEO. WINDELER,

144-154 Berry St. San Francisco, Cal.



WATER TANK.

THE PACIFIC RURAL PRESS

Vol. LXXXII. No. 14. SAN FRANCISCO, SATURDAY, SEPTEMBER 30, 1911. Forty-first Year.

CALIFORNIA STATE

THE CALIFORNIA POTATO CROP.

Written for the PACIFIC RURAL PRESS by Mr. D. J. WHITNEY.

An exceptionally profitable season for potato growers has been enjoyed since the crop of 1911 first came to the market; prices having been very good until recently and are quite good yet, and the question is what they will be. The early prices were due to the scarcity of the product, but apparently it is thought the supply is sufficiently plentiful to justify the lower prices that the grower is now selling for.

Potatoes, of course, are one of the staples of life; they are not a vegetable that a person can eat more of or do without to a very great extent. If there is a large crop few more can be eaten because they are plentiful and cheap; if the crop is short they will still be less expensive than almost any other food, and nearly as much will be eaten anyway; the difference will simply be that culls and all will be sold, that less waste will be made, and that other food will be substituted to a slight extent. In case that the crops are very short this season the price will go as high as it did early this summer, but sales will still be made.



Harvesting Potatoes on the Reclaimed Lands Near Stockton.

Crops Extremely Short. — There are two things that are now definitely known that will govern prospective prices. Last year with a rather short crop the prices soared nearly to the record mark, and this year the shortage is going to be so great that that of 1910-11 cannot compare with it. A year ago, or on September 1, 1910, the United States Department of Agriculture states that there was 70.5 per cent of a full crop available, only 8.4 per cent less than normal. This year there was at the same time only 59.8 per cent of a full crop, which makes much more than twice the shortage. And if this is so, what justification is there for prices that indicate a full supply during the rest of the year? We may be like the French toymakers who woke up one morning and found that their forest had all been used up, no wood was available to make toys, and starvation stared them in the face. The only ill effect from a similar situation here would be that the grower would get much less for his crop than he should and the consumer would pay moderate prices first and extremely high prices at the end of the season. Better for grower, and as well for consumer, if prices are moderately high all the way along.

The Coast Crop.—The explanation for present moderate prices can be accounted for as a reaction over the high prices of earlier in the season, and not due to the actual prospects. The high prices were due to early scarcity and as soon as the crop was ready to be harvested and the scarcity overcome it appeared that the reason for high prices had gone. This was especially true since the present crop in this State has been up to standard and the acreage as large as usual. Features that have been overlooked are that digging has progressed at a very rapid rate, leaving much less in the ground than usual at this time of the year and that the Eastern crop is in very bad condition. In the Northwest the crop is good and the acreage slightly larger than usual, but this is more than offset by the great shortage elsewhere. Even in Europe the consular reports show that the prospects are much below normal.

Prices Higher in 1910.—Combined with this year's short crop the prices compared with those of a year ago show that the high prices of last winter and spring are not expected by growers or dealers, unless many deals are being made on the quiet. Last August, with a larger crop than this year river potatoes were bringing as much per box as is obtained for a sack now, about the lowest price during the fall being from 65 to 90 cents per box, most of the time much higher prices ruling. Compared with this the current rate of 85 cents and $1.05 per sack will do practically nothing to curtail consumption and make present supplies last as they should.

Even with last year's larger crop and fair prices there was a much greater shortage here by spring than usual. Before the California crop was ready the Oregon supplies were practically exhausted and districts as far east as Minnesota were drawn upon, in spite of the high freight rates on such a bulky product. Texas sent numerous carloads of early potatoes through the State to Oregon, but was forced to draw upon us as soon as these were exhausted. This left such a shortage in the East that potatoes were sent in large numbers not only to Texas, but also into the Mississippi valley, this keeping up until the Colorado crop came in.

Planting Prevented. — In fact supplies were so short before the spring was over that sufficient seed could not be obtained to increase the acreage as much as many growers wished and much planting stopped because nothing fit to put in the ground could be secured, and a similar condition seems to be confronting us this year.

This does not necessarily indicate that as good profits will be secured in 1912 as in 1911, but it is a pretty good indication that the man that can get a lot of early potatoes on the market next year will receive high prices for them.

Variation Last Year.—The way the prices do go up when it is known that there will be a shortage is seen by the history of the season of 1910-11, In the middle of August, 1910, the river potatoes were selling at $1 to $1.15 per box, and Salinas potatoes at $1.10 to $1.40 per sack. In the middle of September the price for river potatoes was 90 cents to $1.05 in October and November 65 to 90 cents, the latter part of November 90 cents to $1.10, in the middle of December $1.35 per sack, in January and February $1.60 to $1.90, and from that they went to $2.50 to $2.70 in May and June.

There seems no apparent reason, except the fact that consumption would have been curtailed somewhat, why moderately high prices should not have ruled during all this period, and with double the shortage this year there appears to be no good reason why still higher prices should not rule now.

Pacific Rural Press

Issued Every Week at 420 Market Street, San Francisco.

TWO DOLLARS PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

PACIFIC RURAL PRESS CO. - - - PUBLISHERS

Advertising rates made known on application.

E. J. WICKSON - - - - - - - Editor
FRANK HONEYWELL - - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Sept. 26, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	T	.34	1.08	64	46
Red Bluff	.60	.64	.63	90	48
Sacramento	T	T	.28	92	50
San Francisco	T	T	.21	64	50
San Jose	00	00	.30	84	44
Fresno	T	T	.16	94	50
Independence	00	.10	.12	84	50
San Luis Obispo	.02	.02	.38	72	44
Los Angeles	00	T	.02	84	54
San Diego	00	.12	.02	76	58

The Week.

Nothing more than dust-marking showers have yet reached the valleys, though on upper coast and mountain the changing season has brought somewhat clearer tokens of its progress. On the rich low lands some frost injury has been wrought upon potatoes and beans. Otherwise the delightful autumn weather, with clear sky and heat enough for crop-endings, has prevailed. We have urged preparations for more wintry doings and more exact knowledge of their approach. We are interested in the announcenment that in an effort to improve the weather service for the protection of Fresno county crops, W. E. Bennett, the local Government forecaster, has announced his intention of installing a telephone weather service. Fifteen branch stations will be established in the county and the farmers can learn the daily weather predictions by telephoning these places. In the past the system has been bulletin boards at rural postoffices and rain flags. There is no reason why these branches should not develop into rural information bureaus on all interesting subjects. Nearly all "centrals" can do something in that line now and baseball scores are legal tender everywhere along hello lines. Why not give the first news of the success of the women's voting amendment that way on the morning of October 11? That may not be necessary, but we expect everyone to vote for it on the preceding day, and other things which are not so certain can be easily announced. Mrs. Jones could be advised beforehand of the coming of her visitors, for "central" would know evryone who passes and where everyone is going. Anyone could be advised if "that cussed breachy cow of mine has come up that way." Such a branch could also handle picnic invitations and announcements of all kinds. We are quite delighted at the prospect. It will begin with the weather—nearly everything does—but it will be a dull thing if it gets no further than that.

Canada Saved From Hungry Invasion.

Now that Mr. Rudyard Kipling has rescued the soul of Canada from the grip of the American devil (for the reciprocity liberalists were beaten out of their boots at last week's election) we can only suggest that he has plenty of soul-saving work to do nearer home. He scared the Canadians nearly to death with his cry that Americans were starving on their own land and planned to gnaw at the spiritual entrails of Canada as the vulture Fletcherized the interior of Prometheus. And his cry saved Canada just as Rome was once saved, and we are glad of it—therefore we condone all Mr. Kipling's offences except his lying about the United States. As he has circulated the false report that Americans "have so dissipated their own resources that even before national middle age they are driven to seek virgin fields for cheaper food and living," it is only proper penance that he should now address himself to saving Great Britain from industrial mastery by Germany. Is such work needed?

In the section of Economics at the British Association last month, Mr. Sigismund Stein read a paper in which he said: "England had entirely given herself up to manufacture, to the neglect of agriculture, while Continental countries like Germany, where industry and manufacture had increased and improved at the same pace as ours, had not neglected agriculture. The question of employment was at the present moment a very pressing problem indeed. There were 1,065,645 people in the United Kingdom under poor relief in 1910." And after discussing the sugar industry, showing that Great Britain was buying $125,000,000 worth of sugar which they could get from home-grown beets just as Germany does, he continues: "Our position in the world depends upon maintaining a large rural population. We all read the sad and disquieting accounts of the depopulation of different districts in our islands. This ever-increasing exodus, which robs the country of the best healthy working men and women and a sturdy agricultural population, and drives them into other countries where they find more favorable economic conditions, and where they work in competition against us, could be stopped." This would seem to be a soulful job for Mr. Kipling. Mr. Rider Haggard does not weigh much against Mr. Kipling in the literary scale, but we have more respect for Mr. Haggard because he is working earnestly for the welfare of the English laborer and to advance agriculture which will make him busy and happy. Mr. Haggard conducted a long personal investigation in the United States to secure suggestions of ways in which this would be done and is now faithfully trying to apply them. Mr. Kipling calls us names and warns people against us. Mr. Haggard seems to have recovered from the worst attacks of his imagination. Mr. Kipling should have his under better control.

American Interests in France.

Well, then, why not hurry up reciprocity with France? As the Canadians do not care to sell their souls to this nation of profligates why not buy French spirits instead? A California statesman proposes this balm for our national affections after this mitten-stroke from the chilly northern beauty and surely why not choose another partner, to wit: warm, lovely, reciprocating France? It would, of course, knock our wine industry and cripple our prune and walnut industries, and all that, but think of the silks, notions, and cast-off modes which France wishes to cover us with. And then, so much greater opportunities are appearing in France for rapid Americans. The important news has just crossed the cable that by far the most finished racing establishment in France has been leased by Joseph Widener of Philadelphia. The lease includes the magnificent property of Prince Murat at historic Chantilly. This lease puts Widener among the first men of France. His stables are finer than those of W. K. Vanderbilt, whether at Poissy or Deauville. Many of the best racehorses have been bred at Chantilly and they will form a splendid nucleus for what their owner is endeavoring to do—make the best stable of racehorses in the world. The competition among the Americans in the French racing field is also heightened by the fact that August Belmont has secured the services of Samuel Hildreth as trainer. Young Jockey Garner, who recently went over from New York, has broken all records so far as securing a big salary and bigger commissions on winning is concerned. He has been engaged at a salary of $10,000 a year and ten per cent of his winnings. He claims that this commission will more than double his salary. Here, then, is the true line for American advancement. There would be nothing like that doing in Canada—now nor ever. On, then, the race for reciprocity with France—Mr. Kipling's winning horse, Pegasus, barred.

Agriculture in Germany.

Speaking of Germany, it is interesting to note that the agriculturist has political power commensurate with his economic importance, and that the government is not allowed to overlook that fact. The story comes that the Kaiser became so enthusiastic in speaking of the national importance of commerce at Hamburg that he alluded to commerce "as the breath of the national organism without which it would be but a lifeless corpse," which was a little redundant but so intelligible that the agriculturists felt themselves affronted by this exaltation of commerce, though nothing has been said or insinuated in disparagement of agriculture, and a campaign of such vigor was started in the agrarian press that his majesty found it expedient in a speech delivered a few days later at Stettin to pay an equally high tribute to the virtue and importance of agriculture and "glorified agriculture as the backbone of the state." Even though it was an afterthought, the basic character of agriculture is quite well expressed by the Kaiser's late simile, and it fortunately, at the same time, keeps his throne level.

A Grain Flurry.

The failure of reciprocity naturally sent grain prices scurrying upward all over the central West as soon as the Canadian conservatives won against reciprocity. How much actual grain there is involved in it we do not know. It was probably for the most part a rush to cover shorts sold in anticipation of reciprocity, for the report is that the grain gamblers generally played the Liberals to win and put into effect the reciprocity treaty, and the effect of the news from across the Northern border was to cause an explosive situation in the grain pits, send the price of cereals bounding in uncontrollable style in the wildest market known for months. Naturally, barley was sharply affected, and that is the grain in which California growers are most interested. The rise in barley is apt to be something more than a flurry for maltsters have been arranging for a supply of cheap barley from Canada which they will never get at the prices contemplated. It is not wonderful that the price rose eight cents per bushel and it is to be expected that California will continue to be in the barley business with large brewing points in the Mississippi valley—and more largely in it when the Panama Canal opens.

California Asters for President Taft.

President Taft accepts the death shock of reciprocity philosophically. "The United States," he is reported to have said, "will continue to do business at the old stand," in spite of the affront. This makes us more glad that California is getting ready to give the President a unique welcome next month. At Pasadena over half a mil-

lion asters, red, white, and blue, are to be used in the making of a great floral flag for the reception of President Taft when he visits the city October 16. The flag is to hang over the table when the banquet is served, and it is expected to be one of the most beautiful decorations of the kind ever conceived or assembled. That enough asters may be available at the proper time, all residents who have plants—and there are thousands—are asked by the Board of Trade to nurse them along in such a way that the buds will be ready to open a few days before the President's arrival. The President will find the aster a more popular posy here than at the East—judging by the way the Eastern people recently handled John Jacob.

The Schoolhouse as a Social Center.

We are certainly going some nowadays with the exaltation of the school as a chief factor in building up the young people in a saving interest in their rural surroundings. Now the schoolhouse is also getting into action as a satisfying agency in rural life. Mr. E. T. Fairchild, the Kansas State Superintendent of Instruction, at Topeka, says he has the remedy that will prevent farmers from leaving the farm. Kansas has had more than its share of trouble in this respect. Farmers who own farms, after making enough to insure their living in comfort, have been moving to town in order to have near neighbors and better social advantages. "There is no sense in those schoolhouses standing idle every evening through the year," says Mr. Fairchild. "There is no reason why the schoolhouses should not be open two or three, or even four, nights a week. The schoolhouse should be the social center of the rural community, and we are going to try to make it so in Kansas." There is another incidental advantage in the plan: it will give us better schoolhouses in the country. Many people do not really know how mean the inside of their schoolhouse looks.

Queries and Replies.

Fertilizing Prunes.

To the Editor: I have an orchard of prunes, apricots, and cherries, which has been bearing since it matured, some thirty years ago, without fertilization, except possibly muddy sediment from occasional irrigations of mountain streams. Various people are advocating the use of nitrates and other fertilizers. Should I have samples of this earth analyzed in order to ascertain what the soil most needs? If so, will you give instructions as to the quantity of a sample of the soil, how near the surface it should be taken, etc.?—Orchardist, San Jose.

The best way to find out whether your trees need fertilization is to study the tree and the product and not depend upon chemical analysis of the soil. If your trees are growing thriftily and have sufficiently good-sized leaves of good color, and if fruit of good size and quality is obtained, it is not necessary to think of fertilization. If the trees are not satisfactory in all these respects, the first thing to do is to determine whether they have moisture enough during the later part of the summer. This should be determined by digging or boring to a depth of three or four feet in July or even as late as this. The subsoil should be reasonably moist in order to sustain the tree during the coming few weeks when strong fruit buds for the coming year will be finished. If you are sure the moisture supply is ample, then fertilization either with stable manure or with commercial fertilizers containing especially nitrates and phosphates should be undertaken experimentally, in accordance with suggestions for application made to you by dealers in these articles, who are usually well informed by observation. When you have the tree to advise you of the condition of the soil, you do not need a chemist, although if the tree manifests serious distress and is unable to make satisfactory growth the suggestions of a chemist may be very helpful.

Subduing Devil Grass.

To the Editor: Will you kindly advise me if there is anything that will eradicate the "Devil Grass" when it once gets a good foothold in the lawn or garden? Hundreds of us are suffering the loss of most excellent lawns by this grass. It seems almost, if not quite, impossible to grub it out—anyway, in doing that, the lawn is destroyed. —Reader, Los Angeles.

We do not know any method which will eradicate the grass which you mention, nor any application to the soil which will not also render it sterile and prevent the growth of any other useful plant. Such a grass can be kept down in a field by sowing alfalfa and making every condition favorable for its dense growth, but this method would not be available for lawn purposes. We should be inclined to try white clover, seeding heavily and using plenty of water after the plant has started well to secure as dense a mat as possible and to keep it vigorously growing. This may reduce the objectionable grass to subjection, but is not likely to eradicate it.

Fertilizing Pear Orchard.

To the Editor: I have a pear orchard of 12 acres situated on heavy valley land. The trees are 15 years old and have fruited heavily for years and have never been fertilized. What is the best fertilizer for the same, and when is the best time to apply it? I intend planting rye to plow under in the spring, but thought possibly the fertilizer should be applied first. This orchard is flooded for possibly a week during heavy rains to a depth of a foot.—Grower, Ukiah.

If you have stable manure available, nothing could be better for the feeding of the trees and for its mellowing effect upon your heavy soil. Application can be made at once, to be worked into the land when the rye is sown. It will help the trees and give you more rye which in the end will help the trees. If you have no stable manure available, what is called by the dealers a "complete fertilizer" for orchard purposes is what you should use and apply it when you work the land for rye.

Reclaiming Olive Trees.

To the Editor: I am located on a 5-acre ranch near Lakeside, San Diego county, and have about half the area in olive trees which have grown up around the old stumps. They are quite large trees and some of them have six or eight trunks. I wish to know whether I should cut away all but one trunk or let them alone. There are some of the trees with small olives; others none.—Beginner, Lakeside.

If the olive trees which were originally planted were trained at first and still have a good trunk and tree form, the suckers which have intruded from below should be removed. If, however, the trees have been allowed to grow many branches from below, so that there is really no single tree remaining, it would be better to make a selection of four or five of the best shoots and grow the trees in large bush form, shortening in the higher growth so as to bring the fruit within easier reach and reduce the cost of picking. You can also develop a single shoot into a tree as you suggest. Of course, you must determine whether the trees as they now stand are of a variety which is worth growing. If they are all bearing very small fruit, it would be a question whether they were worth keeping at all, because grafting on the kind of growth which you describe would be unlikely to yield satisfactory tree forms, though you might get a good deal of fruit from them.

Pruning Peaches.

To the Editor: Will you inform me if it would be a good plan to prune my peach orchard as soon as October 1? I did not prune last spring, for an experiment, and the trees are breaking down with fruit. I want to prune them as soon as I get the fruit off, if it would be the right thing to do. I am a beginner in the fruit business. What kind of fertilizer would be the best to use to make the peach trees bear well another year and when to use it? The trees are past three years old and in good healthy condition. Will pears do any good to graft them onto the peach, or will plums do well on the peach? How soon ought they to bear when grafted on the peach when the peach is past three years old?—J. B. C., Empire.

It is usually better to prune peach trees during the latter part of the winter, because the bark is so apt to dry and the stub to die back if long exposed to dry air, as is likely to be the case in the late fall and early winter. Still, probably no great amount of harm would be done, providing all large cuts are covered with paint to prevent drying out. But the pruning ought not to be done unless the leaves are drooping and have finished their season's work.

A complete fertilizer, containing nitrogen, phosphoric acid and potash, containing nitrogen, phostree, and any dealer of fertilizers can furnish you these preparations. We should be sure, however, that the trees need fertilizing now before making such an investment. If they are in vigorous growth and bearing well, as your letter seems to indicate, fertilization need not be undertaken until later when the trees will come to need it.

Pears cannot be grafted on peaches. Plums generally do well grafted on the peach stock, and if the grafts are taken from bearing trees, should come into fruit the second season. The peach is more difficult to graft than other fruit trees, because of the drying back of the bark. You have to be extra careful in the waxing and be sure that the waxing remains good until the growth starts out well the following summer.

Rye in California.

To the Editor: Kindly state which kind of rye you find the hardiest, the best yielding, and the best hay varieties in your State.—Farmer, Oregon.

Rye is the least grown of all the cereals in California, and, so far as we know, no attention has been paid to selection of varieties. That which is produced is "just rye," of some common variety whch came to the State years ago and still remains. No rye is grown for hay, as the toughness of the stem renders it undesirable for that purpose. There is a certain amount of rye grown for winter feeding. This is grown in the foothills principally and it serves an excellent purpose, but it is fed off before approaching maturity.

New Zealand Flax.

To the Editor: Will you kindly tell me where I can obtain information about Phormium tenax (New Zealand flax), which I see by a recent article is imported to San Francisco in large quantities yearly for making cordage and binder twine, and is said also to be the best of bee pasture. Can I get the plants on the Coast, and is California soil and climate adapted to the culture?—Enquirer, Oakland.

New Zealand flax grows admirably in the coast region of California. It has been growing on the University grounds for the last twenty-five or thirty years, and you will find it in nearly all the public parks and in private gardens, for it is a very ornamental perennial. You can get plants in any quantity from the California nurserymen and florists. It produces plenty of leaves, but we should doubt whether it is floriferous enough for bee pasturage except where it occurs wild over a large acreage. You could get vastly more honey from other plants grown for that purpose.

How to Judge Horticultural Novelties.

By Mr. Luther Burbank, of Santa Rosa.

[The opinions of a leader in any activity concerning the way his work should be judged is always interesting. The interest increases, usually, if it can be inferred that the statement is more or less an answer to criticism and misrepresentation. This sort of an ex-parte declaration is always welcome if a man's work justifies public attention. It may give new points of view and new facts. Such we find in a discussion of the way to judge novelties which Mr. Luther Burbank has just published and from which we draw to the limit of our immediate capacity. —Editor.]

Limitations of Adaptation.—It is very rare that a fruit variety of any kind will thrive under all conditions of soil, climate, and locality. No fruit thrives equally well in all parts of the United States, even. Two or three of the ancient European and early American standards approach this cosmopolitan tendency. The old Bartlett pear thrives fairly perhaps in half the States of the Union, the Ben Davis and the Rhode Island Greening apples thrive over a large territory, perhaps including nearly one-third of the United States, though their usefulness as standard varieties is very much more limited.

Among the older plums the Wild Goose type, though not of superior quality, thrives widely. Among peaches, the types which thrive best in the South and West are generally worthless in the Northern States. The same state of affairs exists with grapes, apricots, almonds, oranges, lemons, olives, figs, prunes, and cherries, strawberries and other berries. The old hardy Concord grape thrives as generally as any among grapes, but the territory on which it is grown as a standard variety is quite limited.

When we extend our study of fruits from a narrow local point to a more comprehensive view of the whole subject, it is at once seen that success in the production of fruit depends upon the most delicate adjustments of soil and climate and locality, and that certain varieties which are a success in one locality may be, and often are, a complete failure a few miles distant, or near by on a different soil or at a different elevation.

No one variety of fruit can be grown everywhere. This fact seems too plain even to be mentioned.

What Burbank Has Done.—From having made a life study of these conditions, and having produced several millions of new fruits, using in this constructive architectural work nearly or quite four hundred species and tens of thousands of varieties, all in the constant effort to eliminate faults and substitute virtues, these observations have been most deeply impressed, and all intelligent, progressive fruit growers are now aware of some of the benefits conferred by this enormously expensive work, a work such as no man or body of men, community or even government has undertaken, much less carried to a successful issue.

Nearly two hundred and forty thousand dollars of my own private earnings in other lines have been used in this work, not one-tenth of which has ever been received in return, nor was it expected, as few originators of new plants have ever made it pay themselves, no matter how many untold millions their work may have been of benefit to others. No patent can be obtained on any improvement of plants, and, for one, I am glad that it is so. The reward is in the joy of having done good work, and the impotent envy and jealousy of those who know nothing of the labor and sacrifices necessary, and who are by nature and cultivation, kickers rather than lifters.

Happening, however, to be endowed with a fair business capacity, I have so far never been stranded, as have most others who have attempted similar work even on an almost infinitely smaller scale.

It takes nearly as long and is far more difficult to adapt the average grower of fruits to the priceless qualities, characters and values of a new and unique fruit than to adapt a new fruit to the real wants of the grower. These facts have both a ludicrous and a pathetic interest; it must necessarily take four or five years to fairly test new fruits in a warm climate, and sometimes ten in a more inhospitable one, and where fruits are not as well known and extensively grown.

The Burbank Plum, when first introduced was, by dealers and shippers, canners and dryers, generally pronounced as "not like other plums," and they would have none of it; but although generally introduced less than twenty years ago, it is perhaps today more widely known, more thoroughly cosmopolitan, and more generally grown than any other plum of any name or kind produced either by nature or by the scientific experiments of man since the dawn of history; growing both where other plums can and where they cannot be grown, thriving well in Canada or Brazil, Japan or Africa, Borneo or Argentina, Russia or New Zealand. Hundreds of better plums have since been produced on my experiment farms, and two of these are described in this circular, and more will be offered later.

The Burbank Crimson Winter Rhubarb met with flat failure in interesting anybody, simply because it had absolutely new and unique qualities which were at first wholly unappreciated. Today nearly all rhubarb growers in warm climates recognize it as the best and most profitable of all rhubarbs, and it is without doubt the most valuable vegetable introduced during the last quarter of a century. Fortunes have been made and are still being made from it in California and also in Florida. It has been rightly named "The Mortgage Lifter." Chief Forester of the English Government for Africa reports that at Cape Town, where all other rhubarbs had been a complete failure for two hundred years, the Burbank Crimson Winter is a complete success, as it has later proved to be throughout all of Africa, where it is being generally introduced by the government officials. Burbank's Giant is a great improvement over all others, excelling the original Crimson Winter Rhubarb at least 400 per cent. This is becoming even more popular, if possible. It will produce stalks of most delicious flavor throughout the whole year, outyielding any of the older rhubarbs at least three to one. Other greatly improved new ones are now also offered. These varieties cannot succeed in a cold-winter climate.

The Burbank potato, which was produced on my old home place in Massachusetts in 1873—nearly forty years ago—received little attention at first, but today is grown each season by the million bushels. Many hundreds of new varieties of potatoes have been introduced since, but the Burbank is more and more extensively grown as a main crop. One of the best known horticulturists of America agrees with others, that the Burbank is of late gradually but surely taking the lead of all other varieties in Iowa, Michigan, Wisconsin, Utah, Missouri, and in the States of Oregon and Washington it is now the universal standard, and in our own State of California, where nearly all varieties ever introduced have been tested, it is also the standard. When first introduced here in 1876 old potato growers would have none of it because it was new and because it was white. You will have to hunt a long time to find red potatoes now.

[At this point Mr. Burbank introduces individual descriptions of his many fruits and flowering plants which have made good, and gives notes of their values and achievements. This matter exceeds our present capacity.—Editor.]

An Argument on Plums.—Some interesting facts which have not perhaps attracted the attention of fruit growers: Within the past twenty years 120 new plums have been introduced by various growers, dealers, and nurserymen, in the United States. Among these 120 are 24 of my own production, as follows:

Abundance	Satsuma	America	Sultan
Burbank	First	Chalco	Bartlett
Gold	Apple	Climax	Shiro
Delaware	Combination	Splendor	Formosa
Hale	October	Giant	Santa Rosa
Doris	Wickson	Sugar	Gaviota

—the last three quite lately. All of these 24 have proved successful with growers, dealers, and consumers, and are quite generally catalogued at the present time. What has become of the other 96 new varieties which have been introduced by all other parties? The facts are these: Nearly 95% of the new plums introduced since 1890, now catalogued as standards, originated on my own farms, although nearly four times as many new varieties have been introduced by other dealers. Most of the introductions of others are not now generally even listed.

Forty-nine of the 96 new plums introduced by others are like the above, mostly of the Japanese type or their hybrids. The Orient, Red June, Ogon, Gonzales, and Normand are sometimes still generally catalogued. The other 47 which have been introduced by other parties are of various parentage, mostly Prunus Americana and Prunus domestica. Where are the bulk of these also now catalogued as standards, and who grows them?

All or 100% of my own introductions are quite generally now catalogued by nurserymen and widely planted by growers, and at least 15 of them are grown by the carload for shipping, by the most critical, intelligent and extensive growers of several continents while less than 12% of all others have survived the tests of growers, dealers and consumers. I have not the least desire to make adverse comparisons with the producers or introducers of the various new plums, for whom I have the deepest sympathy and admiration; yet, owing to false and malicious statements, I feel impelled to state the facts as above, otherwise they would perhaps never have been investigated.

How to Judge Novelties: Look to their Source—The old standard "Tragedy" prune is too well known to all California fruit growers, shippers, and Eastern dealers to need description. Its large size, extreme earliness, beauty, quality, and ability to stand the long transcontinental trip have made it very popular, and yet the tree generally fails to produce a good crop at least half the time, and in many localities is a flat failure all the time. Its several good qualities induced me to cross it with the Sugar Prune. The Sugar Prune, though a month earlier, fully four times as productive, and more than twice the size of the French Prune, has been often condemned—one of its worst supposed faults being that it produced too much fruit! Today the tide is rapidly turning in its favor, as the growers are realizing its value for drying and its unequaled value for shipping. Eastern retail dealers in fancy fruits like it and write that it is the "best of all sellers," and some of the wholesale firms have written to growers: "Grow all of Burbank's Sugar Prune you can; too many of them cannot be grown for the Eastern market."

A New Prune, the Standard.—Years ago I had made the combination of the Tragedy and the Sugar prune, and now have at last (in my opinion and the opinion of a number of the best-known growers) the best prune ever produced. The trees are enormous and never-failing bearers, and good, healthy growers. Well-grown fruits measure 4½ inches around one way by nearly 6 inches the long way. Skin purple with a heavy blue bloom; flesh amber or honey yellow, fine grained, juicy yet firmer than most other drying prunes, very sweet and a perfect freestone. This is without doubt the best combination drying and shipping prune ever grown; ripens September 1 and has been kept fully a month in good condition in a basket in an ordinary living-room during our warm fall weather, and can be shipped when dead ripe with success to any part of the United States. And the final test as a prune is that when dipped as usual, the result is a big, quickly dried prune of better quality than any ever before known. I have no other and know of no other prune which compares with this in its wonderful combination of good qualities. A competent judge says: "It has been tried in a commercial way now for two years, and its possibilities as a high-grade prune have been established beyond a question of a doubt."

WHAT BOYS DID WITH BERRIES AT BARLOW'S.

The Sebastopol Times gives an outline of the results of boys' work on the berry ranch of Mrs. Laura E. Barlow during the ninth annual camp,

which proved very successful in every way. Owing to the backward season, the boys came up two weeks later than last year, arriving in time for the first picking of loganberries. Until the Mammoth berries came on they had some time for recreation, and enjoyed the opportunity for baseball and swimming. But from the time the Mammoths required picking they have been busy from 7 a.m. to 6 p.m. They have picked about 40 acres of loganberries, Mammoths, and raspberries, from which were taken 14,053 trays of loganberries, 19,990 trays of Mammoths, and 1400 trays of raspberries. The blackberry picking to September 2 amounted to 40,000 trays, taken from about 90 acres.

A WAY TO GET "CLASS A" APPLE TREES.

The way to get a tree which will hold up a proper burden of fruit is to grow it so that it will do it—giving the limbs adequate strength by fixing proper attachment, direction of growth and short joints by pruning the young tree as outlined on this page in last week's issue. Still, everyone will not do this, and no one can probably do it so well that all the trees will be safe without artificial supports; therefore, propping is unavoidable to some extent. But if one desires to go to the trouble and expense of furnishing each tree with a steel frame and constituting it a Class A building with such a frame and proper reinfrocement of all the branches, there is a way to do it as described by Mr. Hooland of the Wenatchee Valley, Washington, as follows:

"It is very necessary in orchards which are carrying heavy crops to support the branches with props to keep them from being broken down by the weight of ripening fruit. There are several ways in which this can be done. The one which will be described here is the most economical of any method in use at the present time.

"The materials needed for one tree consist of (1) one strong, solid pole; (2) a quantity of 16-gauge galvanized wire; (3) limb preservers; (4) one 18-penny nail; (5) one piece of a 2 by 8, or a flat rock.

"The pole to be used must be strong and solid, at least as long as two-thirds the length of the tree, and with a diameter of not less than three inches. The pole must be of strong wood and good throughout its entire length, as it must bear the weight of the entire load, and for this reason the cheapest kind of poles are not the best.

"The limb preservers consist of either leather or galvanized sheet iron, or of leather and wooden sticks. They can be made of scrap leather from the harness-shop or from old boots, shoes or even tin cans. Their purpose is to prevent the wire from cutting into the limb.

"The 2 by 8 or flat rock is to serve as the foundation for the pole and prevent its sinking into the ground, and the nail is to put into the top of the pole and serves in supporting the wires.

"The board or flat rock is placed on the ground about two feet from the trunk of the tree and on the leeward side. From the nail in the top of the pole four wires are suspended and the pole allowed to lean toward the windward side. Stretch each of the wires down to solid limbs, in such a manner as will best serve as braces for the pole and hold it in position.

"When the limb preservers are put on, be sure not to tie them around the limbs, but thread the wire through both holes and place them under the limbs; fasten the ends of the wire about five or six inches above the limb, making a tie that will not slip and yet support the limb, just as a child is supported by the board in a swing. As many additional wires can be put on as may be necessary, although two or more limbs can frequently be fastened to the same wire.

"The cost of this method of propping trees will depend on the material used and the size of the tree. On the average I believe 40 cents per tree will be plenty to establish and keep in proper form for 10 years. This makes the annual expense only 4 cents.

"Blackman Brothers put in such a system as this on their 30-acre tract some years ago, and it has worked very satisfactorily. Last year from this orchard an average of 1000 boxes an acre was taken and without a single breakdown in any of the trees.

"This outfit stands winter and summer, the only changes that are needed from time to time being to change the wires where necessary and put in more wires where they are needed. This method will not eliminate the necessity for proper pruning, but it will prevent serious breakdowns and save a whole lot of the crop and many a fruit tree from total destruction."

BLACKBIRDS AND SUNFLOWERS.

To the Editor: Can anything be done to prevent blackbirds from destroying crops? Are these birds protected by law in this State? After my promising grain crop was destroyed by the floodwaters about five miles northeast of Dunnigan, Yolo county, I planted, after the water receded, about twenty acres in common sunflowers. The growth was excellent, blooms immense, and well filled with seeds. A return of at least 400 sacks of sunflower seed was expected, when, before the crop had thoroughly ripened, blackbirds began destruction and have continued it so persistently that probably not more than four or five sacks will be realized. These birds cause similar destruction of Egyptian corn.

Can you bring any influence to bear to have such pests exterminated, or can you suggest any method by which we farmers can protect ourselves from a similar experience for the coming year? FARMER.

Dunnigan, Cal.

ANSWER BY MR. H. C. BRYANT, ASSISTANT FISH AND GAME COMMISSION.

The red-winged blackbird especially, is a great pest to the grower of sunflower seeds and Egyptian corn. Your correspondent will be interested to know that the Fish and Game Commission is now carrying on an investigation into the food habits of several of the birds of the State, the blackbird included. Birds are collected each month of the year, in different parts of the State, and the contents of their stomachs examined. It is hoped that in this way a complete knowledge of the food habits of each bird for the whole year will be obtained. If, after this thorough investigation, it is found that the blackbird does more harm than good, some attempt will undoubtedly be made to protect the farmer from its depredations; or, if it is found to do more good than harm, it will undoubtedly be kept on the protected list.

The law permits the killing of any bird by the owner or tenant of any premises where such bird is found destroying crops. A shotgun is perhaps the most effective as a protection, but its use is expensive. Poisoning with strychnine has been found successful in some cases, but where there are plenty of sunflower seeds to be had from the head, it is difficult to get the birds to take the poisoned grain. Then, too, poisoning is always dangerous, especially if there are domestic birds about. The hanging of dead birds in different parts of the field has sometimes been found advantageous for a time. This method has been found more successful with crows than with blackbirds, however.

I am interested in knowing if the flocks of blackbirds whose depredations your correspondent describes were made up entirely of red-winged blackbirds. There are two common blackbirds in the State, one having different food habits from the other. The one is known as the red-winged blackbird, for the male has a patch of red feathers on the wing; and the other as the Brewer blackbird, it being shiny black in color. A third species which inhabits the tules, the yellow-headed blackbird, is troublesome at times, but is not so common as the other species. It is desirable to have information as to the comparative numbers of these species which have destroyed the sunflowers.

A SURPLUS OF ONIONS.

The question of too much planting, following high prices and good profits, has been exemplified this year by the condition of onions on the market. The wholesale price of onions in San Francisco is at time of writing between 60 and 70 cents per bag of 100 and 110 pounds, and with more to come and no place to sell them.

As was stated in a previous issue of the PACIFIC RURAL PRESS, people won't eat more onions because they are cheap, and freight is too high to send them to other markets, and a surplus cannot be disposed of in the markets in any possible way. Reports from the East indicate that the onion market there is about the same as here, with no relief in sight, and, unless prospects are deceiving, the grower can get but little more than enough to pay for the digging, and that for only the best grade.

At present prices $10 per ton in the field would be a generous price, while if the supply were cut down one-third, at least twice as much could be obtained for them and profits more than doubled, without the "ultimate consumer" or any of the middlemen being enough worse off to hurt. If it were possible to induce the hogs or other cattle to eat up all the surplus and perhaps a little more, not only would the onions that have to be dumped into the bay and the cost of freight handling saved, but prices could be improved and the onions turned into valuable meat.

Another crop which is in about the same condition as onions are melons, both watermelons and cantaloupes. Prices for these are at bedrock for grower—$2.50 per ton, f. o. b., for matermelons, and corresponding for the others. In other words, the only expense the consumer has to go to, practically speaking, is to pay the freight and middlemen's profits. Both cool weather and excessive production are responsible to some extent for these prices to the grower, and the only thing this season seems to be to use the melons for hog or cattle feed, which is being done in many places.

PRUNING AND FERTILIZING TOMATOES.

How to get good tomatoes and more of them is a most important matter, and many growers fail to get either. Mr. S. V. Godden gives the Florida Grower some hints on these points.

Pruning.—Probably no other vegetable in cultivation has received as much attention as the tomato. There are two reasons for pruning tomatoes. The first is to bring the earliest fruit in earlier than would be done without pruning. The second is to develop the fruit to its full extent. The earliest form of pruning was to remove all the side shoots, and then train the plant up to the main stem, or vine, as it is usually called, this being either tied to a stake or fastened to a trellis. While this has done much toward producing a good crop, it does very little in the way of bringing the crop in earlier. Experience shows that the earliest tomatoes can be forced to ripen a week or ten days earlier than where the tomatoes have not been topped. By topping or cutting out the terminal bud at just below the second cluster of blossoms, before the first cluster has begun to open, the growing force is thrown into the first cluster. It is not unusual, under such treatment, to have this cluster produce from five to seven berries, and all of these ripen at nearly the same time. Pruning should not be carried too far, as the leaf surface of the plant must be sufficient to assimilate the crude material that is absorbed by the roots. It must be remembered that we want to check further growth of the stem and further formation of fruit, but not interfere with the production of leaf surface, so the mere removing of the buds and flower clusters will be pruning enough.

Fertilizing.—A tomato fertilizer formula is as follows:

Nitrogen	4 per cent.
Potash	7 per cent.
Available phosphoric acid	6 per cent.

Use from 1000 to 2000 pounds per acre, depending upon the fertility of the soil and the distance apart that the plants are set. If the soil is rich in humus or nitrogen matter, a portion of the nitrogen should be withheld, as too much of this element makes tomatoes soft and liable to have hollow places in the interior.

The elements noted above can be secured as follows:

Nitrogen: Pounds of different material for one acre—700 to 1400 lbs. cottonseed meal; or 400 to 800 lbs. dried blood; or 275 to 500 lbs. nitrate of soda; or 200 to 400 lbs. sulphate of ammonia.

Potash: Pounds of different material for one acre—900 to 1800 lbs. kainit; or 140 to 280 lbs. muriate of potash; or 140 to 280 lbs. sulphate of potash; or 300 to 600 lbs. sulphate of potash and sulphate of magnesia.

Phosphoric Acid: Pounds of different material in one acre—600 to 1200 lbs. acid phosphate; or 500 to 1000 lbs. dissolved bone.

AGRICULTURAL REVIEW.

With the Fruit Men.

Rains in Washington are reported to have injured the prune crop.

It is stated that rains have caused damage to prunes in Washington.

A 20-acre apple orchard near Sebastopol recently sold for $22,000, or $1100 per acre.

High prices for prunes have caused heavy ordering of young trees at Gilroy.

More extensive fumigation of lemon trees than ever before is being started in Santa Barbara.

Rains in the upper Sacramento valley have done some damage to prunes that are being dried.

Charles Teague and S. N. Griffith of Fresno will plant 1000 acres to peaches in Merced county near Minturn.

County Horticulturist L. R. Bodfeld of Colusa has requested the supervisors to buy two tents to fumigate citrus trees.

A circular from the J. K. Armsby Company states that the peach crop is below the packer's early estimates, the dried fruit being 10,000 tons or less.

From Concord, sales of almond crops are reported at the following prices: Nonpareils, 16½ cents; IXL's, 15½ cents; Ne Plus, 14½ cents; Drakes, 12 cents.

The J. K. Armsby Company has brought suit against the California Fruit Growers' Exchange to prohibit them from using the trademark "Sunkist," claiming a prior use of the term.

The Tulare County Citrus Fruit Exchange has elected officers for the coming year. The Exchange has marketed this year 236,750 boxes of fruit, receiving for the same $404,107.72.

The annual statement of the California Fruit Growers' Exchange shows that the concern handled 10,824,882 boxes of fruit during the year, or 61% of the crop. The average per box f. o. b. was $1.89.

Horticultural Commissioner W. H. Block of Santa Cruz county reports good results from spraying against woolly aphis with Black Leaf 40. The aphids have been bad this year, although other conditions in the orchards are good.

The Smyrna fig crop has suffered severely this year from unfavorable weather, both the quality and quantity suffering. More efforts are being made to improve conditions in the pack. In Asia Minor a good olive crop is expected.

Notes on Grapes.

The Eisen Winery of Fresno burned last week, the loss being $75,000.

The price for second-crop Muscats in the raisin belt is said to be $12 per ton. Rapid deliveries of the dried Muscats are not expected to begin for a week yet.

Many Thompson Seedless grapes are being dried in the Sacramento valley. The crop is good, but prices for fresh grapes is not high enough to take many to the markets.

Several ranchers near Fresno have arranged for boys from the Fresno schools to come out and pick grapes on Saturdays, paying 3 cents per tray. The first day out no boy made less than $1.

Muscat picking is going on at El Cajon, San Diego county, the crop being below average, but of good quality. A bunch of the Muscats from Escondido valley exhibited at the Grape Day Festival at Escondido by Mrs. T. J. Powers weighed 8 pounds 3 ounces.

Threatening weather and one or two showers have caused the raisin men to stack their trays several times recently in the San Joaquin raisin district, although the difficulty of obtaining sufficient help has hindered stacking on many ranches, and the lack of help seems likely to cause considerable loss if rains do come, and further reduce the size of the crop.

The Weather Bureau is in closer touch with the raisin men than ever before and the weather prospects are sent from San Francisco every two hours in doubtful weather. Forecaster Bonnett of the San Joaquin district, or agents he has appointed at various points, can then be reached by every rancher in the raisin belt who has a telephone.

At Neroly, Contra Costa county, $14 is said to be the price set for wine grapes. At Livermore, Alameda county, it is said that $20 is being paid for both white and black grapes. From St. Helena it is reported that common grapes are selling at $15 to $17, with finer varieties at a premium.

The work of organizing a Raisin Exchange in Fresno has been forwarded by the appointment of a committee of five, headed by Judge M. K. Harris, who will draw up definite articles of organization for the exchange, following as closely as possible the plan of the Elgin Butter Exchange. Other plans of organizing to benefit the industry have been temporarily laid aside.

Horticultural Commissioner J. W. Jeffrey has called a meeting of grape growers and shippers at Sacramento for September 30 to discuss methods for preventing a repetition of the low prices that were obtained for Tokays and other fresh fruit late this season. Standardization will be one of the principal topics discussed, as it is claimed that most grapes were shipped with insufficient sugar, although the color was good.

Mrs. V. A. Mowat of Fresno, who buys raisins to sell in the East with her own crop, has returned from there, and in an open letter states that the demand from the trade justifies prices of 4¼ to 4½ cents a pound in the sweatbox, and urges

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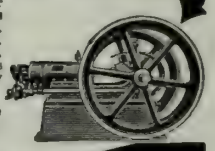
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growers not to sell for less nor to hold for much higher, and to wait till the raisins are ready before selling at all. It is stated that conditions are as strong statistically as at any time in the season.

Agricultural Notes.

In Lassen county on sage brush land 100 bushels of oats to the acre were said to have been secured by August Anderson of Red Rock.

For the irrigation season coming to a close in Stanislaus county 30,524 acres of alfalfa were irrigated, against 23,323 in 1910, and 16,306 in 1909. The increase in dairying corresponds with this.

A heavy frost in the Delta lands has cut back the bean crop about 10% and served to ripen the potatoes yet in the ground. Frosts have also killed tomatoes in the upper Sacramento valley, although the low prices have caused many of these to remain unpicked.

The California Vegetable Union recently shipped a straight carload of tomatoes East from Fullerton, Orange county, the shipment being about two weeks earlier than last year. About 50 carloads will be shipped this season, from that place.

Harvesting the Orange county bean crop has been almost completed. Ten sacks per acre are being secured. There were 23,000 acres in beans this year. Barnard Bros. of Santa Monica have leased a large area at Oceanside, San Diego county, to plant to limas next year.

Miscellaneous.

November 20 to 25 has been set for the date of the Imperial county fair.

R. E. Luscomb is preparing to reclaim his land on Grizzly island, Solano county.

The main canal of the Thornton Irrigation Company, San Joaquin county, has been completed and work begun on the laterals.

The Fresno County Poultry Association will hold its annual show in connection with the county fair and not as a separate undertaking.

Squirrel inspectors of Santa Clara county state that half the rodents in the county have been killed. The second inspection has begun.

Land owners near Woodville, Tulare county, are organizing a levee protective project to protect their lands from overflow from the river.

A live stock and agricultural fair was held at Fallon, Nevada, last week to celebrate the turning on of water from the government irrigation district.

The Citrus Chamber of Commerce of Tulare county was opened this week at Porterville with a public meeting addressed by a number of soil experts.

The Co-operative Land & Trust Company is to open 2500 acres near Atwater, Merced county, for colonization. It adjoins Merced Colony No. 2, and will be irrigated from the Crocker-Hoffman system.

Clark & Snook of Sacramento recently added 4120 acres of tule basin lands near O'Banion Corners, Sutter county, to their holdings through purchase from the Decker-Jewett Co. of Marysville. The land will be reclaimed.

The Southern Pacific has arranged to distribute poison at cost price to lessees on their land in Tulare and Kings counties for the purpose of killing squirrels, and will have the poison distributed themselves on unleased lands.

An outbreak of glanders in Los Angeles has caused the authorities to temporarily remove water from the watering troughs to prevent the spread of the disease.

Property owners along the Lompoc river are organizing to prevent the Santa Ynez river from overflowing and doing great damage next winter. Among others means employed to prevent the overflow will be the planting of willows along weak places in the banks.

Messrs. Betts and Post of Terra Bella, Tulare county, have completed the installation of a $2200 pumping and irrigation outfit on their ranch. There will be a lift of 170 feet. Eighty acres of the ranch is being prepared for orange planting.

County Bee Inspector A. F. Wagner of Imperial is importing 250 Italian queen bees from the East and distributing them among apiaries of the county for the purpose of obtaining better resistance to disease and improving the quality of the bees.

The export value of the Chinese walnuts such as were mentioned in the PACIFIC RURAL PRESS of September 16 is said in a recent consular report to have amounted to $43,829 last year, the first year that any amount was shipped here, and a still greater amount is expected to be shipped this year. The nuts are produced in Manchuria and northern China and are so hardy that an effort is being made by the U. S. Bureau of Plant Introduction to introduce them into the Northern States, where they might possibly compete with the local product. Some of the nuts are very soft shelled and of these only the meat is shipped into this country.

ROUND VALLEY: ITS PAST AND FUTURE.

Written for the PACIFIC RURAL PRESS
By Mr. D. L. SCHRADER.

Round Valley, in Mendocino county, is situated in the heart of the Coast Range mountains. It is 52 miles north and east of Willits, and 25 miles east of Laytonville. The valley is almost circular, the greatest length being nine miles and the greatest width seven miles. The upper half, or about 16,000 acres, belongs to the Round Valley Indian Reservation The lower half is being farmed by Americans.

The soil of the valley is very rich, most of it being a heavy loam and having an average depth of about 30 feet. Alfalfa, fruits, and vegetables are grown without irrigation.

Until the Northwestern Pacific began to extend its line to Eureka, very little was done in the way of farming in the valley, for the reason that it was to expensive to get the produce out; but now that the railroad passes within 12 miles, the farmers are beginning to wake up.

The valley has a great many natural resources that will be of great value when developed. Artesian wells are to be had all over the valley. Ed. Gibson sank a 7-inch well 90 feet and struck a stream of water that runs all the year round. It furnishes him with water enough to supply the barn and house, besides a good-sized garden and 20 acres of alfalfa. E. F. Bates struck artesian pressure at 80 feet.

The Eel river flows about five miles east of the valley, and as its bed is a good deal higher than the floor of the valley, enough water to irrigate it all could be taken out by buiding a dam and digging a tunnel through a small hill.

A co-operative creamery and chees factory has been organized, and $5000 has been subscribed. Work on the building will begin as soon as building material can be obtained. As from eight to ten tons of alfalfa to the acre can be grown with irrigation, the dairy outlook for the valley is good.

The Hop and Barley Ranch, comprising some 8000 acres, was sold a short time ago to E. C. Horst Company of Sacramento for $125,000. Some 600 acres is to be planted to hops and the rest is to be cut up in small tracts and sold.

With rich soil and plenty of water for irrigation, an almost ideal climate, the Round Valley has a great future before it The elevation is 1500 feet above sea-level. Frost is seldom heavy enough to do a great deal of damage, and fruits of all kinds do well here.



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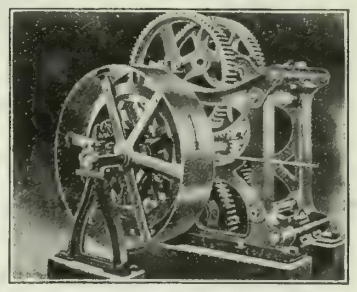
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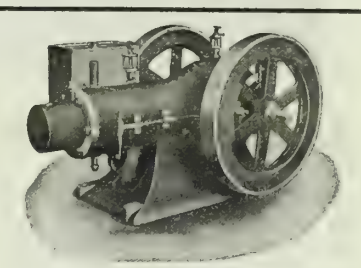
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How Mendocino Farmers Work Together.

To the Editor: The Ukiah Farmers' Club has been in existence just about six months and has accomplished results worthy of pride when we consider the obstacles overcome and those still facing the farmers.

Mendocino is truly a great county from the standpoint of natural resources—not one, but many. At the same time, these resources are but little known, even among our own citizens. Outside of the State our county is almost entirely unknown, and very few of the Eastern settlers or tourists reach us. Among the Californians, if we ask for information about Mendocino county, we are immediately discouraged. The answer will be to the effect that it is a wild, unsettled county and the principal industries stock-raising and lumbering, with a few hops grown around Ukiah. This statement is true, yet it is very misleading, because it implies lack of opportunity or possibility for anything else.

Pioneer Agriculture. — Mendocino is not a mineral-producing county, and its early settlers did not arrive until after other portions of the State were well settled. They were made up largely of men who had gotten rich in the gold mines, and so decided to hunt a good farm or stock range. The conditions of the county were ideal for this. The mountains are low and therefore the winters are mild. The great redwood timber grows in a comparatively narrow belt along the coast, and just over the first low range the timber becomes oak, fir, pine, madrona, manzanita, and brush frequently broken by grassy hillsides, making an ideal stock range.

For general farming these pioneers found numerous valleys between the many broken hill ranges. Of these the principal ones are Sanel, Anderson, Ukiah, Redwood, Potter, Little Lake, and Round valleys. The land in all of these is exceedingly rich and productive, but owing to lack of railroad transportation much of the land has been given over to hay and grain growing. Many fields have been cropped continuously for 30 years to wheat, barley, and oats, and still produce excellent crops, although they are beginning to show the effect of such soil robbery.

Of course, our lands, like many other parts of California, have been held in large tracts in stock ranges and grain farms. This era seems now to be at an end, and we are just entering upon a new period of development which will be entirely different. This is owing, first, to better transportation. The railroad, which for years has ended at Willits, is now rapidly nearing Eureka, work being pushed at both ends of the gap. North of Eureka work is being pushed to extend to Portland, so that there must soon be a coast line from Portland to San Francisco. Fort Bragg is the largest lumber shipping point on our coast, and the railroad from that town will have reached Willits within a few weeks. A railroad must of necessity soon reach our main line at some point from Lake Port, the county seat of Lake county. Work is now being done on three separate propositions.

The next cause leading toward changed conditions is found in the greatly decreased returns from the large ranches. The ranges have for years been heavily overstocked and will not provide winter feed without assistance from the valleys. The valley lands are now much more valuable for something else than hay, and so the stockmen cannot afford either to raise or buy hay.

Another factor is the natural breaking up of the large holdings by the settlement of estates. The pioneers will soon be gone and their sons and daughters who inherit the lands either make several farms of the home place or sell it to others who do. This process has been very noticeable around Ukiah during the past four years.

Better transportation has given us a dairy industry, made fruit growing profitable, and increased the profits in all other farm products. This year has witnessed a remarkable growth in the poultry business, equal to more than 1000 per cent during the past 12 months.

An Awakening.—The county as a whole is much like a young giant just coming to the realization that he is a giant. The towns, however, are the last to wake up. Ukiah has been notorious for her ability to do the same old way. Now it seems that she, too, is really awake. This summer her principal streets have been well paved with concrete and asphaltum, new cement sidewalks have been put down, some modern houses built, her merchants have improved their stores, and many other evidences of an awakening are to be seen.

Co-operative Impulse. — This natural evolution of our industries has brought about a strong demand for co-operative organization among the farmers of the county, and most especially of Ukiah valley. All of the farmers were discussing the problems, but there seemed to be no leader or single person enough concerned to start a movement. About the first of last February a conversation was held on the street between Horticulturist J. R. Banks, F. O. Mower, principal of the Ukiah High School, C. D. Flowers, principal of the grammar school, and C. A. Bernhard, commercial instructor in the Ukiah High School. It was then decided to call a meeting of farmers for the next Saturday in F. C. Albertson's office. This meeting was attended by about 15 farmers and was the real birth of the Farmers' Club, although we were at once nicknamed the "Schoolmasters' Club." Mr. Mower was elected temporary chairman and has ever since taken an active and helpful interest in the work of the club.

For a month meetings were held on each Saturday afternoon in an effort to discover what we could and should do. Some of these meetings were attended by more than 100 farmers. On March 11 a constitution was adopted and permanent organization made. J. C. Johnson, general farmer, president; Mack Howard, general farmer, vice-president; C. A. Bernhard, high school teacher and fruit farmer, secretary-treasurer. The work of the club was divided among five committeemen who were to be the leaders in any work along their respective lines. These men are: W. F. Willcox, fruit; C. L. Crawford, grain; D. S. McKinley, stock and dairy; Frank Cunningham, hops; and S. J. Carrol, poultry.

Poultry.—The poultry business seemed to demand the first attention, but before anything could be done, the grape growers were clamoring for a hearing. Due deliberation soon showed that the poultry business must have a separate organization and this was at once done under the name of the Ukiah Poultry Association, auxiliary to the Farmers' Club.

Last year there were only two or three men with as many as 500 hens, and perhaps not 15 altogether that were trying to conduct a poultry business. There was no cash market for eggs or poultry, and the very few who shipped had to do so by express, paying the single-case rate.

Now the Poultry Association numbers between 40 and 50 men. They ship twice per week by freight under the Association name. They maintain a regular meeting-room and shipping-room, and a secretary to attend to their business. They will represent close to 20,000 hens for this winter's laying. Last spring the Carrol & Malpas firm (Ukiah Hatchery) hatched and sold about 15,000 White Leghorn chickens, and this is their first season.

GRAPES.—The grape question was very serious. Along both sides of the Ukiah valley are many acres of brush land which will when cleared produce the finest and sweetest wine grapes in California. A few years ago some enterprising men with faith in these lands made contracts with leading wineries for 10-year periods and began to clear and plant. As a result, last year many tons of choice wine grapes remained unpicked ,and early last spring some men began to plow out the young vineyards.

After much careful work on the part of the secretary and a committee it was learned that in and around Ukiah district there are about 3000 acres of wine grapes, and that the crop for this year would probably be over 3000 tons from those old enough to bear and not already contracted. With this information in definite shape over the signatures of the growers, a committee was sent out to interview the wine companies with a view of getting one of them to build us a winery and ascertain that contracts could be made.

At the next meeting we held we had with us the president, Mr. P. Bernard, and other officers and directors of the French-American Wine Co. This meeting was a most excellent example of what co-operation among the farmers can do. We met in the courtroom. Our visitors and committeemen occupied the jury corner and chairs; the other members and listeners, the audience seats. An informal meeting was held in which everybody talked as he thought. It was all very pleasant, and after about one hour the Secretary went out and borrowed a typewriter and a contract was drawn up then and there and signed.

As a result of this contract, nearly all the grapes in this district are sold at a good price for five years, and the French-American company has just completed a fine new winery, one of the most modern and up-to-date in the State. It is located just outside the city limits on the crossroads. It is electrically equipped, having individual motors for each machine. The crusher is the very latest design and with a capacity to handle grapes as fast as they can be unloaded. An elevator extends down to the railroad switch, and two cars can be unloaded on one side while two wagons are unloading on the other, thus affording every convenience to the grower for rapid handling and no lost time.

About the first of June the farmers thought they had accomplished enough to entitle them to a celebration. At first an evening banquet was planned, but owing to the fact that no adequate banquet hall could be secured, this was given up in favor of a barbecue and basket picnic.

ENJOYABLE REJOICINGS.—On June 24 several hundred farmers and their families assembled in Clark's Grove, two miles south of town. Two steers and a number of hogs and sheep had been roasted, and all farmers brought great baskets of good things to eat. After the dinner a poultry and horse show was viewed with much interest. Seats and a speakers' stand had been arranged, and at 2:30 o'clock the speaking program was called. The visiting speakers were Dr. Leroy Anderson of the University Farm, and Mr. L. C. Byce of the Petaluma Incubator Co. The local speakers were J. Q. White, Superior Judge of this county, and Attorney J. E. Pemberton. The day was ideal, the banquet could not have been better, the speaking was interesting and closely attended, and the general sentiment was well expressed by Mr. Byce and Judge White who declared that they had attended many picnics and banquets in many parts of the United States but had never attended one as enjoyable. Everything on the grounds was free and paid for by the committee in advance. Even feed in abundance was provided for the horses.

From the very beginning it has been recognized that our farmers need more knowledge and training on matters pertaining to their business. With this in mind it was decided to start a farmers' library and exhibit room. A suitable place has been secured, and about $35 worth of books purchased, also the necessary furniture. Our show-window looks out onto the courthouse square, a very public place, and in it we are building up a very fine exhibit of Mendocino county products. So far we have choice peaches, pears, apples, plums, nectarines, corn, etc., processed in the usual way, and this exhibit is beginning to attract great interest.

This winter we expect to secure some good speakers, and also to hold one or more farmers institutes by co-operation with the University. A committee has the organization of a farmers' co-operative fire insurance company in charge, and many plans are being discussed for keeping a little more of the profit on the farmers' products in the farmer's hands.

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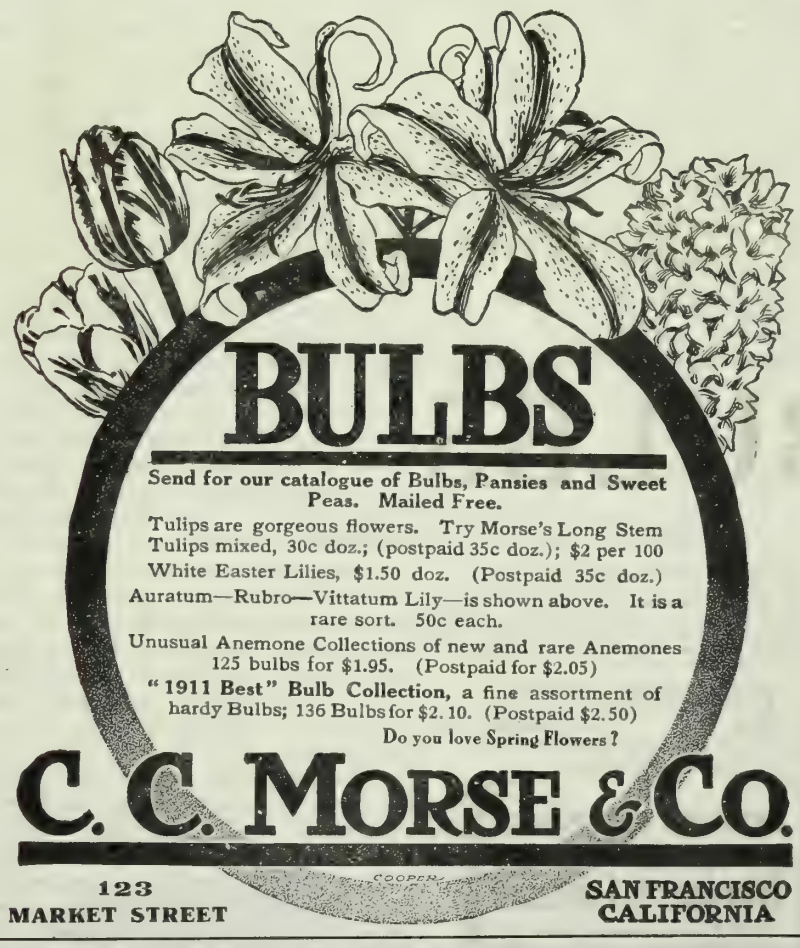
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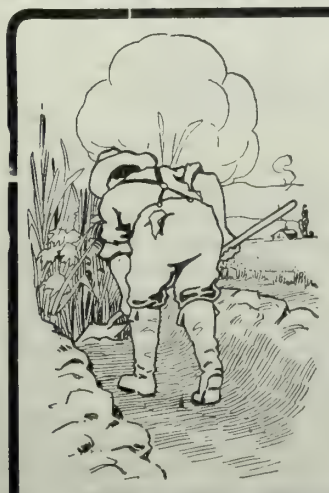
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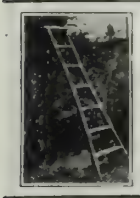
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EXPERIENCE OF THE ANAHEIM ASSOCIATION.

Mr. G. W. Sandlands, secretary of the Anaheim Fruit Association, gives the Gazette of that town in Orange county an account of the successful operation of the Association from which we take the following statements:

During the past season, in spite of the enormous crop (the biggest California ever had), and the many cars of fruit the trade had consequently to select from, we received 126 direct orders for our brands, against 25 the year before, and from actual detailed reports of the different exchange fruit inspectors from the receiving points, we can show that we did not have a car, so far shipped this season, that was reported as "poor" in a single detail of our packing-house work. Of the total, three only were "fair," all the rest being from "good" to "extra good." We believe that the above is sufficient to prove that our work has been consistently first class.

Recognition of the Individual.—To the query, "Does a man who raises first-class fruit, directly benefit through the quality of his fruit over his neighbor who does not raise quite such good fruit?" we emphatically reply, Yes, our competitors' statements to the contrary, notwithstanding. Just stop and think. How could any growers' association exist if this were not the case? It is the most important detail we have always before us and which we believe under our system has been perfected, and certainly is successfully carried out. Every grower's fruit is received, and through a double check system cannot possibly go astray. Every grower's fruit is graded and packed separately; every grade of fruit is pooled separately, and invariably shipped and sold in different markets. Hence the grower who is raising first-class fruit has more fruit packed under the first grade and brand and shipped to the markets calling for that class of fruit. On the other hand, the man who has more of the lower grade of fruit has his fruit shipped to those markets which call for that particular class of fruit. As before stated, the returns on each grade of fruit is made separately, and therefore the grower who has good, first-class fruit gets considerably more money for his crop; and as we, as an association, working at all times for the protection and in the interests of our members, solicit for membership those only who are endeavoring to improve the quality of their fruit by taking proper care of their orchards, the result is that our output of high-grade fruit is above the average.

The Association as a Buyer.—In order to assist and encourage our members to raise larger and better crops, we are now carrying on hand the very best obtainable complete fertilizers, compounded from the most successful formulas. These are to be had by the Association members at prices that will save them considerable money.

Many other necessities of the successful orange grove are also to be obtained through this Association at prices made possible only by the enormous volume of business done by the California Fruit Growers' Exchange, which is thoroughly alive to the interests of the citrus grower. The Exchange is working, among other things, for a cheaper and more effective fumigation system for the elimination of scale and we have it on good authority that something of interest will be given out before long.

Extremely short packs of strawberries, raspberries, peas, beans, and several other vegetables are reported from Canada, the deficiency in the output having to be filled from American ranches and canneries.

Fruit Growers' Talks

No. 7—In No Degree a Trust

The California Fruit Distributors is in no degree a trust, but simply an organization acting as a clearing house upon systematic and successful methods in the best interests of both shippers and growers.

We want the cordial co-operarion of YOU, Mr. Grower—the successful handling of YOUR fruit and the balancing of the markets in your behalf will thus be attained.

Correspondence invited.

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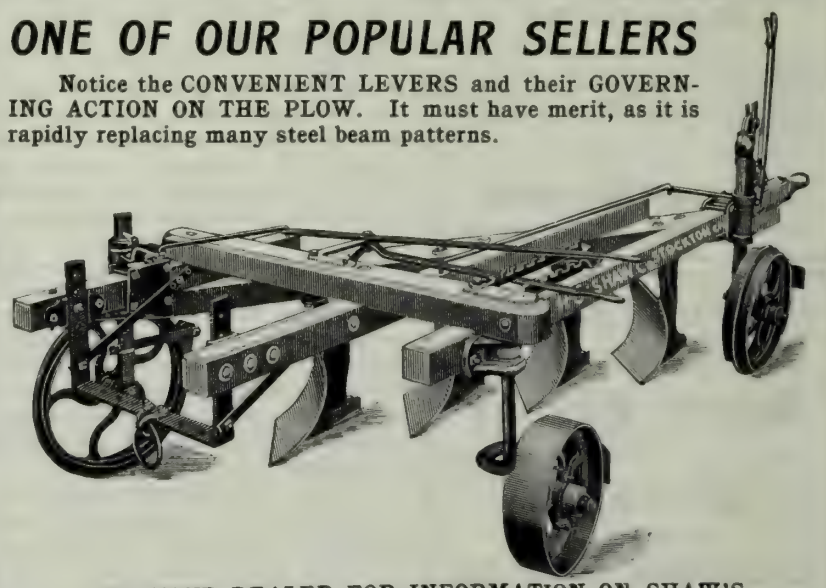
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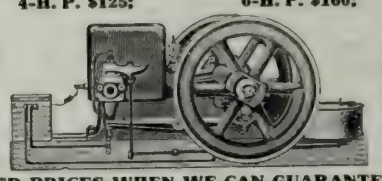
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HINTS ON FILLING THE SILO

As it is during the time for cutting the corn for the silo, the following practical hints by Professor Kennedy of the Iowa Experiment Station may be helpful:

There are several different ways for distributing and packing the corn in the silo. The principal points to be observed are that the light and heavy portions of the corn should be uniformly distributed; that is, the stalks and ears should not be in the center or at one side and the lighter portions, such as the leaves, at the other side. The corn should be uniformly packed or tramped in all parts of the silo. This is necessary to insure a good quality of silage. The majority of the silo owners prefer having the surface of the silage saucer shaped, about two feet higher at the sides than in the center, for the reason that the center where the corn drops and the men usually stand gets solid and hard and does not settle afterward as much as the sides. (This is especially true of those silos filled without some form of a distributing device.) If the sides are constantly kept about two feet higher than the center and well trod or tramped when the silo is full, the silage is wedged tightly against the sides and the heat of fermentation retained, thus killing the germs of mold. One reason why silage molds more at the sides than in the center is that it is not packed closely enough against the sides to prevent the air from reaching the heated silage, thus furnishing mold-making conditions.

There are several patented distributing devices on the market. The majority of these are very helpful in filling the silo. A very simple and cheap device may be made by sewing together a number of sacks (with the ends cut out), making a tube. This is attached to the end of the blow-pipe and manipulated by a man inside of the silo. In this way the corn can be evenly distributed over the entire surface of the silo. The packing of the corn is an important point. True, in time it will settle of its own accord, but more corn can be put in a silo and much better silage made when the packing is given careful attention. Tramping on the part of the men is helpful. The best way, however, is to use two good reliable men with cement tampers. The best silage the writer has ever seen was in a silo which had been packed by cement tampers. There was not a particle of waste after a few inches on the top had been removed.

Adding Water During Filling.—Ordinarily, corn cut at the proper time does not need any water added to make good silage. There are times, however, when it is necessary to add water to the corn in filling the silo. The corn in the silo at the time of filling should feel moist; if not moist, water should be added. Under any of the following conditions water should be added to the corn when filling the silo: First, when the corn is too ripe, and the leaves and part of the stalks are dried out to such an extent that they will not pack well. Second, when the corn is severely frozen before it has reached the proper degree of maturity, liberating the moisture and leaving the leaves and stems dry. Third, when refilling the silo late in the fall with shocked corn, it is always necessary to add water.

There are two ways to add the water. First, put a hose in the silo and thoroughly saturate the dry portions, especially around the walls. Second, where the blower cutter is used, run an inch stream of water into the blower when it is at work. This will add a sufficient amount of water to insure good results.

Filling Cracks and Air Spaces in the Silo.—The silo should be air-tight. Any crack or space which lets in the air will cause more or less moldy silage. These troubles in wooden silos may be avoided at filling time by having a pail of soft clay at hand; as the silo is filled, anything that looks as though it was not air-tight should be filled with a handful of clay. Any cracks or openings in masonry silos should be properly fixed with cement before filling. Great care should be taken to have the door fit well and air-tight. In a good silo, properly filled, there should be no waste except at the top.

Preventing Waste on Top of Silo.—There is always some waste on the top of the silo, unless feeding operations are commenced as soon as the silo is filled. The amount of waste material varies under different conditions of management from two inches where great care is exercised, to ten or twelve inches where practically no precautions are taken to protect the same. Various methods for lessening the amount of waste have been tried. One of the first precautions is to thoroughly pack and level the top of the silo. Some use oat chaff or cut straw. Others thoroughly soak the top with water, then seed with oats. The oats germinate and form a thick covering which serves to keep out the air, thus lessening the waste. One of the easiest and most satisfactory methods to pursue is to pick the ears of the last three or four loads of corn, then run the stalks through the cutter into the silo. Thoroughly tramp the same. Then put on from twenty to thirty barrels of water. This has the effect of hermetically sealing the silo and only a very thin layer of waste will be on top.

Cost of Filling the Silo.—The following statement, furnished by a very successful dairy farmer, gives a fair idea of the cost of filling the silo: "We hire an extra man or two and make long days with the regular help during the filling season. We have our own outfit, silo cutter and engine (16-horse gasoline), also corn binder.

Four teams and drivers	$16.00
Corn binder, man and team	10.00
Cutter and engine with one man	15.00
Two extra men to pitch	5.00
Two men in the silo	5.00
Thirty gallons of gasoline	3.60
Total cost per day	$54.60

"This crew will put in from 85 to 90 tons per day; thus it costs around 60 to 65 cents per ton to fill the silo."

The above statement is a fair one. It has cost from 60 to 75 cents per ton to fill the silos at the Iowa Experiment Station during the past eight years. The higher cost was due to hauling a long distance or to rainy weather when the loading was more difficult and the sand and dirt on the corn made it very difficult to keep the knives on the silage cutter in good working condition.

When to Open the Silo.—The corn may be used for feeding purposes as soon as the silo is filled. For the first few days it will be simply cut corn, as it is not silage until it has gone through the heating process. In a week or ten days' time the real silage will be reached. When managed in this way there is no waste on the top of the silo. If allowed to stand for several weeks there will be some waste in the form of decayed corn. This should be removed and hauled to the field in a manure spreader, as it is not always a safe feed for any class of live stock.

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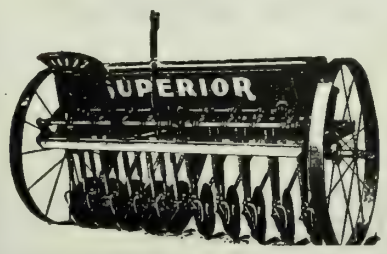
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For further particulars write to above address. Inspection solicited.



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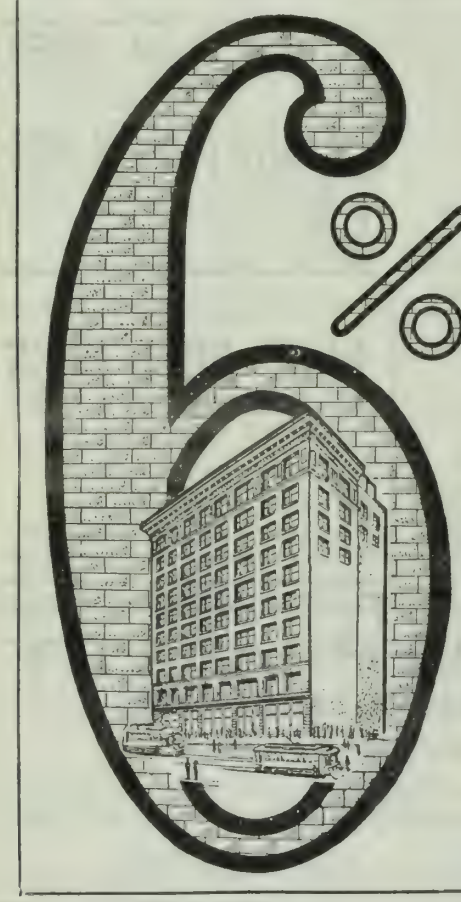
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149 CALIFORNIA STREET, SAN FRANCISCO.

California Hair, Wool and Feather Figures.

Statistics relative to the domestic animals, poultry, and bees reported on farms and ranges for the State of California in the Thirteenth Decennial Census, for 1910, are contained in an official statement issued by Census Director Durand. It is based on tabular summaries prepared under the direction of Dr. Le Grand Powers, Chief Statistician for Agriculture, in the Bureau of the Census. The figures are preliminary and subject to slight revision later, when a few other farms, whose returns, now incomplete, are included in the final tables. It is not expected that these additions will materially modify the amounts or rates stated herein. Special attention is called to the fact that the present statement relates only to live stock on farms and ranges, and does not give the figures for the cities and towns of the State.

AN AGGREGATE INCREASE OF $52,245,000.—The aggregate value of all domestic animals, poultry, and bees in 1910 was $119,487,000, as compared with $67,242,000 in 1900, the amount of increase being $52,245,000, and the rate 77.7 per cent.

The total value of the domestic animals was reported at $114,921,000 in 1910, as against $65,001,000 in 1900, the increase amounting to $49,290,000, or 76.8 per cent.

The poultry were valued at $3,839,000 in 1910, as compared with $1,877,000 in 1900, the gain being $1,962,000, or 104.5 per cent.

The bees were valued at $728,000 in 1910 and $364,000 in 1900, an increase of $364,000, or 100 per cent.

INCREASE OF DOMESTIC ANIMALS.—Horses and colts had a greater value than any other class of domestic animals in 1910, whereas cattle had the greater value in 1900. Cattle were nearly twice as valuable as horses and colts in 1900, while in 1910 the value of horses and colts was slightly more than that of cattle. The total value of horses and colts in 1910 was $46,681,000, while in 1900 it was $17,845,000, an increase of 161.6%. The total value of cattle in 1910 was $46,087,000, as compared with $32,655,000 in 1900, an increase of 41.1%. Next in order in 1910 were mules and mule colts, with a total value of $8,897,000, as compared with $4,611,000 in 1900, an increase amounting to 92.9%. The total value of sheep and lambs in 1910 was $7,661,000, while in 1900 it was $7,003,000, an increase of 9.4%. Swine in 1910 were valued at $4,947,000, as compared with $2,477,000 in 1900, an increase of 99.7%. Asses and burros in 1910 were reported as valued at $345,000, as against $147,000 in 1900, the increase amounting to 135.4%. Goats and kids in 1910 were valued at $302,000, as compared with $263,000 in 1900, an increase of 14.9 per cent.

Horses and mules in 1910 constituted 46.5% of the value of all live stock; cattle, 38.6%; sheep and lambs, 6.4%; swine, 4.1%; poultry, 3.2%; bees, 0.6%; and goats and kids and asses and burros, each 0.3 per cent.

NUMBER OF FARMS REPORTING EACH CLASS.—The total number of farms in the State in 1910 was 87,585. Of these, 91.2%, or 79,846, reported domestic animals 86.4%, or 75,715, reported horses or colts; 72%, or 63,060, reported cattle; 36%, or 31,518, reported swine; 12.5%, or 10,490, reported mules or mule colts; and 4.3%, or 3801, reported sheep or lambs. Only 1.9%, or 1700, reported goats or kids, and 1.2%, or 1086, reported asses or burros.

NUMBER, AGES, AND AVERAGE VALUES OF CATTLE.—The total number of cattle reported in 1910 was 1,863,096. Of these, 464,329 were dairy cows, the total value of which was $18,478,000, and the average value, $39.80. The number of farms reporting dairy cows was 60,906, or 69.5% of the total number of farms in the State. On the other hand, cows not kept for dairy purposes numbered 490,055, and their average value was $23.83. These cows were reported by 16,040 farms, or 18.2% of the total number of farms in the State. The average number of dairy cows per farm reported was over 7, while the average of cows not kept for milk, per farm reporting that class was over 30. Yearling heifers—that is, heifers born during the year 1909—numbered 201,202; average value, $15.59. Mature steers and bulls, born before 1909, were 247,841 in number; average value, $29.52. Yearling steers and bulls born in 1909 numbered 147,454; average value, $17.42. The total number of spring calves born in 1910 was 255,422, and the average value $6.81. It may be noted that the census of 1900 showed a larger number of calves, namely, 329,430. This difference is due to the fact that the census of 1900 was taken as of date June 1, after all the spring calves were born, and the group "calves" included all cattle less than one year of age, so that the number and average value of calves were greater than in 1910, when the census was taken on April 15, and only "calves born in 1910" were included in the comparative group. In addition to the above, 56,793 cattle not classified by age or sex were reported, having an average value of $20.55.

HORSES AND MULES.—The total number of horses and colts reported in 1910 was 462,872. Of these, 397,734 were classed by the census as mature horses—that is, horses born before 1909—and their value was $43,391,000, average value, $109.10.

Yearling colts, which are colts born in 1909, numbered 41,139, and their average value was $57.37. Spring colts, born in 1910, were 22,661 in number, and their average value was reported as $33.44. It may be noted that only 12.9% of the farms of the State reported colts born in 1910. There were also reported 1338 horses, not classified by age or sex, with an average value of $128.40.

The total number of mules of all ages in 1910 was 68,623, which is 14.8% of the number of horses and colts. Of these, adult mules born before 1909 numbered 60,958, and their average value was $138.39. Only 2807 mule colts born in 1910 were reported, having an average value of $39.74, while 4858 yearling colts were reported, with an average value of $71.80. There were 2487 asses and burros reported, with a total value of $345,000 and an average value of $138.86.

SHEEP.—The total number of sheep and lambs reported for 1910 was 2,234,125. Of these, 1,130,476 were mature ewes born before 1910, and their total value was $4,542,000, or an average of $4.02. This total value was nearly three-fifths of the total value of all sheep and lambs. Rams and wethers numbered 269,392, and the average value was $4.24. Spring lambs were 234,257 in number, and their average value was given as $2.37. The number of spring lambs was 73.8% of the number of ewes. There were 128,181 goats and kids reported, having an average value of $2.36. The farms reporting goats show an average of 75 per farm.

SWINE.—The total number of swine in 1910 was 749,643, of which over three-fifths, or 469,149, were classed as "hogs born before 1910." The total value of these was $4,196,000, and the average value, $8.94. The spring pigs, born in

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1910, numbered 280,494, and their average value was reported as $2.68.

POULTRY.—The summary on poultry shows that the total number of farms reporting the different kinds in 1910 was 66,251, the total number of fowls being 6,087,159, and the total value $3,839,000.

Of the total number of farms reporting poultry, 66,251, nearly all, or 66,055, reported chickens, numbering 5,665,964, valued at $3,237,000; 11,927 reported turkeys, numbering 116,602, valued at $258,000; 3606 reported ducks, numbering 40,061, valued at $28,300; 2567 reported geese, numbering 14,195, valued at $18,600; 760 reported guinea fowls, numbering 2920 ,valued at $1993; 2152 reported pigeons, numbering 246,065, valued at $69,300; and 9 reported ostriches, numbering 974, valued at $224,000. There were also reported peafowls, valued at $1431; pheasants, valued at $342; and India jungle fowls, valued at $150.

Of the whole number of farms in the State, those returning chickens were 75.4%; turkeys, 13.6%; ducks, 4.1%; geese, 2.9%; pigeons, 2.5%; guinea fowls, 0.9%; and each of the others less than one-tenth of 1%. The reported increase in the value of poultry on California farms in the 10 years 1900 to 1910 was 104.5%; the increase in the total number of fowls, 45.1%. The number of farms reporting poultry increased 10,772, and the number of fowls per farm reporting increased from 76 to 92.

BEES.—The number of farms reporting bees decreased from 6915 in 1900 to 6896 in 1910, or 0.7%, while the colonies of bees increased from 129,444 to 200,718, or 55.1%, and the value increased from $364,000 to $728,000, or 100.1 per cent.

The relative increase in value of bees during the decade was about twice as great as that of the number of colonies, whereas the number of farms reporting decreased slightly. About 8 farms in each 100 reported bees in 1910, while in 1900 over 9 in each 100 reported bees.

LOU DILLON AS A MATRON.

Readers who remember the beautiful portrait of Lou Dillon, the famous native daughter of California, in the PACIFIC RURAL PRESS of December 24, in which she was honored as "the fastest trotter in the world," will be interested to read of her present matronly achievements on the Walnut Stock Farm in Kentucky. A well known turf writer, Mr. Hawley, in a recent issue of the Stock Farm, speaks of Lou Dillon as a brood mare. The queen of all trotters has a pasture to herself and with her three weeks old foal is afforded the luxury of paddock knee deep in blue grass, and with shade trees, under the foliage of which the noonday sun cannot penetrate. If Lou Dillon had never been known to fame, if her achievements consisted merely of a mile in 2:30, she would be one of the most desirable brood mares in the world. She is the most perfect type of a matron I have ever seen in the ranks of trotting mares, and I know of few thoroughbreds that are her superiors. She has that exquisite quality which characterizes the best type of thoroughbred, great length, yet covering little ground, has the straight hind leg so rarely seen in a trotter, great depth through the heart, the best of feet and legs and a big barrel which is well ribbed back.

When one considers the remarkable achievements of Lou Dillon, all that she has gone through, the unheard of tasks she was put to, and the almost merciless manner in which she was trained, one wonders that she is today the superb looking matron that sleepily browses the blue grass pastures at Walnut Hill, that she is apparently sound, and that she has produced at least one extraordinary trotter. In point of speed and probably in point of endurance, no trotter in the history of the world has ever approached Lou Dillon. In saying that she was seconds faster than any other trotter that ever lived, I am merely quoting those who were best able to judge of her real capacity. More than once in her work, she has trotted miles faster than have ever been credited to any other trotter except Uhlan, and in one workout she was given three heats averaging 2:01½. She has repeatedly trotted quarters in 27½ seconds or better, and on one occasion covered a measured quarter on the speedway in New York in 25½ seconds, accurately timed by experts.

Had Lou Dillon been given the sort of training that Uhlan receives, had she been been in the hands of the man who made Hamburg Belle famous, none other than herself would now be the champion of champions. Had she not been given the fiercest kind of work, had it not been the practice of her trainer to work her ten times as severely as was necessary, she would have drawn a wagon in two minutes without a pacemaker, and would have done it with consummate ease, and I shall always be of the opinion, and in this I am supported by several of the most practical horsemen in America, that the mare had the capacity during the period in which she was being torn wide open on every and all occasions, to trot a mile in 1:58 without the aid of artificial appliances.

THE NEW STALLION LAW.

Arrangements are being completed by State Veterinarian Charles Keane for the enforcement of the new stallion law passed by the last session of the legislature and in effect August 1, important sections of which were published in the PACIFIC RURAL PRESS of August 19.

Blanks have been prepared for the necessary information regarding each stallion or jack registered which will be sent to veterinarians throughout the State and to others interested. The stallion owner may employ any veterinarian he sees fit to make the examination, and, according to the law, an affidavit regarding the condition of the stallion or jack has to be filed at Sacramento, whether the animal passes the examination or not.

The examination is only to be a clinical one, unless there are indications of disease present—that is, no specific tests of the enumerated diseases need be made unless the animal being examined appears to have one or more of them.

The diseases are only those that are at all hereditary, contagious or infectious and which might injuriously affect either mare or foal.

It is thought that the registration will proceed very rapidly as soon as all necessary blanks are ready, owing to the difficulty a stallion owner would have in doing business when he had no permit to show, even if the authorities did not learn of his using the stallion.

J. A. Viney, of Tudor, Sutter county, is finishing a barn that will accommodate 100 cows.

PROUD OF THEIR SHARPLES

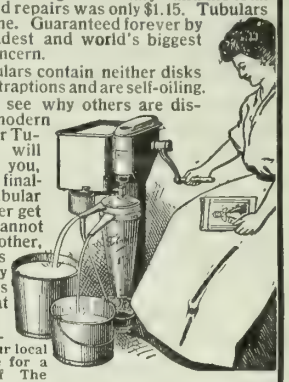
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STATE ASSISTANCE AGAINST BOVINE TUBERCULOSIS.

As a step toward securing the eradication of bovine tuberculosis throughout the State, Dr. Charles Keane, State Veterinarian, has agreed to have the dairy herd of any dairyman so requesting tested free of charge by himself or deputies, hoping by this means to demonstrate the financial benefit to be derived by dairymen in having tubercular-free cows, and thus make it easier to finally secure compulsory testing and the removal of the diseased cattle.

The conditions under which the testing is to be done are made as easy as possible for the dairymen, and while the testing will be free, the removal of the diseased cows is also to be done in a way that will cause practically no loss to him especially in comparison with the loss he would sustain in not having the testing done.

CONDITIONS FOR TESTING.—These conditions are as follows: The animals which show the disease both by the test and a physical examination are to be sold for beef, under Federal inspection; cows reacting to the test but not showing the disease otherwise, are to be removed from healthy cows and the milk sterilized before being used. Their calves can be added to the well herd if removed from their dams at once and fed on clean milk. Reacting bulls may be used, but not run with the cows. All cattle added to the herd are to be tested, all tested cows marked for identification, and reasonable sanitary methods employed on the dairy. Thus the only loss possible is the sale of a cow which is sick and sure to decline rapidly in value for beef, instead of keeping it for milk.

LITTLE TEXAS FEVER.

Recent reports have been appearing in several rural papers to the effect that a quarantine against the Texas fever has been lifted in Fresno, Kings, and Tulare counties, following an inspection of the territory by Federal and State officers. As a matter of fact, there has been neither fever nor quarantine in any part of the San Joaquin valley for a number of years.

The statement that a quarantine fence is being erected along the Mexican boundary in order to keep out the fever is also without foundation. No such fence is needed, and most of the territory along that line is free from the trouble.

At the present time the fever is found in this State only in parts of three counties, San Luis Obispo, Orange, and San Diego. No fever has been found for some time in one of the quarantined districts in San Luis Obispo county, and the quarantine may soon be lifted. Very rapid progress is also being made in checking the disease in the districts where it still exists, and it is only a question of a very few years until it will disappear entirely here. The quarantined districts are comparatively small, and no great inconvenience or expense is required in continuing or enforcing the quarantine.

DAIRY NOTES.

The agitation in favor of pure milk has resulted in the Southern Pacific furnishing certified milk on its trains for babies who may be traveling and unable to get pure milk otherwise.

A cow-testing association such as Professor Leroy Anderson of the University of California has been appointed to organize when desired, has been formed in the Chester valley, Pennsylvania.

A committee from the newly formed King's County Dairymen's Association reports that the prices paid during August by Kings county creameries varied from 26 to 28 cents. Several creameries were not reported upon.

L. P. Denny, of Corcoran, Kings county, is completing a dairy barn 64 by 150 feet in size, with concrete floors and other modern finishings. Nils Hansen & Son are also finishing a similar barn. Both ranches are on lands reclaimed from the old bed of Tulare lake.

The enforcement of the regulations of the Los Angeles Board of Health regarding the production and shipping of sweet cream has been postponed for a short time in Tulare county, from which most of the cream comes, in order to permit the dairymen and shippers to make the required changes in methods.

Samuel E. Watson, special inspector of the State Dairy Bureau, has left for Los Angeles, where he will begin prosecutions against about 95 dealers in oleomargarine who have not taken out a license to sell the product. Evidence to convict or to force the taking out of licenses has already been secured. The Bureau has won the appealed case of a dealer selling short weight butter, the law being fully sustained by the courts.

WITH THE STOCKMEN.

Alexander Forbes of Woodland recently purchased three registered Tamworth sows and one boar from Davis & Peterson of Yuba City.

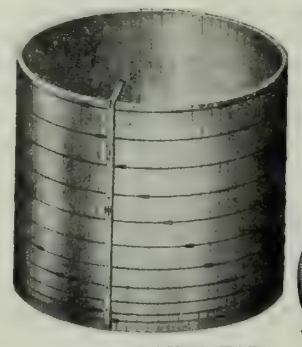
A number of cases of hog cholera are reported from ranches near Ryde, Sacramento county, and several demands for hog cholera serum to check the spread of the disease have been made at the University.

The pack-train of burros of Antonio Lavezzola, of Sierra county, one of the best-known trains in the mountains, was recently ordered killed by Assistant State Veterinarian John P. Iverson, all of the animals being affected by glanders.

In a report just issued by the Nevada Experiment Station the value of high-class winter lambs is indicated by the fact that several lambs raised as an experiment last winter sold to San Francisco hotels, when good lamb was scarce, at 40 cents a pound. The Dorset Horns gave the greatest satisfaction during the experiments. The only California lambs on the market at the time were from Miller & Lux. What can be done with high-class farm mares was shown by the sale of a three-year-old Percheron stallion from a station mare for $1200.

The Percheron Society of America reports that a much smaller importation of Percheron stallions into the United States from France has taken place this year than last but that the quality of the imports has been raised greatly. Horses of all breeds imported during July and August were 789 head in 1911, against 859 in 1910. The registrations to September 1, 1911, were 5000 head, or about the same as in 1910, while the membership in the society is growing very rapidly. There are said to be more mares imported than ever before, indicating that the raising of thoroughbred Percheron colts is receiving great attention by the stockmen.





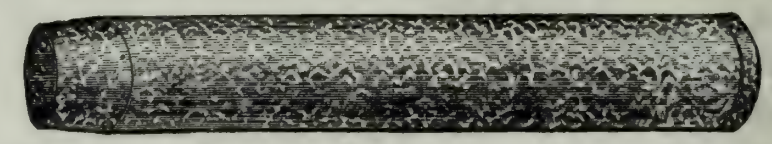
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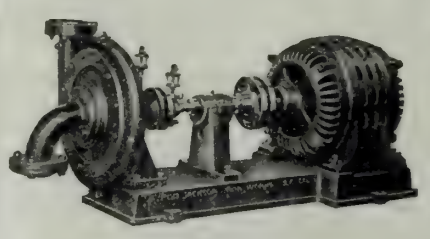


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POULTRY DEPARTMENT.

Conducted By M. RUSSELL JAMES.

INTERNAL POULTRY PARASITES.

The PACIFIC RURAL PRESS in recent issues has given considerable space to the subject of external poultry parasites. Since then our attention has been called to the pests which are not so much in evidence, as they inhabit the inside of the poultry. From two widely separated sections in the Sacramento Valley have come reports of an epidemic of worms among both turkeys and chickens. In the old countries outbreaks of worm infestation among poultry in the form of epidemics have long been known, but it is only within the last twenty years that they have occurred in this country. The fact that already in the East "a number of poultry plants have been put out of business by worms in epidemic form" and that the disease has reached the far West should arouse our poultrymen to this new danger which confronts them.

As with external poultry parasites, there are many different species of internal ones. Those of importance to the poultryman are grouped into three classes: Tape-worms, round-worms, and flukes. The most serious of these are the tape-worms, though the round-worms are the most common.

TAPE-WORMS.

We take the following from "Poultry Diseases and Their Treatment," issued by the Maine Experiment Station: The tape-worms of poultry, like those which infest man and the domestic animals, are long, flat, segmented worms. The anterior end of the animal possesses a number of hooks or suckers by which it attaches itself to the walls of the intestines. Back of the head the entire animal consists of a long series of segments or proglottids. The segments near the head are the smallest and it is at this region that new segments are constantly being formed. The farther from the head they get the larger the segments become. Toward the posterior end of the worm the segments develop sexual organs and later become filled with eggs. As soon as the eggs are fertilized and mature, the segment containing them drops off and passes out with the droppings of the fowl. Each segment of this kind contains thousands of eggs.

NODULAR TAENIASIS, OR TAPE-WORM DISEASE OF FOWLS.

A bulletin with the above title has been issued by the Maryland Agricultural Experiment Station. A brief summary of the points of general interest as set forth by the bulletin follows:

This disease is believed to be one of the most deadly which may infest a flock; hence it was considered of timely interest to the farmer and poultryman to know the cause, the life history of the parasite, and the treatment which was found most effective.

At the Maryland Experiment Station and in the surrounding country an epidemic occurred in 1908. This was quite general. All the places were visited, and when the birds were examined tape-worms were found in great numbers. It was reported that 50% or more of the birds in the flocks had succumbed to the infestation.

The affected birds at the Station were Plymouth Rock pullets and cockerels from five to six months old. Attention was called to the trouble when one of the pullets died. An autopsy was performed. All the internal organs appeared normal except the intestines, which were filled with gas and exhibited nodular or pea-shaped growths along the outside walls. When these were opened up, several tape-worms were found. As the rest of the flock appeared healthy, it was concluded that probably this was an individual case. The following morning, however, three of the healthiest appearing birds died. The autopsies revealed in two cases worms by the hundreds; in one-half inch of the intestines more than fifty worms were counted. On successive mornings birds died with almost no outward sign of the disease. In nearly all cases the autopsy showed the heart, liver, spleen and lungs to be normal. This eliminates the chances of confounding the infection with tuberculosis.

SYMPTOMS.

The sick birds become emaciated. During the course of the disease at this station it was noted that the droppings in nearly every case contained considerable yellow mucus. In this material may be found the tape-worm segments or proglottids. During the later stages the bird becomes dull and listless. At first the appetite is not disturbed, but when the disease reaches the listless stage the bird begins to lose appetite and shows a tendency to huddle, also to develop an intense thirst for cold water.

TREATMENT.

The first rule to be carried out in all cases of this disease is to isolate the birds from the rest of the flock, and keep them confined until they have recovered. The droppings of all birds known to be infested with the parasite should be destroyed or treated with a disinfectant in order to kill the eggs of the tape-worm. The chief drugs used for tape-worm infestation are: Extract of male fern, turpentine, powdered kamala, areca nut, pomegranate root bark, pumpkin seeds, sulphate of copper, epsom salts.

(Continued next week.)

POULTRY NOTES.

POULTRY CULTURE IN THE COLORADO SCHOOLS.—A course in poultry raising is to be added to the Colorado schools this fall, says a Denver paper. A school poultry club has been organized as the result of the A. P. A. convention, and the State Superintendent of Public Instruction is its president. Arkansas had the first school poultry club, and the idea is growing. In the official poultry exhibition, prizes will be offered for the children to stimulate their interest. The course will be free to the school children, but $1 will be the fee for outsiders participating in its benefits. The money thus acquired will be devoted to purchasing equipment for institute work.

THE WATSONVILLE POULTRY SHOW.—The Pajaro Valley Poultry Association will bring off its first poultry exhibition, October 9 to 14, during the annual State Apple Show. This poultry show offers so many attractions to exhibitors in the way of premiums and the thousands in attendance at the apple show, that the only thing which keeps it from having the largest entry of any show on this Coast is lack of cooping room. On this account the entries are limited to about 800 birds. One of our subscribers, Mr. W. R. Triggs, of Watsonville, sends the following word:

"I hope the PACIFIC RURAL PRESS will be represented at our poultry show. This is, of course, our first attempt, but the apple annual is sure to draw immense crowds, and after they have seen the apples, there is nothing else in the town of especial interest except the poultry show, and so we hope to do well financially. The people of the valley have taken hold with enthusiasm, and we are to offer almost twice as many premiums as are usually offered. The fanciers who show should do well, for there is more money in this valley than in any other locality in the State of which I have any knowledge, and less attention has been paid to poultry in the past than in other sections. The valley is practically virgin ground, and the people have a very bad case of chicken fever now at its height. We have an association of two hundred members, largely the result of a membership contest."

SAN FRANCISCO PAYS FOR SQUABS.

Since quail can no longer be served at hotels and cafés, fine, fat, gamey-flavored squabs are filling the place at first-class tables. A large "squab plant" about sixty miles from San Francisco has a contract for all its squabs (large varieties) killed and feathers off, at $5.50 per dozen. Another gets $5 alive the year around.

When we consider that these birds are but four or five weeks old, and require little or no care except that the parent birds are well fed and watered, it certainly looks well for this growing business.

It pays to raise big ones, good white ones. It pays, like any business, to raise the best. When people ship little, half-fed, half-feathered, black-meated squabs, from small stock, there is small profit, and no satisfaction to seller, dealer, or consumer.

The San Francisco papers have all summer quoted squabs at $2 to $2.50 per dozen, but hundreds of shippers have been getting from $3 to $5 right through, according to size and quality. They pay better than chickens.

One squab plant in Sonoma county sends as high as 700 good fat squabs per month to San Francisco.

JUST THIS

Croley's High Protein Meat Scrap has **no superior.** Your hens need it—need it badly to produce good results. Why not try it? Every sack guaranteed pure and sweet.

Remember that the **GEO. H. CROLEY COMPANY, INC.,** San Francisco, is the **Quality House** for poultry supplies on the Pacific Coast.

629 Brannan St., San Francisco.

POULTRY.

IF YOUR POULTRY RANCH DON'T PAY, write us. If the ranch prospers, write us anyway. Everything for everybody interested in poultry. GEO. H. CROLEY CO., 629 Brannan St., San Francisco.

DAY-OLD CHICKS—Barred Rocks and White Leghorn chicks, good laying strains; order early for fall delivery and avoid delay. Fairmount Hatchery, Box 29 B, R. F. D., Santa Cruz, California.

S. C. B. MINORCA EGGS for hatching at $6 per 100; can fill large orders; 12 yards large beautiful hens, excellent layers. Black Beauty Poultry Yards, Dixon, Cal.

OAKLAND POULTRY YARDS, 149D, California St., San Francisco.—Est. 40 years. Standard bred poultry. White Orpingtons, R. I. Reds, Brd. Rocks, White Leghorns.

IF INTERESTED IN INCUBATORS or how to feed, write for our free Catalog. PETALUMA INCUBATOR CO., Petaluma. California.

WAYSIDE YARDS—A few settings from special S. C. White Leghorn matings, at $5 for 30. Carl Gregory, Petaluma, Cal.

FREE BOOK—"Poultry Feeding for Profit," on application to Coulson Co., Petaluma, Cal., Box P.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

WHITE LEGHORNS—Chicks, eggs, cockerels. Fine stock. Reasonable. O. B. Morris, Lodi, Cal.

BUFF ORPINGTONS—Mr. and Mrs. W. S. Sullivan, 25 Market St., Agnew, Santa Clara County, Cal.

BRONZE Turkeys and Eggs. Ed Hart. Clements, Cal. Large size, good plumage, early maturity.

TWIN OAKS FARM—W. H. Bissell, Proprietor, Livermore, Cal.—Buff, White Orpington.

HATCHING EGGS—White Leghorns. Circular 164. A. H. Gregory, Fruitvale, Cal.

PIGEONS! SQUABS PAY! LARGEST squab plant in Sonoma county offers young unmated Carneaux $8 to $12 a dozen. Good crosses, $6. Mated working color banded crosses, $2 pair. Maltese hens, $3; Carneaux, $3 and $3.50. Bolton Squab Factory, Healdsburg, Cal.

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Plant of most modern equipment; 6000 Laying Hens (White Leghorn); all raised and kept under most sanitary conditions.

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1200 Pullets	May Hatching
1000 Pullets	June Hatching
500 Pullets	July Hatching
200 Cockerels	
50 Aylesbury Ducks	

Will hold for purchaser until five months old, if desired. Orders booked for eggs next season's hatching. Correspondence solicited. Visitors welcome.

R. N. FOSTER, Manager

HOPLAND, CAL.



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2300 THOROUGHBRED WHITE LEGHORN HENS 10 MONTHS OF AGE, $9 per dozen. Act Quick.

The Pioneer Hatchery

108-118 East Eighth St. Los Angeles

The Home Circle.

Ain't It Fine Today?

Sure, this world is full of trouble—
I ain't said it ain't.
Lord! I've had enough, an' double
Reason for complaint.
Rain an storm have come to fret me,
Skies were often gray;
Thorns an' brambles have beset me
On the road—but say,
Ain't it fine today!

What's the use of always weep'n'
Makin' trouble last?
What's the use of always keepin'
Thinkin' of the past?
Each must have his tribulation,
Water with his wine.
Life, it ain't no celebration.
Trouble? I've had mine—
But today is fine.

It's today that I am livin'
Not a month ago;
Havin', losin', takin', givin',
As time wills it so.
Yesterday a cloud of sorrow
Fell across the way;
It may rain again tomorrow,
It may rain—but, say,
Ain't it fine today!

—Douglas Malloch.

Useful School Fads.

"The first business of a child is to be come a healthy animal."

Luther Burbank, whom everyone knows for his wonderful work in the rearing of plants, has written some interesting things on the rearing of children. He says: "Every child should have mud pies, grasshoppers, water-bugs, tadpoles, frogs, mud-turtles, elderberries, wild strawberries, acorns, chestnuts, trees to climb, brooks to wade in, water-lilies, woodchucks, bats, bees, butterflies, various animals to pet, hayfields, pine cones, rocks to roll, sand, snakes, huckelberries and hornets; and any child who has been deprived of these has been deprived of the best part of his education."

That is laying it on pretty thick, but you can tell what Mr. Burbank means. He means that a child should be out in the fresh air and sunshine as much as possible learning from things by handling them, and above all, whether he learns or not, exercising his muscles.

There are parents who worry because their child does not take readily to books, but prefers boisterous play. Do not think this means that the child will not have a good brain later. Mental power is the highest and most complex of human attributes. We do not look for fruit from orchard trees until after a long period of growth; so with the child. The fine fibers in the brain upon which mental power depends have not all developed by the twelfth year.

Don't compel a child to do much fine minute work, and discourage him if he wants to. If he is going to write, a big coarse pencil to make big letters is the thing to start with. A six-year-old child ought not to read type in which the capitals are much under a quarter of an inch high. This is because there must be considerable nerve development before there is a capacity for fine work.

Eyes were made for seeing at a distance mostly. They have to be broken in very gradually to the heavy strain so often demanded of them by our ways of working now-a-days. Let the child use his eyes as much as possible on large things, and out in the open. Eye strain, and the effort of attention to fine work like needle work and too much reading and writing are sources of the nerve disorders now so common. The nerves that control big bodily muscles are in a way the foundation of the finer nerves. Let the child get a good foundation for his nervous system by plenty of running, romping, climbing, etc.

The schools are developing the science of managing the play of children, and even are bringing some of the play element, and much of physical activity, into the school room. This is as it should be. Much time has been wasted in discussing fine points of science with children who ought to be moving about and handling things in order to learn. So don't set your teacher down as being a crank if she is trying to introduce into her school some of the new ideas. Help her out with her playground, her school garden, her manual training, and other so-called fads. Children who have plenty of directed activity in their early years will learn all the faster in their later years.

And let the child work; not long and arduously, but so as to establish the habit of industry and to familiarize him with things and tools. It is one of the advantages of farm life that the child can get such an abundance and variety of industrial training.

The following table arranged by Dr. Clement Dukes, is a sort of general average of what amount of work and sleep is desirable for a child of given age:

Age.	Hours of Work per week.	Hours of Sleep per night.
5	6	13½
6	9	13
7	12	12½
8	15	12
10	20	11½
12	25	11
14	35	10
16	45	9
18	50	8½

—Dr. G. R. Davis, Valley City, N. D.

To Mend Lamps.

Mend a lamp loose on the collar with sifted plaster of paris mixed to a very soft paste with white of egg. Have everything ready before wetting the plaster and work rapidly, as it sets quickly. If there are several lamps to be mended, mix up only enough paste to fix one at a time, for it cannot be worked over when once set, which it will do in five minutes. If a part of the metal work needs repairing, you must use the soldering iron. Dust the break well with powdered resin, tie the parts firmly together, and bring the iron down on it lightly but firmly. When it has cooled, remove as much of the resin as possible with a cloth dipped in alcohol.

Macaroni With Tomatoes.

Break half a pound of macaroni into inch lengths and boil in salted water until tender. Drain and put a layer of the macaroni in the bottom of a greased pudding dish, sprinkle with pepper, salt, onion juice and grated cheese and cover all with a layer of stewed and strained tomatoes that have been previously seasoned to taste. On these goes another layer of macaroni, and so on until the dish is full. The top layer must be of tomatoes sprinkled with crumbs and good-sized bits of butter. Set in a hot oven, covered, for twenty minutes, and then finish baking, uncovered, until the crumbs are well browned.

Green Pea Soup.

Drain the liquor from a pint of canned or garden peas cooked until soft, then rub them through a sieve. Thicken a quart of milk with a tablespoonful of flour rubbed into two of butter, stir the mashed peas into this, boil up once, stirring continually. Season and serve.

Gladstone, a Man Apart.

Gladstone was not beloved. He was a strong statesman without being a great man. He was so entirely occupied by official duty that no room seemed to be left for those apparently small but really vital personal sympathies and relations which belong to real greatness.

I was several times in evening companies where he was present. When he entered it was as if in state; all talk and mirth were suspended and we stood around and bowed to him and his wife and his escort, he returning our bows all around as if we were some delegation. He would move near the hostess, introductions would follow, but there was no free and easy chat with individuals. Happily he did not remain long on such occasions and the young people were enabled, without much interruption of gaiety, to cherish a remembrance of the "Grand Old Man." He was an institution; how can one love an institution? A member told me that he asked another Liberal why he disliked Gladstone; the reply was, "Oh, he is always so damnably in the right!"—M. D. Conway.

An Irishman's Memory.

Former Postmaster General John Wanamaker, the big dry-goods merchant, believes that the Irish, as a race, have excellent memories, and to back up his opinion, he tells a story as it was related to him by a man from the Emerald Isle.

Pat was working in the garden when Satan popped into view, appearing suddenly and mysteriously from behind a rosebush.

"Good morning," said Satan.

"The same to you," replied Pat.

Satan, evidently deciding that this was not a propitious time to capture Pat's soul, asked a question merely for the purpose of making conversation.

"How do you like eggs?" he inquired.

"Very much," answered Pat. Satan then disappeared.

Four years later the Irishman was again working in the garden, when Satan made another phenomenal appearance, and began a question:

"How——"

"Fried," said Pat, without a moment's hesitation.—The Popular Magazine.

Stenciled Pillow Tops.

When making pillows for real service and comfort and usefulness it is wise to choose the best down pillow foundations, see that the inside covering is firm and durable, and then select the outside cover with an idea of beauty and utility. There are many fabrics which may be used for pillow covers, either stamped or plain, among them being tapestry, linen, burlap, and denim, but to give individuality to one's furnishings the stenciled pillow is much used. After selecting some fabric that harmonizes in general tone with the room, any suitable design may be stenciled upon it, but great care should be taken in the selection of colors and also in their application.—Modern Priscilla.

Boned Shoulder of Lamb.

Have the butcher remove the bone and thin skin from the shoulder and fill the "pocket" with a dressing made from a dressing made from a cup of bread crumbs moistened with two tablespoonfuls of melted butter, half an onion chopped fine and a good seasoning of sage, or thyme and marjoram may be used. Tie the shoulder together, set to cook in a hot oven, basting frequently, and roast from 30 to 40 minutes. Serve with lima beans and a green vegetable salad.

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OUR YOUNG FOLKS' DEPARTMENT.

Conducted By M. Russell James

Poultry Course for Young Folks.

DESCRIPTION OF BREEDS.

Class VIII, Games and Game Bantams.

The game fowl is said to be as old as time. The pugnacity of this class of fowls appeals to the savagery in human nature which delights in bloody combats and contests. The Romans, Greeks, Persians, and Britons of far-back ages all bred and highly prized the game fowl, and though in the more civilized countries the cocking-main is prohibited by law, the cruel sport is by no means extinct; while in India, China, and the various islands of the oceans it is one of the leading pastimes of the natives. In the Philippine Islands the fighting cock is the native's dearest treasure. If his bamboo shack is demolished by the elements, he seizes a fighting cock under each arm and seeks safety, content to leave his other possessions to their fate.

Until within the last sixty years the game fowls were bred entirely on fighting lines, regardless of any established standard of size, color or shape; vigor and courage being the requisites. The modern game fowl, which is principally the work of the English fancier, is bred to symmetry, exact coloring, and a shape and style unlike any other breed. An English authority describes the ideal English production: "Head long and narrow, beak straight with a light curve, strongly set on the head; eye large, full and fiery; the neck long and thin; the body wide but rounded; thighs and legs long and thin; feet long and well to the ground, spur set low; tail narrow, small, and carried low, the whole of the feathers short, hard, almost like scales; general carriage upright."

There are eight varieties of Games recognized by the American Standard of Perfection: Black-Breasted Red, Brown Red, Golden Duckwing, Silver Duckwing, Birchin, Red Pyle, White, Black. The Games of this class are fairly good layers and excellent table fowls. They rank high as setters and mothers, as they can defend their nests and progeny against all invaders.

The Black-Breasted Red is the most popular of this class. Its plumage is a mingling of black, orange and red in the male, and brown, golden brown and black in the female.

"Come In, Doggie."

The late dispatches bring a pathetic story and one even more tragic in its ending than that of Little Red Riding Hood, which has thrilled the hearts of many generations of little children.

Juan Morales, a Mexican farmer living seven miles from Brownsville, Texas, was working in his fields some distance from the house. His small children were alone in the houe when a mountain lion came smelling about the premises. The youngest child, a three-year-old boy, thinking it a dog, opened the door and called, "Come in, doggie!"

The beast walked in, and as the baby started to pet it sprang upon the child. The screams of the children soon brought their father to the house, but not in time to save the poor baby. Mr. Morales had rushed into the house without stopping to secure any weapon of defense, and had only his pocket-knife to help him in the struggle which followed.

He finally succeeded in killing the savage brute, but he was terribly lacerated by the lion's claws and teeth, and one of his arms was so mangled and crushed that it had to be amputated.

Though this innocent baby's "doggie" proved to be a lion, the incident shows the importance of teaching children never to pet or take any liberties with strange dogs or other animals. Many dogs will snap at a strange child who attempts to pet them or take hold of them, and though this may not seem so tragic as to be torn to pieces by the lion, the bite of a dog often proves as fatal in the end.

The Dollar Not Needed as a Starter.

Many of our boys think they might make a success in life if they had something in the way of capital to start on. That dollars are not the necessary or even the best capital upon which to start a business career is illustrated by the following incident as reported by the Oklahoma City Times:

At a recent meeting of the directors of the National Reserve Bank of Kansas City, the president asked each one present who had begun business with a capital of $10,000 to stand up. There were twenty-five directors in the room, and their wealth would aggregate about $20,000,000 dollars. Not a man of the twenty-five arose. Dr. Johnston, the president, then put another proposition. "Each of you who had $5000 with which to begin business, stand up."

The directors looked around at each other, but not one of them arose.

"Each of you who had $1000, stand up," persisted Dr. Johnston.

The directors began to laugh as they looked around at each other and all remained seated. Dr. Johnston kept putting the proposition, lowering it each time by $100. When he got down to $100, one of the directors stood up and said that was the amount of his capital when he began business.

The majority of the others began without a dollar. Dr. Johnston, himself, estimated to be worth a half-million dollars, began his business career without even a pair of shoes.

Farm Boys Camp on Fair Grounds.

A feature of interest at the recent New York State Fair held at Syracuse was the camp of the farm boys. It was Commissioner Pearson's idea, says the American Agriculturist, to have boys whose intention is to practice farming, come from every county to the fair as student helpers, to camp on the grounds under the discipline of Fred Hill, whose work among rural Y. M. C. A.s has been so successful. Altogether 128 young men and their leaders have lived in tents on the fair grounds, have performed light duties on the grounds, in the judging rings, and in the buildings, have attended lectures and concerts, and otherwise spent their time with profit, not only to themselves, but to the State. They will return to their homes with a broadened idea of farming and the opportunities to be enjoyed in their own State rather than at a distance.

A little school-taught negro in a North Carolina district, instructed his older but less fortunate brother to ask for "molasses", not "'lasses."

The illiterate boy replied: "G'way fum here, nigger, wid yer fool school idees. How's I gwine to ax fur mo' 'lasses when I ain't had no 'lasses yet?"

Wants to Live With the Indians.

A little Indiana girl, who has been feeding her imagination on fairy tales about the Indians, has addressed two letters to "Indian Chief, Chickasha, Ok." The postmaster at Chickasha turned the letters over to the district Indian agent. The last letter follows:

"Dear Chief: I love the Indians and I want to be with them. Can I help you out, and can I be with you all? Write and let me know of anyone that wants to write to an Indian's friend, or I hope I shall be one soon. Don't get offended at this, and answer soon. I would give my life to be with the Indians, I imagine."

One of the keepers at the New York Zoo found the following letter tied to the stork's cage:

"Dear, dear Stork: Please bring me a baby boy. Don't forget, Stork. I'm going to put some sugar at the window for you. Your loving friend, Helen Frankel."

When Helen was found later she proved to be a little seven-year-old girl with two smaller sisters. She pointed contemptuously at the smaller girls as she explained why she wanted the stork to bring her a boy:

"They can't fight," she said. "All the kids on our block fights so much and I get tired of fighting back, and I want some one to pertek me."

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For reservations and information, call on or write your Local Agent, or,

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SAN FRANCISCO, CALIFORNIA

THE MARKETS.

San Francisco, Sept. 27, 1911.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Extreme firmness prevails in all Coast markets, with an upward tendency in prices. There is no great activity locally, but it is impossible to buy anything at former quotations, and prices on all grades have been marked up.

California Club	$1.50	@1.55
Sonora	Nominal	
White Australian	1.65	@1.70
Northern Club	1.50	@1.55
Northern Bluestem	1.70	@1.75
Northern Red	1.65	@1.70

BARLEY.

Futures have taken quite a jump, and the cash grain is higher in sympathy. Supplies are now pretty well concentrated and closely held, and while there is a steady demand both for local needs and for shipment, offerings are light all over the Coast.

Brewing and Shipping	$1.67½	@1.72½
Choice Feed, per ctl	1.60	@1.65
Common Feed	1.50	@1.55

OATS.

There is little cheap feed on the market, but such offerings receive little attention. Somewhat higher prices prevail for desirable lots of both red and white oats, and there has been considerable buying at present quotations for several days.

Red Feed	$1.70	@1.75
Gray		1.65
White	1.65	@1.70
Black	1.70	@1.75
Red Seed	1.75	@2.00

CORN.

This grain remains dull and featureless, prices standing as before. The demand here is light, and no large amount is coming in.

Cal. Small Yellow	$1.75	@1.80
Eastern Yellow		1.70
Eastern White		1.70

RYE.

There is no trading of any consequence in this grain. Quotations stand as before but are little more than nominal.

Rye, per ctl	$1.55	@1.65

BEANS.

New-crop beans of several varieties are beginning to appear, but not in sufficient quantity to establish very definite values, and the market is still in a very unsettled condition. The tendency in most lines is still downward, and several descriptions are quoted lower, but the quotations are likely to show many further changes during the next few weeks. Under such conditions, the movement is largely limited to current needs, though a few buyers are doing considerable business through the country. In the San Joaquin district, where the bean acreage was unusually large, considerable damage is reported as a result of frost last week, the loss being estimated by some as high as 10%. This condition, however, has had no apparent effect on the local market. Threshing of southern limas and blackeyes will soon be completed, the crop in general being up to expectations. The Association price on first half of October shipments will be named shortly, and some reduction is expected from the 5 cents per pound quoted on September delivery. The local market price is a little higher than that quoted by the Association.

Bayos, per ctl	$3.75	@3.90
Blackeyes	3.50	@3.75
Cranberry Beans	3.40	@3.60
Garvanzos	3.00	@3.50
Horse Beans	2.50	@2.75
Small Whites	3.75	@3.85
Large Whites	3.60	@3.75
Limas	5.10	@5.20
Pea		4.25
Pink	4.10	@4.20
Red Kidneys	5.75	@5.85

SEEDS.

The demand is still limited for most descriptions, though there is a little more inquiry than for some time past. Prices remain nominally at the previous level.

Alfalfa		17½c
Broomcorn Seed, per ton		$25.00
Brown Mustard, per lb		5½c
Canary	4	@ 4½c
Hemp	4	@ 4½c
Millet	3	@ 3½c
Timothy	Nominal	
Yellow Mustard		5¾c

FLOUR.

The situation is strong all over the Coast, owing to the firmness of wheat and the heavy export movement from the North, where mills have sold their output to the end of the year. Prices stand as before.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.80	@5.00

Hay and Feedstuffs.

HAY.

Hay is now practically cleaned up from the fields of the leading producing districts, and is being taken from warehouses for shipment to consuming markets. The arrivals here show some reduction, and consist largely of alfalfa, which is being rushed to market. Prices on all the better grades show a further advance, fancy wheat hay being in strong demand and very scarce. The lower grades are also firm at an advance, though alfalfa is a little easier. A good market for alfalfa is expected, however, as this hay is rapidly being put under cover. There is some demand for good barley straw, which is scarce and firm at an advance.

Choice Wheat	$18.00@20.00
Good Wheat Hay	13.00@17.50
Other Grade Wheat	10.00@12.50
Wheat and Oats	10.00@17.00
Tame Oats	10.00@16.50
Wild Oats	8.00@13.00
Alfalfa	8.00@11.50
Stock Hay	6.00@ 7.50
Straw, per bale	35@ 70c

FEEDSTUFFS.

A further advance is noted in rolled barley and oats, which are firm in sympathy with the raw grains. Shorts are also a little higher. All other lines are in steady demand, prices being well maintained.

Alfalfa Meal, per ton	$16.00@18.00
Bran, per ton	28.00@29.00
Cocoanut Cake or Meal	25.50@26.50
Cracked Corn	38.00@39.00
Middlings	34.00@36.00
Mixed Feeds	28.00@30.00
Rolled Barley	33.00@34.00
Rolled Oats	33.00@34.00
Shorts	32.00@33.00

Garden Truck.

VEGETABLES.

Onions are coming in at about the usual rate, and while the demand continues fairly active prices are a little easier. Prices on most lines of garden truck show little change, supplies being fully as large as the market can well absorb. A little improvement is noted in some lines, in which the surplus is hardly as burdensome as last week, but there is no real strength to the market. Tomatoes are still coming forward too rapidly to be easily disposed of, and prices are still unsatisfactory, though better than last week. Supplies of cucumbers are increasing, and values are weak. Green peas and string beans are steady as last quoted, while green limas are higher. Summer squash and the best lots of green corn are also doing a little better, though the latter was a drug on the market for a few days.

Onions: Yellow, ctl	75@	85c
Garlic, per lb	3@	4c
Green Peas, per lb	3@	4c
Tomatoes, per box	25@	50c
Cucumbers, per box	50@	60c
Cabbage		75c
Carrots, per sack		75c
Cauliflower, per doz		50c
String Beans, lb	1@	3c
Lima Beans, per lb	3@	4c
Summer Squash, per box	40@	50c
Okra, per box	50@	60c
Green Corn, per sack	1.00@	1.50
Eggplant, per box	50@	65c
Green Peppers, per box	30@	50c

POTATOES.

The demand continues fairly active, but arrivals have been quite heavy, both from Salinas and the river district. Some frost damage has been reported, but the first report seems to have been exaggerated, and at least this market shows no effect of such a loss. Some Bay potatoe in boxes still bring as high as $2, but lower prices are quoted on other lines. Sweets are rather easy at former figures.

River Whites	85@	$1.05
Sweet Potatoes, per ctl	1.75@	1.90
Salinas Burbanks	1.60@	1.75

Dairy Produce.

POULTRY.

Arrivals have been unusually heavy for the last week, and considerable stock, mostly of unattractive quality, has been held over. Supplies of both Eastern and local stock are too heavy with more due to arrive, and only the best offerings find any demand. Prices are quoted as before, but concessions are easily obtained on ordinary stock. Prime young turkeys find a ready demand.

Large Broilers	$ 3.50@	4.00
Small Broilers	2.50@	3.00
Fryers	4.50@	5.50
Hens, extra	8.00@	9.00
Hens, large	5.00@	6.00
Small Hens	4.00@	4.50
Old Roosters	4.00@	4.50
Young Roosters	6.00@	7.00
Young Roosters, full grown	8.00@	9.00
Squabs	2.00@	2.50
Geese, per pair	2.00@	3.00
Ducks	4.00@	7.00
Turkeys, live, per lb	24@	27c

BUTTER.

General conditions show very little change. Extras are ½ cent above the prices prevailing most of the week, and all lines are a little firmer, but the lower grades are quoted as for some time past.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	27	27	27	27	27	27½
Prime Firsts	25	25	25	25	25	25
Firsts	24	24	24	24	24	24
Seconds	22	22	22	22	22	22
No. 1 Packing stock	20	20	20	20	20	20
East Ladies Extras	21½	21½	21½	21½	21½	21½

EGGS.

Production is steadily decreasing and the growing scarcity is reflected in the upward movement of prices. Prime firsts have not been quoted for some time, firsts being firm as last quoted. Extras and selected pullets have been advancing steadily, though dealers look for little further advance at present.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	42	42	42	43	43	43
Firsts	35	35	35	35	35	35
Seconds	21	21	21	21	21	21
Selected Pullets	30½	31	32	33	33½	33½
Eastern	16	16	16	16	16	16

CHEESE.

Little change is noted in lines quoted on the Exchange, new stock being firm and storage steady. Monterey cheese is moving off well, and prices are better than for some time past.

Fancy California Flats, per lb	14½c
Storage	14 c
Firsts	13 c
New Young Americas, fancy	16½c
Monterey or Jack Cheese	13@13½c

Deciduous Fruits.

FRESH FRUITS.

Prices show some little improvement in several lines, but are still rather low, and the market in general is overloaded. Blackberries are higher, but both raspberries are weak, and it is impossible to clean up arrivals in the regular trade. Huckleberries also are lower. Melons are unchanged, offerings being ample for all demands. All lines of apples are quoted lower, as several varieties are now coming forward freely, and the fancy Gravensteins which have held the market for some time are being replaced by Bellefleuds and Newtowns. Mountain pears and peaches command top prices, ordinary offering being neglected. Figs are very weak, with excessive supplies, and ordinary lots of plums are hard to move. Table grapes show little change, all lines being plentiful and easy, but there is some firmness in wine grapes. The best Zinfandels are in strong demand at $20 per ton or more.

Watermelons, per doz	$ 1.25@	2.00
Cantaloupes, standard crate	1.00@	1.25
Nutmegs, box	25@	50c
Raspberries, chest	4.50@	7.00
Blackberries, chest	5.00@	6.00
Strawberries, chest	3.00@	4.00
Huckleberries, lb.	7@	10c
Apples—		
Fancy, box	90c@	$1.25
Choice	60@	85c
Peaches, lug box	75c@	1.00
Small box	40@	75c
Plums crate	50@	75c
Figs, box	65@	90c
Pears, Bartlett, box	1.25@	1.50
Other varieties	75c@	1.00
Quinces, box	75c@	1.00
Grapes—		
Muscat, crate	60@	75c
Isabella	75c@	1.00
Other varieties	40@	65c
Pomegranates, box	60@	75c

Dried Fruits.

The market in general remains comparatively inactive, as the majority of buyers in consuming markets have filled their most pressing needs, and packers do not care to take on much surplus at the prices asked. The only exception is prunes, which find a steady demand, and are firmly held. The firmness is especially marked on large sizes which are hard to get at any price the crop showing unusual shrinkage in drying. Packers who have sold large sizes are offering higher prices for whatever they can pick up in this line. Offers for new figs have been reduced, but it is reported that little remains in growers' hands. Seedless raisins are in good demand, and firm at quotations. Muscats, however, are quiet and packers have again reduced their offers. The crop is said to be in good condition, and a few weeks more will see everything under cover. The outlook is said to be favorable in most lines of fruits, as supplies are light in all sections of the trade and the present lack of firmness may be attributed to the desire of dealers to let the growers carry the stock until it is required by the consuming demand. The New York Journal of Commerce says:

"An easier tone has been developed in the market for California dried peaches, though there seems to be nothing in the statistical situation to warrant a decline in f. o. b. Coast prices. According to advices from California a number of packers are short and are trying to weaken the growers' market, but apparently with little success. They are also said to be endeavoring to block the game of one large packing concern, which has absorbed a large percentage of the crop by paying to the growers from 10 to 10½ cents, lug box. The offerings of prunes for September, October and even later shipments from the Coast are light, but as the trade here has pretty well protected its early wants the orders going out to the Coast are few, for despite the reputed strong statistical position on this season's crop there is no speculative interest shown. A number of the larger packers seem to have withdrawn from the market for the present, particularly as sellers of sizes above 60s. At least two of them decline to consider bids of anything under a 6-cent four-size bag basis f. o. b. Coast for October steamer shipment, with half a cent premium on 50s and a cent premium on 40s. Seeded raisins remain dull, with an easy tone, but it is asserted by some prominent operators that the weakness is more apparent than real, being mainly due to bearish influences exerted by packers with a view to influencing the growers' sweatbox prices. As there is little demand for early shipments of either old or new crop the sellers quoting the low prices, it is held, run little risk of being picked up. However, freshly seeded old crop for immediate shipment from the Coast is quite freely offered at 7 cents f. o. b. for fancy."

Evap. Apples, 1911, per lb	8	@ 9½c
Apricots	13	@14 c
Figs, new crop		4 c
Peaches, new crop	9	@ 9½c
Prunes, 4-size basis, new crop contracts	5½@	6 c
Pears, new crop	8	@ 9 c
Raisins—		
Loose Muscatels, in sweatbox	3¾@	4 c
Thompson's Seedless	6	@ 6¼c
Seedless Sultanas	5	@ 5½c

Citrus Fruits.

The Eastern orange and lemon markets are holding up strong, taking all fruit offered at good prices. Growers of valencias and late shippers of lemons have no cause for complaint in prices paid for fruit. About 25 cars of oranges and 12 cars of lemons are being shipped daily. At New York on Monday, September 25, 10 cars of valencias and 2 of lemons sold on auction. The average prices paid for valencias ranged from $2.60 to $5.95, while lemons averaged from $3 to $5.35 per box.

At Boston the same day prices for oranges averaged a trifle lower, while lemons were a little higher. Philadelphia was well up with New York in prices, both on lemons and oranges.

The San Francisco market shows little feature. Supplies are ample for all requirements, the demand being about the usual moderate nature for this time of year. Prices stand as before.

Valencias, choice to fancy	$ 3.50@	4.50
Grapefruit	3.00@	4.00
Limes	5.00@	5.50
Lemons	1.50@	5.50

Nuts, Honey, Hops, Etc.

NUTS.

Walnut crop reports, both from south-

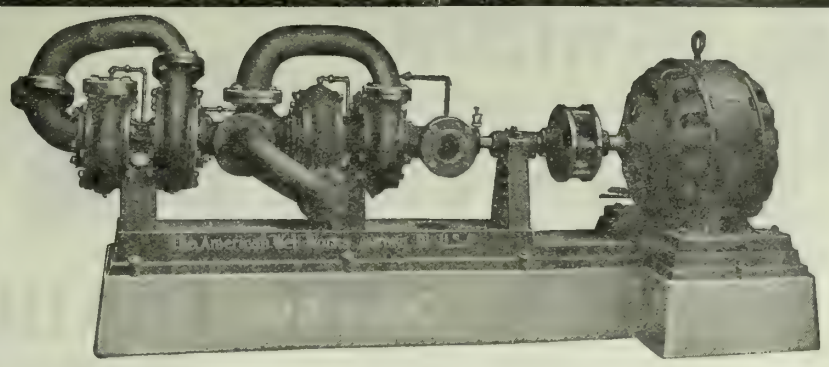
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ern California and Europe, are rather conflicting, but it is believed here that the new crop prices to be fixed shortly will be lower than the opening figures last year. The crop is being gathered in some sections, and will appear on the market in a few weeks. Meanwhile the spot market is almost entirely nominal, old California stock being closely cleaned up. Almonds are moving off slowly, and some concessions have been reported from the opening figures, but no lower quotations are given.

Almonds, 1911 crop—		
Nonpareils		18½c
I X L		17¼c
Ne Plus Ultra		16½c
Drakes		14½c
Languedoc		14½c
Hardshells	8	@ 8½c
Walnuts—Softshell, No. 1		15 c
Standard		14½c
Softshell, No. 2		11 c
Budded		17½c

HONEY.

The local movement is of a limited routine nature, prices standing as before. The output in producing centers is moving off steadily, and an early cleanup is expected.

Comb, white	13	@15 c
Extracted, water white	8	@ 9 c
Amber	7	@ 7½c
Off grades	5	@ 6 c

BEESWAX.

Quotations stand as before. There is a limited movement, but no particular activity.

Light	28	@30 c
Dark	23	@26 c

HOPS.

California growers who have not yet sold are holding pretty firmly and are not anxious to sell until the harvest is over. Present quotations are accordingly little better than nominal for this market, though there has been considerable business in Oregon at about the range quoted.

1911 crop	35	@40 c

Live Stock.

DRESSED MEAT.

Heavy hogs are a little lower, and all weights are rather easy, with liberal supplies and no especially strong demand. Otherwise the local market shows very little change.

Gross weight:		
Steers: No. 1	5¼@	5¾c
No. 2	5 @	5¼c
Cows and Heifers: No. 1	4¼@	4½c
No. 2	4 @	4¼c
Bulls and Stags	2 @	3 c
Calves: Light	6½@	6¾c
Medium	6 @	6¼c
Hogs: Grain-fed, heavy		7 c
150 to 250 lbs	7¼@	7½c
100 to 150 lbs		7 c
Small prime wethers	3¾@	4 c
Large prime wethers	3¾@	4 c
Ewes	3¼@	3½c
Lambs		4¾c
Steers	8¾@	9¼c
Cows	7½@	8½c
Heifers	7½@	8½c
Veal, large	10	@11 c
Mutton: Wethers	8	@ 8½c
Ewes	7½@	8 c
Lambs	10	@10½c
Hogs, dressed	10½	@11½c

WOOL.

California wool is still neglected in the Eastern markets, and local buyers are holding off. No prices have yet been established on the fall clip, and current quotations are largely nominal.

Spring Clip—		
Choice Southern, Year's sta-		
Northern, year's staple	14	@16 c
ple	10	@12½c
7 months	8	@11 c
Lambs, spring	8	@10 c

HIDES.

Prices stand as before, but the market is weak, and buyers are operating on a very small scale.

Heavy Steers, over 56 lbs		11½c
Medium		11 c
Light Steers, under 48 lbs		10½c
Heavy Cows, over 50 lbs		10½c
Light Cows, 30 to 50 lbs		9½c
Kip		11½c
Veal		16 c
Calf		16 c
Dry—		
Dry Hides	17½	@18½c
Dry Bulls		15½c
Dry Kip, 10 to 15	18	@18½c
Dry Veal, 5 to 10		19½c
Dry Calf, 7 down	23	@23½c
Sheep Skins—		
Long Wools	$ 0.85	@ 1.25
Medium Wool, 6 to 9 mos	50	@ 75c
Short Wool, 3 to 6 mos	30	@ 50c
Lambs	35	@ 50c

HORSES.

The market is rather slow at present. There is a continued fair demand for heavy stock for city use, but there is a tendency to ask higher prices than have prevailed of late, and sales are not easily closed at the figures asked. Driving horses and light stock in general are easy.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	210@250
Chunks, 1350 to 1500 lbs	175@225
Wagon Horses, 1250 to 1350 lbs	120@175
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	110@125
Old Mares	90@115

MULES.

200 lbs	$240@290
100 lbs	200@225
1000 lbs	165@190
900 lbs	140@165

SPECIAL DECIDUOUS MARKET

Sacramento, Cal., Sept. 23, 1911.

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (7 days) ending Friday morning, Sept. 22, 1911, as reported by the California Fruit Distributors:

Peaches (22¾ cars)—Salways are going forward in small volume and will continue to do so during the next ten days. It is not likely there will be any straight cars shipped, and what few there are will nearly all go to auction.

Plums (2½ cars)—No straight cars of plums are now offering, the quantity represented in this week's shipment being made up of scattering lots from various sections.

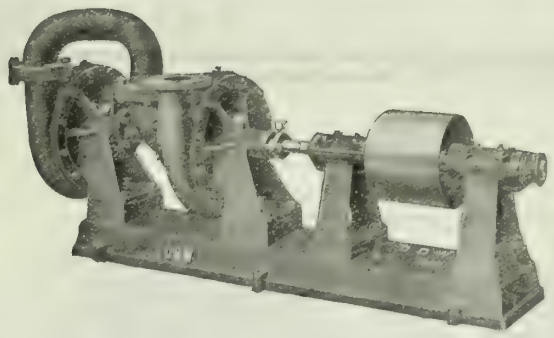
Pears (57¾ cars)—The shipment of fall and winter pears is now of as large a volume as can be expected at any time during the season. It is likely that after the coming week the movement will decline rapidly.

Grapes (493½ cars)—Practically the same quantity of grapes moved out this week as during the preceding one. In the Lodi district there has been a considerable curtailment in the shipment, but scattering lots from other sections have very nearly made up the difference. There are a few cars of Malagas moving, and they will continue to be offered in a limited way for some time to come if markets justify. Tokays are in ample supply from the Florin and Lodi districts; the former will practically finish shipping during the coming week. The quality of the Lodi Tokay has never been as good as at present. The fruit is well developed, has plenty of sugar and the color is perfect. It is safe to say that no finer grapes ever left the State of California than are available at the present time.

Total shipments for season to September 25 were 8513 cars. Total shipments to same date last year, 9699 cars. On the Eastern auctions grapes are selling very low, as evidenced by the following reports from sales at New York on Tuesday, September 26: Malaga grapes, 70 cents to $1: Bartlett pears, $3.05; Elberta peaches, 90 cents; Tokay grapes, 60 to 85 cents; Italians, 90 cents. On the same date at Chicago the following prices were paid: Bartlett pears, $2.45 to $2.95; Malaga grapes, 85 cents to $1; Tokay grapes, 60 to 85 cents; Cornichons, 85 cents; Italians, 85 cents; Elberta peaches, 85 cents.

The Farmers' Union of Selma, Fresno county, has arranged to furnish legal representation for all members in case of difficulty with packing-houses and middlemen in the handling of fruit and farm produce. The union is also attempting to have important weather notices sent by telephone throughout the farm districts of the State.

A dam sufficiently large to hold water enough to irrigate 2000 acres of land is being completed by Charles Horton, on his ranch at Dairy, Klamath county, Oregon.



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PUBLISHER'S DEPARTMENT.

A note received from W. S. Sullivan of Agnews, states that at the late State Fair he won every award on "Buffs" except three pullets. All gold specials in English class, 1-2-3 on pen, 1-2-3 on cock, 1-2-3 on cockerel, 1-2-3 on hen, 1-2 on pullet. Grand special on best male, best female, best pen, best exhibit, largest entry, in the entire English class. Gold special for best exhibit in entire show.

"Weeds of the Farm."—This is a new book written by L. H. Pommel of the Iowa State College and published by the Orange Judd Co. of New York City. The book contains 300 pages, is cloth bound, well illustrated, and sells for $1.50 per copy, net. Prof. Pommel is one of the master weed men of the country, and in writing this book he discusses the weed problem from a broad viewpoint, making the work of great value, particularly to high schools and colleges.

Manual of Farm Animals.—This is another new book along farm lines just issued by the Macmillan Company, 66 Fifth Ave., New York. The book is written by M. W. Harper of Cornell University; it contains 545 pages, is well illustrated and bound, and sells for $2 net. The book covers every phase of care, feed, and breeding of horses, cattle, sheep and swine.

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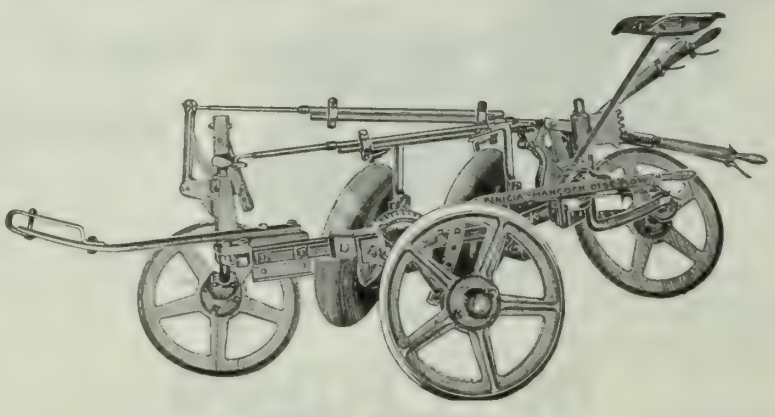
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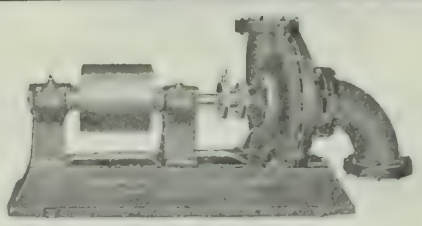
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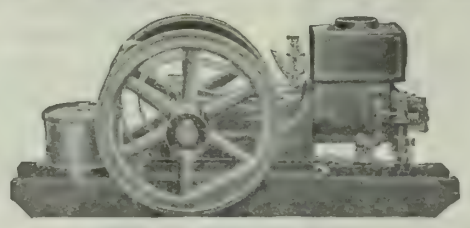
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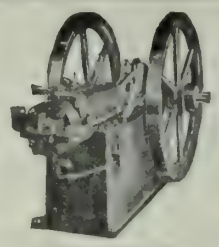
BENICIA IRON WORKS, Benicia, Cal.



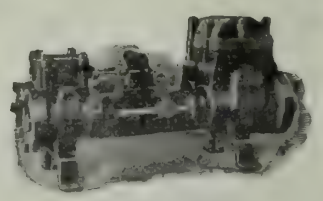
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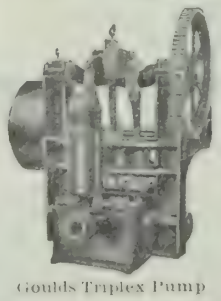
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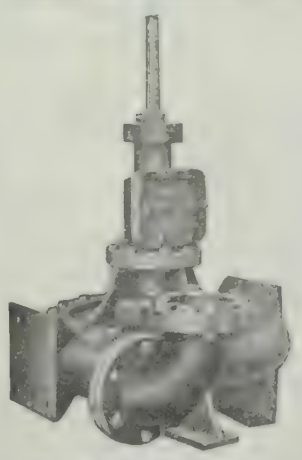
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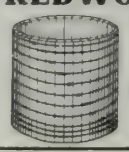
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R. F. WILSON, 447 W. Main St., Stockton, Cal.

THE PACIFIC RURAL PRESS

Vol. LXXXII. No. 15. SAN FRANCISCO, SATURDAY, OCTOBER 7, 1911. Forty-first Year.

CALIFORNIA STATE

Live Stock Interests in Nevada.

Written for the PACIFIC RURAL PRESS by Professor GORDON H. TRUE, University of Nevada.

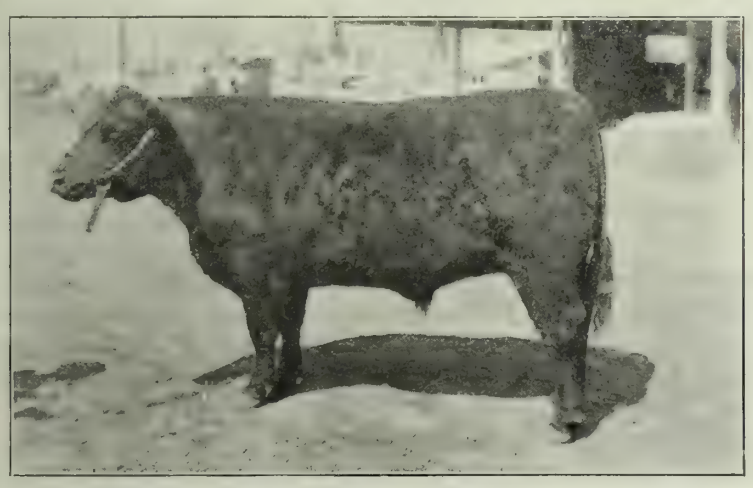
Agriculture in Nevada is looking up. Never before in the history of the State has there been such a thorough interest in the development of its agricultural resources. While this promises much for the future of the State which, perhaps more than any other, is known as one of predominant mining interests, it must be admitted that the spirit of speculation is responsible in a considerable measure for the increased interest in agriculture and agricultural lands.

With this new interest in the spread of the basic industry in the State there must be an equal interest in the improvement of farm practice if a permanent advancement is to be recorded. When farm lands increase in value because it has been demonstrated that their earning capacity has been increased, the new value means something more than where the price goes up because of a new speculative interest.

Nothing plays a more important part in the matter of agricultural economy than live stock. A banker remarked to the writer a few days since concerning Nevada's great staple crop, alfalfa, that it was a lazy man's crop. To which the reply was made, "But the farmer can turn it into as high class a product as he chooses by feeding it to the right kind of stock." And yet, with all this new interest in agriculture, the pure-bred live stock interests have probably not been at a lower ebb in the State for a decade or more than they are at the present time. Time was when Nevada was represented at the California State fairs by as fine herds of the beef breeds as were to be found on the Coast. But John Sparks has gone, and his great herd dispersed. The Short-horn herd of Joe Marzen went to build up California herds and the veteran stockman himself now resides in Sacramento. Other herds of which the old-timers tell have been scattered—the famous 71 herd of Herefords with the rest—and the place once occupied by these pioneers has not been filled.



Partial View of University of Nevada, at Reno.



Champion Steer California State Fair 1911; University of Nevada.



Stafford Mercedes Aaggie 12th; University of Nevada.

The live stock interests of Nevada must always be a large interest. Even with the fulfillment of the fondest hopes of the most ardent advocates of "dry farming," the greater part of the State must remain range land; and with the cutting up of the large ranches which in the past have been run simply to cut hay for the winter feed of range animals there will come the development of a new animal industry. The growing of more stock under fence is bound to come, in Nevada as in other States, where the ranch has been but a supplement to the range. The widespread interest in Western lands is bringing to us from the other States a type of farmer who considers that farm animals have a natural part in ordinary farm operations; and with them is coming a demand for improved dairy cattle that cannot be supplied from the present herds of the State. Not only does the demand for dairy cattle exceed the supply, but the same is true of pure-bred sires for the range. The presence of Nevada stockmen at Sacramento during the fair, and at the Glide and Howard sales of Short-horns in San Francisco, looking for bulls and rams, indicates that there is an opportunity for the farmers of the State to furnish an unsupplied want. It should not be necessary for the range men to have to go out of their own State for the purchase of pure-bred sires of any kind.

In connection with a growing interest in dairying throughout the State has come an interest in hogs and a resulting demand for pure-bred stock. There are few pure-bred herds and the demand exceeds the supply from these. The fear of cholera has kept many out of hog raising, but the University has produced serum in a small way and is trying to get into touch with the hog men in such a manner as to help combat the disease when an outbreak occurs.

Speaking in a general way, we are trying in our live stock work at the University to do two things at once—to stimulate the interest in pure-bred animals and to build up an equipment for the teaching of animal husbandry in the institution. Starting a few years ago with an investment of Federal funds in a work team of pure-bred mares purchased of Mrs. Sherman at Fresno, a pair of Berkshire sows from S. B. Wright of Santa Rosa, and some grade dairy cows in the vicinity of Reno, we have been able by the re-investment of the proceeds of sales to build up our present live stock equipment. This consists now of a herd of pure-bred Holsteins, a few Aberdeen Angus, all the purchases of which have been made in California, and a pair of Herefords presented by a Nevada breeder, Mr. John H. Cazier of Wells; representatives of five breeds of middle wool sheep—Shropshire, Hampshire, Southdown, Dorset Horned and Cheviot—and two breeds of hogs—Berkshires and Poland Chinas. We owe much to the generosity of breeders with whom we have had dealings, their sales to us being in some instances almost contributions.

We believe that animal husbandry should find a leading place in the

(*Continued on Page 294.*)

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E. J. WICKSON - - - - - - - Editor
FRANK HONEYWELL - - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Oct. 3, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.26	.60	1.56	60	44
Red Bluff	.04	.68	.95	80	44
Sacramento	.20	.20	.46	80	46
San Francisco	.16	.16	.36	72	50
San Jose	.22	.22	.44	82	40
Fresno	.02	.02	.36	86	44
Independence	.60	.60	.33	76	36
San Luis Obispo	00	.02	.55	80	44
Los Angeles	1.24	1.24	.09	84	52
San Diego	.09	.21	.09	80	52

The Week.

The first rain to cover a considerable area of the State arrived during the week, bringing over an inch of water near the coast in southern California and diminishing northward to foliage-washing showers. Some damage has been done to beans in process of harvesting and the late fruit still on the drying trays, but much less than expected because of the quick reappearance of drying sunshine and the sponge-like thirst of the dry soil. In fact the dust is flying again in places where forebodings were indulged in but not realized. So far as we have heard not even a wild goose has been cited as the prophet of this approach of the early rains. It was, however, just the kind of rain we would expect a wild goose to know about, because, though not altogether unprecedented, it was not the normal nor rational beginning of the rainy season. No doubt the Weather Bureau knows whether it was an estray from the Mexican storm system or merely the eastern edge of a great cyclonic affair over the Pacific ocean—but what particularly interests us is the fact that no bird told us of its coming. And this fact has no little importance, because we have just been reading a monograph by a great biologist which makes the claim that birds do not know any more about coming weather than we do. It is a striking illustration of the candor of modern science that a bird-biologist should make such a declaration. It might have been expected from a meteorologist, because he might be tempted to claim that a wild goose could not be as good a prophet as he, but that such an admission should be made, before a jury prejudiced in his favor, by a special attorney for birds is certainly a lofty flight of candor. [The ornithological printer will be careful not to print that word "condor."—EDITOR.]

What Do Birds Know About the Weather?

People generally believe that they know a great deal. If we are not mistaken, early naturalists exhorted farmers to observe the flight of birds, the phases of the moon, and other celestial phenomena as sources of farming wisdom. It is therefore rather a shock to the aspiring farmer to be told that he must forsake his trust in harbingers, heralds and auguries and come down to the demonstrations of man-made science for wisdom. If that is really true we may as well begin with birds as weather prophets and get used to the sensation. For Mr. W. W. Cooke, the biologist cited above, does everlastingly lam the birds, inferring that they do not know any more than a man. He says: "The frequency of disasters to them proves that birds cannot foretell the weather. No bird starts on a migratory flight during a rain or in a dense fog or against a chilling blast, and yet thousands of birds are found each year near lighthouses and along the shores of great bodies of water under just such weather conditions, showing that after starting they met or were overtaken by the storm. The early settlers in the Mississippi valley noticed so often that an exceptionally heavy flight of ducks and geese moving straight south at a high altitude was soon followed by a severe storm that they came to have great faith in birds as weather prophets and believed they could actually foretell a tempest. It is more probable that the birds began to migrate at the first sign of a storm and outstripped it in their southward flight." Which means, we take it, that a bird knows a storm by sight, just as a man does, and in getting out of one side of it, may butt into the other side. We shall now wait with anxiety to see what will happen to the prophetic reputation of the wood-chuck.

Farmers Called First in the United States.

We described last week the trouble which came upon the Kaiser for calling commerce the breath of the empire, and subsequently evened up by calling agriculture the backbone thereof. Colonel Roosevelt has taken the other way around. He told an audience of farmers last week that he was with them in their efforts to get more money for their crops. The farmers were guests of the United Shares Association, which is engineering a movement to eliminate the middleman in the disposal of farm products. "I never object to paying for what I get," Colonel Roosevelt said, "it means more profit to the farmer, more for the wage earner. But I do very much object to paying more if it means nothing but profit to the man who stands between the farmers and wage earners and me." We believe Colonel Roosevelt strikes the keynote of lower cost of living, the first whack, instead of going off-key at first, as the Kaiser did, but we are wondering what the Colonel, as a politician who must sail on an even keel, will have to say to the Retailers' Association, which may next visit him.

But the Farmer Must Place Products.

If reports which come to us are true, there are tomato growers in some parts of the Sacramento valley who have not been able to sell their tomato crops at profitable prices and are somewhat short of cash because of that. On the other hand, there comes the story from an adjacent county that four Greeks formed a company to grow tomatoes and leased twenty acres for that purpose, the land yielding at the rate of twelve tons per acre. A Portland, Oregon, firm bought the entire crop, and it is estimated that unless early rains should cut the crop short the twenty acres will make a return of $9000. The joy of these Greeks may have come through blind luck, of course, but the probability is that they bustled around beforehand and found out first who would take 20 acres of tomatoes at a profitable price. It is, of course, unwise to put in a special crop of that kind just as one might grow staples like hay, potatoes, barley, etc., and trust to the general market. The trouble with doing that is just like that which arose this year for those in the San Joaquin valley who put in an acreage of cantaloupes without contracts with buyers and sold the crop for the price of the boxes, while those who had contracts made money. The grower must pay much more attention to the selling end or he certainly will not last long enough to see Colonel Roosevelt's millenium. If he gets wise a little now, however, he may get his nightcap off for the millenium dawn.

The Cost of the Land.

Another factor which enters into the determination of profit in farm products is the cost of the land on which they are grown. This is generally overlooked, but when the farm producer comes to crediting himself with interest, taxes, etc., and charges them against the product as other producers do his selling prices will seem more reasonable and not so high—even when they do strike top notches. To tranquilize the community, these facts should not be evorlooked. In Europe the farmers seem to be trying to guard themselves against undue exaltation of land values by speculation, which means, by the above reasoning, to enable them to produce more cheaply. We read in consular reports that the Bavarian Diet has adopted a new law against speculations in farming land. According to the statements of the Government, the profit of speculations of this sort in Bavaria during the past twelve years amounted to $14,280,000, to which are to be added $7,140,000 expenses, so that the sum of $21,420,000 was lost to the farming population. The average price of land in consequence of speculation increased by $10.71 per 2.74 acres. In future the village communities and agricultural co-operative associations will in every case have the right of preemption in case owners desire to sell land. From the point of view of a new country like ours this seems like a strange procedure—landowners trying to keep down the price of lands. It is, however, thoroughly rational and is protective against increased interest or rent or taxes. Under present conditions in the United States such an effort to depress land prices would please nobody, for the farming owner joys to think of making more from the unearned increment than from cropping; the speculator finds opportunity for his capital and enterprise in lifting values, and even the buyer in small tracts hopes to get into the same game and would not buy an acre which he thought would not advance. And yet every advance in value is a handicap upon profitable production. Lest this unwholesome truth should offend any of our friends who are enriching themselves by holding or by subdividing lands we hasten to assure them that the fact is not against their interests but promotive of them, because such considerations should hasten purchasers to place their stakes now and get as much good land as they can before European styles of land regulation can come into vogue in this country—which will be at least several hundred years hence, unless the socialists should get their leveling processes into operation before that time.

Employers' Liability for Accidents.

Another matter which will have to be reckoned with in future cost of farm products will be the amount the farming employer must pay for accidental injuries to his hands if the constitutional amendment, which is to be voted on next Tuesday, shall be ratified. This will make the employer liable whether the injured man is at fault or not. The charges which he will have to pay will be quite competent to put the small farmer out of business if injury should come, and the only way he could save himself would be through insurance against such injury. This would make a fixed charge against his products to be covered in the selling price, just as interest and taxes ought to be. With this in view, it is interesting to note that employers' liability insurance is working well abroad. In Denmark it has been in operation

since 1908, in which year a law was passed which makes the insurance of all persons concerned in agricultural labor obligatory, as well as those engaged in forest or gardening occupations, provided that their salary is not more than about $400 per annum. The insurance does not apply to those injured by machinery alone, but to all accidents during work, no matter what be their cause—handling of labor implements, transport of material, animals assisting in the labor, etc. The employer is responsible for the insurance, but he is free to insure with the society that he prefers, whether it be a mutual aid society or a share company, provided it is authorized by the ministry. In Denmark, if the accident should cause a temporary disablement for work, the person insured has the right, starting from the thirteenth week of disablement, to a daily compensation of 21 cents for workmen less than 18 years of age, and 33 cents for adult workmen. During the first thirteen weeks the claim for the accident is defrayed by the Sick Funds. If the disablement is permanent and complete, the compensation paid is equal to six times the annual wage, the limit, however, being $1000. Lastly, in the case of death, the heirs receive compensation equal to four times the annual wage, but not more than $700. In California a much higher rate of compensation will prevail, and it is quite possible for an employer to be liable for more than the value of the year's products—perhaps for more than the ranch is worth. Manifestly, this will be a great force to impel farmers to get together for carrying their own insurance, for they get it probably for as low a cost as they now secure against fire losses in the farmer's mutual companies.

Farming Girls.

Agriculture for women is going through all the vicissitudes which might have been prophesied for it. The daily papers are printing the story of two San Francisco girls who have bought a ranch near Mt. Shasta consisting of thirty-five acres, two-thirds of which is under cultivation. The remainder is in timber. The account says the girls propose "to make their property a model ranch. They have a foreman and a corps of workmen to carry out their orders, and are arranging for alterations to their ranch house, where they propose to entertain their friends after the rush of next season is over." This is a thoroughly urban conception of "real farming"—to wit: a foreman and a gang of laborers, a new house and a run of house-parties—all on a 35-acre hill ranch. They can, of course, do it all and have lots of fun besides—if their check-books are long enough; but to call such sport "real farming" is an economic slander. For farming is not such a picnic as urban people think. It seems that the farming school for young women established by Mrs. Belmont on Long Island has already run its course, and it was only begun last spring. The Boston Globe says that "the farm was not well managed and the farmerettes did not get enough to eat, although there was an abundance at hand. Nothing but early failure could be expected under such conditions. After the novelty of the enterprise no longer sustained the interest of the young women, and the practical hard work that goes with the daily farm routine began to impress itself upon the toilers, the awakening came. Farm labor has its reward, but it is found mostly in work accomplished and not in fun. It does not follow that a capable and ambitious woman cannot direct a farm because this fad has fallen flat, but it is not necessary to say that in this country hard physical toil in the fields is not expected of women. It is a man's job to plow, lug water, build fences, and do the hundred other things that a farm demands." The Globe proceeds to preach a sermon about the woman's place being in the home and all that—which we do not need to follow. The fact remains, however, that if a woman undertakes to do farming she must do it like a man (according to conditions and requirements) if she hopes to succeed. Dilettante farming will not pay either men or women who embark upon it.

Queries and Replies.

Covering—Blasting—Alligators.

To the Editor: Will you kindly, through your valuable paper, inform me if it is necessary to have young orange trees covered or leave them uncovered during the winter months? Which is the proper way to blast hardpan: to drill down from the surface to the hardpan, or dig down to the hardpan and then drill? Can alligator pears be grown here, and are there any to your knowledge grown in this part of the country?—A Subscriber, Fresno.

It is generally desirable to cover with burlaps or bale with straw or some other coarse litter. all young trees which are being planted in untried places; and even where old trees are safe, young trees which go into the frost period with new growth of immature wood should be thus protected. Do not use too much stuff nor bundle too tightly. In soil blasting, you work from the surface; there is no digging to do. Send for full descriptive publications to the Dupont de Nemours Powder Co., Chronicle Building, San Francisco. The Fresno nurserymen can tell you how alligator pears have behaved in your district and tell you where you can see trees if there are any which have enjoyed your climatic conditions.

Treatment of Bark Wounds.

To the Editor: Will you please tell me the best way to treat the trunk of an orange tree when a part of the bark has been knocked off by the harrow?—Grower, Pasadena.

In the case of such injury as you describe, the rough borders of the wound should be removed by a clean cut to uninjured bark and the surface of the wound covered with paint or grafting wax to prevent the checking. If that is done, such a wound in a healthy tree will soon be covered with new bark growing from the sides of it. Sometimes such wounds are covered with a plaster made of cow manure and clay, held in place with a piece of burlap. This is for the purpose of maintaining moisture so that new bark may start from granulations which may remain on the inner surface. This is a very old and satisfactory treatment, but rather troublesome and unsightly; therefore, the first mentioned treatment is generally approved.

Orchard Use of Hen Manure.

To the Editor: I am planning to use hen manure altogether if it is most suitable. I would like to know if 100 pounds to the tree, say 70 trees to the acre, is too much, and if the hen manure contains the proper chemicals to make good fruit.—Owner, Long Beach.

Hen manure is a concentrated animal manure which has to be used with some consideration. We should not use over twenty younds to a young tree and should mix it with the soil for a considerable distance around the tree. Of course, it depends upon whether there is much dirt mixed with the manure or not. If it is clean droppings, the amount stated is enough for the first application at least. Old bearing trees might stand two or three tons to the acre if distributed all over the ground. The material contains everything that is necessary for the growth of the tree and formation of the fruit.

Prefers Grass to Weeds.

To the Editor: I have some land in the southern part of Monterey county which I expect to make my home after this year, and I am desirous of improving the pasture as much as possible. The land ranges all the way from a sandy loam to adobe (all apparently rich enough), but there are lots of places where the forage is very poor. The principal grasses are bunch grass, wild oats, and alfilaria, but for some reason the bunch grass, which is considered the best, has disappeared to a great extent. The land is very foul, and every time the land is broken "tucalote" seems to come up so thick I can hardly see how I am going to get grass to hold its own after it is sown. Can you give me any advice as to the varieties of grass most likely to grow or any suggestions as how best to go at it? The average rainfall I do not know, but there is plenty to grow a wonderful variety of weeds in the winter.—Pasture-Seeker. Santa Cruz.

What grass you can grow in the region which you describe, you must determine by experiment. There are plenty of places with rich soil which cannot be counted upon to grow rich grasses without irrigation, although they may put forth quite a product of drought-resistant weeds. In such places one has to depend upon winter growth of annuals supplemented by rye and barley to be fed off green. The experiment should be made with the seed of burr clover and alfilaria to see if they make satisfactory winter growth and produce seed enough to provide for their appearance during the next season. To this end, overstocking and too close feeding should be guarded against. Summer growth of pasturage is not to be expected without irrigation, as already stated. There has been no perennial grass demonstrated to be successful on our driest soils, although Australian rye grass will hold through wherever a moderate amount of moisture is present during the summer, because the soil is retentive enough for its conservation.

THE WILBUR PEACH.

To the Editor: There has always been a dearth of good freestone peaches in the market at and during a period following Late Crawford, Lovell, and some others. Picquett's Late ripens a little ahead of Salway, and therefore does not fill the gap.

The peach of which I am sending you a sample will prove, I believe, just what is wanted. The original is an odd tree in an orchard of Muirs, and I have named it "Wilbur"—a name in the owner's family. The large, glossy leaves indicate that it belongs to the Chinese class, and it seems to be a chance seedling. The original tree is about ten years old. The fruit is very large, pale yellow flesh, and, when ripe, with handsome dark-red cheek.

LEONARD COATES.

Morganhill, September 17.

[The peach has some objectionable points, but still it may prove desirable commercially, as Mr. Coates' suggests.—EDITOR.]

WALNUT WISDOM IN A NUTSHELL.

To the Editor: As many people will be selecting walnuts for planting the coming season, a few words in the selection of individual specimens is timely. Without going into theory or elaborate discussion of cause and effect, I would advise as follows:

Select the finest and largest nuts growing well out on the branches where they have had an abundance of sunlight.

In these twenty words is contained one of the strongest and oldest rules in plant breeding for improved varieties. It is simply the selection of the best where best development is possible.

I might write a page and tell the whys and whereofs, but the rule is easy to put into use without elaborate theory.

ALBERT F. ETTER.

Briceland, Humboldt county.

What's the Matter With Table Grapes?

Written for the PACIFIC RURAL PRESS
By Mr. D. J. WHITNEY.

Three things were found to be radically wrong with the table grape conditions in this State at the meeting of those interested in the business of growing or shipping that fruit at Sacramento last Saturday, September 30. It was unanimously agreed that there was an excessive planting and production, the packing was not what it ought to be, especially this season, and the shipping rates and regulations prevented a proper distribution of the crop.

The meeting was called by State Horticultural Commissioner J. W. Jeffrey, who acted as chairman and will appoint committees provided for at the meeting.

R. D. Stephens first addressed the meeting on "General Conditions of the Table Grape Industry," stating that the best that most growers could hope to do this year was to sell their grapes at a figure that would return the money paid for the shooks; that the prices received would pay but little more.

"I wish to state a few facts," said Mr. Stephens. "In the first place, we are powerless to improve conditions in the table-grape industry without railroad assistance. The proposed reduction of 15 cents a hundred would make a difference of $39 per car, but this would only be part of the loss now being met. The greatest need of help from the railroads is a reduction in carload lots from 26,000 to 20,000 pounds. The cars are packed too full with a load of 26,000 pounds, as is shown by the fact that the crates near the top are very often spoiled, while those below are in good shape. The reduction to 20,000 would prevent good grapes from spoiling, and open much new territory.

Supply Excessive.—"The demand for grapes is not equal to the supply. With 12,000 cars during the season it will mean that 400 cars a day will be put on the market for each of the five auction days of the week. Putting the great bulk of the crop in a few places cannot fail to demoralize the markets, as the buyer will not uay $1.50 per crate when he can buy others for 50 cents. I believe in standardization, but even with standardization, about 60 per cent of the Tokay vines would have to be taken out before the rest of the grapes could be disposed of to advantage.

"Grapes will barely pay cost of production, packing, and shipping at $1.15 per crate, and a glance at the Eastern prices will show that 70 cents a crate is about the average returns.

"The weaker will go to the wall before Tokays are again on a paying basis. We have been holding off shipping too long, but this will simply flood the market later on."

The large Eastern crops of grapes were claimed by Mr. Ashley of Lodi to account partly for the small prices here. Mr. Ashley claimed that a postage-stamp rate was not required, but that lower rates to the Middle West and the present rates to the Atlantic seaboard would be satisfactory. A reduction of carload lots to 20,000 pounds was the pressing need to broaden the markets. He told of a number of cases where buyers paid carload rates on short shipments sooner than have the market flooded, and gave other instances where only a few crates were sold, while a whole carload of grapes could have been disposed of if the minimum was 20,000 and not 26,000 pounds.

Shipping Sour Grapes.—The shipping of unripe grapes was claimed by F. B. McKevitt, manager of the California Fruit Distributors, to be responsible for a large part of the difficulty of disposing of the fruit at a profit. "I was down in Tulare county," said Mr. McKevitt, "and found that the Thompson's Seedless on our ranch were just getting ripe. On visiting other places I found that all the Thompson's Seedless were shipped. They started shipping green grapes from Imperial county, and everybody in the State kept shipping green grapes, too.

"There is only one way to do, and that is to find out when the grapes are fit to eat, and then ship them. As it was, consumers bought the early grapes at high prices and then threw them away and bought no more. The market could have taken twice the amount of grapes if they had been held until there was sufficient sugar in them.

"It is a mistake to plant out too much of a single variety of any fruit. They ripen all at one time and flood the market. The Lodi grapes ripen just when the Eastern grapes come in. Instead of planting grapes, plant almonds and other fruits.

Improve Packing Methods.—"We need to have the rates reduced to the East, but that alone won't do; we must reduce the packing cost. Our crate is nice and looks good, but it costs too much, and there is not enough in it to justify the expense. The facing has to be done away with, and we must sell on a pound basis. It would be well to pick into 25 or 30-pound shipping boxes in the field, having only the best grapes put in, and no more of them than the boxes would hold, and brought direct to the cars. Now they put seven inches of grapes in a four-inch box, the crate bulges away up, and when they are packed the grapes are crushed and decay sets in.

"We need good European labor at about $1.50 per day instead of the slighting labor done by Asiatics, and to ship fruit that is fit to eat."

A Standardization Law.—The matter of having the legislature pass a standardization law like that of Florida, preventing the shipment of immature fruit, was referred to the hands of a committee for investigation, Judge Chipman, of the Appellate Court, stating that he had doubts of the constitutionality of such a measure, while others thought that sufficient standardization could be obtained without the aid of a law.

A report was rendered on the good results of standardizing fruits in Placer county, the cost being but ¼ cent a box for inspection and excellent results being achieved by having all fruit going out of good quality.

The matter of advertising deciduous fruits was also passed up to a committee to be appointed by Commissioner Jeffrey. A committee was also appointed to prepare for the organization of a deciduous protective league, like the Citrus Protective League of the south.

A resolution was also passed requesting the railroads to reduce rates to the East to the lowest possible limit, and especially to reduce the minimum on carload lots from 26,000 to 20,000 pounds.

The Mediterranean Fruit Fly.—Quarantine Officer O. E. Bremner gave a talk on the Mediterranean fruit fly, on account of which a quarantine had been placed on Hawaiian fruits and vegetables. He stated that the steamship companies, with the exception of the Pacific Mail, had arranged to have all fruit and vegetables that could carry the fly thrown overboard one day out, while the Pacific Mail was bringing in large quantities of infested material that had to be boiled at great difficulty and trouble before the maggots could be killed.

BLASTING SUGGESTED FOR DRAINAGE.

To the Editor: I would like to make a suggestion to our "Grower" from Riverside county on the subject of his communication of last week. I agree with both of you that the trees in question are suffering from lack of drainage in places. I believe it is a plain case of hardpan, which is a very comprehensive term and may include impervious clay, cement gravel, etc. The fact that the area is waterlogged in spots indicates that these same spots are underlaid with an impervious layer. I should try blasting these places with generous charges of slow-acting explosive properly apportioned and placed.

Marysville. E. E. LONG.

[Full information about such blasting can be had from the Dupont-Nemours Powder Co., Chronicle Building, San Francisco.—EDITOR.]

PLACER COUNTY'S STANDARD PACK.

Written for the PACIFIC RURAL PRESS
By Mr. H. E. BUTLER, Penryn.

Placer county has standardized her pack of fresh deciduous fruit for interstate shipment. In other words, has put her pack on an honest basis. Have buyers discovered it?

The trade has handled "stove-piped" potatoes and specked apples below the first layer in the barrel so long that it may be slow in realizing that a whole great shipping district has voluntarily become honest and accomplished what cities and States have attempted by passage of laws and regulations.

In Placer county this was made possible by the co-operation of all shippers, buyers, and growers' organizations throughout the county. It should be mentioned here as significant, and indicative of the necessity, that without a single exception every individual connected with the buying and selling of fruit, every marketing agency, sub-agent and broker in the county, while sharp competitors among themselves, were unanimous in supporting the standardization movement. After the experiment of the first year, 1910, the movement was continued for 1911 with the same unanimity.

Ninety-five per cent of Placer county's deciduous fruit, except that sold to canners, is marketed fresh in interstate shipments. The annual output of the county is about three thousand cars.

Standard pack originated here, at a mass meeting called by the State Horticultural Commissioner before the opening of the 1910 shipping season. The committee of fifteen, selected at that time, was made up of seven shippers and eight practical and successful growers. This committee was probably as well qualified to prepare standard rules for packing of fresh fruit as could have been gotten together. Its members were experienced in the growing and packing of fruit, and its marketing wherever California fruit is offered for sale. Practical methods and trade requirements were well known to these men. So well were the rules and regulations prepared, few, if any, changes have been found necessary in the two seasons they have been in use.

At any time, during the season just passed, if a representative of Eastern buyers had visited the principal shipping points in Placer county, he would have observed a corps of inspectors working from one shipping house to another, carefully examining the various lots of fruit ready for shipment. He would have seen occasional lots marked by these men as rejected and below standard, and such lots trucked aside, separated from the fruit for interstate shipment. These inspectors were employed and paid by the growers' and shippers' association of the county, and were all practical and experienced fruit packers, well qualified to interpret and apply the standard rules. They were also deputies of the County Horticultural Commissioner.

At the close of this second season, the question is being asked, "Has the trade seen the results of Placer's efforts to standardize her pack?"

This year the daily reports from the auction-rooms of New York, Boston, Montreal, and other places have read: "Placer county peaches averaged ——; others, ——," with the former invariably the higher—often the difference being equal to the cost of production. Had standardizing the pack anything to do with this?

Placer county growers have standardized their pack of fruit and tried the experiment two years. Their rules provide that fruit of every kind, offered for interstate shipment, must be well matured and fit to be eaten fresh, honestly packed throughout the box, basket, or carrier, and correctly labeled as to contents.

The movement is one of policy, of course. Marketing immature, undersized fresh fruit ahead of others was a temptation to which growers had yielded since fruit was first grown, and prices obtained for such early stuff often seemed to justify the practice. Later shipments suffered as a result, however, and from such experience growers and shippers alike saw the wisdom of a standard pack.

There is more than the direct financial gain in it: the satisfaction to be had from handling first-class goods, honestly packed, and the development of the districts which attain a reputation for a

high standard of products, are to be considered. It will be interesting to see if Placer county can maintain its high standard and honest pack. Only unexpected influences can affect it, for the support of the movement has been so general that the experiment has worked out in practice beyond reasonable expectations.

Penryn, September 23.

The California Winter Garden

Written for the PACIFIC RURAL PRESS
By M. G. H. HOPKINS of Tropico.

Prices of vegetables are already beginning to soar, so you had better begin planning that winter garden.

It is wonderful how much better vegetables are to eat when fresh. And not only that, but there is considerable pleasure in raising our own "truck."

Lettuce.—How much more crisp a head of lettuce is when freshly cut than one which was cut the day before and perhaps hauled around the country a day or so. Lettuce does better during the cool months, and of the different varieties catalogued we recommend the Wonderful and New York, and of the smooth-leaved varieties the California Cream Butter. The Wonderful is very popular among market gardeners, is very large, crinkly and tender. The New York is of good size, very solid head and fine flavor. The California Cream Butter is a smooth-leaved variety and one of the best shippers.

Sow lettuce in seed beds and transplant in rows 16 inches apart and 14 inches in the row. Transplant in moist ground, irrigating immediately after, unless there is rainfall. An ordinary package will furnish seed enough for one planting for family use. Where one contemplates growing for market, one ounce will produce 5000 plants.

Other Wholesome Greens.—It is quite generally known now that we should eat considerable green food like lettuce, radishes, spinach, kale, etc. They contain organic salts largely, which our system requires. The radishes are quick growing when conditions are favorable. The turnip rooted varieties mature earliest and are to be had both red and white skinned. Drill in rows 12 to 16 inches apart. One ounce will plant 50 feet.

Young Onions.—Onion seed can be sown now for the table or for market. They can be sown in drills where they are to remain, or sown thickly and transplanted later into permanent rows. The latter mode is practiced by many market gardeners. They claim that, being a certain distance apart from the start, they will bottom more uniformly and that there will be a better stand of plants. It is certain that, as usually sown in drills, there will be very many places where plants are too thick and in other places there will be spaces where there are no plants. Yet, on the other hand, the extra cost of transplanting must be considered, which will approximate $25 per acre. There are others, who, living near a market, sow about five pounds of seed per acre in drills, and when tops are about the size of a pencil the bottoms are large enough to begin pulling and bunching for market, leaving plants about 4 inches apart for the main crop. It is a good idea to use plenty of seed where plants are not transplanted. Onion seed will be cheaper this season than last. Danver's Yellow Globe, and Australian Brown, two of the leading sorts, will be quoted at $1.25 in most of the seed catalogues. We understand there will be no change in the Bermuda stock.

Bermudas.—Of the Bermuda onions there are three varieties, namely, the White Bermuda, which is a large flat onion with white flesh and straw colored on the outside. The Red Bermuda is also large and one of the best shippers. The Crystal Wax is also a Bermuda onion with a white skin and also white flesh. This variety is one of the best for early market and is largely grown in southern California, Arizona, and Texas.

Pansies.—It is not too late to sow pansy seed. Sow seed in well prepared soil in boxes, and transplant when small into flats and later into permanent bed. If preferred, one can buy plants of the florists that are already in bloom. Such plants can usually be had from January till early summer.

Other Hardy Perennials.—While many of the hardy annuals can be sown in the spring, they do much better when started in the fall. This applies also to hardy perennials.

Many varieties of flowers have such small seeds that to get a good stand of plant it is important that the seed bed be made in perfect condition. All lumps of dirt that will not pulverize should be raked off, leaving the soil fine and compact. The bed should be kept moist, but not wet. The tiny seeds should be sown on the surface and the seed bed sprinkled with a fine hose.

Beginning Anew.—The writer is now busy planning and preparing new home grounds, having recently moved. Moving is always bad business, and leaving old friends and associations is always to be regretted. Yet in a new home there is always the pleasure of planning and planting, and afterward the care of the growing plants, which compensates to a certain extent leaving the old home. Anyhow, it is better to look at it in that light, especially when it cannot be helped.

We are handicapped considerably here in getting started with our work by the fact that the soil is so hard that we are compelled to wait for the rains to soak it up. We have, however, by considerable work and water, prepared the ground for planting some climbing roses; also a Bougainvillea.

Quick Results With Roses.—One can get large plants at the nurseries of roses, etc., in pots or large cans, which if planted now will bloom this coming winter. We purchased plants of the Climbing Wooton (red) and Climbing Kaiserin Augusta Victoria (white) in five-gallon cans close to 6 feet high. By planting them with this large ball of earth they will never know they have been moved. They will bloom this winter for a while and during February and March should make a splendid new growth and give an abundance of blooms during April and May. Such plants can be purchased for 50 cents, and where a few are wanted for quick effect, are to be recommended.

We are anxious, too, to get some bulbs planted so are watching for signs of rain. October is the usual time for beginning the planting of hyacinths, tulips, narcissus, Easter lilies, rannuculus, anemones, etc. So that if the bulbs are not already in stock or ordered, this should be attended to.

Sowing for Succession.—Continue planting sweet peas during October. Plants that are already up should receive plenty of water and cultivation.

Some Bedding Plants.—There are many of the perennials that are gorgeous when massed in beds. But do not mix them. The writer has seen flower beds containing almost everything in the galaxy of flowers, with the result that the best effect was lost. This is also true of bouquets. There was a time when the value of a bouquet was based, not on its beauty, but on the number of different varieties contained therein. The taller growing sorts should be planted in the background of the planting scheme, the low-growing sorts nearest walk, street or roadway.

Some of the most common sorts for beds in California are geraniums, begonias, cannas (in many varieties), carnations, chrysanthemums, daisies, galliardias, ivy-leafed geranium, lobelia, marguerites, pansies, pinks, pentslemons, petunias, Shasta daisies, and verbenas. The most of the plants can be raised from the seed, should one desire to bother with them, or they can be purchased from the nurseryman in pots or flats and transplanted into beds where wanted. The plants may be set out any time during the fall, and, in fact, most any time of the year, with the exception of some of the more tender varieties.

CITRUS NOTES.

By Mr. G. HAROLD POWELL, Manager California Citrus Protective League.

Lemons in Europe and Prices in New York.—There has been an unusual demand for lemons in European countries during the year 1911. This demand has been increasing steadily for ten years, and in 1911 it has had a marked effect on the international shipment of lemons.

The California crop in 1910-11 is the largest in the history of the State. Nearly twice as much fruit has been shipped into Eastern markets as in 1909-1910, and the large increase over the crop of the preceding year has reduced the price of lemons to an unusually low level. Heretofore the Eastern markets have been controlled by the importers of Italian lemons, and each year since 1885 the wholesale price has been forced at some period during the summer months to $6 to $12.50 per box. On account of the increase in the California crop in 1911, and the freer shipment of the fruit to Eastern markets, the wholesale price of 132,738 boxes of Italian lemons in New York in August, 1911, averaged about $2.60 per box, an average of less than 10 cents per dozen. The average wholesale price of 143,986 boxes of Italian lemons in New York in August 1910, when the California crop was much lighter, was $3.67 per box.

In an effort to hold the prices high, the importers have endeavored to create a scarcity in the Eastern supply of lemons. They have been reshipping lemons to Europe since the first of August and have withdrawn the fruit from the auction sales in New York whenever the price has been unusually low. Mr. Sciortino, a prominent New York lemon importer, is quoted as saying that some of the exporters in Sicily would probably not permit the sale of lemons in New York at a price below $4 a box wholesale on account of the higher prices in Germany and England, where, in referring to Germany, Mr. Sciortino states "that buyers there are willing to pay relatively higher prices than can be obtained in the American markets."

Rates of Duty on Citrus Fruits in Other Countries.—There is a duty equivalent to 1 cent per pound on citrus fruits in Australia; 1.84 cents maximum and a free conventional duty on lemons, and 2.2 cents on oranges in Austria-Hungary; 79-100 of a cent on oranges and lemons in Belgium; 79-100 of a cent in Denmark; 1¾ cents in Finland; 1.3 cents maximum and 44-100 of a cent minimum in France; 1.3 cents maximum on oranges and lemons, 35-100 of a cent minimum on oranges and a free conventional duty on lemons in Germany; 2.43 cents maximum and 24-100 of a cent minimum in Norway; 44-100 of a cent maximum and 44-1000 minimum in Roumania; 2.25 cents maximum and 1.42 minimum in Russia; and 1.21 cents in Sweden. There is no duty on citrus fruits in Argentine, Canada, England, or Switzerland. With the exception of Australia, which produces citrus fruits, these duties are levied for revenue only. Mexico formerly granted a bounty of 85 cents per 1000 lemons and $1 per thousand on oranges exported to encourage the planting of these fruits; and Italy fixes a minimum price to be paid the producer for citrate of lime into which 40 per cent of the Italian lemon crop is converted, and fixes a minimum selling price as well.

SHIPPING OF UNRIPE FRUIT.

To the Editor: Mr. Frank B. McKevitt has called attention again to the disastrous results from the shipping of immature or unripe fruit. In this case, with grapes—the Tokay—many carloads being sent East which, while fairly well colored, were really unfit for food. This is an old story, repeated with variations every season. But it is unnecessary, to say the least, even if some grower can boast of having sent the first cherries, the first grapes, or the first oranges to market. The fresh fruit industry, and indirectly California, is much injured in consequence. The leading fruit journals deplore the fact and censure the shippers annually; but of what avail? Is there no remedy? Does not such action come within or under the Pure Food inspection, and should it not be peremptorily prohibited?

LEONARD COATES.

Morganhill, September 29.

Fruit Growers' Talks

No. 8—Interwoven Interests

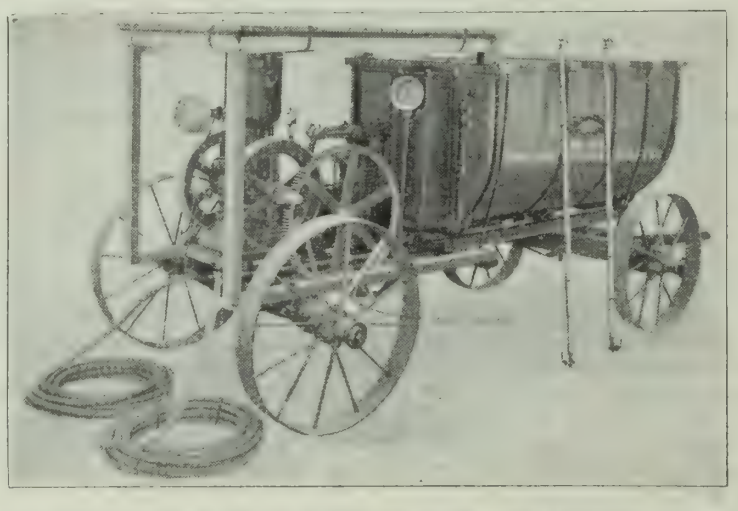
The interests of fruit growers and fruit shippers are so closely allied that the greater the co-operation existing between them the better for their mutual good.

The chief aim of the California Fruit Distributors is to increase the facilities for handling the fruit to balance the markets in favor of the grower and to do everything possible to promote the welfare of the industry.

Write us with any ideas you may have.

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AGRICULTURAL REVIEW.

With the Fruit Men.

A very good crop of walnuts is being harvested in Santa Barbara and other southern California counties. In the Goleta and Carpenteria districts several of the schools have been nearly deserted while families worked in the walnut orchards, which caused an investigation by the State Labor Bureau.

The olive crop in Santa Barbara county this year is not large, but the fruit itself is much larger and better in quality than usual.

The Porterville Citrus Association has begun shipping pomegranates. Several carloads will leave Tulare county this year.

The Mission Olive Orchard Co. has been incorporated to develop olive land in Butte county. Among the incorporators are Alden Anderson and Frank Buck.

A. J. Paulson of Davis Creek, Modoc county, will put out 200 acres to apples this season.

A reduction in rates on dried fruit to Birmingham, Ala., has been announced by the Santa Fe.

The members of the board of directors of the Gravenstein Apple Show Association have been all re-elected for the coming year.

A drying and canning company has been formed at Hemet, Riverside county.

The Citrus Protective League has sent out a circular warning orange growers not to ship immature or green fruit, as this practice is both unprofitable and unlawful.

From one almond tree in the Annie E. K. Bidwell Orchards Co., at Chico, almonds worth $11.40 gross were sold this season.

The old berry pool of Sebastopol growers has been dissolved, its place being filled by the Sebastopol Berry Growers' Union.

Applications for space in the Watsonville Apple Show, October 9 to 14, have been made from all apple sections of the State in such quantity that 4,000,000 apples will probably be displayed there. There are to be a number of contests in box-making and packing, and all harvesting work in apples can also be easily seen. The special excursion rates are expected to bring 50,000 persons to the show.

Horticultural Commissioner Schell of Fresno has ordered the eradication of mealy bugs within the city limits.

Arrangements have been made for a large amount of walnut planting in the Klamath valley and other parts of Siskiyou county this season. The Franquette and Concord varieties are mostly in favor, one 22-year-old tree producing $150 worth of nuts last year and $82 worth in 1909. This is the first year extensive commercial plantings have been made.

Walnut Prices.

At the meeting of the California Walnut Growers' Exchange at Anaheim last Saturday, the following prices for the 1911 crop of nuts were set: No. 1 softshells, 14 cents; No. 1 hardshells, 13½ cents; No. 2 walnuts, 11 cents. The lower prices are partly due to the heay imports expected from Chili and Manchuria.

Grape and Raisins.

Horticultural Commissioner G. H. Hecke, of Woodland, reports tnat both raisin and wine grapes in Yolo county are showing less sugar than for many years. Dried fruits are similarly affected by the weather. Northern Muscats are said to be selling from 4 to 4½ cents.

According to data received by the California Fruit Distributors, probably half of the unpicked grapes on the vines were spoiled by the recent rains. The greatest damage was done around Lodi. But little loss is expected in table grapes, as the market was oversupplied, anyhow, although many sales to wineries will be prevented. In southern California there was a considerable loss in raisins. But little loss to raisins was experienced in the San Joaquin or upper Sacramento valley.

The Southern Pacific has refused to cut grape rates to the East from $1.15 to $105 per hundred pounds.

In spite of a somewhat weaker market for raisins, the shortage in the crop is becoming more and more apparent as picking continues, and there appears to be no good reason why prices should not be fully as high as ever before this season.

General Agriculture.

Sorghum syrup is being manufactured on the Carson colony tract near Willows, Glenn county.

Seed supplies of Bermuda onions are reported to be short.

The heavy rains in the south are reported to have done a good deal of injury to the bean crops along the coast, causing the beans to rot. In the river lands of the central part of the State the frosts have cut down the crop, although the beans were mostly mature enough to be ready for harvesting, and did not suffer as much as they would otherwise have done.

The Spreckels Courier states that Japanese laborers in the beet fields are earning $4.50 and $5 per day.

The Kings County Fair.

The county fair at Hanford last week was one of the best and most successful ever held there, both in attendance and the quality of the exhibits. Nearly all of the leading breeders of dairy and beef cattle, horses, sheep and swine had their best animals on display.

The poultry show was made up almost entirely by local fanciers and was very large, and the quality of the fowls was very high.

Miscellaneous Notes.

An alfalfa-meal mill has been started by the warehouse company at Hollister, San Benito county.

The Santa Clara Poultry and Pet Stock Show is being held at San Jose this week.

Kings county honey producers shipped last week a carload of honey to Trinidad, Colorado, the price being 5¾ cents gross weight.

The Sonoma County Co-operative Poultry Association and the Sonoma Fruit and Produce Co. are having difficulty over the marketing of eggs. There is a contract between the two, according to which the company has been paying much over market quotations for the cheaper grades of eggs, and it wishes to change the contract.

Plans and specifications for the fifth sugar factory in Orange county were filed recently. The factory will be located three miles south of Santa Ana.

The Gridley, Butte county, cannery has closed, after putting up more fruit than ever before, with the exception of one season.

The fall sale of wool at Cloverdale will be held October 12. There are about 750 bales of wool to be sold.

The Fresno county fair is being held this week. There are 440 head of livestock on display, and other exhibits are in proportion.

Artesian water has been struck at a

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Every fruit grower should realize the importance of making a right start, and the only sure and safe plan to follow is to obtain your trees from a thoroughly reliable and conscientious nursery firm.

We call particular attention again this season to the necessity of ordering early to get your needs supplied.

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describes 2000 different varieties of trees and plants, contains 120 pages, is fully illustrated with half-tone engravings and color plates. Contains much valuable information to planters. Mailed upon receipt of 25 cents in stamps.

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Trees are large and strong, grown without irrigation, with well matured wood.

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Write for prices

VALLEY SEED CO.

313 J Street, Sacramento, Cal.

Agents for Mococo Fertilizers

depth of 80 feet on the Prentice ranch, 16 miles northwest of Willows, Glenn county.

The State Grange convened this week in Visalia for a four days' session.

The second largest pumping plant in the south was operated Saturday by the Covina Irrigating Co. at the mouth of the San Gabriel valley. The water comes from an underground flow and 1,000,000 gallons were pumped into the reservoir in 7 hours. The cost of the plant and pipeline is $125,000; capacity of reservoir at plant, 1,500,000 gallons; capacity of storage reservoir, 10,000,000 gallons; length of pipe-line, four miles; lifting power of double-engine battery, 600 horsepower; steady flow of water, 300 California miner's inches.

A company has been organized to sink an artesian well near Yreka, Siskiyou county. No artesian wells have been sunk in the vicinity, although the geological formation promises success. T. E. Wadsworth, Horticultural Commissioner J. F. Wetzel, and several others are among the promoters.

J. F. Knowlton is promoting an irrigation project to cover 20,000 acres in Shasta valley. It is hoped that the Federal government will undertake the work.

CHEMICAL STUMP-KILLING.

To the Editor: A short time since, one of your correspondents inquired how to kill stumps. I have killed large eucalyptus stumps by boring three holes in the stump with an inch auger, near the outer rim of the stump, placing therein a tablespoonful of potassium cyanide and saltpetre mixture (half and half), and plugging tightly. With me this never failed. A. L. WISKER.

Colfax.

FROM ANOTHER CORRESPONDENT.

To the Editor: I saw an inquiry a short time ago for a way to kill stumps. If your inquirer will give the stumps a liberal application of salt, say a half inch all over the top, and let the fog and rain dissolve and soak down, he will not have much trouble with suckers. That has been my experience.

GEO. E. GIBB.

WHO HAS FOUND THE INTRUDER?

To the Editor: A fly or some insect is filling the leaves of my cauliflower plants with small holes as if perforated with shot fired from a gun. I can find no bug on the leaves nor eggs. In the heat of the day a number of small white butterflys hover over the plants. What is the matter, and what the remedy?

Santa Cruz. SUBSCRIBER.

Perhaps some reader has detected the culprit which makes such mouth-prints. We have not seen this trouble.

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A FREE BOOKLET ON
Rhubarb Culture

$1000 profit per acre; plant now. Berry plan sofall sorts. Cut this adv. out and mail today.

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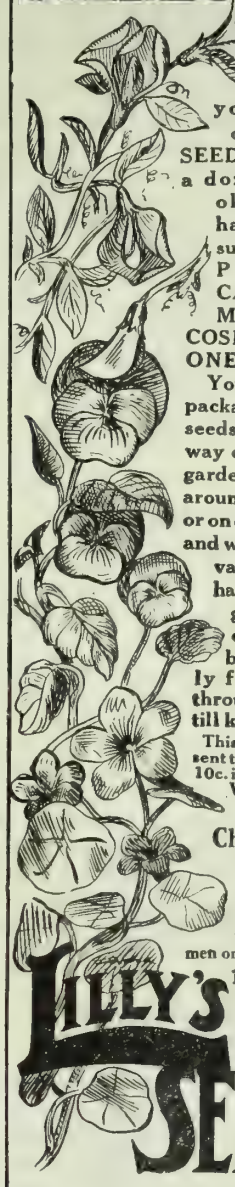
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You can sow this package of choice seeds in out-of-the-way corners of the garden, in odd beds around young trees or on embankments and with little cultivation you will have a mass of gorgeous and continuous blooms, sweetly fragrant, all through summer, till killed by frost.

This package will be sent to any address for 10c. in stamps or coin. Write Dept. B

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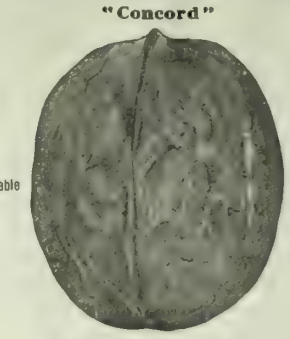
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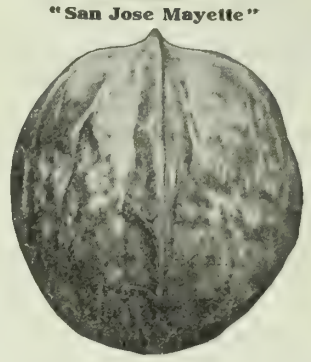
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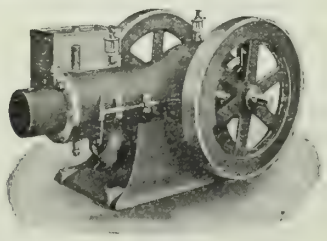
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Unequaled guarantee of fuel consumption, material and workmanship.

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Dry Farming Congress.

The Sixth International Dry-Farming Congress will hold its sessions in Colo rado Springs from October 16 to 20, inslusive.

The International Dry-Farming Con gress is an organization with working branches in nine countries of the world, with more than 15,000 individual members scattered through fifty nations, and with an expense for agricultural propaganda, including the funds expended by its branches, of more than $60,000 an nually.

The Sixth Congress will have as delegates in actual attendance, seven governors of States, ten presidents of agricultural colleges, fifty professors of similar institutions, fifty members of the staff of the United States Department of Agriculture, a half hundred agricultural authorities from foreign countries, and more than 2500 prominent farmers and business men, all of them intensely interested in the great problem of reclaiming the so-called arid districts of the world. These delegates actually own and operate farms to the extent of nearly six millions of acres, and the problems they will meet to consider are vital to 63% of the American continent and to more than 50% of the entire earth's surface.

The Congress is a unique organization. Its avowed objects are the co-operative, scientific study of agriculture and the development of better farming methods in the sub-humid or so-called "dry" districts of the world. It has no country to colonize. It has no lands to sell. Its work is utterly impersonal, and, as such, it has been officially indorsed by the agricultural authorities of many countries.

The world has discovered, as a general truth, that the method used in farming in those regions which receive 20 inches of rainfall or less per year makes all the difference between success and failure. The actual farmer is just beginning to learn this fact. A few years ago the agricultural world was astounded at the news that a campaign for better farming methods in Iowa had succeeded in raising the annual yield of corn in that state five bushels per acre. The campaign now being carried on in the dry-farming districts frequently determines whether two bushels or twenty bushels of wheat to the acre, and other crops in proportion, shall be harvested.

The Congress advocates deep plowing for the production of humus in the soil, frequent surface cultivation and the main tenance of a loose surface mulch to check evaporation and preserve moisture, the rotation of crops to preserve soil fertility, the raising of live stock to the limit of the farm's capacity, and the use of plenty of common sense on the part of the farmer as a lubricant for his season's labor.

The gradual adoption of these principles by the country's "dry farmers" has not only added hundreds of millions of dollars to the value of the lands of western America, but it is adding other tens of millions annually to the crop production of every Western State.

MR. DUANE'S ACTIVITIES.

To the Editor: I wish to report a very pleasant and interesting visit with Tom Duane in his beautiful home in the Alhambra Valley. Mr. Duane is a nurseryman and fruit grower. His orchard contains almost every variety of fruit grown in California, and includes about an acre of the finest Bing cherry trees I have seen. These netted over a thousand dollars this season. The trees are planted 30 feet apart, and though still young, their branches almost interlace. Mr. Duane believes that trees and vines both are given too little space, as generally planted.

Mr. Duane has developed a French prune of excellent size and quality. A grower in Suisun claims he got 12½ cents per pound for his prunes of this variety last season. He has also developed a walnut that is very prolific and of excellent quality.

As a young man, Tom Duane was afflicted with a disease that had proved fatal to three of his brothers, and at one time was given only thirty days to live, by his physician. He now weighs 250 pounds and has a large, healthy family. He confided to me that he keeps neither a medicine chest nor a family doctor. He has an olive-oil press in his cellar, and olive oil is his panacea.

Mr. Duane took me back to town in his big automobile, which he says was paid for with his Bing cherries.

FIELD CORRESPONDENT.

Martinez.

CACTUS WHITEWASH.

Consul Frederic W. Goding, Montevideo, Uruguay, writes: "When traveling through the rural districts of Uruguay, one's attention is attracted to the fine white color of the farm buildings, even during the wet season. To obtain this neat effect a white-wash is used which is made with the sliced leaves of the common cactus, macerated in water for 24 hours, producing a solution of creamy consistence; to this lime is added and well mixed. When applied to any surface, be it of wood, brick, iron, or other material, a beautiful pearly white appearance is produced which will endure through storms and frosts for many years.

FOREIGN POTATOES.

Owing to drouth, the English crop of potatoes will be much below the normal. The Irish crop will also be poor, and reports from Scotland indicate that the crop will be a little short of that of 1910, which was a short crop. However, it is thought that the German yield will be good, so that if the United Kingdom is obliged to import potatoes the supply will naturally come from Germany.

The 1911 potato crop for the United States, according to the August Crop Reporter, is expected to equal only 73.8% of the crop of 1910.



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Parties contemplating the planting of citrus groves this coming spring will do well to send for our prices soon, as there will evidently a a shortage of strictly first class stock. Write today for particulars, or, better still, pay us a visit so that we may be able to show you just what we have.

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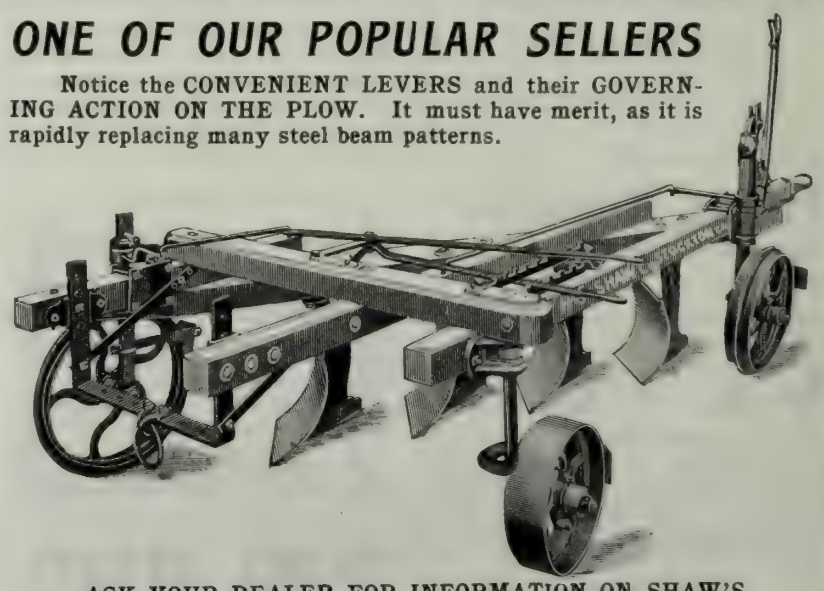
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Fertilizing Cucurbits.

Prof. Ernest Walker of the Arkansas Experiment Station has published a circular on cantaloupe growing in which the following paragraphs occur:

The muskmelon, watermelon, cucumber, pumpkin and squash belong to the same botanical family, and remarks regarding fertilizers apply quite well to all these species. Muskmelons and watermelons, however, require a warm, sandy soil, while the others may be grown upon the clayey and cooler types of soil. The principal thing after having the right sort of land is an abundance of humus or decayed vegetable matter in the soil. This helps to retain moisture, promotes earliness and is essential to the best results when commercial fertilizers are used. It provides for a continuous supply of available nitrogen throughout the growing season. At the Experiment Station we have had good results from using a good sized shovelful of rotted manure in the hill. Rotted manure is not to be put down in a deep hole, but should be thoroughly mixed with the soil some inches below the surface. Our plan is to compost the manure in advance by piling it and turning it two or three times some weeks in advance. It may be quickly rotted in this way and the nitrogen rendered available. Upon this point the writer in Arkansas Bulletin 69, "Experiments with Muskmelons," wrote, "the plan of placing manure in the bottom of the hill, as was done in hills 5 and 6 (of each plot) seems impracticable except in a limited way, and as far as this season's experience goes has nothing to recommend it, in view of the much better results obtained by thoroughly incorporating the compost with the soil in the hill."

As a general application in the way of commercial fertilizer to be worked into the soil in preparing the land about the time of planting, apply one thousand pounds of a fertilizer of the following formula:

	Per cent.
Nitrogen	3 to 4
Phosphoric acid	8
Potassium	10

In addition to this general application, there may be added and worked into the soil with advantage principally as supplementary nitrogen either of the following: 300 pounds of fine ground tankage, or 300 pounds of cotton seed meal, or 200 pounds of blood fertilizer. Any of these become available gradually and provide for a continuous supply of nitrogen, precisely what is required to maintain a continuous growth of vine and fruit.

The use of stable manure in the hill or under the hill is more dangerous in the light soils and dry climate of California than in Arkansas and the earlier application and more thorough incorporation with the soil more necessary.

WHOLESALE SQUIRREL POISONING.

The work of poisoning squirrels by the wholesale has been well demonstrated on the F. H. McKenzie ranch of 5000 acres on the San Joaquin river in Fresno county. The work has been going on for a month and is being done by a crew of four Indians, who show more efficiency at it than could be expected from persons not accustomed to the life habits of the squirrels.

They travel in parallel lines about 50 yards apart from each other and leave the poison near every hole on the ground covered, and so effective is the poisoning that according to F. H. McKenzie, manager of the ranch, "the ground is literally covered with dead squirrels where the Indians have spread the poison. We use an ounce of strychnine to 20 pounds of barley and the poison works so quickly that the squirrels keel over before they can reach their holes.

"The buzzards watch the Indians closely and follow up their tracks in the afternoon to feed on the dead squirrels to their fill. The poison in the squirrels does not seem to affect the buzzards, but other animals are endangered by the poisoned barley, and we have noticed rats, mice, gophers, and even snakes that have fed on them dead in large quantities.

"In the territory covered by the Indians the squirrel has been practically exterminated. Going over the ground we have found only two live squirrels, and despite the continued efforts of the Indians, these two squirrels have outwitted us."

The officials connected with the work wish to announce, owing to numerous reports to the contrary, that game birds, like doves and quail, are seldom, if ever, poisoned by the barley, as they refuse to eat this grain. When poisoned wheat is used they will eat it and die, but not the barley, which is recommended as cheaper and more effective than the wheat.

LOOK OUT FOR LESPEDEZA.

There is a very energetic association of lespedeza seed growers actively engaged in promoting the demand for their product by exciting the interest of forage growers in all parts of the country in the plant. Lespedeza, or Japan clover, is probably all that is claimed for it in the Gulf States, but it is not at all clear that it is of any value in other parts of the country. As for California, the seed was introduced for trial by the University of California about 25 years ago and was distributed for trial by other growers at that time. So far as this trial went the plant seemed of very little value as it would not grow in the winter and perished quickly from drouth when started after the spring frosts. It would be enterprising to try it again in parts of the State which are now much more interested in frost than they were then, but no one should get excited over current reports of value in the plant until we are surer, from small tests, that it is worth growing. Californians are too apt to blow in money for acreages of untried plants because they read something glorious about their behavior at distant points.

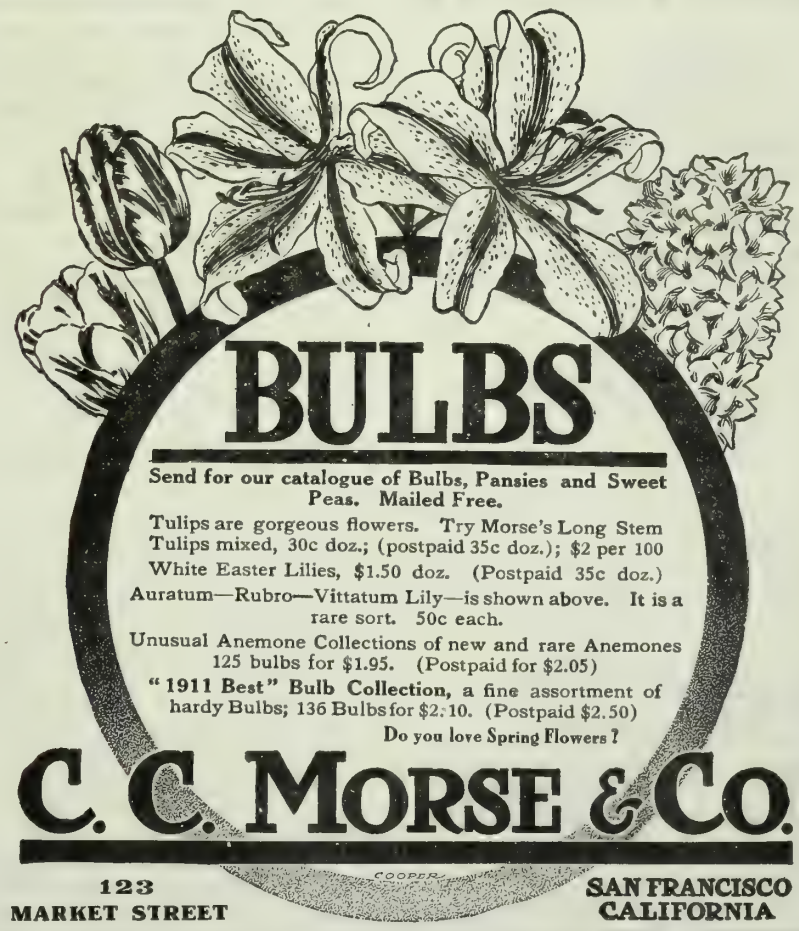
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It is well worth your while to verify this statement, and when in doubt as to the Sodium Chloride content of a Cyanide, have a reputable chemist furnish you an analysis. It may prove a good investment.

The Roessler & Hasslacher Chemical Co.'s Special Fumigating Cyanide of Potassium 98-99 per cent and Cyanide of Sodium 128-130 per cent is manufactured expressly for fumigating. Contains no excess of chloride of sodium. It generates quickly. Reliable, Efficient, Economical.

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Gas Steam — Electricity.

Written for the PACIFIC RURAL PRESS by Mr. C. R. SESSIONS of San Francisco.

(Continued From Page 248.)

The cost of repairs and supplies (oil, grease, waste, packing, etc.) on a motor are practically nothing. The wear and tear on a gas engine, and particularly so on a steam plant, are considerable. Repairs due to accidents and poor attendance cannot be taken account of. The cost of repairs and supplies cannot be estimated directly, but from engines which have been running some time a fair value can be obtained. For a gas engine of about 50 horse-power this cost is about one-fifth of a cent per horse-power hour. For a steam plant the supplies amount to about seven-hundredths of a cent per horse-power hour. The repairs are expressed usually as a percentage of the first cost, and may be taken at 2% per year. This is so because a steam plant wears out just about as fast standing idle as it would running. The longer the plant runs each year, the less will be the cost per horse-power hour. For a 50 horse-power steam plant, running three months in the year and ten hours a day, this cost is about one-fifth of a cent per horse-power hour.

SIMILAR OUTLAY.—The cost of land occupied, buildings, pump and pump accessories will be the same very nearly, whether the plant is a steam, gas or electric one, so that for the purpose of comparison this cost may be omitted from what may be called the first cost of the power itself. The first cost must include, besides the cost of the machinery, the cost of foundations, transportation, erecting, and of any storage arrangements or pipe lines for fuel or pole line for electric current. Of course this can only be figured approximately unless all the conditions are known. However, for the purpose of this comparison the following very rough costs may be used. An oil-burning, compound-condensing steam plant can be completely installed in the accessible part of the State for about $90 per horse-power, and the non-condensing single engine for about $70 per horse-power. A 100 horse-power gas engine plant set up costs about $35 per horse-power, and an electric motor costs installed about $25 per horse-power, with about $1000 added for each mile of lateral pole line that it will be necessary to run out to the plant from the main line. Sometimes the power company insists upon charging a minimum rate, that is, a certain amount per horse-power per month whether the current has been used or not. If there is any chance that this will be collected because of a break-down or because there is no necessity to irrigate during some part of the season, then this charge should be capitalized at, say, 6 or 8% and added to the first cost of the motor.

HOW TO PAY IT.—Now here is an investment which must be charged with interest at, say, 6% per year, and with depreciation also, because its value is growing less constantly. It is considered good business to set aside every year a part of the profit of the crop so that overhauling and replacement may be provided for. An engine does not have to be so badly worn that it will not run before it should be replaced with one of a new design and more reliable and efficient. Machinery suffers depreciation when it is not used. A new design or a cheaper method of production will cause depreciation in the old machine. This depreciation is greatest in a steam plant, less in a gas engine plant, and least in an electric plant. In a steam plant it has a large value because of the necessary replacement of rusted pipe, fire brick, etc. In the gas engine it is caused by wear and by rapid changes in design and a lowering price. Motors are fairly standard (they have a high second-hand value), and the wear on a good induction motor is practically nothing. A set of values for this depreciation, which is expressed as a percentage of the first cost, is as follows; for irrigating plants of 50 to 150 horse-power, as found in California, steam, 12%; gas engine, 10%; and electric, 5% per year. Much difference of opinion exists regarding depreciation and many disputes are caused by assigning percentages to different machinery. The above values are at best an opinion and must be considered as such.

Taxes are paid for as a percentage of part of the real value of the property. The rate of insurance is similarly determined. About 1% of the real value of the plant is a fair value of the sum of these two items.

OTHER CONSIDERATIONS.—When a man has a steam plant or a gas engine plant he is independent. He must buy fuel, to be sure, but fuel can be bought, and outside of a variation in the price and a delay in shipment, he is assured of a fuel supply. He alone is responsible for a failure of his engines or boilers and can provide against such a failure. In the case of an accident he can always get outside help.

When he has an electric plant he is dependent upon the power company for his supply of power. He is bound to the company for a number of years by a contract which has been perfected in the interest of the power company. His bill is computed from the reading of a meter which he does not understand and cannot control. Complaints of poor service may and may not be listened to. Unless there is competition he has no assurance that his rate will not be raised after he has installed his machinery and it comes time to renew his contract, unless he has a reserve steam or gas engine plant. The presence of a high voltage transmission line is always an element of danger to life. Through no fault of his and because of some act of God, as the contract puts it, he may have to stand idly by and suffer a serious loss.

The foregoing is what comes under the item of independence. The electric plant is, on the whole, less trouble, barring accidents, but there is this dependence upon some one else which may or may not be well placed, depending upon who that some one else is and continues to be. Many a warm argument has taken place when rival interests have tried by this item alone to prove which power is best by vigorously and eloquently drawing word pictures of the luxury of the motor and the never ending worry of the gas engine and steam plants on the one hand, and, on the other hand, the thrift and independence of the gas engine farmer and the misfortune and failure of the motor farmer whose crop burnt up while he stood helplessly waiting for the power company to repair its generating plant miles away.

As was said in the beginning of this article, such a discussion leads nowhere, and the only way to nail the thing down "for keeps" is to figure out this cost of a horse-power for an hour for your particular case, considering everything. Do it yourself, or have some one in whom you have confidence do it for you.

To make this comparison clear, a practical example, showing how Jim Smith worked it out, will be given.

(To Be Continued.)

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KERNS—SESSIONS ENGINEERS
Postal Telegraph Bdg., San Francisco

WILL YOU PROFIT BY THIS LESSON?

The Boys' Corn Club of one county in Mississippi averaged something like 74 bushels of corn to the acre, while their fathers averaged about 18 bushels **on the same farms,** the same season.

THE REASON?

The older men—**practical farmers**—knew all about growing corn, and would not listen to scientific advice. The boys **didn't know,** and therefore followed scientific direction.

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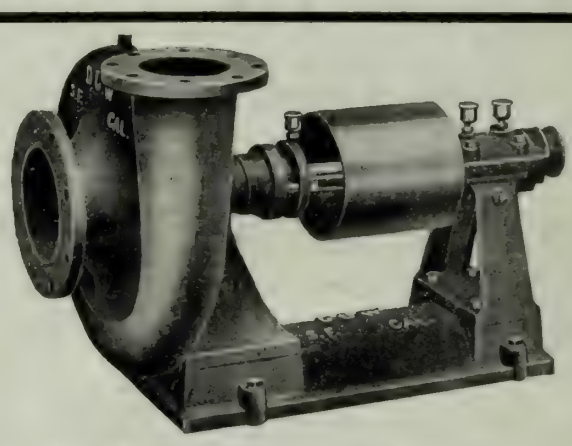
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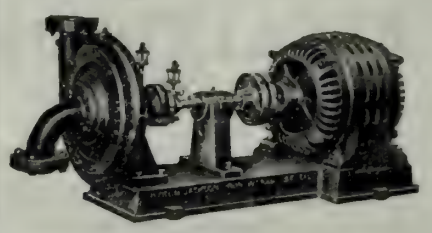
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PARAFLEGIA IN NEW-BORN FOALS AND CALVES.

At the recent meeting of the California State Veterinary Association in San Francisco the dangers resulting from a too generous feeding of brood mares and dairy cows was brought up effectively by Dr. F. H. McNair of Berkeley in a paper on "Paraflegia in New-Born Foals," and by other veterinarians in the discussion that followed. This disease is more common than it should be in this State, especially in alfalfa growing sections, and claims occasionally very valuable colts and calves. It results almost entirely from a misplaced generosity in feeding, where the prospective dam gets hog fat on a rich nitrogenous diet and too little exercise to work the fat off or to make it solid instead of flabby.

The disease is caused by the digestive tract being stopped up with hard matter even before the new-born animal is able to suckle the dam, and soon results in a paralysis of the hind quarters and then death. These symptoms in a young animal dropped from a soft-fat dam show that the new-born animal is suffering from this disease.

TREATMENT.—If the animal is too valuable to lose, a veterinary should be called in, but if the owner still wants to save it and does not want to go to this expense he can sometimes apply the treatment successfully himself.

Since the trouble results from a stoppage of the bowels, the thing to do is to loosen them up. This is best done by injecting a quart or two, all that can well be applied, of very soapy water into the rectum. The material causing the stoppage is then attacked from the other side by causing the colt or calf to swallow a pint or so of linseed or other oil. This will cause the bowels to move and save the animal, leaving no serious effects of the attack.

The paraflegia, or paralytic symptoms, are caused by impurities forced into the blood through the stoppage of the bowels, and occurs frequently with mature animals, especially when accompanied by constipation and where there is too much fat and too little work, and the same treatment is applied.

EXCEPTIONS.—Exceptions to this have been found by several veterinaries in the San Joaquin, in times when there have been many dead grasshoppers in the pasture of dairy cows. A number of cows showed the typical paralysis of the hind quarters, but the cause of the same was poison in the feed from the dead grasshoppers and not from constipation or any other obstruction in the bowels.

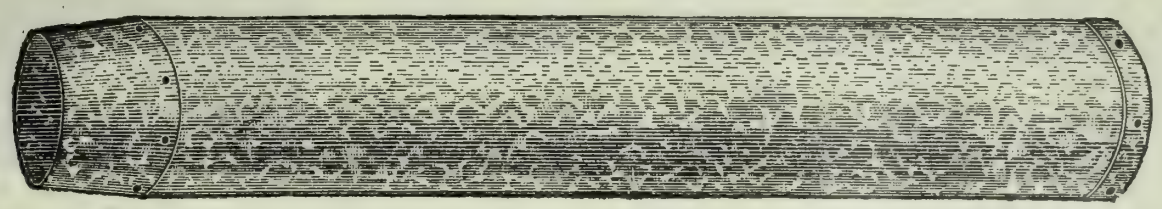
In this case treatment with soapy water and oil was not effective and only the application of a strong stimulant, like an injection of strychnine, was effective in saving the cows.

In the same way injections of strychnine or other application of stimulants are required when paralysis develops through poisoning.

SEPARATOR HOUSE.

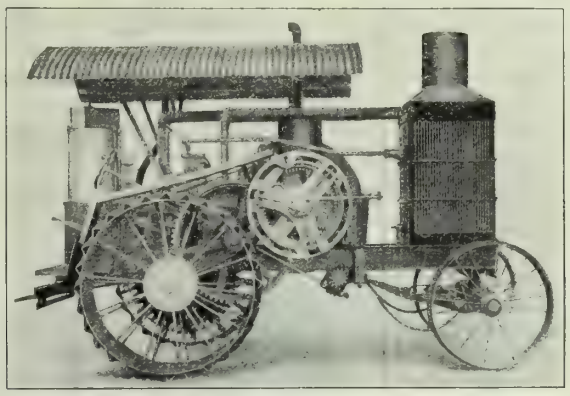
C. A. Pears, dairy inspector in Tulare county, has given the following materials as being all that are necessary to build a cheap separator house at dairies, in order to comply fully with the State dairy law: 5 pieces 1x3x16; 5 pieces 1x3x20; 3 pieces 1x3x12; 1 piece 2x4x16; 1 piece 2x4x12; 3 pieces 2x3x10; 5 pieces 1x12x12; 4 pieces 1x12x14; 4 pieces 1x12x16; 2 pieces 1x6x16; all surfaced on one side; 150 shakes or 1000 shingles; 2 sacks cement; 16 feet of 24-inch. screen; 33½ feet of 18-inch screen. A separator house 6x8 feet in size was built by A. A. Jenkins of the county from the above material, which cost $16, labor being extra.

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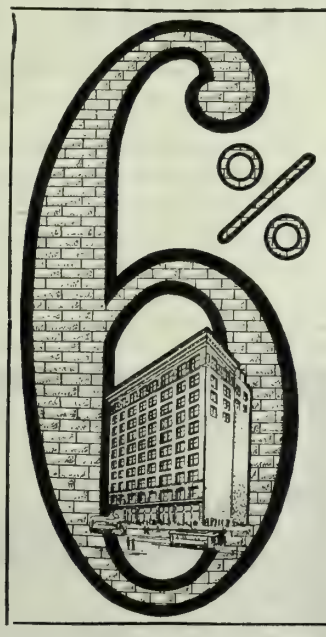


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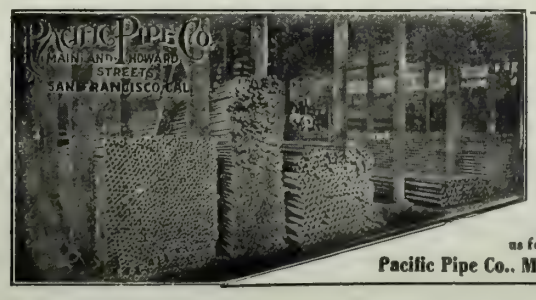
WHAT TO DO AGAINST TUBERCULOUS MILK.

To the Editor: I should like very much to know what could be done with a dairy where cows are dying with tuberculosis and the owner knows it, but is selling the milk to families and hotels.

A SUBSCRIBER.

The case should be reported to F. W. Andreasen, Secretary of the State Dairy Bureau, at San Francisco, for investigation by an inspector. If conditions are found as represented, the sale of milk will be prevented, as it is contrary to State law to sell milk from sick cows.

County boards of health have also authority to prevent the sale of such milk in the county, on the ground that this is a menace to the public health.



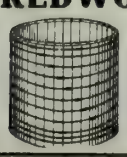
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R. F. WILSON, 447 W. Main St., Stockton, Cal.

Sheep on the Small Farm.

Written for the Pacific Rural Press
By Mr. D. J. Whitney.

The keeping of a few sheep on the small ranch has been neglected to a great extent in this State, but is bound to be of more and more importance as time goes on and farming is conducted on a more intensive scale. Large ranching for wheat, fruit, and everything else has been the rule, and sheep raising has been done on a large scale, too, or, with very few exceptions, only on the large ranches.

Successful sheep raising on a small scale is often thought to be impossible or inadvisable in this State, but that it will finally be done seems evident from the fact that in England, a country of small farms, have been developed the greatest number and some of the best breeds of sheep that are known, and here in California the climate and soil have proved fully as suitable as those of England for producing all kinds of stock, sheep included. Probably no better animals in the world can be found than on many of the stock farms in Yolo county, for instance, and this success could be duplicated with proper care in almost any other part of the State, and with such suitable conditions as these there is no reason why sheep should not be as profitable on the small ranch as they are anywhere.

Varieties Raised.—The two main breeds of sheep raised in this State are Merinos and Shropshires. The Merinos, however, are more of a range breed than the Shropshires and cut less figure on the small ranch. They produce a longer, heavier, and finer grade of wool than other breeds, but are not as large nor as valuable for mutton. The Shropshires are also hardier than the Merinos, especially where there is much mud in winter, and are more prolific, very frequently producing two lambs at a birth, while the Merinos seldom produce more than one.

Other breeds of sheep closely resembling the Shropshires may be raised in their stead, and the Shropshires are only named as the most common mutton breed here and not for the purpose of discrediting any other breeds. Other and somewhat similar breeds are the Southdowns, Hampshire, and Oxford-downs, Lincolns, Cotswolds, and Dorset Horns. Nearly every kind of sheep named has some feature in which it surpasses the others, but may be inferior in many others. All are heavier than the Merino breeds, but have coaser wool and less of it.

Sheep Pay Twice.—While hogs and beef cattle usually bring direct financial returns to their owners only in one way, and that is from their sale for meat, sheep pay twice, first by the wool they produce, and second with the mutton or lamb. The indirect benefits are also numerous, so that it is a common proverb that "the sheep has a golden hoof."

In this State sheep are sheared twice a year, first in the spring and second in the fall. From a fair Shropshire the fleece at the spring clip will weigh from 5 to 8 pounds, and the fall fleece from 4 to 5 pounds. The present quoted prices for these are 16 and 17 cents for spring wool, and 8 and 9 cents for fall wool, which may be considered typical of the way prices run. In other words, the wool from a mature sheep will be worth from $1 to $1.25, and from a well-bred animal considerably more. This is obtained from breeding animals, which with other stock bring no returns except their offspring, and makes almost clear profit.

The unwashed Merino wool is much heavier, but sells for a little less per pound, owing to the large amount of oil and dirt that it contains.

Spring Lambs.—In the best agricultural regions of this State the most profit from sheep will always come from the sale of spring lambs, rather than from the wool or from the yearlings raised for mutton. Much of the lamb sold in our markets comes from Nevada, and the best prices are obtained before the Nevada lambs arrive here. The Merino lambs from the Nevada or California ranges may be dropped at the same time as the Shropshires, but owing to breed, less care and colder climate, cannot be marketed until much later than the Shropshire lambs.

The prices for lambs to the packer run about 5 and 5¼ cents in summer to a cent above that in winter and about 6½ to 7 cents in the early spring, live weight. This will make a difference of 50 cents to $2 per animal in favor of the early Shropshire lamb over the later Merino. Ewes bring from 3½ to 4½ cents, according to the season, and wethers run from 4 to 5 cents, all the above figures being within extreme prices that may occasionally be met. When killed for home use, both lambs and mature sheep are, of course, worth much more than these figures, and not a little of the value of sheep on the ranch should be for the lamb and mutton furnished for home consumption. In fact, if only a very few are kept, perhaps none ever need to be sold.

The Indirect Benefits.—One of the greatest indirect benefits from a small flock of sheep is in the fertilizer they furnish. No soil can retain its fertility without either plenty of manure or the application of commercial fertilizers, and there is no animal that is better than the sheep in turning roughage into valuable manure and distributing it at the same time. Sheep are also the best weed killers that can be secured, destroying the weeds as fast as they can be killed by ordinary cultivation and getting at them in places where a cultivator could not be used.

The hog is a valuable animal in turning many waste products into meat, but sheep are still better in this way, since they will eat stubble and other dry food that hogs and other animals would pass by or be unable to get any good from. Thus much dry food and weeds that would otherwise be plowed under or burned, and in either case be of little value to the land, can be eaten by sheep and either changed into valuable mutton or wool or returned to the land in the form of a very available fertilizer.

It is also claimed that fleas disappear wherever sheep are kept, as they get into the wool and either are killed by the oil there or leave for parts unknown. The sheep is also a clean animal, and while hogs are wallowing in every available mud hole, the sheep cean things up that are fit to eat and make less rather than more dirt.

Where They Should Be Kept.—On grain ranches where there is plenty of stubble and summer fallow land to take the weeds off of, sheep are at their best and are almost universally kept. Otherwise the small ranch where diversified farming is practiced and waste products of many kinds are often provided, is an ideal location. Where all the land is planted to orchard, there is no pasture to speak of, and all waste comes at one time of the year, hogs would be more suitable, but with a good location and good care, sheep should prove their right to the claim of having "a golden hoof."

Two mules of Cad Houghton of Porterville, weighing nearly 1600 each, were sold for $600 recently to Jay Brown of Plano Tulare county.



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Underground Silos.

There is some current discussion about putting silos in the ground instead of in the air and it is interesting to remember that the first silo was a pit or hole in the ground as the French word "silo" signifies. In 1876 the first account of such a way of preserving forage was printed in the PACIFIC RURAL PRESS—a translation for the French by the late Mr. Felix Gillet of Nevada City.

A QUESTION.—A correspondent of Hoard's Dairyman writes to that journal from Louisiana as follows:" "Why is an overground silo better than an underground one, taking into consideration that a silo 14 by 30 underground will cost approximately $75 when the same one on top ground will cost $300.

I started to experiment with one under the ground, and I was advised by different authorities that the gases would form in same when the silo got nearly empty would make it exceedingly dangerous for a human to go into it. As you have had experience in this will you kindly advise me on that phase of the proposition.

My argument in favor of the underground silo in the South is this: We have cheaper labor than our bretheren in the North, and consequently the cost of getting the silage out of the silo is not as great; and the interest on the difference in amounts invested in underground and overground silos, blowers, etc., would more than offset the extra labor attached to the underground proposition."

A REPLY.—The editor of the above journal replies as follows: "There are some underground silos in this country, and so far as we know, are giving excellent satisfaction. About the only objection to an underground silo is the difficulty in removing the silage. One of our correspondents, Mr. William Goodrich of Iowa, has an underground silo and he uses a gasoline engine for elevating his silage.

When the silo is first filled, fermentation begins immediately and carbon-dioxide, a very poisonous gas, is produced. After the process of fermentation has ceased, there is no further danger of this gas.

The customary way of filling an underground silo, is to start the machinery, and let it run from 15 to 30 minutes before any one enters the pit. To be sure that there is no carbon-dioxide left to endanger life, it is well to lower a lighted lantern into the silo. If the flame continues to burn, there is sufficient oxygen to sustain life, and the silo may be entered."

[We wonder why no mention is made of the silo filling with water which would destroy the contents.—EDITOR.]

DAIRY NOTES.

The proposition of establishing a milk condensary at Chico, Butte county, is being developed by E. P. Stevens, and a meeting of dairymen and business men of the place has been called.

A new creamery is being established at Anderson, Shasta county, by J. P. Grimes, formerly of Reading, Pa.

J. M. Central of Sutter county is erecting a dairy barn on his ranch that will have a quarter acre floor space.

The Central Creamery of Oakland has secured 300 acres of land at Brentwood. Contra Costa county, for use as a dairy. Water will be brought on the land and other steps taken to develop it.

C. F. Daniells of Hughson, Tulare county, has installed several milking machines in his barn. C. A. Zimmerman of the same place has ordered three for his ranch.

The Tulare County Dairy Association will meet in Porterville October 16 to discuss dairy improvement. Persons interested in the association are intending to start a local dairy paper.

The H. F. Davis Creamery of El Centro is obtaining reduced temperatures during the summer months by having a water cooling tower erected on the roof of the creamery building. The water falls in a spray for ten feet and by evaporation is several degrees cooler than it would otherwise be when it reaches the inside of the creamery.

LIVE STOCK NOTES.

W. H. Chism of Sutter county is using a power machine in his sheep shearing this fall. The machine is run by gasoline and keeps eight clippers going. With it about 1000 sheep can be handled per day with as good or better results than with hand shearing. Other large sheepmen are also using machines of various kinds instead of hand shears.

A site has been purchased in Red Bluff for the new wool scouring plant to be erected by sheepmen of the northern counties. The company will be a co-operative concern and make it possible to sell scoured wool rather than the wool in its original condition. The building, including warehouse, will be 150 feet square.

Several cattle which were thought to have died from rabies at Barstow, Fresno county, have been found to have suffered from influenza. This disease has afflicted a number of animals in the country recently and several times has been mistaken for rabies.

The annual roundup at Fort Bidwell, Modoc county, is going on, about 50 cowboys being required for the work. The roundup lasts two weeks.

The new registration board that will attend to the listing of the stallions in the State as provided in the new stallion law has been organized. H. L. Scott, president of the State Board of Agriculture, was chosen president of the Stallion Registration Board, while the present secretary of the Board of Agriculture will act as secretary of the new organization.

Word has been received that the Gibson herd of Short-horns of Woodland has taken a large number of awards at the Oregon State Fair recently held at Salem. The animals will be shown at several fairs in Washington before returning home. Other exhibitors from this State also were well represented in the awards.

J. F. Weaver of Mesquite Lake, Imperial county, will receive a carload of thoroughbred Berkshires from the East soon.

The 600 head of horses, mules and cattle on the Cone ranch in Tehama are to be sold off Monday at the ranch headquarters.

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LIVE STOCK INTERESTS IN NEVADA.

(Continued From Page 281.)

work of an agricultural college, and for many reasons. In the first place, no system of agriculture can be permanently maintained without the aid of an accompanying animal industry. Second, animal industry results in one of the highest types of agricultural production. Third, no study is more interesting than the study of animal life.

We believe that every breeder of pure-bred stock should exhibit at the fairs. Competition at fairs, where the judges are expert, furnishes the best training a stockman can have. Thus the agricultural fair becomes one of the most effective of educational institutions.

We show at the California State Fair for the following reasons: First, there is no State Fair in Nevada. Second, because of our having been able to make a creditable showing among the best flocks and herds on the coast our work, through the medium of the California press, becomes known to the people of our own State who never come to the University and many of whom we cannot reach. Third, that we may give our students an opportunity to take part in preparing animals for show and of exhibiting them in the ring. They are also enabled to see at the fair many classes of pure-bred animals we are not able to furnish for class work at home. We want to arouse in them such an interest in showing that, when they become farmers, they will be inspired to follow up this perennial opportunity to learn in one of the best of schools.

While the number of students in agriculture in the University of Nevada is not large, there has been a most gratifying growth the past three years, during which time the number has increased from one to twenty, and it is a significant fact that the number of freshmen in agriculture the present year exceeds the number of freshmen in the mining school by 100%. We feel that this augurs well for the future of the State, for while legitimate mining is an industry to be strongly encouraged, the spirit of speculation which is liable to obtain where mining interest is dominant is not helpful, and the permanent development and prosperity of a State must ultimately rest upon its developed agriculture.

MILKING MACHINES IN NEW ZEALAND.

The use of milking machines in New Zealand is reported by Vice-Consul Henry D. Baker, on special service in that country, to be very extensive, owing to the difficulty in obtaining sufficient farm help. The expense of a milking outfit for about 80 cows is nearly $1500, which is saved in cost of labor in two years. The machines are worked on the suction, compression, and combined suction and compression method, and the main objection to them seems to be the difficulty of keeping them clean.

The milk is generally taken to creameries to be separated, home separators being very uncommon, and far the largest part of both butter and cheese made is exported. Some of this came to California last year when prices were high, while other parts are going to British Columbia, to which it is probable some of our butter may be sent, if reciprocity is finally adopted in Canada.

Most of the creameries are co-operative and the output ranks well with the dairy produce from all places. Pasteurizing is used almost universally with both milk and cream, in some places the milk being pasteurized before separating to prevent the giving of tuberculosis to hogs which are fed the separated milk. There is much Government supervision, both at the factories and at export points. The value of the butter and cheese exported in 1910 was $14,615,711. There will be a smaller output this year, owing to a prolonged drought.

A HINT ON LAMB PROSPECTS

For those who can obtain or already have lambs which will be in good marketing shape for winter or early spring, the knowledge that a shortage of lambs is looked for in the East, with corresponding high prices, may be valuable.

The Chicago Livestock World, a trade paper, states that a shortage over last year's figures of more than 300,000 lambs has been received on Eastern farms for fattening for the Chicago market. The sheep-feeding districts generally are short of hay and will not fatten many animals, while losses last year will further prevent them from going into the business this year. The ranges are better than usual, but the benefit from this cause cannot, it is said, offset the loss from lack of fattening on the farm.

These conditions do not exist here, but high prices in Chicago will react on local markets and reward the person who has good material to send to the packing-house.

A preliminary organization of an irrigation association has been effected at Montague, Siskiyou county, and officers elected.

POULTRY DEPARTMENT.

Conducted By M. RUSSELL JAMES.

The Billion-Dollar Hen.

(Poultry and eggs this year amount in value to more than $1,000,000,000.—Crop Report.)

Let other bards extol the lark,
The osprey or the wren;
We celebrate with festive bark
The billion-dollar hen.

She helps conserve the farmer's pile;
She adds to it in chunks;
And this year's figures now on file
Exceed a billion plunks.

The eagle is, beyond all doubt,
To be admired of men;
But we prefer to yawp about
The billion-dollar hen.
—Louisville Courier-Journal.

OUR METHOD OF SELECTING KEEP-OVERS.

Now, as a matter of fact, the ordinary poultryman has not the time to operate trap-nests, neither can he be always handling his fowls to ascertain the state of the pelvis; such methods are not practiced on established egg farms of long standing. The largest and oldest poultry plant devoted to pure-bred poultry on this Coast, and one that carries off the prizes at the shows, to our personal knowledge, has not a trap-nest or a "system" about the ranch. The proprietor, who has studied the hen for nearly a quarter of a century, can size up the layers without any such aids.

The prime test of the worth of a fowl is vigor. Without vigor a fowl is naught, and there is no profit in her. A vigorous fowl will get through the molt in proper shape and time, and even if she loafs afterward and declines to contribute her keep, she will take on fat and be profitable as a market fowl.

The signs of vigor are a full, bright eye, a full, well-rounded breast, a long body, wide across the fluff (this is the outward sign of the wide pelvis), a healthy color in comb and wattles, strong,



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Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle
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Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address
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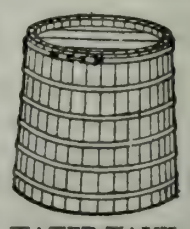


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GEO. WINDELER,
144-154 Berry St. San Francisco, Cal.

WINE TANK.

WATER TANK.

sturdy legs set wide apart.

The signs of weakness and off-condition are a dull, sunken eye, a thin breast and sharp breast-bone, a narrow, pinched body, a pale or yellowish comb and wattles, legs set near together, inclining inward at the knees—knock-kneed—which means lack of stamina in all animals, from man down. Or a naturally sturdy fowl may be out of condition from over-fatness and liver trouble. This is shown in hens by a bagging down behind where a big lump of fat may be found, and all the internal organs clogged with fat; a dull red in comb and wattles with dark color at the edges. These over-fat hens may not be exactly diseased, but the tendency is to fatty degeneration of the heart and liver, and while they are all right for the table, they are not profitable to keep. A person by handling a plump hen in good condition and comparing her with these loggy hens which feel like they were weighted with lead, especially in the fluff section, may quickly see the difference between healthy fatness and over-fatness.

On the other hand, no surer sign of disease of a chronic nature can be had than emaciation in a fowl. A fowl below normal weight with a sharp breast hollowed in on each side of the breast-bone, is pretty certain to be suffering from tuberculosis or some other equally incurable disease.

Again, it is not profitable to keep hens, as a flock, through the second molt. Hens of superior vigor and fine points may be kept into the third and fourth year as breeders. But even such, especially if of the larger breeds, are liable to accumulate too much internal fat with consequent liver troubles which conduce to lack of stamina in the progeny. And as to male birds, the rule should be never to use them in the breeding pen after their second mating season, unless in the case of exceptionally vigorous birds, when the eggs for their matings should be thoroughly tested for fertility before being depended upon.

Thus, if the poultryman can keep tab on the ages of his birds, the culling of the flock becomes a much more simple matter. The punching of the web of the foot as soon as the chicks are taken from the incubator is largely practiced; but we do not like this method and have never practiced it in our yards. This season we intend trying out colored leg-bands for the purpose. Thus, the hatch of each year may be banded with a certain color and noted in the daybook; then the poultryman can tell at a glance the age of every fowl with certainty and without catching the fowl. We have just received the samples for which we had sent of colored bands made of aluminum. They look strong and comfortable and may be had in any color, with or without numbers.

QUESTIONS AND ANSWERS.

"Systems" for Selecting Layers.—E. H. S., of Ben Lomond, Cal., writes: "I shall be very grateful if you will give in the columns of the Rural Press some information regarding the "——— system," which I have been told is the only reliable means of distinguishing the laying hens from hens which no longer lay. I am anxious to make such a division of the old stock in my yards, and had thought the trap-nest and leg-bands the only sure means of accomplishing this. My informant tells me that this system does not deal with other questions relating to poultry raising and that the price of the "——— system" pamphlet is $10. I should like to know whether this system is really worth that amount, and, if so, why its merits have not become more widely known. I thank you in advance for the information, and also for the great help which I am always able to obtain from the columns of the Pacific Rural Press."

In answering the above question, if a personal opinion may be allowed, I should say that there are no so-called poultry "systems" and "secrets" that are worth the poultry-raiser's good money. The points which are really worth while in such things may be found in standard poultry works and from time to time appear in the first-class agricultural and poultry papers. The various systems for selecting the layers among hens are all based on one and the same principle, which is older than any of the modern "discoverers," though each of these latter may have added some frills of his own to make his especial system the original and only system. This principle relates to the width of the pelvic bones of the fowl. If these bones are set wide apart even in young pullets or pullet chicks it argues that the pelvis is large and consequently all the internal organs are large and vigorous, which naturally tends to prolific egg-production. Also, when the egg organs are active they increase in size and this spreads apart the pelvic bones so that the width between these bones is wider in the fowl in full lay than in the same fowl when taking a lay-off of any considerable length.

That's the principle upon which all such systems are based, and one which the poultry raisers of the old countries have been familiar with time-out-of-mind. One of our neighbors, who is a native of France, the country noted for utility poultrykeeping reduced to a science, and who is quite ignorant of any of the "systems" which are being exploited in this country, remarked to us that the poultry raisers of her neighborhood in the old country had some way of telling the good layers among their fowls by the width of the bones on either side of the fowl's rump.

But even this is not an infallible test, as proved by an experiment made by the Agricultural Experiment Station of the University of Minnesota. We take the following from the Station's bulletin No. 119:

"During recent years there have been many widely advertised systems for choosing the laying hens, and the discoverers have made a great deal of money from these systems. They claim that by certain signs and types they are able to estimate quite accurately the number of eggs a hen will lay in a year. With a view of giving one of the most popular of these systems a trial, we persuaded the discoverer to come personally and estimate the laying qualities of 50 Leghorn pullets. The birds were then carefully trap-nested for a year, and the result in the table gives a very good idea of the worth of the system."

The table which accompanies the above introduction must be something of a shock to believers in such systems; in fact, a person going it blind might have made as close an estimate. We give only a few of the discrepancies in the table between the number of eggs which the hen should have laid according to the system and the number which she did lay according to the trap-nest. Hen No. 2, estimated to lay 200 eggs, laid 40; hen No. 40, estimated to lay 250 eggs, laid 81; hen No. 22, estimated to lay 250 eggs, laid 86. There are many more cases where the hen failed to get in sight of the number for which she was scheduled, and on the other hand, there are many cases where the hen overstepped the schedule a long way; for instance: hen No. 7, estimated to lay 60 eggs, laid 139; hen No. 44, estimated to lay 80 eggs, laid 152; and so in varying numbers. All of which goes to prove that "one can't most always tell," when it comes to guessing on the hen. However, we aim to be entirely fair in all poultry matters, and so will say that we know of two of our large breeders and noted fanciers who use the especial systems inquired about, and who declare that it is worth the price and more.

New Poultry Features. — Missouri is going to "show them" how to make the poultry end of the State Fair interesting and profitable, and will introduce some new features to that end at the coming fair. The State Fair will be held the first week in October, the golden season of the year in that latitude, and on the open lawn the required number of 10 by 15-foot yards will be prepared for fanciers or farmers who wish to make a sales display of a flock or pen of birds, the yards accommodating from 20 to 50 birds. The cost per bird will be 20 cents for the exhibitor, who may put up such display matter as he pleases on the pens and make sales, delivering the birds at the close of the fair. There will also be on display views of the State Poultry Experiment Station; model poultry-houses which are best suited to the farmers of the State will be erected near the poultry building, and other interesting features will be added. Big poultry institutes will be held in connection with each of the State poultry shows later in the season. During the live stock show, the second week in October, the new Poultry Experiment Station at Mountain Grove, Mo., will be dedicated, the Governor of the State delivering the principal address and the Knight Templars assisting in the dedicatory services. Beginning September 1, the College of Agriculture will have a regularly organized poultry department, the purpose of which will be to investigate the various diseases and pests which affect farm fowls; to study the relative utility of different breeds of poultry for various localities of the State; to experiment with the problem of feeding poultry for breeding and for market, besides giving regular courses of instruction in poultry husbandry to students. Altogether, it looks like the Missouri hen is "getting there."

POULTRY.

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The Home Circle.

An Unbidden Guest.

Sorrow once said to Youth: "I needs must dwell
With thee awhile—I pray thee, let me in,
For if thou shelter me it shall be well,
And thou fresh treasure for thine own shall win,
New conquest over Self, new strength 'gainst Sin."
But Youth refused; and swift to shut the door,
Crying: 'Depart, I will not see thy face!"
Yet Sorrow knocked more loudly than before,
Pleading: "Let me abide with thee a space,
Lest I some fearsome form am forced to take—
The heart that will not yield I needs must break!"
Then Youth, with tears, no longer dared delay,
But bade the stranger welcome—till one day,
Behold! Joy sat in Sorrow's vacant place.

An Amazed Burglar.

It was the year I graduated that our class adopted a "cry"—an absurd imitation of college yells. As we were all girls, our parents very properly censured the new departure, and we seldom gave our cry in public. But during our woodland rambles it often rang out, and I was noted for my proficiency in rendering it effectively.

"Minnie," said Myrtle Bates, one of my classmates, "if you are ever chased by a mad dog or a man, just lift up that terrible voice of yours in the 'ha-ra-ya,' and you are saved. Your hearer will flee to the uttermost parts of the earth."

Well, I graduated in due season, and then went on a long visit to Grandfather Johnson. He and Grandma lived in Stockton, a small vilage in northern Vermont. It was their custom every year to make a regular New England feast at Thanksgiving, to which their sons and daughters, with their children, were invited. I had always looked upon this as one of the gala days of life. This year It was suggested that I should go to them in October and stay till after Thanksgiving, when I could return with my father and mother. Of course, I was eager to go, and one fine day found me seated in a big, old-fashioned rocking-chair by grandma's kitchen fire, with a bowl of bread and milk in my hands, talking and eating with all my might.

"What is going on in Stockton, grandma?" I asked. "Anything exciting?"

"Well, child, there is quite an excitement here just now. The store has been broken into."

"By burglars?"

"So they say."

"When did it happen? And what did they take? Have they been caught?"

"No, not yet. The thieves stole about twelve dollars' worth of stamps, some jewelry, and fifty dollars in money."

"Not a big haul," said grandpa; "but they took all they could find."

"Oh, dear! I hope they won't break into any of the houses!"

"No danger of that, Minnie; they are probably city sharpers, and know there is little money in the village. Don't get your head filled with fancies; you are quite safe here."

Nothing more was said on the subject, and as the time passed on I forgot all about it. There was plenty to take up my mind. I went to the mill with grandpa, jogging along behind the old white horse who seemed like one of the family. I fed the hens, and helped grandma about the house. A week before Thanksgiving the preparations for the day began in earnest. Mince-meat was prepared and I pared and chopped the apples. There were raisins to seed, citron to cut up, and currants to wash. All took their share of the work. Grandpa cracked butternuts and walnuts, selected the largest, reddest apples, and the best ears of corn for popping.

One night a man called to pay grandpa some money he owed him—three hundred and forty dollars. He counted it carefully, then put it in his desk.

"It's too late to carry this to the bank," he said, "but I guess it will be safe enough. There are no robbers in Stockton."

"Well, there, Hiram!" said grandma, "I wish you hadn't said anything about robbers; it brings to mind those city sharpers."

"Oh, they're far enough off—they won't venture back again in a hurry. There isn't a particle of danger."

I was not so sure of that. I felt nervous and frightened. My room was an upper one, and a long way from my grandparents' chamber on the ground floor. We were tired and went to bed early, but I could not sleep for a long time. At last I fell into an uneasy slumber. I awoke with a start. What was that peculiar noise underneath my window? At first I thought it the rustling of a bush blown by the wind against the house. But it was too continuous a sound for that. I sprang out of bed and went to the window. I could see nothing, but the noise still continued. Cautiously raising the sash, I thrust my head out and looked downward, and there, directly beneath me, stood a man who, by the aid of a dark lantern, was cutting out the glass in one of the side lights of the front door.

I was paralyzed with fear. I thought of the money, of the poor old people sleeping peacefully in their room. In order to reach them I must go down the stairs, past the door the ruffian was liable to open at any moment, through a long hall and the sitting-room. But what was to be done must be done quickly. Carefully lowering the window, I moved noiselessly toward the hall.

What if I should be too late?—or should encounter the robber? No matter—I must make the attempt to reach my grandparents at any risk. It would never do for me to stay there in cowardly inaction.

I had to pick my way cautiously along, for it was very dark. Just as I reached the lowest stair I heard the key turned in the lock, the door swung open, and the burglar entered, the rays of his lantern falling full upon my face.

It is said that a drowning man sees his past in a flash. I think my mental condition must have been similar to his, for, strange as it may seem, memories of my schooldays passed through my mind, including the words Myrtle Bates had said concerning our class cry, and I clutched at what seemed, to my fear-benumbed brain, the only thing that could save me. My senses must have entirely departed, for certainly a moment's sane reflection would have prevented me from doing such a rash thing; as it was, without an instant's hesitation I flung my arms high in the air, and there broke upon the stillness of the night, in my wildest, shrillest accents, the unmeaning jargon of our class cry.

Whether the fellow thought I was some unhappy spirit, returned to earth and giving vent to my troubled soul in language unknown to mortals, or that there was some magic in the words which would cause a body of armed men to spring from some unknown quarter, I know not, but before the last syllable died away he was gone.

I did not stop to shut the door, but flew to grandma's room. She had heard my shriek, and had arisen and lighted a lamp.

"What is the matter, Minnie? Have you had a bad dream?" she said, as I sank into a chair.

It was some time before I could speak. When I did, grandpa could hardly believe my story; but the missing side light of the front door convinced him I had not been dreaming.

You can imagine how he praised me for my bravery, and how proud I felt! When a few days later my parents arrived and heard the wonderful tale, I said to father:

"Papa, you can never say again that our class cry has not been of some service in the world. If it had been intelligible, it would perhaps have failed of its object."

He smiled and patted me on the head.

"No one but a madcap like you would ever have thought of putting it to such a use," he said.

Well, we had a merry Thanksgiving in spite of our fright. And nothing has been heard of my burglar from that day to this. Let us hope that the apparition which so noisily confronted him gave him such a shock that he as indeed fled to the uttermost parts of the earth.—Florence Mason.

Queer Morality.

Upton Sinclair, in a lecture in New York, condemned industrial or business morality.

"It is all wrong," he said, "but every one thinks it is all right. It reminds me of Tin Can.

"Once in a Tin Can poker game a tenderfoot saw a player give himself four aces from the bottom of the pack. The tenderfoot flushed with indignation. He turned to a Tin Can native and whispered.

"'Did you see that?'

"'See what?

"'Why, that hound dealt himself four aces!'

"'Wall, said the native, in a surprised tone, 'wasn't it his deal?'"

A Bad Bargain.

Eleanor (aged five)—How much did you pay for the baby, mother?

Mother—I don't know; he isn't paid for yet.

Eleanor—Do you think it will be more than three dollars?

Mother—I think so.

Eleanor—Well, I certainly think you got stuck on that baby!

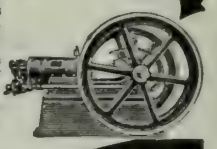
Breakfast Muffins.

Beat one egg light; add a tablespoonful of sugar and a cup of milk. Then stir in one cup of flour, into which has been sifted two teaspoons of baking powder and a little salt; add one-fourth cup of butter melted in a little hot water and enough more flour to make a batter a little stiffer than for griddle cakes. Beat and bake in well-buttered hot muffin tins about ten minutes.

If the jelly refuses to "jell", one rarely mends matters by adding more sugar and giving prolonged boiling. There may be cases, of course, where an error has been made in the proportions, or where the juice has not been boiled down enough, but excessive boiling is likely to remove the fruity flavor. We would seal the semi-liquid jelly without further effort, and use it like a fruit syrup. It will make pudding sauce or flavoring for ice cream; can be beaten with white of egg to make "jelly sponge," or stiffened with gelatin to make molded jellies; it can also be used as the basis for various drinks, hot and cold.

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OUR YOUNG FOLKS' DEPARTMENT.

Conducted By M. Russell James

Poultry Course for Young Folks.

DESCRIPTION OF BREEDS.

Game Bantams. — These miniature Games are the result of the fancier's skill. Except in size, they are exactly like the Games described in our last chapter and include the same eight varieties. The origin of these Game Bantams is not known, but early writers on the subject agree that the credit of producing the first Game Bantams of quality belongs to John Crossland, an English fancier. Dwarf fowls have been known throughout the history of poultry; the art of moulding this dwarf stock into the many different varieties of breeds is a tribute to the wonderful skill of the fancier.

The standard weight for these Game Bantams is 22 ounces for cock and 20 ounces for hen; that is, a pound and one-half for the mature male bird and a pound and one-fourth for the mature female. The Black Breasted Red, as with the large Games, is the most popular variety of the Game Bantams. These little creatures are kept for their beauty and oddity. They are as full of spunk as the big Games, and in a "scrap" can put to rout full-sized fowls. We have a picture taken at one of the poultry shows where the camera caught a big Plymouth Rock rooster on the run with a tiny Game Bantam cock in full chase.

Something for Mother.

We are getting close to the Christmastide, but to the young folks that season seems a long way off—

"A day to childhood seems a year,
And years like passing ages."

However, time is on the wing for them as well as for their elders, and soon they will be in a rush and worry to know what to get as a present for "mother" and also for other friends. Therefore, this is none too soon to decide that momentous question with plenty of time to prepare suitable presents in readiness for the reign of Santa Claus.

Now let us give our young folks a tip on Christmas gift-making: The gift that is altogether delightful and dear is some simple and useful thing made by the giver's own hands. There is entirely too much money thrown away upon the cheap and glittering bric-a-brac displayed in the stores at the holiday season. These things clutter up the house, and their only value to your friends is the assurance they bring that you have tried to get them something—have remembered them. How much more valuable, from every angle of view, is the gift that comes into daily use and that has taken hours and days of loving remembrance to make!

Begin now to notice what small conveniences which you might make would be nice for father, mother, brothers, sisters, or other friends. Such presents will be appreciated by even that class of people who already have about everything they want. As a help to start our young folks in the right direction we give the following which would be "just lovely" for the mother, sister, or anybody who likes dainty bedding:

COMFORT PROTECTORS.

Take a piece of cheesecloth four inches longer than the bed is wide; split it in the center and hemstitch both pieces, making a hem two inches wide. The selvage edge need not be hemmed. Put some pretty linen lace on the hemstitched edges and work a monogram on the cloth if wished. To place, baste the selvage edge along the under side of the top of the comfort, draw the protector smoothly over the outside and tack down the edges. You will have two dainty comfort protectors at small cost.

These protectors can be easily removed and laundered, and are a great saving to the bed covering. A set of less elaborate ones may also be made for the blankets. These protector sets are also nice for a bride's outfit or for the church fair as well as the Christmas box.

The California Garden.

In less genial climates at this season, the girls and others of the home folks are busy potting flowers, banking tender perennials, and making ready for the months when bud and blossom shall sleep beneath a covering of snow. In California we are entering upon a second springtime when a velvety green carpet instead of a snowy blanket shall cover the ground, and the care of the winter garden begins. By a proper selection of plants and seeds, those who live in the valleys and coast sections of the State can have blooming plants every month in the year. This is a work just suited to our girls on the farm where the mothers don't have time to hunt out and make selections. The attractive advertisements of the nursery and seed companies are already appearing in the columns of the Pacific Rural Press, and our girls should send a request on a postal for the handsome free catalogues sent out by each of the houses represented by these advertisements.

It is great fun to study these catalogues with their fine pictures and descriptions of all kinds of lovely plants and flowers, and to make selections of seeds for both fall and spring planting. The earlier in the season orders are sent in for plants and seeds the more certain one is of getting the especial variety fancied. Many of the catalogues contain more useful instruction in a concise form upon California gardening than can be found elsewhere. They tell when, where, how, and what to plant. By careful study and judicious selection of seeds—and proper attention afterward—for even a few nickels and dimes our girls can make their little flower gardens a riot of color and bloom at all seasons of the year.

Just now the especial work in the flower garden must be directed along the line of violets, pansies, and bulbs, and also sweet peas for Christmas blooming.

Probably each of our girls has a bed or border of violets in the home garden. These may have become matted and small in leaf and bloom fro mneed of dividing and transplanting. Violets, like pansies, require a rich loamy soil, kept mellow, damp and partly shaded from the direct rays of the sun in order to secure a luxuriant growth of long-steemed blooms of rich color and spicy fragrance.

Prepare new borders and corners in your garden with fresh rich soil; put a spade under the clumps of matted violets and lift with the roots; separate the plants, selecting those with the more smooth and white roots for transplanting. Trim off all the runners and large leaves; spread the rootlets out in mellow soil, setting plants some four inches apart; pour a little water over the roots and cover with fine earth, pressing the soil close about the stalks. Keep the soil mellow, damp and free from weeds, and soon the rootlets will take hold and the plants will grow and bloom to perfection through the winter and spring.

It is a little late to plant sweet peas for Christmas blooming, but if planted on the south side of a sheltering wall, with a little forcing the early flowering varieties may even yet come to bloom at Christmas time. Dig a trench two feet deep and put in a foot of stable manure containing plenty of bedding straw; cover this with a foot of mellow earth mixed with sand; Plant the peas about an inch apart in a row and press them one at a time down into the earth so that they will be covered with a half inch of loose soil; now water thoroughly with a watering pot. For planting, order the Christmas varieties. These come in ounce packages for from 10 to 15 cents, and in colors from white to rose pink and primrose.

A Drum Major Gander Holds up the Cars.

For an hour a formidable gander with a large following of geese held up the cars on the Trenton-Princeton trolley line in New Jersey, says a dispatch to the World. The drum major gander took to trailing along on the track between the rails with his big following of geese. When the motorman, conductor and passengers tried to clear the track, the geese attacked them and drove them to the car. Goosebills bruised several passengers. The gander, resenting an attack on his court train even by the Government, attacked a letter carrier with such fury that the postman's uniform was torn. The geese finally left the track and traffic was resumed. Ignatz Solon, who owns them, was fined $5 for letting the birds roam.

HOME FINDING SEASON IS HERE

LOW SETTLERS' FARES

in effect September 15 to October 15, 1911
from the East to

CALIFORNIA

VIA

SOUTHERN PACIFIC

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THE MARKETS.

San Francisco, Oct. 4, 1911.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The San Francisco market remains firm, with prices unchanged, though there is no very heavy trading locally. The movement in the north is also rather light at the moment, as growers are holding for extreme prices, and with shipping facilities fully occupied buyers are in no hurry.

California Club	$1.50	@1.55
Sonora	Nominal	
White Australian	1.65	@1.70
Northern Club	1.50	@1.55
Northern Bluestem	1.70	@1.75
Northern Red	1.65	@1.70

BARLEY.

The situation is favorable to sellers, with a burther advance in feed grades, and a strong demand for all descriptions. The crop is unusually well cleaned up for this time of year, and offerings are diminishing all the time. The heaviest demand is from the East.

Brewing and Shipping	$1.67½	@1.72½
Choice Feed, per ctl	1.65	@1.70
Common Feed	1.55	@1.60

OATS.

Increasing strength is apparent on all grades. Red feed is hard to get under $1.75, and all desirable lots of seed are held at $1.90 to $2. There is more movement of gray and white oats than for some time, and at higher prices.

Red Feed		$1.75
Gray	1.65	@1.70
White	1.70	@1.75
Black	1.75	@1.90
Red Seed	1.90	@2.00

CORN.

Eastern grades receive little interest, and are moving in a limited way at former prices. California stock is not coming out very freely, and with a fair inquiry the price has been advanced.

Cal. Small Yellow	$1.80	@1.85
Eastern Yellow		1.70
Eastern White		1.70

RYE.

All desirable offerings are held at about the previous level, cheap stock receiving no attention. The movement is very small.

Rye, per ctl	$1.55	@1.65

BEANS.

Values are still rather unsettled, although there is no quotable change this week except a sharp decline in pinks. Arrivals of new stock are gradually increasing, and the movement of the lima crop is now under way. Pink beans are still very weak, and there is also a downward tendency in bayos, blackeyes and limas. The demand for these descriptions is confined to narrow limits, as buyers are holding off in anticipation of lower prices, and buying only for current requirements. White beans, however, are by no means plentiful, and prices are firmly maintained at the former level, with a strong demand and some prospect of an advance. Nearly half the lima crop is said to be under cover, but it is possible that the remainder may have suffered some damage from the recent rain. Buyers have been freely bidding $4.75 for uncleaned limas in the field for early delivery. There are no offerings of European substitutes for limas, and the crop of Austria and Madagascar is likely to be consumed in the European market. The New York Journal of Commerce says:

"Referring to the reported weakness in California dried lima beans, as indicated by reports made from association quarters, a prominent operator outside of the growers' combination says there is no question that sales for prompt shipment from the Coast have been made and confirmed at $4.75, and that additional offerings at that figure are in evidence. It is stated that only a limited quantity has been sold by jobbers to retailers for delivery later, and this is held to be one of the reasons for the weakness in the market, though the fact that the crop promises to be a record-breaking one is the chief factor in the present depression of prices."

Bayos, per ctl	$3.75	@3.90
Blackeyes	3.50	@3.75
Cranberry Beans	3.40	@3.60
Garvanzos	3.00	@3.50
Horse Beans	2.50	@2.75
Small Whites	3.75	@3.85
Large Whites	3.60	@3.75
Limas	5.10	@5.20
Pea		4.25
Pink	3.50	@3.75
Red Kidneys	5.75	@5.85

SEEDS.

Alfalfa is finding considerably more demand at present, and prices are higher. Broomcorn seed has also advanced, and hemp and canary are firm. Otherwise there is no change in prices, but a little more movement is noted in most lines.

Alfalfa	18	@18½c
Broomcorn Seed, per ton		$28.00
Brown Mustard, per lb		5½c
Canary		4½c
Hemp		4½c
Millet	3	@ 3½c
Timothy	Nominal	
Yellow Mustard		5¾c

FLOUR.

The export movement continues large, and the market is strong, though prices stand as before.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.80	@5.00

Hay and Feedstuffs.

HAY.

Alfalfa is now being shipped in in considerable quantities, constituting the bulk of the present heavy arrivals. The local market for this variety is still rather weak, but a material improvement is expected before long. Grain hay shows no further change, prices being firmly held at the recent advance, and there is still an upward tendency in the poorer varieties. Large inquiries are now coming out from consuming markets in the interior, and there is likely to be some further advance at such points.

Choice Wheat	$18.00	@20.00
Good Wheat Hay	13.00	@17.50
Other Grade Wheat	10.00	@12.50
Wheat and Oats	10.00	@17.00
Tame Oats	10.00	@16.50
Wild Oats	8.00	@13.00
Alfalfa	8.00	@11.50
Stock Hay	6.00	@ 7.50
Straw, per bale	35@	70c

FEEDSTUFFS.

Rolled barley and oats continue in active demand, and have again advanced. Oil-cake meal, which was practically out of the market for a time, is again offered in limited quantities, at $43 to $45 per ton.

Alfalfa Meal, per ton	$16.00	@18.00
Bran, per ton	28.00	@29.00
Oil-cake Meal	43.00	@45.00
Cocoanut Cake or Meal	25.50	@26.50
Cracked Corn	38.00	@39.00
Middlings	34.00	@36.00
Mixed Feeds	28.00	@30.00
Rolled Barley	34.00	@35.00
Rolled Oats	34.00	@35.00
Shorts	32.00	@33.00

Garden Truck.

VEGETABLES.

The demand for onions has dropped off a little, and with receipts running about as usual, prices are easy. A number of advances are noted in general garden truck, as arrivals in this market have been reduced materially on account of the rain. The same cause, however, has caused a heavy increase in arrivals of tomatoes, which are offered in larger quantities than the market can possibly absorb, and include quite a lot of unattractive stock. Prices are accordingly lower. Summer squash and green corn have advanced quite sharply, and green peppers and cucumbers are also a little higher, with arrivals well cleaned up. Green peas are steady, and string beans stronger, being at present higher than green limas. Okra and eggplant are lower.

Onions: Yellow, ctl	75@	80c
Garlic, per lb	3@	4c
Green Peas, per lb	3@	4c
Tomatoes, per box	20@	40c
Cucumbers, per box	50@	65c
Cabbage		75c
Carrots, per sack		75c
Cauliflower, per doz		75c
String Beans, lb	3@	4c
Lima Beans, lb	3@	3½c
Summer Squash, per box	65@	85c
Okra, per box	40@	50c
Green Corn, per sack	1.25@	1.75
Eggplant, per box	40@	50c
Green Peppers, per box	50@	60c

POTATOES.

The outside demand has dropped off, and both river and Salinas goods are offered quite freely, the latter being lower. Oregon potatoes are offered, but so far find no demand in this market.

River Whites	85@	$1.05
Sweet Potatoes, per ctl	1.75@	1.90
Salinas Burbanks	1.60@	1.65

Dairy Produce.

POULTRY.

Prices are still easy, being quoted as before. Arrivals from both local and Eastern points continue heavy, and while large hens and some other lines of strictly fancy poultry are in demand, ordinary stock is very hard to move at anything like satisfactory prices.

Large Broilers	$ 3.50@	4.00
Small Broilers	2.50@	3.00
Fryers	4.50@	5.50
Hens, extra	8.00@	9.00
Hens, large	5.00@	6.00
Small Hens	4.00@	4.50
Old Roosters	4.00@	4.50
Young Roosters	6.00@	7.00
Young Roosters, full grown	8.00@	9.00
Squabs	2.00@	2.50
Geese, per pair	2.00@	3.00
Ducks	4.00@	7.00
Turkeys, live, per lb	24@	27c

BUTTER.

Extras have shown a little fluctuation within narrow limits, but the general market level is almost precisely the same as last week. All the better grades are firm.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	27	27½	27	27	27½	27½
Prime Firsts	25	25	25	25	25	25
Firsts	24	24	24	24	24	24
Seconds	22	22	22	22	22	22
No. 1 Packing stock	20	20	20	20	20	20
East Ladies Extras	21½	21½	21½	21½	21½	21½

EGGS.

Extras have been a little lower for the last few days, though the production is very light and this grade particularly scarce at present. Firsts have advanced sharply, being in demand for the trade which has been buying extras. Selected pullets are also a little higher than a week ago.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	43	43	42	42	42	42
Firsts	35	35	35	35	37½	39
Seconds	21	21	21	21	21	21
Selected Pullets	34	34	34	34	34	34
Eastern	16	16	16	16	16	16

CHEESE.

The demand on the Exchange has been rather light this week, and all new stock of the grades quoted is lower. Monterey cheese is quoted on the street at an advance, though offerings are ample for the demand.

Fancy California Flats, per lb	14	c
Storage	14	c
Firsts	12½c	
New Young Americas, fancy	16	c
Monterey or Jack Cheese	13½@14	c

Deciduous Fruits.

FRESH FRUITS.

Cantaloupes are about off the market, and nutmegs are in good demand at an advance. Watermelons are coming in freely, and some stock is offered below the former quotation. Raspberries are higher, and strawberries unchanged, while blackberries are lower. A few early cranberries are offered, but find little market. In tree fruits, the best lots of peaches, plums, and pears are doing better, as offerings are decreasing, but other lines are inclined to weakness. Figs are a little higher, but only the best lots are salable, and a good deal of unattractive stock is arriving. Apples are quiet locally and show little change. Fancy seedless and cornichon grapes are bringing fair prices, and the best muscats are doing fairly well, but the market in general is weak, with heavy arrivals of more or less rain-damaged stock every day.

Watermelons, per doz	$ 1.00@	2.00
Nutmegs, per box	40@	75c
Raspberries, chest	5.00@	8.00
Blackberries, chest	3.00@	7.00
Strawberries, chest	3.00@	4.00
Huckleberries, lb	8@	10c
Cranberries, per bbl		9.00
Apples—		
Fancy, box	90c@	$1.25
Choce	60@	75c
Peaches, lug box	75c@	1.25
Small box	50@	75c
Plums, crate	75c@	1.00
Figs, box	75c@	1.00
Pears, Bartlett, box	1.25@	1.75
Other varieties	65c@	1.50
Quinces, box	75c@	1.00
Grapes—		
Muscat, crate	60@	75c
Isabella	50@	75c
Other varieties	40@	90c
Pomegranates, box	65@	90c

Dried Fruits.

Prices show no change since last week, and aside from the extreme strength of the prune market there is not much to report. The movement of raisins is not very active, as the quotations named by packers are not satisfactory to growers, and it is felt that better prices may be obtained later on. Seedless varieties continue strong, both here and in the East, but there is not much movement in muscats in the consuming markets. The easy feeling, however, is generally attributed to the efforts of packers to reduce sweatbox prices. Most lines of tree fruits are pretty well cleaned up, and with prospects of better prices later on than are now obtainable, the odd lots in growers' hands are firmly held. The demand in the East is limited, and the trade is not buying beyond its current needs, though additional supplies are pretty sure to be needed later on. Prunes appear to be cleaning up, and the Santa Clara crop is reported 90% sold out. The packers are making every effort to get large sizes to fill contracts for early delivery, and there is some apprehension that they may be unable to make full delivery. The New York Journal of Commerce says:

"A considerable degree of interest is being manifested in the probable action of California prune packers relative to the completion of contracts which call for a large percentage of sizes above and including 50s in September shipments. These sizes are showing less than was expected even by the most conservative operators as the crop season progresses. There have been many rumors on the street, but nothing definite has come from authentic sources to indicate what deliveries of the large sizes will be. Confidence is expressed by receivers at this end that deliveries will be made on contracts as closely as possible. The trade, however, awaits with some anxiety the final outcome. Unable to get what they want in the larger sizes of California prunes, European buyers, especially in Germany, are endeavoring to cover their requirements by purchases in New York, but they find no sellers on this market able to accommodate them.

"Peaches are receiving comparatively little attention. The market is irregular, depending upon seller, but there is no great pressure to sell, apparently. Offerings are made of Northern fruit in Muirs at 9¾c for standard, 10¼c for choice, 10⅝c for extra choice, and 10⅞c for fancy f. o. b. steamer in 25-lb. boxes. Fresno Muirs are quoted in 25-lb. boxes f. o. b. Fresno, with 32c freight to steamer.

"California seeded raisins are still rather easy, though the depression is generally attributed more to the desire of packers to influence the sweatbox market than to a hope to effect sales to the Eastern trade, which is already well protected as to its fall and winter supplies. In fact, it is intimated by some that the packers who are offering new crop on the basis of 7c for fancy seeded, feel safe in making such offers, as they are less likely to be picked up for considerable quantities since the distributing trade is so well covered."

Evap. Apples, 1911, per lb	8	@ 9½c
Apricots	13	@14 c
Figs, new crop		4 c
Peaches, new crop	9	@ 9½c
Prunes, 4-size basis, new crop contracts	5½@	6 c
Pears, new crop	8	@ 9 c
Raisins—		
Loose Muscatels, in sweatbox	3¾@	4 c
Thompson's Seedless	6	@ 6¼c
Seedless Sultanas	5	@ 5½c

Citrus Fruits.

Only about 25 cars of oranges and 15 of lemons are going East from southern California daily, and oranges on the Eastern auctions are selling at good prices for good fruit. Lemons also are bringing very good average prices. In New York on Monday, Oct. 2, seven cars of oranges were sold at auction, the average for the highest car, which was Chapman's Old Mission brand, was $6.20 per box. From these high prices down to $5.30 per box was averaged for Glendora Heights valencias, and the lowest average on that date was $2.60 for Teal Brand from the Covina exchange. For lemons on this market, prices averaged from $4.50 up to $5.20 per box. On the Cleveland auction at the same date, oranges were a trifle lower than the above, and lemons were a little higher. At Philadelphia, valencias sold from $2.85 up to $4.30 per box, lem-

ons from $4.30 to $5.10. Boston averaged from $2.10 up to $4.40 for valencias, and one car of lemons sold at $5.50.

A press despatch from Louisiana states that a better crop of oranges will be raised in that State this year. The crop is reported to be larger than at any time since the freeze of 1899 and is estimated at a half million boxes. Some of the earlier oranges have already commenced to move for the season.

A dispatch from Florida states that the citrus crop from that State will aggregate about 4,500,000 boxes, being about the same as last season. The earlier fruit is now commencing to move, it being about two weeks earlier than last year. The grapefruit crop is much lighter than last year, and will not come into market quite as early.

Supplies of grapefruit have been rather light for the last few days, and higher prices prevail. Oranges and lemons are moving on about the usual scale at unchanged prices.

Valencias, choice to fancy	$ 3.50@ 4.50
Grapefruit	4.00@ 4.50
Limes	5.00@ 5.50
Lemons	1.50@ 5.50

Nuts, Honey, Hops, Etc.

NUTS.

The walnut growers of southern California estimate their crop at 26,000,000 lbs., and announce their opening prices as quoted below, 1c below the level of last year. The nuts are of unusually high quality, and it is reported that practically the entire crop was sold as soon as prices were named. Almonds are quiet, though some business is in progress at various points in the country. Values are rather easy.

Almonds, 1911 crop—	
Nonpareils	18½c
I X L	17¼c
Ne Plus Ultra	16½c
Drakes	14½c
Languedoc	14½c
Hardshells	8 @ 8½c
Walnuts, 1911 crop:	
Softshell, No. 1	14 c
Hardshell, No. 1	13½c
No. 2	11 c
Budded	16½c

HONEY.

The output of most producing districts is being cleaned up, though the local market is quiet. Values are steadily held.

Comb, white	13 @15 c
Extracted, water white	8 @ 9 c
Amber	7 @ 7½c
Off grades	5 @ 6 c

BEESWAX.

Some new beeswax is coming in, but there is no great demand. Prices stand about as before.

Light	28 @30 c
Dark	23 @26 c

HOPS.

Values at present are largely nominal, as dealers are not anxious to buy at present prices, and growers are willing to wait until the harvest is completed. The situation, however, is strong, and those who have not yet sold expect to get top prices.

1911 crop	35 @40 c

Live Stock.

DRESSED MEAT.

Beef cattle are being rapidly cleaned up from many of the ranges in northern California, where high prices prevail. Arrivals in the local market, however, are ample for current needs, though values are firmly held. Hogs are arriving freely and heavy stock is lower, though light hogs are still moving at the former quotations. Dressed cows, heifers and veal are higher, while lamb is easy.

Gross weight:	
Steers: No. 1	5¼@ 5¾c
No. 2	5 @ 5¼c
Cows and Heifers: No. 1	4¼@ 4½c
No. 2	4 @ 4¼c
Bulls and Stags	2 @ 3 c
Calves: Light	6½@ 6¾c
Medium	6 @ 6¼c
Hogs: Grain-fed, heavy	6¾c
150 to 250 lbs	6¾@ 7 c
100 to 150 lbs	7 c
Small prime wethers	3¾@ 4 c
Large prime wethers	3¾@ 4 c
Ewes	3¼@ 3½c
Lambs	4¾c
Steers	8¾@ 9¼c
Cows	8 @ 8½c
Heifers	8 @ 8½c
Veal, large	10 @11½c
Mutton: Wethers	8 @ 8½c
Ewes	7½@ 8 c
Lambs	9½@10½c
Hogs, dressed	10½@11½c

WOOL.

So far nothing of any importance has been done in fall wool, and buyers are unwilling to make any definite prices. The clip, however, is about over, and the Cloverdale wool sale is announced for October 12.

Spring Clip—	
Choice Southern, Year's sta-	
Northern, year's staple	14 @16 c
ple	10 @12½c
7 months	8 @11 c
Lambs, spring	8 @10 c

HIDES.

Hides continue weak, and buyers are keeping out of the market as much as possible, though there has so far been no quotable decline in prices.

Heavy Steers, over 56 lbs.	11½c
Medium	11 c
Light Steers, under 48 lbs.	10½c
Heavy Cows, over 50 lbs.	10½c
Light Cows, 30 to 50 lbs.	9½c
Kip	11½c
Veal	16 c
Calf	16 c
Dry—	
Dry Hides	17½@18½c
Dry Bulls	15½c
Dry Kip, 10 to 15	18 @18½c
Dry Veal, 5 to 10	19½c
Dry Calf, 7 down	23 @23½c
Sheep Skins—	
Long Wools	$ 0.85@ 1.25
Medium Wool, 6 to 9 mos.	50@ 75c
Short Wool, 3 to 6 mos.	30@ 50c
Lambs	35@ 50c

HORSES.

Good drafters of all kinds are in strong demand. Very little heavy stock has been offered of late, but some good light drafters have been eagerly bought up at local auctions within the quoted range of values. Light range stock finds only a very moderate demand, recent sales being reported around $75.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	210@250
Chunks, 1350 to 1500 lbs	175@225
Wagon Horses, 1250 to 1350 lbs.	120@175
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	110@125
Old Mares	90@115

MULES.

200 lbs.	$240@290
100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

SPECIAL DECIDUOUS MARKET

Sacramento, Cal., Sept. 30, 1911.

The following gives the number of cars of deciduous fruit shipped from all points in California for the week ending Friday morning, September 29, 1911, as reported by the California Fruit Distributors:

Peaches—25 cars. The peach movement during the past week has been about the same as for the preceding one. Principal supplies are coming from the foothill districts and from Vacaville. They will continue in fair supply for probably another week. The quality is particularly fine.

Plums—3½ cars. Scattering shipments are still offering and may continue for a few days longer.

Pears—45¾ cars. Not quite as many cars shipped this week as last. The coming week will probably show still further reductions. Winter Nellis is the principal variety still available. The quality of fruit is first class.

Grapes—480¾ cars. The movement of grapes seems to be nearly stationary, as there has been practically no change during the past three weeks. Shipment from Lodi has dropped to very small volume owing to the very low prices prevailing. The quality of the output from this section has steadily improved from the beginning, and now seems as near perfect as it is possible for grapes to be. Abundant supplies are still available. Cornichons and Emperors are developing in first-class shape and promise to be of better quality than before for some years. It is not likely that any appreciable quantity of other variety will be shipped until the Tokay movement is done.

Total shipments to Oct. 2, 9009½ cars; total shipments to same date 1910, 10,261 cars.

The Eastern markets show somewhat better, but prices on grapes are still very low: The following are the sales reports for Tuesday, Oct. 3:

New York—Forty-nine cars sold. Market is strong on Malagas; weather favorable. Malaga Grapes, $1.05@1.55; Bartlett Pears, $3.40; Tokay Grapes, 80c@$1.10; Hardys, $1.70; Humphreys, double crates, $2.55; single crates, $1.

Chicago—Twenty-four cars sold. Market is firm on good stock; cloudy and raining. Malaga Grapes, 95c@$1.30; Tokay Grapes, 70c@$1; Salway Peaches, 70c; Heath's Cling Peaches, 45c; Italians, 85c.



REGULAR $1.50 VALUES

HANDSOME STYLISH **Tailored Waists 95c**

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Choice of lawn, lingerie, linen or madras, tailored and fancy styles. An example of the many wonderful values offered in our new catalog.

We guarantee to please you. If you are not perfectly satisfied, just return the waist. We will promptly refund your money. We assume all the risk.

95c

Send 95c, give size, state material, and if ordered by mail, allow 10c to cover postage.

YOU OUGHT TO HAVE our new Fall and Winter catalog No. 3. It is a most remarkable money-saving book. Full of the latest styles; illustrates and describes all that is best in ladies' suits, underwear, hosiery, shoes, millinery, hair goods, men's furnishing goods etc. Also jewelry, toys, sewing machines, stoves, furniture and other household necessities. Our catalog is the messenger of low prices—heralding what goods are actually worth.

It is free for the asking. We pay postage.

HALE BROS., Inc., San Francisco, Cal.

A Great Problem Settled.

After all, here seems to be the great moving force, "back to the land," which all reformers are looking for. A southern California reader writes: "You will be gratified to know that your 'California Vegetables' has been my vade mecum. It is so charmingly written that it makes horticulturists even out of city folk."

PUBLISHER'S DEPARTMENT.

As the fall season opens and planting time draws near, nurserymen should be getting their announcements before intending planters. Already we have a number of advertisements of this character in the PACIFIC RURAL PRESS. Among the new ones this week will be noticed that of F. C. Willson, the Sunnyvale nurseryman, who has a fine lot of Franquette walnut trees besides his own Wonder walnut. The Bean Spray Pump Co. of San Jose also make their preliminary announcement this week. The Leonard Coates Nursery Co. of Morgan Hill, also have a fine lot of walnut trees for the trade. J. E. Sloan of Palo Alto has a timely ad. in this issue regarding the Hart-Parr tractor. The Fancher Creek Nurseries of Fresno also make their first announcement for the season this week. Several other smaller ads. along these lines are well worth reading. Look them up.

From now on the poultry shows will be held thick and fast over the Coast. There is a great interest manifested in the chicken business, and every reader of the RURAL PRESS should attend the show nearest to him. Study up on the business, then get into the game.

CLASSIFIED ADVERTISEMENTS.

Rate, 1½c. per word. No order for less than 25c. per week. If you have anything to sell, or want anything, use these columns.

FARM LANDS.

$1000. About 20 acres suitable for fruits, dairy and poultry, ½ mile from Nevada City, Cal. Excellent local market. Good 5-room house and buildings. Ideal climate, fine scenery. Plenty of wood. Water for irrigation. A comfortable home that will make you a good living. A bargain. Address, Owner, care Pacific Rural Press, San Francisco.

$10.00 per acre, 4,400 acres, 20 miles from Monterey bay; stock and grain rancho; abundance of water; profitable, well improved. Circulars of JOHN F. BYXBEE, Palo Alto, Cal.

$1500. Eighty acres in Browns Valley Irrigation District, near Marysville, Cal. Thirty acres cultivated, balance oak timber and pasture; 8-room house; school across the road. Address, Owner, care Pacific Rural Press, San Franscisco.

$6,000—20 acres, highly improved income property near Vacaville; 10 acres fruit, 10 grain; furnished house, farming implements; water piped; horses, turkeys, geese, chickens. For particulars, address Owner, P. O. Box 314, Vacaville.

$27,000 buys best improved and best paying bearing apple orchard in Sonoma county, near Sebastopol. Circular and photos of JOHN F. BYXBEE, Palo Alto, Cal.

FAIR AND SHOW FIXTURES.

San Jose, Cal.—Santa Clara Valley Poultry Show. Oct. 6 to 9.

Watsonville, Cal.—Watsonville Apple Annual and Poultry Show. Oct. 9 to 14.

Willits, Cal.—Mendocino County Agricultural Fair. Oct. 10 to 14.

Stockton, Cal.—San Joaquin Poultry Association Poultry Show. Nov. 7 to 11.

Oakland, Cal.—Alameda County Poultry Association. Nov. 21 to 27.

Corning, Cal.—Corning Poultry Show. Nov. 29 to Dec. 4.

Petaluma, Cal.—Petaluma Poultry Association. Dec. 6 to 9.

San Diego, Cal.—San Diego Pigeon and Pet Stock Show. Nov. 28 to Dec. 2.

Reno, Nev.—Nevada State Poultry Association's Show. Jan. 11 to 13, 1912.

CALIFORNIA FRUITS

AND HOW TO GROW THEM

FIFTH EDITION
REVISED AND EXTENDED

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By Edward J. Wickson, A. M.

Dean and Professor of Agriculture in the College of Agriculture of the University of California; Director and Horticulturist of the University Experiment Station; Author of "California Vegetables in Garden and Field"; Editor PACIFIC RURAL PRESS; member National Council Horticulture, etc.

CONTENTS BY CHAPTER HEADINGS:

The Climate of California and its Local Modifications.
Why the California Climate Specially Favors Fruits.
The Fruit Soils of California.
The Wild Fruits of California.
California Mission Fruits.
Introduction of Improved Fruit Varieties.
Clearing Land for Fruit.
The Nursery.
Budding and Grafting.
Preparation for Planting.
Planting Trees and Vines.
Pruning Orchard Trees and Thinning Fruit.
Cultivation.
Fertilizers for Fruit Trees and Vines.
Irrigation for Fruit Trees and Vines.
Commercial Fruit Varieties.
The Apple.
The Apricot.
The Cherry.
The Peach.
The Nectarine.
The Pear.
Plums and Prunes.
The Quince.
Vine Propagating and Planting.
Pruning and Care of the Vine.
Grape Varieties in California.
The Date.
The Fig.
The Olive.
The Orange.
The Lemon, Lime, etc., Persimmon, Pineapple, Avocado, etc.
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Fruit Canning, Crystallizing and Drying.
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The Pacific Rural Press

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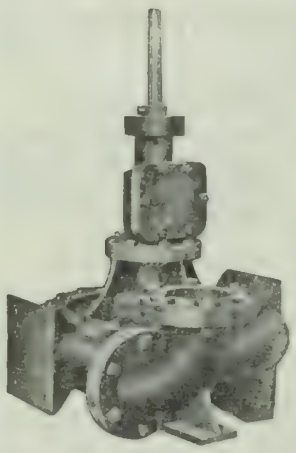
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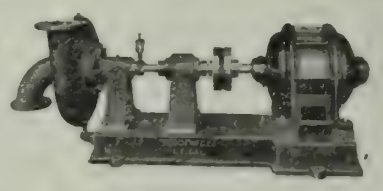
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Krogh New Vertical Water Balanced Pump

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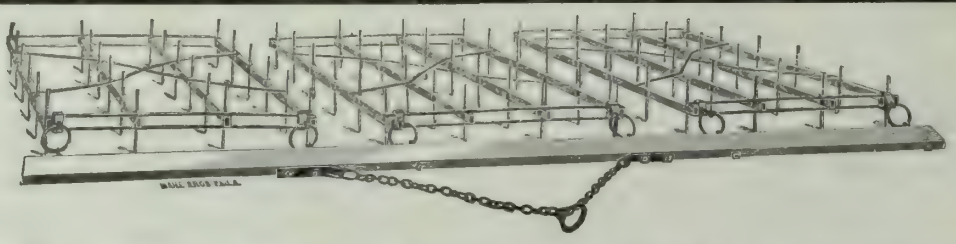
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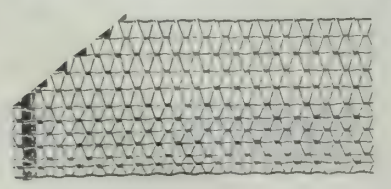
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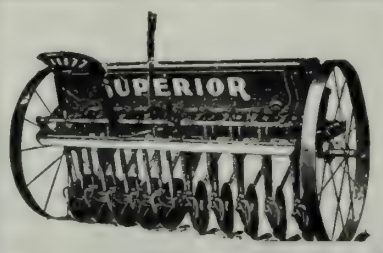


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AT PACIFIC RURAL PRESS OFFICE, 667 HOWARD STREET, SAN FRANCISCO

THE PACIFIC RURAL PRESS

Vol. LXXXII. No. 16. SAN FRANCISCO, SATURDAY, OCTOBER 14, 1911. Forty-first Year.

CALIFORNIA STATE

Some Economies of Fig Production.

Written for the PACIFIC RURAL PRESS by Mr. D. J. WHITNEY.

An awakening as to the value of figs as a commercial proposition seems to have come to many persons in this State, and renewed planting and greater planting than ever before has been indulged in. The fig is no newcomer to the State, the Franciscan fathers introducing the Mission fig along with the Mission grape and the Mission olive, all three of which have proved probably the best general purpose varieties of the fruits named that we yet have. Later on the White Adriatic and other varieties of figs were introduced, and more recently the proper culture of the Smyrna fig has also been discovered.

Until recent years the fig has seldom been given the consideration met with by other fruit trees. Its luscious fruit made it a desirable tree for the door yard; its beauty lent attractiveness to roadways or as a border to vineyards and orchards, and in each case the dried product usually repaid the grower for the use of the land required by the tree. Planting in blocks, however, was not done extensively.

Last year, however, saw probably the greatest planting ever done in the State. On the ranch of the California Products Company at Butte City, Glenn county, 250 acres of Smyrnas were put out, making an orchard of 1000 acres of figs, probably the greatest fig orchard in the world.



Irrigating a Fig Orchard in the San Joaquin Valley, Near Livingston.

Production and Imports.—The opportunity for overproduction in this State at present appears small. There is imported annually into this country about $1,000,000 worth of figs, mostly from Smyrna. These retail at 30 and 35 cents a pound. In this State only about 3500 tons of figs of all varieties are produced annually. Of this amount only 1200 tons are Smyrnas and the rest Adriatics.

The climate such as the fig loves can be found only in California, at least for Smyrna production, and for the best results with other varieties, although in other parts of the Southwest, from Texas to Arizona, locations can often be found where the trees will grow and bear as well as they do here. In any place, however, where there is a likelihood of cold snaps in winter, or rains in summer, fig production is likely to prove unprofitable. As is usually known, the fig needs a long, hot summer with no rain during the ripening period, and should have a deep soil.

It is still a question as to whether the Adriatic figs, including all kinds aside from Smyrnas, will not be most profitable, and considerable planting is done on this expectation. The weight of dried fruit per acre is much more than from the Smyrna figs, which helps neutralize a difference in price. Recent discoveries regarding the caprification of these varieties are likely to improve their quality, which will help to retain whatever advantage they have now. The superior quality of the Smyrna figs, however, seems to give them the preference at present.

The Cost of Production.—The cost of raising and handling a crop of Smyrna figs is less than almost any other fruit grown. Aside from the birds, which take a few of the figs at the ripening time, not a pest of importance annoys either tree or fruit, and the cost of spraying, which with some fruits has to be done many times a year, is entirely absent. After the first few years, when the tree is getting its shape, no pruning whatever is needed. Cultivation only is required, and after the trees are large and the leaves shade the ground, this is reduced to some plowing and enough cultivation to kill the weeds. To caprify the figs, a process probably understood by all readers, it is best for each grower to have his own capri trees, at the rate of two or three to the acre. It is best for several reasons to have several varieties of these trees.

The cost of caprifying trees should be very little, as one man can attend to 40 acres of Smyrna trees, taking about three weeks for the work and applying capri-figs as often as needed and in sufficient quantity. Except in helping the Smryna production, the capri-figs are of no financial benefit to the owner, as they are not edible. As was previously stated, it is generally conceded that considerable profit can be obtained by applying capri-figs at the proper time to other varieties of figs besides Smyrnas, as the fruit becomes larger and of better quality.

Harvesting Inexpensive.—Harvesting is easy and inexpensive. The figs dry on the tree and fall to the ground of themselves, and the owner never has to wonder when they are ready to pick. Except for a few large ones it is seldom necessary to dry them further, and they can be put in the sweat-box and stored until packing time. All attempts to improve on nature by picking and drying them artificially have been failures, both as regards expense and the quality of the product.

This dropping of the ripe figs as above indicated continues from about August 1 until the weather will not ripen well what is left on the tree. All this time the dropping of the dried figs is abundant to make no waste of labor in gathering them. Usually they are gathered about twice a week, but Mr. Rixford recommends that this be shortened to at least every other day, to prevent the entrance of insects while the fruit lays on the ground.

The long harvesting period, of course, makes it possible for a small amount of labor to look after a very large acreage, so that a few men can be kept for a long time.

The figs after being picked off the ground are usually packed in lug-boxes and kept until all are ready to be put up for market. In Asia Minor they are packed tight in bags for transport to Smyrna, where they are prepared for shipment. This tight packing is thought by Mr. Rixford to be the reason for a possible superiority of the imported Smyrnas over the local product. Exposure to the air for several weeks toughens the skin, while packing them tight together makes the skin tender and transparent, makes an even distribution of moisture and sugar and makes the

(*Continued on Page 310.*)

Pacific Rural Press

Issued Every Week at 420 Market Street, San Francisco.

TWO DOLLARS PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

PACIFIC RURAL PRESS CO. - - - PUBLISHERS

Advertising rates made known on application.

E. J. WICKSON - - - - - - - Editor
FRANK HONEYWELL - - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Oct. 10, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.62	1.25	2.16	60	44
Red Bluff	.57	1.26	1.24	82	46
Sacramento	T	.20	.63	84	44
San Francisco	.12	.28	.55	76	50
San Jose	.09	.31	.59	90	38
Fresno	.08	.10	.53	90	44
Independence	00	.60	.49	78	36
San Luis Obispo	00	.02	.69	90	44
Los Angeles	00	1.23	.18	92	54
San Diego	00	.22	.18	84	52

The Week.

Strikingly beautiful cloud effects and light showers have comprised the chief sky-action of the week, both along the coast and in the interior valleys. Little water has fallen, but the absence of dry winds and the lateness of some fruits through slow maturing caused by the heat shortage of the last summer have caused some disappointments in curing, notably perhaps with the fig. We have seen samples souring apparently for lack of speed in expulsion of excess water in the juice—other varieties than the Adriatic, which is somewhat given to that behavior, suffering in this way. Slow ripening has led to fig picking from the tree rather than from the ground, and the fruit was evidently immature, as shown by the failure to sun-cure properly. This is evidently the work of the cool summer, which also worked ill with the shipping grapes and caused the shipping of unripe fruit which was not only unprofitable but an injury to the fruit fame of the State, as some of our readers have already pointed out. We allude to the matter to emphasize the fact that a cool summer in the fruit districts, pleasant as it may be to people, is very undesirable for products, and those disposed to complain of the heat in coming summers should remember the experience of 1911 and forbear complaint. A slow springtime may make grain and hay and prolong pasturage without hurting the fruit, but a slow summer brings fruit scant of sugar and consequent thinness of juice and full of disappointments. And now comes the weather prophet of Oregon, whose mainstay is the doctrine of the alternation of opposites or the succession of contraries, and declares that as we had a cool summer there will follow a winter of sunshine, shy of storms, and therefore short of water. He also applies the same doctrine to the East, where the last summer was fiercely hot and dry, and predicts for them a winter of great severity. All this seems to us irrational and conjectural. On the whole, we are sorry that the wild goose has been thrown out of weather prophecy, as we noted last week. He may know more than some men. It ought to be a misdemeanor to prophesy evil weather on a fanciful or conjectural basis. There is more lost through inaction and idleness born of fear than through errors in activity inspired by hope and courage. We like the vulgar antithesis, "Cheer lp, the worst is still to come!" because, under such mental attitude, it seldom comes.

Product Returns and Land Values.

During the week we have visited a part of the State where owners do not really know what price to put upon their lands. They have had peach returns in some cases upward of $600 per acre—to put it mildly; because the canners needed their varieties with such increasing hunger that growers who sold first on contracts, at something lige $30 per ton, drew only about half as much money as those who waited to see which way the cat would jump. Now, how much per acre is a good peach orchard worth when it yields $600 or more at a crop? That is the reason why owners really do not know how much to ask for their lands, when the gold bags come jingling around. To continue a moment the claim we made last week, that advance in land values is a handicap in production, will not the assessors get after those lands in fine shape next March? Suppose the land is worth all that it pays 10% upon, how will the interest act on the cost of production, when one reflects that he may be working with $6000 land? No wonder orange growers who have had a chance to value their land on that basis have sold out and reinvested in newer districts where that game has not been learned. Of course, we are not saying that such a value as we have indicated has been affirmed by sales, nor is it likely to be; but the way values are running in people's talk, owners naturally do not know what price to put upon their land. It seems quite safe enough to say that good land has doubled in value in the interior valley during the last five years. Sales show that to be true near the University Farm in Yolo county, where land has been sold recently for twice as much per acre as the State paid for that farm. And we have head quite as good stories as that in other parts of the fine interior valley loams, under irrigation. We do not know what such good land is worth: it is probably worth what anyone will pay for it. And two fruits seem to be leading now: the canning peach and the pickling olive—not on the same lands, however, though sometimes not far apart. Some very large planting enterprises are now proceeding with each of these fruits, headed by men experienced both in fruit and finance—which makes a strong combination of wisdom and caution.

The Call of the Cabbage.

We referred last week to the calling-down of the middleman by Colonel Roosevelt. Possibly he had been reading a recent consular report in which it is stated that in St. Gall, Switzerland,, in 1908, the cantonal legislature took up an investigation to ascertain why cabbage had advanced so shamefully in price. It was found that between the cabbage grower and consumer there were so many middlemen to share profits that the price of cabbage was advanced no less than 369%. Then the consumverein, a corporation having regard for the public welfare, undertook to buy cabbage direct from the producers and sell to the consumers at a minimum profit at many stores which the consumverein fitted up. The immediate result was a reduction of 30% in the price of cabbage. That seems to be in the right direction, so far as it goes, but, if we mistake not the figures, cabbage advanced more than 3½ times and direct trade only reduced the price less than one time—so cabbage and co-operation still have quite a journey to make together before they get back to the good old times: but they are on the way.

No Skim-Milk Babies for China.

Another story goes to the effect that the Chinese government has had to guard posterity against the greed of dealers in South China who found that they could get condensed skim-milk with just as handsome labels as condensed full milk, and have been recently driving quite a trade in the skim-milk because they could import it at much less cost. The condensed milk formerly imported commended itself to the Chinese for use with children, this, in fact, constituting almost the whole use to which imports are put, as the average Chinese adult despises milk and milk products in any form. For children, however, the imported condensed milk has been found valuable and is sold at about ten cents per tin. When the condensed skim-milk became available at 6½ cents per tin, the lower cost of living for children seemed to offer a successful weapon against race suicide, but the authorities stepped in and let the people understand that skim-milk babies were not fitted to figure in the advancement of the empire. The cans of skim-milk do not look well with their cross-brands—"not permitted for children."

Overdoing the Squirrel.

The menace to human life which the ground squirrel may embody is being overworked. It is a grand thing for our farmers to have the squirrels etxerminated, for they have destroyed millions of value in the field crops which they feed upon. It is fortunate that they are being systematically pursued by a great health-promoting agency, because in thinly settled districts it is practically impossible for local farmers to kill them on large areas of idle land of absentee owners or on land which the owners, though present, have not spunk enough to clean up. It has, therefore, seemed a grand thing that government squirrel-killing bids fair to reduce squirrels to a degree never before attained in the State, but the use made of currently published facts about this beneficent enterprise is really doing the State much harm. Take, for example, this telegram from Stockton one day last week:

"The United States Government is spending about $200 a month in San Joaquin county in exterminating squirrels, which are credited with causing a loss of about $10,000,000 annually to the farmers of California. At present there are two camps located in the southeastern part of San Joaquin county, with ten men attached to each."

It is generally known, of course, that the health officers are not pursuing squirrels for the sake of saving crops, but because they have found that in a few instances these squirrels and their fleas have in their possession germs of the bubonic plague. The distant effects of the reports are to convey the impression that California is a plague-ridden State. We have been forced to this conclusion by letters asking us whether it would be safe to come to California because of the squirrels which the writers apprehend would be waiting to bite them as they descended from the car-steps. It seems to us that something should be done to allay such fears and to assure intending settlers in California that they are no more liable to be bitten by a squirrel than by a real estate agent.

Lemon Freight Rate May Be Advanced.

The Commerce Court at Washington has decided that the Interstate Commerce Commission has no right to reduce the lemon rate of $1.15 per ctl. to $1 per ctl. for which rate oranges are carried overland. The decision seems to be based upon one contention which was apparently made

that the lemon had a harder row to hoe with importers than the orange and could be helped by a lower rate; for the decisions says: "As in our judgment the order (of the Commission) is based primarily on the assumed authority to protect the industry against foreign competition, it must be held void as beyond the powers delegated to the Commission." It seems to us altogether unnecessary to make this decision on what is merely an incidental consideration, and not upon the main issue, which is that it is unreasonable to charge more for carrying a lemon than for carrying an orange. What does it matter if six times as many oranges are carried as lemons? If such unreasonable discrimination is permitted against it, the lemon will probably always be in the inferior place. The lemon has always been in the way of all the trouble that has gone up and down in the land. Probably nothing of recent occurrence is so aggravating as this Commerce Court decision that the Interstate Commission is trying to protect the lemon from the importers' enterprise, by giving it an equal chance with the orange. Incidentally, too, these lemon importers seem to be having altogether too much to say about what Americans should or should not do for themselves.

Queries and Replies.

Orchard Apple Houses.

To the Editor: We are growing apples at about 4500 feet elevation in southern California. We desire to store two or three thousand boxes and propose to do it in this way: make an excavation in dry earth, putting at the bottom of the excavation straw. Upon this straw place the apples, then dry straw over the apples, and upon the top of this two or three feet of dry earth. My partner thinks it a good plan to keep water pouring from time to time over the top of this. The effect, of course, would be to keep the apples and all wet. All that we desire is to keep the apples in good condition for two, three or four months. It seems to me that the apples should be kept dry and not wet. Will you kindly give me your opinion as to whether the general plan is a good one or not, also as to whether the apples should be kept wet or dry?—Enquirer, Los Angeles.

We would not for a moment think of putting apples down in such a wet place as your excavation would become. There would be too much danger of decay in the excess of moisture and lack of ventilation which would prevail. Apples will keep for a long time in good condition if the boxes are put in piles in the shade, covered with straw, and moistened from time to time; but in that case there would not be such an accumulation of moisture and there would be ventilation at all times. You are probably right that apples should be kept dry, but they will shrivel and become unmarktable unless the air in which they are stored is kept reasonably moist. This is generally accomplished by making apple houses with double walls and roof to exclude heat and with an earth or concrete floor which can be sprinkled from time to time with a hose. Descriptions of apple houses where this result is obtained will be found in our book on "California Fruits." Putting down loose apples in a straw-lined pit would be very expensive, it would invite decay by bruising the fruit, and the result would probably be a worthless mixture of rotten fruit and straw. The fruit should be stored in boxes or shallow trays to reduce pressure and promote ventilation, and not in bins or large piles.

Sweet Clover for a Cover Crop.

To the Editor: What do you think of Melilotus clover for fall planting as an orchard cover-crop for this district? Will it stand our frosts? Can you suggest a better?—A. L. Wisker, Colfax.

The plant has been commended by many growers in parts of California which have a higher winter temperature than yours, and it was, a few years ago, given the first place in Arizona experiments. Just how good a winter grower the plant will be with you must be determined by trial. The choice of a winter-growing legume will probably always be a local question to be answered on the basis of experience. At present there is much difference of opinion, even in districts quite similar. If a man finds out just which one is best for his own ranch he is getting pretty wise.

Too Much Manure for Young Trees.

To the Editor: I have some peach trees and apple trees, three to six years old, that are very thrifty but grow only wood. The soil was poor when planting, and I have put on plenty of sweepings from the chicken-yards. I suppose that is the cause of the trouble. Will you kindly tell me what to put on to counteract the effects of the chicken fertilizer? The trees are full of bloom, but set no fruit.—Grower, Sonoma.

Undoubtedly you have overmanured your soil with chicken maure, which is a very strong fertilizer and should only be used in limited quantities. In order to counteract any acidity or ill effects which have been produced by its excessive application, it would be desirable for you to apply about 500 to 1000 pounds per acre of common builders' lime at the beginning of the rainy season, working it into the soil with the fall or early winter plowing. Do not cut back the tree during the dormant season, although, of course, you may have to remove surplus or interfering branches for the sake of shaping the tree. Winter pruning induces a greater wood growth during the following summer; therefore it should be avoided under such conditions as you describe. Having adopted such a policy, there is nothing for you to do but to wait for the trees to slow down and assume a normal bearing habit proper for their ages. Summer pruning is an offset for excessive wood growth. It is a little late in the season probably to effectively employ that method.

Irrigation for Corn.

To the Editor: I have been asked to find the amount of water necessary per acre for the best possible yield of corn under acreage conditions and proper cultivation in the San Joaquin or Sacramento valleys, and hope that you may be able to help me out.—Subscriber, Santa Clara.

No one can answer such a question with anything more than a guess. It depends upon how much rain has fallen the previous winter, how retentive the soil is naturally, and what has been done to help the soil to hold it. Nearly all the corn that is grown is carried without any irrigation at all on moist lowlands, which may be too wet for winter crops. If you demand a guess, make it six acre-inches, with a good surface pulverizing after each run of water in furrows between the rows. This water would be best used in two or three applications.

Winter-Growing Legume.

To the Editor: Kindly advise me through your columns as to what is considered the best crop to sow in the fall to turn under in the spring as a fertilizer. I want a good winter grower, and also advise as to the amount of seed to sow per acre. My soil is what they call here in Sonoma county a clay loam.—Subscriber, Sebastopol.

We have tried to show that there is no one best plant for this purpose, even for a single district, for there are differences of soil, exposure, moisture, etc. A man has to know which is best for his ranch or for different parts of his ranch, and he has to learn that by trying. Our present notion is that the common vetch would be best for you, sowing 40 lbs. per acre as soon as you can get the land into shape, so as to get the plant well started before the soil gets cold and wet.

A 2-Story Legume Proposition.

To the Editor: I have 40 acres of raw land, which I wish to plant to citrus and deciduous fruits, and I wish to build up the soil all I can, by planting cover crops and plowing under. What would be the best to plant this fall, to be plowed under next spring, and to plant again next spring to plow under in the fall; that is, if there is one best among the vetches and clovers? I will not be able to plant any trees before next fall or the following spring. I have a small family orchard of half an acre, fenced in as a chicken yard, the soil of which has become very foul. When would be the best time to apply lime, and how much?—Would-Be Farmer, Fair Oaks.

Get in your vetches as soon as the ground is in shape. Plow them under early in the spring and close the covering and compact the green stuff by running a straight disk over the ground after plowing. This will help decay and save moisture. Follow with cowpeas as soon as you are out of the frost, disking in the seed so as not to disturb the stuff previously covered in. Do not wait to put under the winter growth until it is safe to put on the cowpeas, for, if you do, you will lose so much moisture that the cowpeas will not amount to much. On the half-acre chicken yard put 500 lbs. of lime and plow under as soon as you can—that is, spread the lime just before the plowing, with a shower or two on the lime before plowing, if the weather runs that way.

Winter Forage.

To the Editor: Will you kindly inform me at what time of the year I should plant kale, Swiss chard, etc., so as to have same ready for use during the months from February to June? —Planter, Santa Rosa.

You should plant swiss chard, kale, etc., as soon as the ground is sufficiently moist from the rain. In fact, it would be desirable for you to plant the seed now in boxes and thus secure plants for starting out when the ground is sufficiently moist. These plants are quite hardy against frost, and in order to have them available by February, a start in the autumn is essential.

What Can One Man Do?

To the Editor: I would esteem it a favor if you would kindly let me know through the medium of your paper, the following: How many acres can one man care for, outside of harvesting, putting in, say, corn, wheat, oats, and grass for hay. It is understood that labor-saving implements are to be used.—Inquirer, Zimapan, Mexico.

We do not know. It depends upon the man. If some readers will kindly tell us what a man has done, in their own experience or under their observation, it will be mighty interesting reading and may help our southern subscriber toward an estimate such as he desires.

Trees From Suckers.

To the Editor: An old orchard that was cut down last fall and was then plowed very close to the stumps has produced many little trees around the stumps. Would these little trees do for nursery use, if grafted or budded?—A Reader, Mendocino.

Trees have been made and can be made from such suckers, and they can be handled in nursery rows just as seedlings are, but we do not believe in that way of making a tree. We prefer a good seedling or a root-graft, according to the kind of fruit.

Nurserymen, Inspectors and Planters.

By Mr. M. McDonald, Orenoco, Oregon, at the Pacific Coast Nurserymen's Convention.

In the early days of horticultural legislation there seems to have gone forth an erroneous idea of the true aims and purposes of such legislation. Horticultural authorities appointed to administer the laws often assumed that the only purpose for which these laws were enacted was a rigid, sometimes unreasonable, inspection of nursery stock, forgetting that education should be the basic principle in the administration of all such laws, and that destruction of property should only be resorted to in extreme cases and after all means of eradication have been tried, and then by due process of law—never upon the mere opinion of one man.

Errors of the Past.—Inspectors were often appointed, not because of their peculiar fitness for the work to be done, but rather to pay some old political debt. Great annoyance, inconvenience, and endless financial loss was the result of the unfair conclusions so often arrived at by inspectors, who perhaps had no previous knowledge of insect pests or fungus diseases, but who taking their certificate of authority to inspect as a license, enter upon any kind of nursery and destroy the same, without allowing the nurseryman time or opportunity to appeal to higher authority or take his case before the courts of common law. Of course, after the nursery stock had been destroyed by fire the evidence as to whether it was affected or not was also destroyed and the nurseryman was left without recourse.

Another very effective form of destroying nursery stock by unreliable inspectors and horticultural commissioners was to quarantine the shipment on the inference or presumption that the stock might be diseased or infected, and in this way create a suspicion among the nurseryman's patrons and cause them to refuse to receive the shipment on the pretext that they might be diseased and that the infection could not be seen at that particular date. This method was just as effective in the destruction of the nurseryman's property as if the trees had first been condemned and destroyed by fire.

An inspector often has used his official position to discriminate between the nurseryman with whom he was on friendly terms and the one who did not live in his vicinity or State, sometimes condemning whole shipments on a mere technicality, while stock of the local nurseryman, who was a friend of the inspector, would be passed and a certificate issued even when found to be in a diseased condition.

A Case in Point.—This point is well illustrated in an experience the speaker had some years ago in one of the Pacific Coast States. A large shipment of trees had been condemned and destroyed by fire, without allowing the nurseryman to prove whether the shipment was diseased or not, only a very few peach root borers having been found in the entire carload of mixed trees. At the same time a tree yard a few miles away, containing thousands of pear trees, carrying this same inspector's certificate, and being distributed with his knowledge and consent, was found to be literally covered with San Jose scale. In this case the nurseryman who had the diseased pear trees was a relative of the inspector, while the nurseryman whose carload of trees was destroyed was from a foreign State. When the inspector's attention was called to this open violation of the law, he passed it off with the remark that they did not mind San Jose scale in their section, and yet the very law under which he was authorized to inspect specifically mentioned San Jose scale as one of the pests that was to be especially fought.

Inspectors always should be selected because of their fitness for the work, and only after some form of examination is gone through that will determine their qualifications for the work to be done.

A man to whom is entrusted work carrying such great responsibilities and power over the property of other persons should be under bonds, or in some way held responsible for the faithful performance of his duties.

Changed Attitude of Nurserymen.—Looking at this subject from the other side, nurserymen were very slow in the earlier days of horticultural legislation to appreciate the great benefits that would come to their particular business through the enactment of legislation which had for its purpose the control and ultimate eradication of fruit tree pests and fungus diseases, and too often it was hard to get the nurseryman to fall in line and work in harmony with the horticultural authorities for the extermination of these pests and diseases. It has probably taken as great an effort on the one hand to get the nurseryman to realize that horticultural laws, when impartially enforced, are of as great benefit to him as to the orchardist as it was to get fruit tree inspectors to realize that such laws were not made to worry, annoy and destroy the property of the nurseryman.

Improved Relations.—However, these conditions have, to a very great extent, passed away, and today we find the nurserymen and the horticultural authorities working in harmony for the mutual upbuilding of their common interests, except in some of the newer sections, or where the nurserymen and inspectors have not been brought together to discuss these vital subjects of mutual benefit to both; and here let me say that in my opinion the Pacific Coast Association of Nurserymen has done more than any other one medium to bring about that feeling of harmony and good will that today exists between the nurserymen and inspectors. This condition has been brought about by this association inviting the commissioners and inspectors to meet with the nurserymen at these annual gatherings, at which time papers have been read and discussed bearing upon every phase of the question until today, in this, the great State of California, where possibly there has been more discord and bitterness between the nurserymen and the authorities than in any other State, and where it was supposed the hatchet would never be buried, and the pipe of peace never smoked, we have with us as our honored guests some of the most learned and noted horticultural authorities of the day, who, I am told are also preaching this same gospel of peace, harmony and good will to all.

How a Man Was Converted.—As an example of what this association has done in bringing together the different interests to discuss these questions of mutual interest, allow me to tell you a little story regarding a fruit grower, resident of one of our Pacific Coast States, who had a supposed grievance against all nurserymen. This man was usually found at all gatherings of a horticultural or semi-horticultural nature, and was in the habit of addressing such gatherings, and he never missed an opportunity to tell the people what a terrible lot of fellows the nurserymen are. In his estimation, every man who engaged in the nursery business was a criminal, and upon every occasion he roasted the nurseryman to a finish.

Well, the members of the Pacific Coast Association of Nurserymen conceived the idea of inviting him to address them at one of their annual gatherings and there let him air his grievances before them in a body. The association even went so far as to hold their annual meeting in his town. He came to the meeting, told his story, which was the same old story of misplaced confidence. He had bought some trees from one of his neighbors, who was really not a nurseryman, but rather an orchardist growing nursery stock on the side.

Some of the trees proved to be untrue to name, and forever after, until he attended this meeting and was converted, he supposed that all nurserymen were fit subjects for the penitentiary. The association took pains to show him the difference between the real nurseryman and the orchardist who is just growing a few trees as a side issue, and also explained to him the great responsibilities that nurserymen carried; that they were really a part of the great horticultural interests of the country, as well as the orchardist, and as a consequence he was converted and is today one of the best friends the nurseryman has. He goes to the horticultural meetings now and instead of knocking he explains to the orchardist the importance of buying his trees from reliable nursery sources, also advising the mutual co-operation of nurseryman and orchardist.

Advantages of Fuller Knowledge.—Our experience with this man simply illustrates the great necessity and importance of association, the coming together whenever occasion permits of the fruit grower, the horticultural authority, and the nurseryman, counseling with each other as to the best methods for the enforcement, along fair lines, of the horticultural laws so that through their united efforts all insects, pests and diseases injurious to fruit trees may be kept in check and so far as possible finally exterminated, thereby reducing the injury done to the minimum point and with the least possible expense and friction, each interest recognizing that the other has an important part to play and should be protected to the fullest extent and that all may work together as one harmonious whole in the upbuilding of the greatest industry of the Pacific Coast.

WINTER WORK ON SMALL GARDENS.

Written for the Pacific Rural Press
By Mr. G. H. Hopkins, Tropico.

Here in California, where we have a continual performance in the garden, it is not necessary to have a large plot of ground for the home garden. The fact is, one is apt to plant too much at one time. It would be much better to plant little and often and as soon as a crop is off prepare the ground for another crop.

Where the garden area is small spade the ground for the succeeding crop unless there is room for a team to turn without turning on the garden. The spading will be much better, because deeper. If one wishes to try an experiment in intensive farming, mark out a bed four feet by ten or fifteen feet. Begin spading by throwing the dirt off tre bed until a sufficient space has been spaded out to allow spading up the subsoil. Then as fast as subsoil is turned spade up surface soil, throwing it on the subsoil that has been turned. When completed the soil will have been turned for a depth of eighteen to twenty inches.

If well rotted manure can be spaded under you will be surprised at the result; for the greater the root growth of a plant the greater the product of the plant or vine. The family which has but a small amount of land, if no larger than a town lot, can raise an astonishing amount of produce if every available foot of ground is spaded up and planted to something that can be made use of. Blackberries, Loganberries, etc., can be grown along the fences. Mammoth blackberries especially can be grown and trained over an arbor yielding an immense amount of fruit, besides being quite an ornament.

The same ground can be used for a garden year after year if it is kept enriched by fertilizer, and occasionally spading under some green crop to furnish humus for the soil. Don't be alarmed if the weeds grow. It's a mighty poor soil that will not grow weeds. And then, if it was not for the weeds we would not give the soil the culture that is necessary for the successful growth of the plant.

The cultivation of the soil is necessary to the growing plant, as it lets in the air and warmth of the sun, and besides making the plant food more available, it permits the moisture to rise to the surface to be taken up by the fibrous roots or feeders which are near the surface.

We are not writing health articles, but it may not be out of place to make the statement that a variety in food supplies is necessary to maintain health. We do not mean a great variety at one meal, but to have a variety to choose from, so that the same food is not consumed every meal. If we can raise a good variety of vegetables and fruit it means better health and a saving in the expense account. Try it.

Timely Hints.—If you have blackberries or other small fruits in bearing now, see that they get plenty of water. It is astonishing how much

water the blackberry will take up, and in return give larger berries and more of them. In a sandy loam soil, where drainage is good, twice a week is certainly not too often to irrigate, and the results will justify the expenditure.

For greens sow seed of chard, spinach, kale, mustard, etc. Of the mustards, there are the Southern Curled and the Chinese Curled. Both are large and excellent for greens. Kale is a species of cabbage, though the leaves do not form a hard head, but just clusters of curled leaves. Swiss chard is delicious cooked as greens, and after getting to eatable size can be cut for a couple of years. It is sometimes called perpetual spinach. It is fine for green feed for chickens.

Flowers.—Among flowers there are many varieties that can be raised from seed and that are also propagated from cuttings. Where one wants some particular color it is necessary to propagate by cuttings. Of those varieties that can easily be raised from seed we mention pansies, lobelias, lantana, petunias, salvia splendens, verbena, larkspur, asters, begonias, gloxnias, heliotrope, mignonette, mimosa, phlox, poppy, portulaca, primula, smilax, stocks, solanum, antirrhinum, and many others. Most of the above varieties are usually grown in mixed colors in beds, and can be raised cheaper from seed. One package of flower seeds will grow into plants that would cost many times the price of the seeds.

When it comes to carnations, chrysanthemums, dahlias, fuchsias and gladiolus, which we usually want in assorted colors, they should be propagated from cuttings. It is one of the mysteries of nature why we can plant certain varieties of corn and wheat and get the same varieties at harvest time, yet when it comes to flowers they are sure to break loose and give any or all of the colors known to the family.

Plants from which cuttings are wanted should be rushed into a quick growth so that the branches will be tender, and when in that condition—when they will snap off in breaking—they are ready for the cutting box. Gladiolus and dahlias are better propagated from a division of the roots, but later in the season.

Catalogues.—Seedsmen have their stock of Dutch bulbs now in, and most of them have issued fall catalogues describing bulbs and bedding plants for setting out this fall. These catalogues can be had from any of the seed houses for the asking. Speaking about catalogues, be sure to get a seed catalogue and study it faithfully. Get your order in early before the rush. Good seed is very important, as it is a loss of time and money when seed fails to come good. However, good seed can be purchased here on the coast, and we hope all will patronize home industries. Most of the vegetable seeds and many of our flower seeds are grown in California, so that nothing is made in sending east for seeds.

Hints on Planting.—Prepare another piece of ground for peas. Plow and harrow and get down into fine shape, and for the home garden plow a furrow 2½ to 3 feet apart with a double moldboard hand plow, and irrigate. Allow the water to run until the soil is wet back 4 to 6 inches each side of the furrow. The next day run the plow through the furrow again to loosen up the ground; sow seed and cover at least two inches. As the vines grow up hoe in more dirt around the plants. During the cool season of the year, especially after rains have commenced, peas and other vegetable seeds should not be planted so deep as during early summer when the ground is warmer. During a cold, wet spell of weather the seed is apt to rot.

Warm Soil Is Essential.—There are portions of California where the nights are so cool during the winter season that plant growth is very slow, and while one can plant hardy vegetable seed most anywhere, except up in the mountains, there are places, as mentioned above, where they will grow, yet so slow that many people who have just come into the State might be disappointed. To such we say that winter gardening is not successful except in warm localities along the coast and back in the foothills of the mountains.

To Get More and Better Lemons.

[Californians are notable for quick application of methods suggested by scientific experts which promise more and better products. The work of Mr. A. D. Shamel, for instance, whose plans for ascertaining exactly which individual trees are producing most oranges of the best type, which were described in detail in the Pacific Rural Press of April 8 and June 24, are being immediately made use of in citrus practice. In the Pomona College Journal of Economic Botany there has just appeared an account of improvement of citrus stock through bud selection, by Mr. Roland S. Vaile, Limoneira Ranch, Santa Paula, Ventura county, from which we take suggestive parts.—Editor.]

Only the Best Will Live.—It is the opinion of the majority of men engaged in the citrus business that because of the rapidly increasing acreage of citrus fruits in southern California the average selling price is bound to reach a somewhat lower level within the next few years. In the case of lemons, at least, there is the added danger from a posible reduction of duty on the imported fruit. In order that the industry maintain its high rank from the standpoint of the investor and landholder, this decrease must be met by greater efficiency in some phase of the organization.

The California Fruit Growers' Exchange, with its wide advertising policy, its co-operative selling methods, and its supply department, is already by far the most complete organization of its kind. Improved methods have reduced somewhat the cost of field and packing-house operations. Careful handling has cut down the large losses through decay. While these matters will still permit of improvement and saving, one is led to wonder if the orchard itself cannot be so intensely cultivated as to increase the average production. As one goes from orchard to orchard, or carefully through an individual grove, apparent differences are noted that show possibilities of materially raising the average standard.

A little less than two years ago Mr. A. D. Shamel, of the Bureau of Plant Industry, took up the work of gathering data which might lead to systematic bud selection for citrus stock improvement. About a year ago the Limoneira Company took up similar work on the Lisbon lemons in their grove, and later on Eureka lemons in the 35-year-old orchard of Mr. N. W. Blanchard of Santa Paula. This work is being carried on because the company is planning large plantings in the near future and wishes the best stock available from trees whose merits have been proved. Much of the data, however, is of interest to every nurseryman and orchardist.

In the first place, the section of the orchard that has been consistently the best bearer for a number of years was chosen for the observations, and from the trees in it, the best 200 were picked. These trees were chosen for their apparent crop, the appearance of the fruit, the general form and foliage of the tree, and the absence of thorns. Later the number was reduced from 200 to 100, which were marked and numbered.

The next step was a description of the trees. The written description included the size, shape, form, foliage, thorns and setting of fruit for each tree. With this preliminary work completed, we were ready for the data of individual yields, the permanent record of which is kept.

During the year the average yield per tree for the special trees was 13.45 field (45-lb.) boxes. The average for the rest of the section (all misses and extremely poor trees having been eliminated in the count) was 10.25 boxes, showing a difference of over 150 pounds to the tree. To the casual observer, the trees in the section look very uniform, and yet this wide variation exists. If one-half of this difference could be overcome by raising the standard of the poorer trees, the increase would be at least 100 packed boxes to every acre. Or, on a percentage basis, an increase of about 3 per cent.

To show that this work needs the accurate keeping of records, even the special trees varied from 15.4 boxes to 10.1, although the trees were chosen by experienced men who knew the groves.

The data from this first year's work is, of course, very preliminiary. After these records have been kept for a number of years, we will be able to tel whether the apparent differences are repeated. We will know whether certain trees are inherent summer bearers and others not. Then, too, we wish to determine whether the characteristics that may be proved for the parent tree will be transmitted to the offspring by budding, and in order to determine this, the buds taken from each individual tree will be used in a definite block of the nursery, and later set in a definite part of the grove—records of which will be carefully kept.

In view of the large possibility of increase that this first year's records have shown, it is thought that others may want to adopt the same method, gradually becoming more and more familiar with good and bad types of trees, eliminating the latter, demanding more reliable data in regard to the source of nursery stock, and thus constantly raising the standard of citrus orchards in general.

AVOCADOS FOR THE MARKET.

A limited but profitable field for the avocado, or alligator pear, as it is known, bids fair to be opened through the quarantine against all fruits likely to carry the Mediterranean fruit fly from the Hawaiian islands to this State. The avocado is now, or was up until the time the quarantine was put into effect, imported from Hawaii in appreciable numbers for the benefit of those who were acquainted with the fruit, but is barred out entirely by the quarantine order. Inasmuch as the quarantine will last as long as the fly exists there and is not established here, this barrier will be kept, it may be hoped and expected, indefinitely, and there will be no competition to such growers in southern California who wish to produce this fruit commercially.

The avocado has been growing in several frostless points in southern California for many years, although not grown commercially to any great extent, and bears fruit of high quality plentifully enough to fully warrant going into the business of commercial production. Although the fruit is not well known, it brings extremely high prices, 25 cents for two, or even higher, in many cases, and those who like it are willing to pay well for it. These prices can, of course, be reduced at least 500 per cent before the grower would get only a reasonable profit, as many sales will not be made at the first named figure. Many more will, however, be made when the general public appreciate the value of the fruit, which has been described before in the Pacific Rural Press, and no competition to speak of can be expected from foreign or domestic parts as long as the quarantine exists.

TREATMENT OF DRY-PLOWED LAND.

To the Editor: We are plowing a piece of light sandy mesa land, dry, which has considerable tarweed and other weeds growing before plowing. Which would be best, to leave the land as it is until the rains come and then harrow, or harrow now? Would the land left without harrowing gather any elements from the air before rain comes? The above land is for oat hay and beans next season. Farmer.

Lompoc.

[We should roll down the tar-weed, if it is tall and likely to be troublesome, and plow in at once so that decay may begin as soon as the land gets moisture from the rain. It would be well to allow the land to lie in that shape, and disk in the seed without disturbing the weeds which have been plowed under. If all this is done early, with plenty of rain coming there is likely to be water enough to settle the soil, decay the weeds, and grow the hay crop. Of course, such practice could not be commended much later in the season. The land gains practically nothing from the atmosphere by lying in its present condition. If there is any appreciable gain, it would be larger after breaking up as proposed. In dry farming, harrowing or disking should be done immediately after plowing, not to produce a fine surface as for a seed bed, but to settle the soil enough to prevent too free movement of dry air. If your rainfall is ample, the land may be left looser for water-settling.—Editor.]

AGRICULTURAL REVIEW.

With the Fruit Men.

Active work in investigations of fumigation methods is being conducted in Santa Barbara county by Commissioner C. W. Beers, also work in spraying for wither-tip on citrus trees and walnut blight. There has been more damage than usual this year from the codling moth and woolly aphis, although the apples at Lompoc are in very good condition.

Regarding the walnut output of the State, J. A. Montgomery, secretary of the Walnut Growers' Association, states that there were 1000 cars of the nuts sold in this State in 1910, against 200 cars in 1893, and that this year's crop will exceed that of last year by 10 per cent.

Commissioner Earl Mills of Butte county reports that good prices for peaches have caused a big demand for stock for planting this fall.

A number of orchardists at Greenfield, Monterey county, are contemplating setting out large acreages to apricots this fall.

Walnut growers of West Covina, Irwindale, Walnut Center, Basset, and Puente, Los Angeles county, have formed a pool of their crops.

The Commerce Court has sustained the railroads in fixing $1.15 per hundredweight as the rate on lemons to Eastern points.

In the consular reports it is said that the apple crop in England is very large and the fruit of good quality. In France conditions are similar.

The date for the big citrus fair to be held at Oroville, Butte county, has been set for December 5 to 9. Besides citrus displays, there will be exhibited at the fair, stock, poultry, and viticultural and deciduous products.

General Agriculture.

According to J. M. Waterman, of the Lima Bean Growers' Association, the crop of lima beans will amount to 320,000,000 pounds.

The U. S. Department of Agriculture is said to be intending to enlarge the scope of the investigations regarding rice culture in this State for next year.

The American Sugar Beet Co. of Oxnard has announced that the price of beets testing 15% sugar will be advanced from $4.50 to $5 per ton, with a premium of 30 cents per ton for each per cent over this amount.

It is reported that the Alameda Sugar Co. will erect a large plant at Meridian, and that 23,000 acres to beets will be put out for it in Yolo and Sutter counties.

Heavy winds have caused a severe loss of beans on the river lands of the Sacramento, where the vines had been cut. The wind rolled them along the ground and knocked the beans out of the pods.

Raisin and Grape Notes.

Consul A. B. Cooke writes from Patras, Greece, that the Greek currant crop for 1911, which has just been put upon the market, is estimated at from 130,000 to 160,000 tons, a conservative estimate being 153,000 tons. The holdover is said to be about 10,000 tons.

Leslie F. Giffen, of the Giffen-Hobbs Company of Fresno, has returned from a trip East and reports that the market there is good, although the effort of two houses to cut quotations still keeps the price down. The growers are reported to be holding most of their raisins at present quotations, expecting higher prices soon. Rain and cool weather is, as during all the season, delaying drying, while the tray count shows that the size of the crop was not overstated in the conserative estimates given, but, if anything, will be short.

The Rosenberg Company is to install a raisin steaming plant in Turlock next month.

The Hanford winery of West & Son began crushing this month, grapes testing 24 per cent sugar bringing $12 per ton.

The rains in the raisin district are said to have caused damage variously estimated from 2 to 25 per cent to the raisins in the trays. Most of the growers were warned by the Weather Bureau and stacked their trays.

H. A. Beekhuis, of the North Ontario Packing Co., states that half of the present grape crop has been sold to the packers and that conditions are promising for disposing of all the crop at good figures.

Rains in the Sacramento Valley temporarily stopped picking of Tokays, but are said to have done no great damage to the crop.

Miscellaneous News Notes.

Edward Atherton of Fullerton, Orange county, has received another car of ostriches to add to his stock.

From Atwater, Merced county, 6,178,406 pounds of produce, including peaches, grapes, cantaloupes, and sweet potatoes, were shipped out during August, nearly double the amount in August, 1910. This increase in shipments is due chiefly to the bringing under cultivation of a large area of raw land. New settlers have been coming in almost daily during the past year. Most of the newcomers have settled near Winton, a new town on the Santa Fe, two miles north of Atwater. The land surrounding Winton was part of the old Crocker ranch and is now known as Merced Colony No. 2.

The supervisors of Kings county are to distribute free poison for use along the county roads to kill the squirrels.

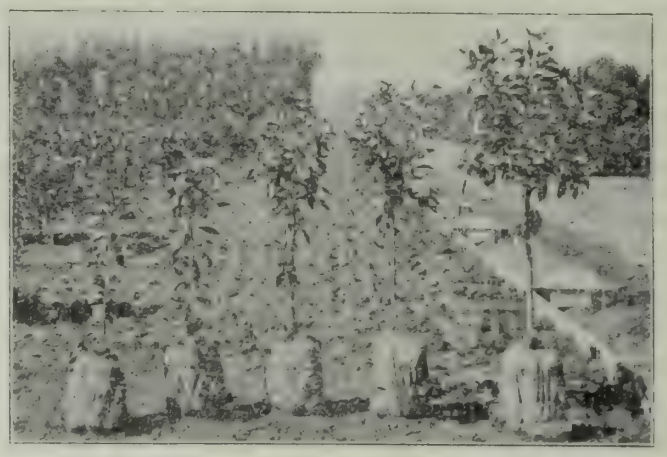
Artesian water has been struck on the Shackelford ranch at Paso Robles at a depth of 455 feet. Unlike other artesian wells in the vicinity, it contains very little mineral matter and will be excellent for irrigating.

The Zelie estate of 3262 acres on Brannan island in the Sacramento river has been sold for $292,250, or $90 per acre.

Business relations have been severed between the Sonoma County Poultry Association and the Sonoma County Fruit and Produce Company, which has been handling the eggs of the association.

WATSONVILLE'S SECOND APPLE ANNUAL.

Was it really the apples or those "peaches" that drew such an immense throng to the second Watsonville apple annual? I met scores of San Franciscans there who were not only enthusiastic about the wonderful apple display, but would constantly burst into song about the "peaches" who composed the uniformed brigade of boosters that recently stormed San Francisco and the Bay Cities with band playing and banners waving.



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Now is the best time to place your order for spring planting. Get same in while the first-class stock is available and avoid being disappointed later on.

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PLEASE NOTICE.—These collections are put up before the hurry of the busy season, consequently no change can be made in them.

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Asta Ohn Spencer. Large blossoms of beautiful lavender.
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King Edward Spencer. Giant bright scarlet, extra choice.
Othello Spencer. Mammoth maroon, very dark.
Primrose Spencer. Clear, distinct light yellow.
Ramona Spencer. White, with delicate lines and flakes of blush pink.
White Spencer. Pure white, crinkled and fluted.
Sanborn's Mixed Spencer. Comprising all the best types of the Spencers.

FREE—Sanborn's Bulb, Sweet Peas, and Pansy Catalogue. For Fall Planting.

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BOLTON ORCHARD HEATERS

THE PIONEER—WITHOUT A PEER

A VICTORY

The Largest Lemon Grove in the World, Limoniera Company, Santa Paula, California, Bought

20,700 BOLTON ORCHARD HEATERS

After Investigating All Other Devices.

SEND FOR OUR FULL CROP PROPOSITION

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but who are known locally as the "lady hussars." One young fellow—without a thought of funning or disrespect—alluded to these fair apple boosters as "pippins."

Anyway, the crowd was there, and there so strong that Watsonville could not accommodate it, and scores sought adjacent towns for a needed rest, after a day of excitement and enjoyment, only to return next morning looking for more.

But when you get there, APPLE is supreme. No less than 20 carloads are said to be on exhibition in every shape and form imaginable. There is a Panama Canal of fresh and dried apples, with a couple of oceans, Culebra Cut, dams, locks and all complete. It was constructed by the teachers and pupils of the High School. The San Monte Fruit Co. exhibited a revolving globe, different colored apples representing the various countries of the world. In this, every two seconds, a tapper announces that another Pajaro valley apple has been eaten, a bell denotes the consumption of a box, and a gong tells when a carload has been consumed. The Stewart Fruit Co. exhibited a half globe; the Y. M. C. A. exhibited a replica of the organization's building; the Appleton Investment Co. a reproduction of its new hotel; and "Spraying in 1923" showed an airship spraying an orchard from above. This novel display was arranged by the California Chemical Spray Co. Outsiders got there, too. Santa Cruz has its apple basins; Monterey its apple custom house; San Jose its apple electric tower. Tuolumne, Eldorado, Humboldt, and Sonoma counties sent splendid exhibits, and even San Diego county, generally supposed to be outside the apple belt, was there with an exhibit that put her very conspicuously on the apple map.

Benjamin Ide Wheeler opened the show Monday, and the day was mostly devoted to entertaining distinguished vistors, speeches, and banquets.

Tuesday was school-children's, Monterey, Pacific Grove, and San Benito day, and commenced with a parade of several thousand school-children of Watsonville and adjacent towns.

Wednesday was Panama-Pacific and Bay Counties day, special trains bringing thousands from the bay cities, San Jose, etc., accompanied by bands.

Thursday was Santa Cruz day, and every business house in the county is said to have closed to allow all to pay court to his majesty King Apple.

The show is only scheduled Monday to Thursday, but everything indicates that festivities will run under a full head of steam until Saturday, as Friday and Saturday will see aviation, baseball and football, concerts, industrial parades, closing with an Oriental parade of 1000 Japanese in native costume with a Japanese band, followed by carnival, confetti, and big noise.

"The Pike," "The Rialto," "The Great White Way," and "Hell's Delight" are represented at Watsonville by "Down the Lane." The name sounds soothing, but a stroll "Down the Lane" is anything but that.

In another building the Pajaro Valley Poultry Association held its show and drew a large entry, while business at the box office must have been very satisfactory. Most of the old campaigners were there and had their exhibits in the best of condition. The organization was only recently formed, but nevertheless is the largest poultry association in the State, having over 200 members. Over 700 birds were on exhibition, and between 60 and 70 cups and trophies were competed for. Most of the incubator makers and supply dealers were there, including the Cyphers Incubator Co., Jubilee Incubator Co., Coulson Poultry Food Co., and Geo. H. Croley Co.

From every indication, the Pajaro Valley has had a prosperous year; everybody seems happy and fully prepared to make the most of Watsonville's Apple Annual.

THE STATE GRANGE MEETING.

At the meeting of the State Grange in Visalia the following officers were elected: Master, E. T. Pettit, Cupertino; overseer, W. E. Stewart, Danville; lecturer, W. V. Griffiths, Geyserville; steward, Charles E. Collins, Dinuba; assistant steward, George Sahlmeyer, Elk Grove; lady assistant steward, Miss Lorena Church, Santa Rosa; organist, Mrs. Alice Winans, San Jose; secretary, Mrs. Nellie Hunt, Napa; chaplain, Mrs. Ella Dow, Oakland; treasurer, Joseph Holmes, Sacramento.

The members passed resolutions in favor of Farmers' insurance companies, increased agricultural education in the schools and the teaching of farm economics. The Grange may establish headquarters at the Panama-Pacific Exposition, the matter to be taken up with the individual Granges. The Granges were also urged to establish co-operative stores and warehouses, and co-operate in other ways whenever possible.

THE WORLD'S HOP CROP.

Consul Joseph I. Brittain, Prague, Bohemia, nuder date of August 26, says: Within the past few weeks the stock of old hops on hand has advanced as much as 200 per cent in price, owing partly to the fact that an unusual amount of beer has been sold during the hot weather, the stock of some brewers having been entirely exhausted. The maximum estimate of the crop for Austria-Hungary would be 19,150,000 lbs., whereas the total for 1910 was 31,680,000 lbs.

The world's hop crop for 1911 is estimated at 132,000,000 lbs., or about 44,000,000 lbs. below that of 1910, and about 55,000,000 lbs. below the average for the last ten years. Choice hops have been selling this year as high as 92c a pound in Prague.

WILLSON'S WONDER WALNUT

Youngest and most prolific bearer, sweetest and richest kernel. Enormous size and thin shell. Nuts matured *on own growth of wood* 18 months from insertion of graft in nursery row. Robust grower, self huller, blight resisting.

ALSO A GOOD
— STOCK OF —

Franquette Walnuts

Trees are large and strong, grown without irrigation, with well matured wood.

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Encinal Nurseries

F. C. WILLSON, Proprietor
SUNNYVALE CALIFORNIA

Increasing Popularity of Soy Beans.

To the Editor: The soy bean, viewed from a poultryman's standpoint, has much of interest because of its high protein value and bearing as an article of food supply, and its relative cost.

It is only recently that the meal made from the bean has been utilized by the poultrymen on this Coast, and to a majority of farmers it is an unknown quantity.

The soy bean is a native of southeastern Asia and has been extensively cultivated in Japan, China and India since ancient times. The beans are there grown, almost entirely, for human food. The meal used as a food product is made from the bean cake, the residue after the oil has been pressed out for commercial purposes. The bean cake is produced in Manchuria, and its scientific and practical value has been fully demonstrated.

The Manchuria bean was introduced into Europe about ten years ago, but, so rapidly has it advanced in favor as a general stock food, noted scientists having determined its rare value, that its exportation from the Orient has reached the large amount of 500 tons annually. The soy bean is richer in protein than any other bean grown, and in the far East is in great demand, Japan using about a half million tons annually.

The United States Agricultural Department has, for some years, endeavored to direct the attention of the public to the high food value of the soy bean, Farmers' Bulletins Nos. 58 and 372 setting forth the virtues of the bean as a forage plant and of the meal as a food for both animals and poultry.

Seven or more varieties of the bean are handled by seedsmen in this country. Sown as a forage crop, it is, for the greater part, confined to the cotton belt, and has been found to be excellent as a green manure. Good soy-bean meal is about equal in value to alfalfa for milk and butter production. The bean meal has, by experiments at several of our State agricultural experiment stations, been shown to be somewhat superior to cotton-seed meal in the production of pork, mutton, and milk. The U. S. Agricultural Department is authority for the assertion that a bushel of soy beans is at least equal in value to two bushels of corn. It is fed as a meal.

Farmers are learning the value of soy beans as a food and are planting them in considerable quantities wherever the climate will admit of their maturing. Numbers of our Coast poultrymen are substituting this meal for linseed meal and cotton-seed meal on account of its high protein value. Parties in Petaluma inform the writer that it is used as a general food there, many poultrymen using it more or less. "Some use it directly as a substitute for beef scraps, but this practice is not customary." Care should be taken by those not accustomed to its use. Professor Jaffa, our University of California and State authority on foodstuffs, suggests the ratio of two pounds of the meal per 100 hens, to the feed. A Seattle correspondent says the shipments of the meal from the large factory there amounts to one or two carloads weekly to Petaluma, and about the same quantity to Los Angeles.

A Petaluma paper of recent date notes that a large shipment of soy-bean meal has just arrived direct from Manchuria. This is the first considerable shipment of this meal received there and will be used for chicken feed. Many poutrymen use a dry mash, keeping it before the fowls all the time. A good dry mash is composed of 20 pounds of wheat bran, 10 pounds of cornmeal, 15 pounds of soy-bean meal, 15 pounds of beef scraps. With this give a morning feed of corn, wheat, and oats scattered in deep litter, with the addition of a liberal amount of green food daily.

In a late daily U. S. consular report, Consul Ham, of Hull, England, says that there is a project to erect large factories at Copenhagen for the production of soy-bean oil and cake. "It is hoped that the annual turnover of the new company will, at first, be not less than $1,100,000, and that 30,000 tons of soy beans will be shipped each year from Manchuria to Denmark. At present oil cake, of various kinds, to the value of $7,000,000, is annually consumed in Denmark."

For laying hens the ration herewith given is noted as well balanced and worthy a trial: Wheat, 8 pounds; rolled barley, 4 pounds; bran, 4 pounds; meat-meal, 1 pound; soy-bean meal, 2 pounds.

Santa Cruz, Cal. A. W. R.

TRUE, BUT NOT NEW.

The irrigation expert of the Colorado Agricultural College gives a practical hint which, though not new, may not have reached all our readers:

A newly made lateral, with loose earth embankment on the lower side, is very easily damaged should the water be turned out over the soft banks successfully. Water may be diverted over these loose earth embankments if a piece of burlap or canvas is made fast to one end on the inside of the lateral and the other end to fall outside. This will serve to protect the banks, and, as the water is flowing out, its weight will hold the burlap in place.

If your lateral seems to cut badly in the bottom at any place, you may be able greatly to reduce this by taking burlap and lining the bottom and sides. The burlap can best be held in place by several slender stakes driven in the bottom and sides of the lateral.

If your embankment slips out, causing a break, this may be successfully closed by using small burlap sacks filled with earth and laid in such a manner as to stop the flow of the water. If there is not too much water flowing, the break may be stopped, it not being necessary to turn the water out of the lateral for repairs.

BULBS

For fall and winter planting; also Flower Seeds for fall sowing. New Catalogue now ready, mailed free upon application.

NOW IS THE TIME TO SOW

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$1000 profit per acre; plant now. Berry plants of all sorts. Cut this adv. out and mail today.
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The Rhubarb and Berry Specialist

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The new commercial tropical fruit. Will stand a temperature down to 10 or 12° above zero. Send for special circular on this fruit.
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It is well worth your while to verify this statement, and when in doubt as to the Sodium Chloride content of a Cyanide, have a reputable chemist furnish you an analysis. It may prove a good investment.

The Roessler & Hasslacher Chemical Co.'s Special Fumigating Cyanide of Potassium 98-99 per cent and Cyanide of Sodium 128-130 per cent is manufactured expressly for fumigating. Contains no excess of chloride of sodium. It generates quickly. Reliable, Efficient, Economical.

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WE HAVE DEMONSTRATED THAT WE CAN CURE THIS DISEASE
ROOT BLIGHT
WRITE FOR OUR CIRCULAR No. 5
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HAVE YOU ALFALFA SEED?
Send for free leaflet describing our process of
RECLEANING ALFALFA SEED—BAG AND BAG ALIKE
and its advantage to you.
Write for samples and prices of Vetch, Bur Clover and Mililotus Seed, the great cover crops.
MERCANTILE & WAREHOUSE CO., 1560 5th St., Oakland, Cal.

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OF
THE HIGHEST GRADE
In development of root, stalk and branch.
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A few carloads of fancy white Sonora.

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Wholesale and Retail
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Snow's Nursery
Citrus Stock a Specialty
Will accept future contracts on Citrus Stock. also Apricots.
H. K. Snow, Jr., Prop. OXNARD, CAL.

Weeds and What to do With Them.

Written for the PACIFIC RURAL PRESS
By Miss CLAIRE A. HEALEY, Salinas.

A weed;—what is a weed? Of course you know what a weed is. Everybody does. Well, let us give a definition for it. A weed is a plant. Yes, so is a potato. Well, you know what a weed is, even if I don't. Some say that a weed is a plant, growing where it is not wanted. In case you are a little doubtful, take one glance at the roadsides, in the garden paths and along the sidewalks in almost any town and small city. What do you see? Beautiful flowering plants or green lawns? Not very often. You will find the weed which is both a friend and an enemy. They are our friends in the spring, when with their broad green leaves so fresh and bright they cover the ugly spots of the country, and our enemies when they form such abundant seed that they scatter themselves over grain fields as well as the roadsides and into the gardens and lawns. We do not want them where they are, therefore they are weeds.

But look again at the weeds standing by the side of the road and the walk. Their beauty is gone, for the leaves are dying and the flowering time is over, but that for which the plant lived, the seed, is coming into its glory. Soon, if not already, thousands of little embryo plants will be wafted by the breezes to new soil where they will take advantage of everything they find by growing rapidly and spreading their broad leaves to get all the sunshine and moisture. These sturdy plants have learned through their bitter struggle for existence that man is the one great enemy of their lives. For just as they are marshalling all of their forces together to produce many good healthy seeds, they are viciously cut down and left to die without their life's work done. But it is the happy weed that finds a neglected spot where the owner cares little or nothing for the appearance of his own premises or that of his neighbor.

Man takes every advantage possible of the weeds in this way. He finds the annual plant the easiest to destroy. As the annual cannot use its root the second year, but must depend upon planting new seeds for the next crop, the farmer soon puts them out of commission by cutting them down before the seeds are formed.

The biennial plant builds for two years. It puts away lots of food in its root the first year, by growing numerous healthy leaves that work all summer making food to be stored away in the root. The next year the food in the root is used by the plant to build its flowers and seeds. These plants can be cut off a few inches below the ground during the first season, and this prevents the plant from continuing its growth the second season. Care must be taken to cut the tops off below the buds on the root. This is something like cutting off the dog's tail just back of the ears. But for the plants that depend on the second year's growth to produce seed, we find this a very effective means of destruction.

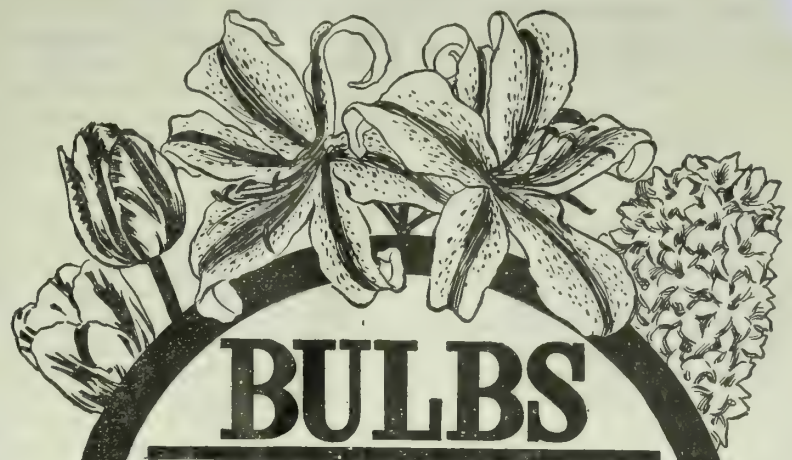
There is still another method that plants have adopted to insure the continuation of their kind. It is the plan of the perennial. Some of the plants we call weeds have learned how great an advantage this little plan of growth is to them, because they persist in growing, although they are never wanted. This wonderfully fine plan is to have a stem, as well as stout roots, growing under the surface of the soil. From the nodes, that is, joints, of these roots grow the stems that finally produce the leaves, flowers and seeds. There is one very clever thing regarding the underground stem, and that is the power of every node to live independently in case it may be cut off from its neighbor. So if we are careless in our hoeing and cultivating, just breaking the root stems into pieces and not taking them out, we will be making many more plants in place of getting rid of any. It doesn't seem to matter much to these plants whether they get a chance to form seed or not, as they have a natural existence of a year or two from their roots. This kind of plant, the perennial, feels very secure, and is able to hold its own against many odds.

To sum up: Weeds are grouped with reference to their duration, as annual, biennial, and perennial. An annual plant germinates from seed in the spring, produces flowers and seed the same season, and then dies. Examples of the annual weeds are foxtail, ragweed, and smartweed.

The biennial plant, during the first season, produces vegetative growth only. In the second season a flower stem is produced. Examples of biennial weeds are bull thistle, mullein, burdock, parsnip and carrot. Biennial weeds cannot live when the ground has been properly plowed.

The perennial plant has a natural existence for some time. They produce flower stalks year after year from the old root stalk. Examples of this class are morning glory, milkweed, horsenettle, horseradish.

The perennial is the most difficult to eradicate because it is necessary that every bit of the root stalk be taken out of the ground, or a method of treatment adopted which prevents the growth of leaves, because without leaf action roots will perish sooner or later. The only sure way to keep fields and vacant spaces clean of weeds is to thoroughly cultivate the soil at regular intervals. Even before the stalks and leaves begin to show above the ground the weed-cutter should be used, cutting a few inches under the surface. This treatment carried on during early spring and early fall will prove the death of the weed.



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Tulips are gorgeous flowers. Try Morse's Long Stem Tulips mixed, 30c doz.; (postpaid 35c doz.); $2 per 100

White Easter Lilies, $1.50 doz. (Postpaid 35c doz.)

Auratum—Rubro—Vittatum Lily—is shown above. It is a rare sort. 50c each.

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"1911 Best" Bulb Collection, a fine assortment of hardy Bulbs; 136 Bulbs for $2.10. (Postpaid $2.50)

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TREES

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Every fruit grower should realize the importance of making a right start, and the only sure and safe plan to follow is to obtain your trees from a thoroughly reliable and conscientious nursery firm.

We call particular attention again this season to the necessity of ordering early to get your needs supplied.

"CALIFORNIA HORTICULTURE
The Fruit Grower's Guide"

describes 2000 different varieties of trees and plants, contains 120 pages, is fully illustrated with half-tone engravings and color plates. Contains much valuable information to planters. Mailed upon receipt of 25 cents in stamps.

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THE HOME GARDEN
Should be supplied with a variety of
Berry Plants
AND
Rhubarb
Send for prices.
G. H. HOPKINS, Tropico, Cal.
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BULBS
FOR FALL PLANTING
Our importation of Dutch Bulbs has arrived. This stock is the very best, and our prices are low. Send for Free Catalog at once. Also for our large Seed Catalog, if you haven't one.
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111, 113, 115 Winston St., Los Angeles, Cal.

To Exterminate
GROUND SQUIRRELS, GOPHERS, also BORERS, ROOT APHIS, etc., on Fruit Trees
CARBON BISULPHIDE
Is the only effective remedy.
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Office: 624 California St., San Francisco.

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Write us for prices and samples.

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The most valuable plant for cover crops now being used in California. For best results should be sown in October and November, if possible, and plowed under early in the Spring. Also very valuable as hay and when so used should be sown with oats or barley to hold up the Vetch.
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VALLEY SEED CO.
313 J Street, Sacramento, Cal.
Agents for Mococo Fertilizers

SOME ECONOMIES OF FIG PRODUCTION.

(Continued From Page 301.)

quality much better. This has been proved here.

Local Pack Good.—One of our finest brands, which is put up by the grower himself by these methods, was taken by Mr. Rixford to a number of buyers and jobbers for comparison with one of the finest imported brands, and no superiority of the imported figs was found.

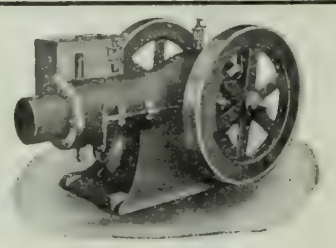
Packing can be done by either the grower or a dried fruit company. The cost of the outfit is small and methods simple. The figs are taken from the sweatbox, rinsed off and dipped in boiling brine, or boiling water and kept there for several minutes until they are heated through. They are then cooled off and dried slightly, and being flexible, are split, flattened out and pressed into shape in wooden forms. After drying a bit they are wrapped in waxed paper and the work is done. They can either be sold in cartons, or with a fancy paper band to hold the paper in place wrapped around them. The latter is cheaper and probably more attractive to the consumer.

The cost of packing is about 3 to 4 cents, boxing and shipping extra, and they can be wholesaled off at about 12 to 14 cents. Inasmuch as the price in the sweatbox is about 5 and 6 cents, the profit of packing on the place makes it worth doing. The growers are receiving this year from 6 to 7 cents, but all dried fruits have been high and these prices cannot be expected every year. Dried black figs this year have been bringing about 3 to 4 cents and white Adriatics 3½ cents a pound.

Prices and Production Uniform.—There is one thing though about the prices that cannot be found with any other fruit, and that is that they will vary but little from year to year. An exceptionally heavy planting might reduce prices, but this should increase consumption so that the grower would not lose much. For instance, at 5 cents a pound they should retail easily at 15 cents, and at this price with proper advertising the public taste could be cultivated until dried figs would be a necessity rather than a luxury. Some figs are also canned, and find a good market.

The reason for a uniform price, however, is a uniform crop. No frosts that are likely to appear in the fig growing districts will hurt the crop, neither will rains at the time of caprification, nor any other weather conditions affect it much, except. of course, an exceptionally dry year, and that will not do the damage to figs that it will to most other fruit trees. Of course, there will be some variation according to the weather, and cheap dried fruit of other kinds will affect figs, but that is all.

The benefit of having a crop that can be dried and held instead of being sold fresh when the market is glutted is also self-evident. The trees will live for centuries, when some others may die in as many decades. More money may be made from several other fruits, but for a sure and steady income the fig appears to be recognized as a tree for this State.



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Just the Engine you have wanted to see.

A marvel of mechanical simplicity.

No spark plug, batteries, carbureter, gears or other complicated parts to get out of order.

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Unequaled guarantee of fuel consumption, material and workmanship.

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The Study of Corn, Shoesmith	.50
Plant Life on the Farm, Masters	1.00
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Fruit Growers' Talks

No. 9—Hands Across the Orchards

Do you remember the old international reciprocity slogan, "Hands across the sea"? Well, there's a great deal more meaning—a great deal more real value in the "Hands across the orchard" spirit which under the fostering care of the California Fruit Distributors is becoming a great power for good on behalf of fruit growers and shippers.

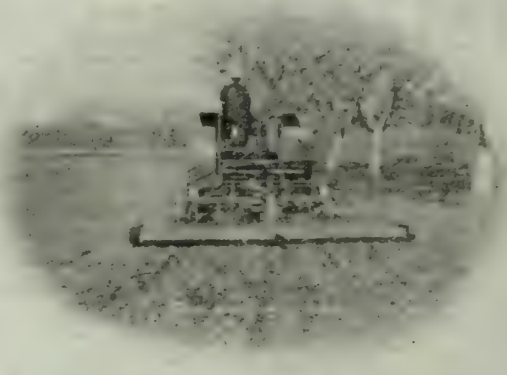
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California Fruit Distributors

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C. L. BEST GAS TRACTORS
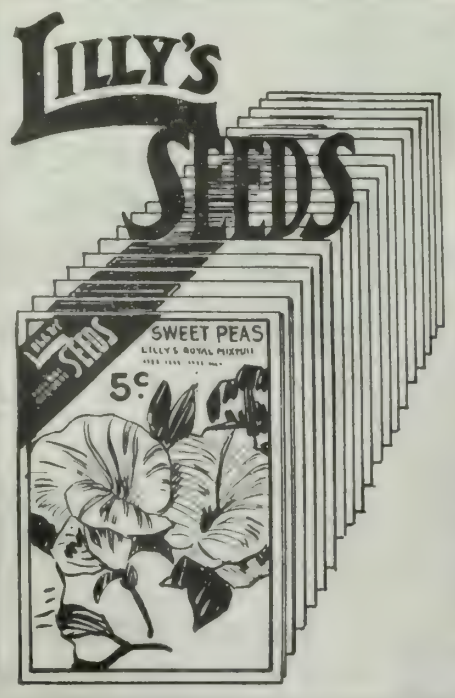
Prize Winners at State and County Fairs



25 H. P., C. L. Best Tractor Plowing and Harrowing In Walnut Grove at Carpenteria.

The C. L. Best Gas Tractor Company won first premium at the Fresno County Fair last week for both their large and small tractors, and at the State Fair in competition with tractors from all over the country, won first premium and $280 prize winner for their big 60 H. P. plow-engine, and first premium with their 25 H. P. orchard tractor.

The C. L. B. tractors have 3 speeds forward and reverse, all operated by one lever. Gearing is all steel, incased in dust-tight cases. Owing to the fact that the Company makes all its own steel castings, it can afford to be very liberal in the use of same in construction of its engines, and the construction enables them to guarantee for one year every tractor they turn out. The C. L. Best Gas Tractor Co. has its factory and main office at Elmhurst Sta., Oakland, Cal. It is represented in Los Angeles by W. L. Cleveland & Co.



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LILLY'S NICOTIANA (Flowering tobacco)—A new hybrid giving a continuous display of gorgeous clusters of purple, white, violet, rose, crimson and pink blooms—plant grows about three feet high.

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Will stand up behind the most powerful **traction engine in any** soil. Made in 4, 5, 6, 8, and 10-furrow sizes.

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PLOW TENDER IS NOT REQUIRED—Does this mean anything to you when men are scarce and wages high?

PLOW DEEP—DO IT NOW—DON'T WAIT; the winter rains may not come until it is too late, then you get only half a crop.

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The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle, SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish* Every bottle sold is warranted to give satisfaction Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars

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Importer and Breeder of

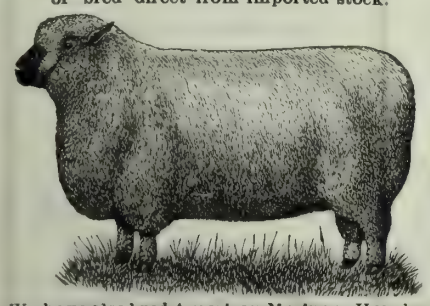
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Color Deep Red. Both Sexes for Sale.

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Importer and Breeder of Shropshire Sheep
They were all imported from England or bred direct from imported stock.



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FRANK A. MECHAM, Importer and Breeder
Shipping Points: PETALUMA and SANTA ROSA, SONOMA CO. CAL.

DAIRY NOTES.

Receipts of butter into the San Francisco markets for September were 1,653,700 lbs., against only 750,100 lbs. a year before. Eggs were 1,127,030 dozen, as against 774,090 in September, 1910. Prices for butter were 5 cents a pound less than the same time in 1910, and about 3 cents for eggs. For the week ending Thursday, September 28, there were received 385,400 lbs. of butter, greater than in any week in 1910 after June 15. In that week prices were a cent higher than at present. Receipts of butter for the last week in September, 1910, were 141,800 lbs., the lowest for the whole year, with the exception of the last week in October, when only 133,100 lbs. were received.

The management of the Oakland Creamery Co. states that the order for sweet cream for the Hawaiian Islands has been increased from 100 to 1500 gallons monthly. The cream is pasteuribzed before shipment.

J. F. Frew, of Tulare, is making butter from his cream instead of shipping it to Los Angeles, as are several other creamery men, owing to requirements in the Los Angeles ordinance concerning cream-handling that cannot be met at prevailing prices.

The Live Oak, Santa Clara county, creamery has been taken over by the Model Creamery Co. of San Jose.

The San Joaquin County Medical Society has endorsed the county dairy law.

New Zealand dealers in dairy produce are spending about $15,000 per year in London for advertising to develop the English markets. One steamer recently brought in 3,345,664 lbs. of this butter.

PLANS FOR BLOWING SOILS.

To the Editor: I have 30 acres in clean summer fallow, part in corn, that I am going to dry sow in rye late this fall. I want some leguminous plant to seed with the rye. This is for a windbreak crop, not to plow under. I expect to plow strips through and plant trees in the spring. The land varies from heavy loam to blow-sand.

I have under consideration the following: Sweet clover, burr clover, vetches. I see occasional stray plants of sweet clover (the white-blossomed) growing in the alfalfa on both hard and sandy soil. I have not noticed any burr clover in this vicinity.

The nurseryman's catalogue says "sow in September and October for above seeds," but as I have to depend upon late rains for germination I want to ask you if December is too late to sow? Also, which is best to sow for the benefit of soil and for pasturing?

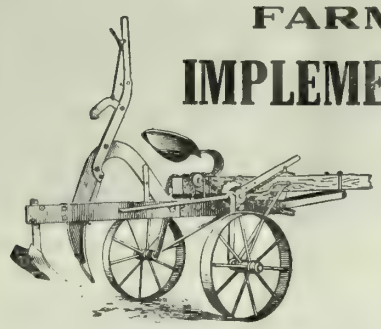
I read in an Eastern bee journal that sweet clover can be sowed on hard uncultivated land with success, and would like to know if I could grow it on the hard vacant spots that occur in the alfalfa fields? ALEX HOUSTON.

Turlock.

[You can sow these leguminous plants all along during the earlier part of the rainy season (September to December) except that they will not make a good start in cold ground which does not seem to bother rye much. But on sand you are not likely to get cold, waterlogged soil, so you can put in there whenever you like—the earlier the better, however, if you have moisture enough in the soil to sustain the growth as well as start it. We should sow rye and common vetch. Sweet clover will grow anywhere, from a river sandbar to an uncovered upland hardpan, but it will not do much if your vacant spots are caused by alkali. —EDITOR.]

WANTED—A mare, weight 1300, sound, gentle, true, and in foal. 37th and West Sts., Oakland.

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OUR JUMBO SUBSOIL PLOW

A very strongly built plow for deep, heavy work. Shin Point and Landside are made of hard steel. No better tool can be found for breaking subsoil hardpan in orchards. If used prior to winter rains will cause soil to retain the moisture. We guarantee this plow to give perfect satisfaction in this kind of work.

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Is made for deep, heavy work. Just what you want for any hard proposition. While designed more especially for field use, it is now becoming a favorite among orchardists where deep cultivation is desired.

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Write or call on us direct if your dealer does not have these tools.

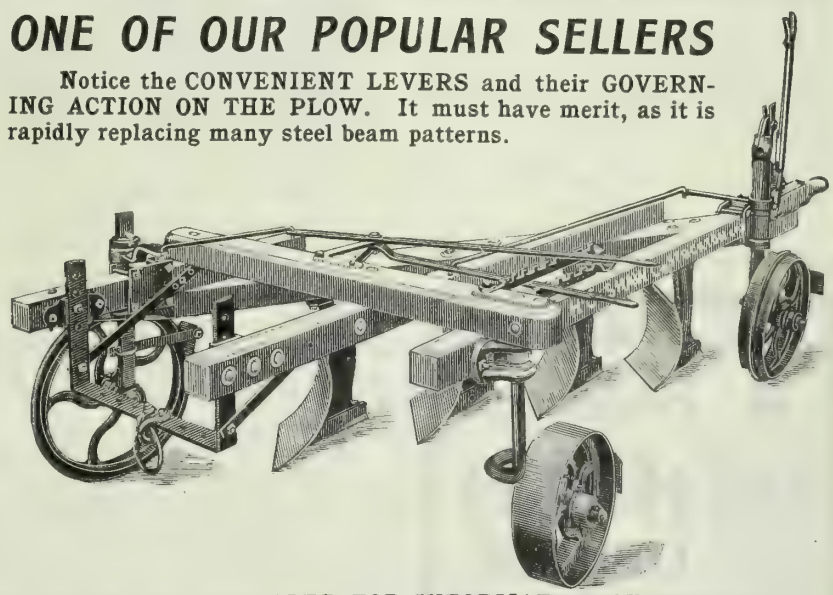
We make special tools to order for handling special work. Tell us your troubles. We invite correspondence.

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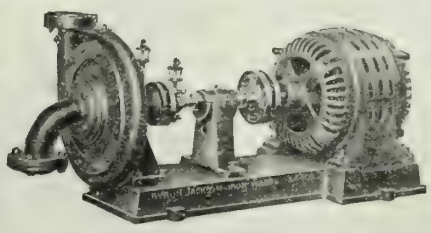
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Notice the CONVENIENT LEVERS and their GOVERNING ACTION ON THE PLOW. It must have merit, as it is rapidly replacing many steel beam patterns.



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Patented Automatic Water Balance Irrigation Pump, direct-connected to electric motor; self-operating.

Byron Jackson Pumps

ars so carefully designed and constructed that they have a higher efficiency than any other pumps of this type.

LOWEST IN PRICE.

Write for descriptive Catalog.

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ALTA VISTA HERD OF IMPORTED GUERNSEYS

OWNED BY
CHAS. G. LATHROP, Stanford University, Cal.
From above herd I offer for sale a few choice bull calves from such sires and grand sires as
IMP. LORD KITCHENER—11369
Winner of the grand champion prize at Sacramento State Fairs 1909-1910, and
IMP. RAYMOND OF THE PREEL—11353
Winner of the first prize 1906, Island of Guernsey.
For further particulars write to above address. Inspection solicited.

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REGISTERED ANGORA BUCKS—Price reasonable. Romer Vista Stock Farm, Ukiah.

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SHOULD BE IN EVERY HOME AS A SAFE-GUARD AGAINST SORE THROAT, SWELLINGS, SPRAINS, RHEUMATISM, NEURALGIA, STIFF JOINTS, LAMENESS, STOMACH CRAMPS, DIARRHOEA, Etc.

50¢ AND $1 SIZES

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For Cattle, Poultry and all Farm Animals

Will double your milk, cream and egg supply.

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318-320 Front St., San Francisco

WANTED: 50 to 75 Good Grade Dairy Cows

SUBJECT TO TEST

Address PACIFIC RURAL PRESS, Box 62.

M. Hickman, of Cloverdale, is getting a number of thoroughbred rams and ewes to grade up his flocks with.

The Prevention of Rabies.

Probably no disease of animals is the subject of more superstitions and traditions that are not founded on fact than rabies, or hydrophobia, as it is usually known. These superstitions may do some harm and certainly cause needless alarm among persons bitten by stray dogs or cats, and should be corrected, if possible.

Rabies is primarily a disease of the dog, though like some other diseases, including anthrax, glanders, and bovine tuberculosis, other animals and man may take the disease if they receive the infection. This disease is communicated from one animal to another solely by bite or scratches. Besides the domestic animals that are affected by it, coyotes and skunks probably do more than anything except dogs in spreading the disease and keeping it from dying out, although human beings are in little danger from them.

Without going into detail in describing the disease, it is sufficient to say that about 40 days after being bitten by an infected animal, a dog begins to show signs of ill health and becomes irritable, nervous, and erratic generally in its actions. The time may be much shorter than this and the symptoms may vary greatly with different animals of any kind; but all symptoms are due to a disordered system and highly wrought condition. The variation in the symptoms may cause a mistake in the diagnosis, and anthrax or other disease may be mistaken for rabies, and vice versa.

Dogs, while the disease is making itself felt in them, and before it comes to a climax, often travel considerable distances as a result of their nervous condition; and on these tours may bite other dogs, or horses, cattle and pigs, and communicate the disease to them. Contrary to general belief, rabid dogs do not go around with the deliberate intention to bite everything in sight, but snap at the nearest person only when disturbed, or when overwrought with pain.

Not every dog with symptoms of rabies is suffering from the disease, and it is well to pen up dogs that have bitten persons under conditions that look like rabies, for ten days or more, and if the animal survives this period the trouble is something else. If it dies, or is killed at once after biting some person or animal, the head may be sent to the laboratory of the State Hygienic Laboratory at Berkeley to be examined. If the disease is found there it is still time, and to spare, to successfully prevent the development of the disease, although the less delay the better. In case the bite is very severe, or near the head, treatment must begin without any more delay than possible. Only in special cases, however, is there danger of rabies in a human being if treatment is commenced in time. After a bite from a rabid dog, or a dog with any disease, the wound should be cauterized at once.

The method of eradicating the disease is simplicity itself. It consists in muzzling all dogs that run loose or could be bitten by other animals, and in keeping a strict quarantine against stray animals from other sections. Every dog that is infected with the disease develops it within forty days or so, and if no other infections are made, the rabies dies out of itself completely. The muzzling should be continued for about six months to be sure that the eradication is complete. By this method rabies has been entirely cleaned out from Great Britain, and by quarantine it has been kept out of Australia.

Other animals may take the disease, and quite a number of deaths have resulted among horses, cows, hogs, goats, etc., in this State during the past few months, but none of these animals bite to speak of, they do not run at large, and all infections resulting from them are known at once. Aside from dogs, then, the only animals that can keep it going for any length of time are cats, and the skunks and coyotes spoken of above. The fact that these can do so makes muzzling for six months or more advisable. The disease is of more importance in the country than in cities, owing to the animals that can be bitten and killed, and the way that dogs run loose where no one sees them; and work in muzzling and keeping them at home, and destroying dogs that have no home or good cause for existing should be taken up.

The muzzling of dogs need not be of any great discomfort to them, as many muzzles can be made or secured that will enable the dog to open his mouth wide enough for eating, drinking, and every other purpose except biting. The cost of the muzzles would be very little in comparison with the value of horses, cows and other animals killed, to say nothing of the human beings that have had to undergo the Pasteur treatment.

The center of the disease is now in the lower San Joaquin valley, in Fresno, Kings, and Tulare counties. A few cases have also developed in Riverside and San Bernardino counties, although the disease has been driven out of the rest of southern California to a great extent. To treat persons bitten by mad dogs in the counties mentioned above, a branch of the State Hygienic Laboratory was established in Fresno this month, Dr. W. W. Cross being in charge.

In four laboratories of the State, where heads of 247 animals suspected of having rabies were examined, 164 gave positive results. At least 68 human beings were bitten by these animals. Of these, only five died, all of which, with one exception, could probably have been saved if treatment had been begun in time, which shows that the danger to human life is not great when proper precautions are taken, although the inconvenience and discomfort of taking treatment is considerable.

LIVE STOCK NOTES.

R. W. Tully, author and playwright, is to raise thoroughbred Arabian horses on a newly purchased ranch at Arcadia.

J. R. Scott, of Ohio, is expected to arrive from the East soon with a large shipment of registered sheep, which he will use as the nucleus of a flock near Sutter City.

The sheep-shearing season in the upper Sacramento valley is being brought to a close. A favorable summer is making the yield of wool large and the quality is good.

Great loss through hog cholera is reported from Kansas this summer and fall. Further loss has been prevented through the use of serum sent out by the University of Kansas.

BYRONDALE JERSEY HERD

For Sale—A solid colored Jersey bull calf, dropped Sept. 1, 1911. Sired by Raleigh's King 84893, out of a richly bred cow. First check for $25 gets him if taken immediately.

T. B. PURVINE, Petaluma, Cal.
R. F. D. No. 4, Box 195.



HERCULES HARNESS SADDLES HORSE COLLARS

They Last Longer

The only sure way to get a HOME Industry Harness is to look for the Hercules stamp Made by W. DAVIS & SONS, San Francisco, Cal. Your Dealer has our Catalogue

MONEY BACK AFTER USING SHARPLES Tubular Cream Separator Six Months

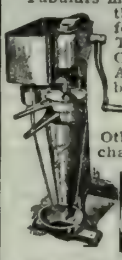
This farmer got his money back after using his Tubular only six months. He was throwing away the cost of a Tubular every six months, but now he puts the purchase price into his pocket every six months:

Delaware, O., Sept. 4, 1911.

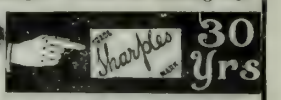
The month before we got our Tubular we made 66 pounds of butter. The first month we used the Tubular we made 150 pounds from same cows. Our Tubular paid for itself in six months. O. B. FURNISS.

Mr. Furniss increased his butter 84 pounds per month by using the Tubular. At even 25 cents a pound he gained $21.00 per month. Figure his yearly profits for yourself. Mr. Furniss gained more than the average; but all Tubular users make money—most of them make at least 100 per cent a year on the cost of the Tubular.

Tubulars make more than others because they have twice the skimming force and skim twice as clean. Tubulars wear a lifetime. Guaranteed forever by America's oldest and world's biggest separator concern.



Dairy Tubulars contain no disks. Ask for free trial. Other separators taken in exchange. Write for catalog 131.



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WEST CHESTER, PA.
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HUB (BRAND) Axle Grease

COSTS LESS
USE LESS

The rub is in the hub.
But HUB saves the rub.

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Los Angeles, Cal.



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Catalog 11

American Steel Post Company

Violet and Santa Fe Ave.
Los Angeles, Cal.

Pacific Coast Silage Practice.

Some interesting points drawn from silage practice in central Oregon may have particular bearing in California northern counties. Mr. Chas. H. Hayes gives them to the Rural New Yorker, saying:

"Here in the Willamette Valley silage corn never gets ripe enough to be at its best, so that we usually leave it until the first frost, the latter part of September or the first of October.

CUTTING CORN.—"We aim to have everything ready when the first frost comes, so that we can put men to cutting down the corn the next day. We use hand corn knives, and each man cuts two rows at a time, which are thrown together in piles, with the tops all one way, and as he comes back on the next two rows he finishes out the piles, making a row of piles for every four rows of corn. If a right and left-handed man are cutting together it will come right for them to cut the four rows and pile the corn between them. It is also quicker and handier, because if a man cuts two rows up and two back the piles are the wrong way when he cuts back on the other side of them, and causes him to turn all the corn over to place on the piles, and if he leaves them until he gets back to the other end it makes the work wrong-handed for him. The next row of piles is placed with the tops the other way, so that when the hauler drives between the two rows of piles, the butts come the same way on each side of the wagon. A little practical experience will show the time and energy saved in noting these things.

"We usually have three teams and one extra man in the field to help load. Good wide hay-racks on low-down wagons will take two tiers, with the tops together in the center. One six-horse steam engine furnishes the power for cutting. The engineer and feeder usually change jobs about every hour, as it makes lighter work all around. The only thing the feeder has to do is to feed regularly. Do not let a large bunch of ears go in at once, and if possible, keep something going in all the time. If you should let the cutter run empty it is a waste of time to try to make up lost time by filling her full all at once. It will slow down, no matter how much power you have or how well your governor works; and perhaps 'plug' your blower pipe. Keep lapping a few stalks at a time, so that the machine gets a steady stream, and you will do the work easier and more of it. Then it is a good idea to keep your hands out of the rollers. One man we had feeding started to feel of the main boxing to see if it was getting warm, but one of the knives trimmed his finger-nails half their thickness, and he made a safe man to feed after that.

"Heretofore the engineer has kept the boards in the silo, spread and tramped the silage. The blower pipe is placed so that the cut corn falls in the center of the silo, and the only place we tramp is around the outside, and our silage keeps in good shape. This year we are thinking of putting a man in the silo and have him scatter the silage by means of a sack spout; sacks with the bottoms cut open and sewn together, with one end fastened to the end of the blower pipe and the other end carried about the silo as the man tramps. Our silos are 2 by 4-pieces stood on end and pinned together. These are held in place by wire bands and ratches. The doors are simply two thicknesses of foot boards with the joints broken. These are taken out, one at a time, as the silage is fed.

WETTING THE CUT CORN.—"Some people complain of putting in corn when it rains, and it is a nasty job, but with us it makes better silage. We haven't got the water around the buildings we hope to have; at present we haul water in barrels from the creek to the engine, but if we did have, I am sure we would run some in the cutter all the time. After the silo is filled we put on a foot or so of cut straw, and wet down. Some people then sow oats on the straw, but we never succeeded in getting much of it to sprout, perhaps because the water, being hard to get, we never used enough of it. Sprouted or no sprouted oats, the good silage usually appeared after the last forkful of straw was thrown off, and the cows go out in the yard and eat the straw. I like to see the corn juice run out of the cracks when filling, and until it swells air-tight.

KALE AND SILAGE.—"Thousand-headed kale here beats silage for milk, but it is nice to have silage to fall back on in bad weather or with three or four inches of snow, so we feed kale once a day and silage once, when the weather lets us get the kale. Of course, in the winter if one has enough room, he can haul in enough kale at a time to feed a week, as it will keep in good shape that long. This isn't the way most of those who write tell us to fill the silo, and neither is the way we grow our corn the way they tell us to do it, but this is the way we do it, and the way we grow our corn is the most profitable we have found, if we do not plow our corn ground until the first of June."

WHAT KIND OF BEET FOR STOCK?

To the Editor: Which would be most valuable to plant on river bottom land for cattle and hog feed, sugar beets or mangels? The land has been used to raise corn, and I wish to grow something that will give the soil a rest. What is the approximate yield of each kind of beet? C. G. K.

Stanislaus County.

Grow a large stock beet by all means—either a mangel or a tankard, both of which you will find in the catalogues of the seedsmen who are advertising in our columns. Usually you will get more weight than with sugar beets; the cost of harvesting is far less, and the nutritive contents high enough. The yield depends upon the land and the culture—perhaps ten tons to the acre would be a low conservative estimate of the average product.

WHO HAS A JERSEY COW FOR MR. LONDON?

To the Editor: A wail of woe! Where under the sun can I buy a thoroughbred Jersey cow? I have answered the advertisements in your columns, and all the offerings I get in reply to my letters are bulls, bulls, bulls. I haven't learned the art of milking a bull. What I want is a thoroughbred Jersey cow. Can you give me any clew for the obtaining of same.

JACK LONDON.

Glen Ellen, Sonoma county.

[Surely some generous reader will let go a cow at Mr. London.]

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FOR PRICES SEE OR WRITE
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The only Bull three times Grand Champion at the Fair.

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300 Blacow Robert Glide French Merino Rams
Single or carload lots. For further particulars write
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IMPORTER and BREEDER of SHIRES
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If you are interested please send in your name and you will be notified when they arrive.
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At the recent California State Fair our Percherons and French Coach Stallions won 14 Gold Medals and both Championships.
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POULTRY DEPARTMENT.

Conducted By M. RUSSELL JAMES.

SAN JOSE POULTRY AND DOG SHOW.

San Jose always leads off with the first regular poultry show of the season, and by thus taking the season by the forelock, as it were, the San Jose show always basks in the kind of weather which might have been made to order for the occasion. Last week during the show there were golden sunlight and silver moonlight and skies so blue and smiling that one (who didn't know better) would never believe they could be overcast by clouds and fogs.

There is no doubt about it being a fine thing for the attendance to take the weather thus by the forelock, but it is rather rushing things for the biddies who were forced to appear before the public a bit short on fringes and trimmings for their fall suits. However, they did the best with what they had, and altogether made so fine an appearance that they won many gay-colored ribbons to help out with the trimmings. Also, they were helped out by the comfortable, roomy apartments which they occupied. In fact, the Santa Clara Poultry Association, along with the poultry, is in luck to have so fine a building for the purpose as the Auditorium.

The show management is to be congratulated upon the excellent arrangement and care of the exhibits. Eight-foot aisles extended between the rows of coops and were kept as free from trash and dust as if a model housekeeper had them in charge, while the coopings presented a fair appearance from the fresh cheese cloth with which they were curtained and valanced. The attendents were untiring in their care of the fowls, and fresh water and cabbage were always in evidence in the coops. The building itself was quite a show, being completely canopied with bright-colored lanterns, electric bulbs, bunting and flags galore. At night when this mass of color was aglow with light, and the band played, and the dogs howled, and the roosters crowed, and the young folks promenaded the aisles and talked love, and the old folks bunched about the prize stock and talked chicken or dog, there was something doing in that section of San Jose.

As one lady remarked, this was a show with the bark on. And it sure was. The lodgers in a nearby hotel swore that at night when the dogs did their best stunts the bark shut out all sleep—in fact, that it was "something fierce." However, there is no denying that the dogs represented the "tony" part of the show. They rode to and from it in automobiles, and they were brushed and caressed by hands that had never toiled nor yet had they ever spun, but all the same the dogs—every one of them, from the St. Bernards with a roar that startled a person out of his boots, to the toy dogs with a wail that penetrated the auditory nerve like a needle—howled their discontent and yelped their woes; neither did they rest night or day. This goes to prove the adage that luxury does not always make for happiness.

In the poultry show there were some 900 birds, making a fine lot of chickens, as there were only a few turkeys and waterfowls, and almost no pigeons. Most of the popular classes of chickens were well represented, but the classes where the competition was close and warm were in the Orpington and White Plymouth Rock alleys. Buff Orpingtons in particular was a hotly contested class. The Sullivans, Ingram, Macy—breeders of this variety who are gaining international fame—had large entries. There were smaller entries from other noted breeders of this variety, Mrs. Swaysgood among them, winning 2nd on pen. The Sullivans won 1st and 3rd on hens, and 3rd on pen, with two special prizes in this class. Ingram, of the California Orpington Yards, won 2nd and 3rd on cocks; 1st, 2nd and 3rd on cockerels; 2nd on hen; 2nd and 3rd on pullets, and 1st on pen. We think Macy got away with about all the others, though we have not his exact winnings.

In White Orpingtons, Ingram won 1st and 2nd on cock; 1st and 2nd on cockerels; 1st, 2nd and 3rd on hens; 1st, 2nd and 3rd on pullets, with 3 cups and 9 specials in the two classes. J. W. Atkinson won 2nd on breeding pen and 3rd on cockerel. We will say here that, hot as the competition was in these two classes at San Jose, it will be as luke-warm in comparison with that of the shows beginning with next month, when such breeders as Bissell, Mrs. Jacque, and a number of others who make a specialty of the breed get their birds in line. For a fact, the California Orpingtons, through importations and breeding, are reaching a standard where it will be a feat indeed to secure any sort of prize in their classes, and also where breeding stock and hatching eggs will be going East instead of coming from there.

The White Plymouth Rock class was represented by a large number of uniformly fine birds, but all White Rock breeders know what they are up against when Mrs. D. A. Robertson enters her birds in the running. At this contest she won 1st on cock; 1st, 2nd and 3rd on cockerels; 1st and 3rd on hens; 1st and 2nd pullets; 1st and 2nd pen, with specials for best display in White Rocks and best display in any class. This noted fancier also captured all the blue ribbons in the Polish class with her beautiful White Crested Back Polish fowls.

There was a fine display of Barred Rocks, made up mostly of the famous Moore & Mann birds. The entire stock of Moore & Mann Barred Rocks, together with the good will of the firm, has passed over to Mr. Parks, a young man who is primed with enthusiasm to keep up the fine winning and utility qualities of this noted strain and even to add something thereto.

There was a surprisingly large display of Anconas, and in this class J. W. Atkinson of Santa Clara captured the cream of the prizes. Mr. Atkinson is a Presbyterian minister who is in poultry raising for his health as well as what profit he can glean therefrom.

The Black Minorcas was a large class. W. A. Gerdes, of Pacific Grove, had a fine display in both Black and Buff Minorcas, winning in the Blacks 1st and 2nd on cocks; 1st, 2nd and 3rd on cockerels; 1st and 2nd on hens; 1st, 2nd and 3rd pullets; 2nd pen. On Buffs, cockerels 2nd and 3d; pen 2nd. Miss Vaughan of Fruitvale, who has taken up poultry as a business, had a few fine birds in the Blacks and won 3rd cock and 3rd hen.

The Leghorn class was fairly good; the Rhode Island Reds were big and luscious as usual; the Bantam class was large and fine; the "gooses" were big and noisy; the ducks were excellent as far as they went; and the turkey class was saved by the fine Bronze specimens from Ed Hart Bronze turkey ranch at Clements. Mr. Hart won 2nd and 3rd on turkey cock; 1st and 2nd on cockerel; 1st and 3rd on hens; 1st and 2nd on pullets.

As these running comments on the San Jose show are written, the official prize list has not yet been given out, and the prizes mentioned are just a few noted by the way, with many equally important to be heard from.

Notes By the Way.

Prospects Greater than Ever for High-Class Stock.—Mrs. Sullivan, one of the brightest little women at the shows and the keen business manager of the Garden Valley Poultry Yards, otherwise known as the Sullivan Buffs, has this to say of the business outlook for the coming season:

"The poultry business has increased so greatly that it makes it necessary for us to hatch every month in the year to keep up with the demand for stock and hatching eggs, orders for which come right on all through the year. The prospects are greater than ever for high-class stock."

FAMOUS BREEDER OF WHITE PLYMOUTH ROCKS—Eggs, Utility and Show Stock for sale; 75 choice cockerels now ready; also White Crested Black Polish. MRS. D. A. ROBERTSON, R. 3, Box 16, 511 Willow St., San Jose.

WHITE, BUFF and BLACK ORPINGTONS.

Eggs for hatching, single birds, trios and breeding pens now ready. We won nine first prizes at New York. Sole agents in the United States for **W. M. BELL**, of **ENGLAND**, breeder of highest class White, Buff and Black Orpingtons.

CALIFORNIA ORPINGTON YARDS,
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RHODE ISLAND REDS

The most popular and useful fowl of today. Orders booked in advance for HATCHING EGGS and STOCK. MAGNIFICENT COCKERELS nearly always on hand. My utility yards are noted for their vigorous stock. My prize pens consist of celebrated winners at Wisconsin, Utah, Stockton, Petaluma, Santa Cruz, Oakland, etc. Circular forwarded on application.

CHAS. S. WAKEFIELD,
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"The Home of the Rhode Island Reds."

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WHY DON'T YOU ASK YUOR DEALER for CROLEY'S HIGH GRADED HARD SHELL—from the deep sea—perfectly graded—best shell produced—no waste. GEO. H. CROLEY COMPANY, INC., 631-637 Brannan St., San Francisco, Cal.

DAY-OLD CHICKS—Barred Rocks and White Leghorn chicks, good laying strains; order early for fall delivery and avoid delay. Fairmount Hatchery, Box 29 B, R. F. D., Santa Cruz, California.

WHITE PLYMOUTH ROCKS—Eggs, $3 per setting; cockerels, $5 and up; trios, $10 and up; my Oakland 1910 4th prize cock, $25; 2nd prize cock, $50. Wallace Rutherford, Napa, Cal.

S. C. B. MINORCA EGGS for hatching at $6 per 100; can fill large orders; 12 yards large beautiful hens, excellent layers. Black Beauty Poultry Yards, Dixon, Cal.

OAKLAND POULTRY YARDS, 149D, California St., San Francisco.—Est. 40 years. Standard bred poultry. White Orpingtons, R. I. Reds, Brd. Rocks, White Leghorns

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CHICKENS, DUCKS, GEESE, GUINEAS, Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

WHITE LEGHORNS—Chicks, eggs, cockerels. Fine stock. Reasonable. O. B. Morris, Lodi, Cal.

BUFF ORPINGTONS—Mr. and Mrs. W. S. Sullivan, 25 Market St., Agnew, Santa Clara County, Cal.

BRONZE Turkeys and Eggs. Ed Hart. Clements, Cal. Large size, good plumage, early maturity.

TWIN OAKS FARM—W. H. Bissell, Proprietor, Livermore, Cal.—Buff, White Orpington.

HATCHING EGGS—White Leghorns. Circular 164. A. H. Gregory, Fruitvale. Cal.

PIGEONS! SQUABS PAY! LARGEST squab plant in Sonoma county offers young unmated Carneaux $8. to $12 a dozen. Good crosses, $6. Mated working color banded crosses, $2 pair. Maltese hens, $3; Carneaux, $3 and $3.50. Bolton Squab Factory, Healdsburg, Cal.



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We can supply them in any number right now in the following breeds: Rhode Island Reds, Black Minorcas, Barred and White Rocks, White Leghorns, White Minorcas, White Wyandottes. The finest chicks we ever had are being produced right now. We get the choice of eggs from the finest flocks in Southern California. Send today for free 64-page book. We can supply PULLETS, Hens, Cocks and Cockerels of 19 kinds. We ship everywhere. Write us today. We are the WORLD'S LARGEST CHICK DEALERS.

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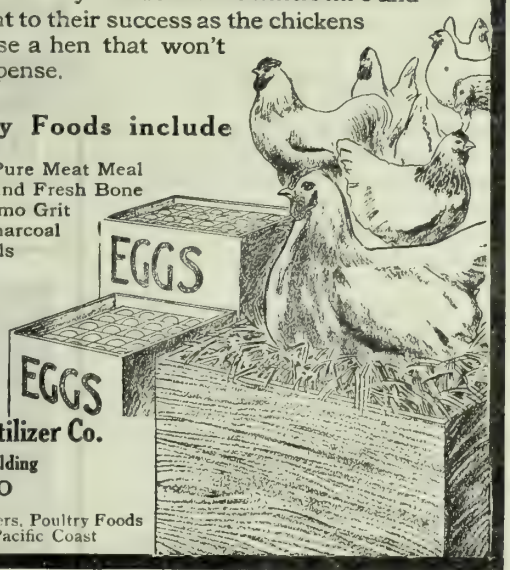
There are certain Food Elements that are absolutely necessary to keep your hens healthy and productive. If a hen does not have the proper food and nourishment she cannot be expected to produce eggs

Successful Poultrymen use and recommend our Superior Foods

They find that the Poultry Foods **we manufacture** and sell are as important to their success as the chickens themselves, because a hen that won't lay is a useless expense.

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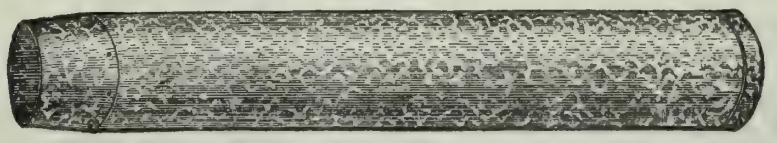
The only grader and scraper combined that moves earth and levels the ground perfectly and with ease.

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This cut illustrates our special pipe made for surface irrigation. We have a circular which gives the construction of same with prices and fully explains its use, which we will cheerfully mail you if something modern and economical appeals to you.

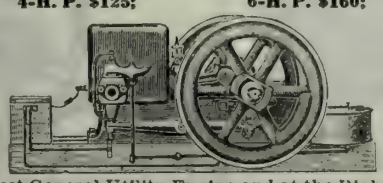
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WITTE DISTILLATE ENGINES

2-H. P. $75; 4-H. P. $125; 6-H. P. $160; 8-H. P. $225.

Guaranteed for 5 years to deliver the actual horse power as stamped on the name plate.



An up-to-date engine; snappy, vigorous and powerful. Simple, reliable and durable.

The Best General Utility Engine and at the Right Price
Write for particulars, stating size wanted

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The Home Circle.

Say "Hullo!"

W'en you see a man in woe,
Walk right up and say "Hullo!"
Say "Hullo!" an' "How d'ye do?"
"How's the world a-usin' you?"
Slap the fellow on his back,
Bring your han' down with a whack;
Waltz right up, an' don't go slow—
Grin an' shake an' say "Hullo!"

Is he clothed in rags? O sho!
Walk right up an' say "Hullo!"
Rags is but a cotton roll
Jest for wrappin' up a soul;
An' a soul is worth a true
Hale an' hearty "How d'ye do?"
Don't wait for the crowd to go—
Walk right up an' say "Hullo!"

—Sam Walter Foss.

Linwood's Responsibility.

Linwood left the office far behind and swung up the avenue at a rapid pace, taking in deep, refreshing breaths of the sweet air.

Inside the park he pursued his daily constutional along quiet paths, now and then crossing the driveway alive with flashing vehicles of every description.

He sat down to rest in a green alley quite deserted save for a very fat policeman and an equally fat Teutonic nurse maid, who was weeping bitterly over the leather canopy of a baby care. The officer's gutteral accents were abrupt and authoritative. Linwood idly wondered if they were enjoying a lover's quarrel.

"Here, you, take dis and—Gott, she is gone!"

With incredible swiftness he lumbered after the fleeing nursemaid, and their disappearance in the green perspective left Linwood staring open-mouthed at the responsibility thrust upon him.

A low wail smote the air and he shuddered at the possibilities that lay behind that introductory murmur. He thrust his foot in the spokes of the wheel and slyly rolled the vehicle to and fro. The cries ceased.

He felt no desire to peer beneath the brown leather and view his unwelcome charge; in fact his only desire was to get away. He looked anxiously for the return of the fat policeman, but the noon hour drowsed on.

He assured himself that his charge was only temporary—the officer and the nurse would soon return—but his heart sickened within him, because he had a premonition they would not come back.

It was funny—he swallowed hard and tried to look at the humor in the situation—it was funny that he, of all men, should have been the victim of that old, old game! Thirty-odd years a bachelor, eighteen months a benedict and six weeks a proud and happy parent.

He frowned and looked at his watch. It was past the luncheon hour. Madge and the son and heir would have left their usual post in the front window and given him up.

"I'll wheel the carriage under this tree," he said, suiting the action to the word, "where it will be perfectly safe when the officer returns—"

"No yer don't, my fine feller!" A blue-sleeved, brass-buttoned arm led him swiftly back to the deserted baby carriage. "You jest take your young 'un home—or I'll run yer in!"

Linwood stared haughtily at the tall, thin policeman who had intercepted his departure.

"It's not my child," he explained.

"What yer doin' with it, then—eh?"

The unhappy keeper of the carriage stated his case at considerable length.

"You're a slick 'un," commented the officer with an admonitory tap on the shoulder; "now jest walk along and take the baby with yer—or I'll run yer both in!"

A vision of the publicity attending this latter ceremony decided the matter in Linwood's mind.

"Since that is the only alternative, I will take charge of the child," he said stiffly; "but I insist that it is not mine—I never saw it before——"

Two ladies with aristocratic canines in leash walked briskly past. They recognized Linwood.

"How is the son and heir?" queried Mrs. Flint gayly, over her shoulder.

"Fine, thank you!" replied Linwood, with a hollow laugh. He did not look at the officer.

When the ladies had disappeared that worthy poked his stick familiarly in the region of Linwood's waistcoat.

"That's enough from you, my man—take that baby—and git," he said tersely.

Linwood obeyed with as much dignity as he might assume. As he walked slowly along the path, wheeling the carriage, he tried to think of some way out of his predicament.

The police station was out of the question; there would be incredulous grins, the scratch of reporters' fountain pens, the evening editions with his picture and the picture of the strange infant, ridiculed, and—

He swore softly. He could not take the child home; while the carriage and its appointments bespoke wealth and refinement, one never knew what contagious diseases—and the son and heir was young—that was out of the question, too.

Then he remembered, with almost a sob of relief the Foundling's Nest. That was one of his wife's pet charities, and he had signed a check the day before to endow another crib; the strange baby would fill the new crib.

With new hope he trotted briskly through the park, now and then evading an acquaintance, and anon pausing to jounce the disturbed infant into somnolence.

He traversed miles in the hot sun before he paused perspiring and weary in the courtyard of the Foundling's Nest, a monotonous wail floating from under the canopy.

"That is all, Mr. Linwood," said the matron blandly, when she had closed the registry book after his lengthy explanation; "I dare say there will be some inquiry made for the child; in the meantime we will take care of it."

It was quite four o'clock when he reached home. His wife met him at the door of the library. Pale and disheveled, her eyes red with weeping, she confronted him.

"What have you done with that baby?" she demanded fiercely. "Why didn't you bring him home?"

Linwood sank weakly into a chair. "My dear girl, I don't know how you heard of the affair, anyway—it was all a mistake——"

"Where is that baby? Why didn't you bring him home?" she repeatedly wildly.

"I didn't think it was prudent," he said, with cold dignity. "I——"

"Where is he?" she asked with sudden calmness.

"I took him to the Foundling's Nest—I don't know to this minute who the young one was, but if you will listen——"

"Don't know who it was! Are you crazy, Jack. It was little Douglas—our little Douglas! The police station telephoned they had arrested Hilda—the new nurse—for some old offense—and she recognized you in the park and the baby was turned over to you—and I have been wild with anxiety—Ella Flint said she saw you with the carriage——" She sobbed the remainder into Linwood's wilted bosom.

An hour later when they drove away from the Foundling's Nest, Linwood stroked the velvet cheek of his sleeping son with a tentative forefinger.

"I hope that last check I gave the matron will obliterate this little escapade from her memory," he said uneasily.

"It ought to," sighed Madge happily; "if you had only looked at the baby, Jack, of course you would have recognized him at once, and it would not have happened."

Linwood thought of the peep he had desperately taken when the uproar under the brown canopy had seemed most appalling and condemning—a peep which had merely disclosed a whirlwind of pink fists and convulsed pink face amid a nest of lace and lawn—and maintained a discreet silence.—Clarissa Mackie.

Kitchen Notes.

Sometimes the paper on the bottom of a cake is difficult to remove, but if the cake is warmed slightly it will peel off without trouble.

In polishing copper, sprinkle a little powdered borax on the cloth. It works like magic.

When you have dried currants to clean pick out all the little stones and stems, fill a flour sifter half full of fruit and set in a basin of water. Turn the handle as if sifting flour, and change the water often till it remains clear. Drain in the sifter. Then spread the fruit on a towel to dry.

It is said that if one-fourth of a teaspoon of ground ginger be added to each batch of doughnuts, the spice will never be detected, and the doughnuts will not soak fat.

An excellent plan for doing next summer's preserving without feeling the extra expense of sugar is this: When you begin to open your fruit in the fall, wash and dry each jar thoroughly after emptying, and before putting away, fill with sugar and screw the top down. Sugar is always cheaper in winter anyway, and as the jars are filled one at a time, the expense is not noticed.

New Minister—"Now just one thing more, before I accept this charge. Have you got a 'supply'?"

Deacon—"Well, yes, though we never said anything to the last preacher about it. I'll show you where it is, and get you a key, but I tell you you'll have to be just as careful about using it as the rest of us!"



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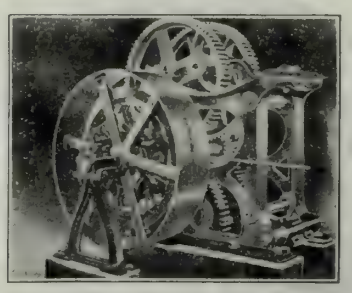
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When Summer Ends.

When summer ends—when the year grows old—
And the maples are crowned with wreaths of gold;
When purple asters swing and nod
'Neath the shining plumes of the golden-rod;
When the winds are still and the breezes sleep,
While the halcyon broods on the waveless deep,
Then the far-off skies seem wondrous near,
And the longed-for "sometime" almost here.

'Tis a time to dream of joys long fled,
To live again the days that are dead,
When Love was young and Life was new,
When our ships came home, our dreams came true.
Thro' the dim blue haze we can almost see
The endless reaches of years to be;
The past with present and future blends,
When the year grows old—when summer ends.

—John Miller Purvis.

Poultry Course for Young Folks.

DESCRIPTION OF BREEDS.

CLASS IX.—ORIENTAL GAMES AND BANTAMS.

There are four breeds and five varieties in this class: Indian Games, Cornish and White; Sumatras; Malays, Malay Bantams.

The Indian Games are very different from the Games of Class VIII. Instead of the long, snakelike neck and high-stationed body of the latter, they have a thick rather short neck, broad head with short strong beak, broad massive shoulders and body; large thighs set wide apart, thick short legs, and large flat feet. The standard weight is 9 pounds for cock and 6½ pounds for hen. About twenty-five years ago this breed had one of the largest-sized booms of any breed since the Cochins of the early '40s. They were boomed as the most profitable fowl on two legs and the best table fowl on earth. Fanciers are said to have gone "Indian mad," and astonishing prices were paid for specimens of the breed. Practical tests proved them not the equal of the Rocks as table fowls and entirely unsatisfactory as layers. Since then they have been greatly improved as a market fowl and now have many points of excellence to recommend them.

There are two varieties of this breed which differ only in color of plumage. The Cornish Indian male has a brilliant plumage of green-black and dark red with lacings of bay; the hen's plumage is a mixture of bay and black. The plumage in both cock and hen is short and hard with a metallic lustre. The White Indians are pure white throughout.

Taking Care of Other People's Property.

That nice sense of honor which makes one take care of other people's property "as if it were your own, and better" is strinkingly illustrated in this little incident given by Elbert Hubbard, who knows how to get at the soul of things practical:

The other day I was waiting for a train at a junction point in Ohio. No town there; just a crossing. The station was an abandoned boxcar. A barefoot, freckled, hatless boy entered the old car, carrying a box in his hands. He was the most frecklesome kid I ever saw in my life. He was so homely that he was attractive. From inside the boxcar came the click of a telegraph key. Then I heard the operater say to the freckle-faced kid:

"Say, Jimmy, when you take a box for a spittoon and fill it with sawdust, you invite a fire. Now, just chase that box out o' here and fill it with sand—see? And say, Jimmy, there's that broom in the corner resting on the brush again. Stand a broom on the handle end—it will last longer. Lookee, Jimmy, you must learn to take care of company property as if it were your own, and better—see! That's the way to get along."

The voice was kindly but firm. I stepped inside to see the man who was so loyal and so sensible. He was crouched over his key, sending a message, his hat on the back of his head. All at once I noticed he was sending with his left hand. I couldn't remember ever before seeing a southpaw telegraph operator. I stepped closer. The man's right hand was off at the elbow, and he held a pad in place on the table with the stump. I wanted to shake his one good honest hand, but I hesitated about interrupting him. Just then my train pulled in and I hurried out to get my grips.

I looked back through the open door, and there was the operator still busy at his key, and the freckled kid was picking up the spittoon to carry it out. I set down my grips, reached into my jeans, took out a half dollar and tossed it to the kid. It lit in the sawdust spittoon.

The lad stopped and stared at me with bulging eyes and open mouth. I ran down the track and climbed into the day coach.

As my train pulled over the crossing I looked out of the window, and in the doorway of the boxcar station stood the operator and the boy. They looked straight at me earnestly, sort of dazed, perplexed. They thought I was Daffy Dill, for sure.

That was the last I saw of them. Probably I shall never see them again, but my heart went out to them in blessing, there in the Grand Central boxcar, with the sand-box spittoon and the broom in the corner, standing on the handle, not the brush. God bless them both!

And the sound of that earnest, kindly voice, instructing the freckled kid, kept singing through my thoughts—"Lookee, Jimmy, you must learn to take care of company property as if it were your own, and better—see!"

Apple Epigrams.

With the apple harvest on, and apple festivals in full swing through the length and breadth of the land, the following apple epigrams are in order:

The twentieth century is to be the age of the apple.

Apples carry the pure-food stamp of the Great Physician.

The apple barrel is Nature's medicine chest.

Apples are an antidote for drink and tobacco.

The climate and conditions which are best for apples are best for man.

The man in the orchard is always a good citizen.

I would rather trust a judge who loves apples than one who hankers after bear meat.

Anarchy never gathered fruit from its own apple tree.

The road that leads to the orchard is the pathway to a simple, happy, prosperous life.

Apples are better nurseries of citizenship than the decks of battleships or military camps.

The apple is the aristocrat of foods and the best of medicines.

A Novel Flower Trellis.

Procure a discarded umbrella and remove the cloth, leaving only the frame; join the ends of the ribs by running a fine wire through the top of each rib and giving it one turn around to hold them at equal distances apart. The handle then inserted firmly in the ground and some climbing vine planted beneath this frame. The plant will climb all over the steel frame and make a very novel and attractive lawn piece.—Popular Mechanics.

Next week we will give a report of the points which we think will interest our young folks in the dog and pet stock section of the San Jose show.



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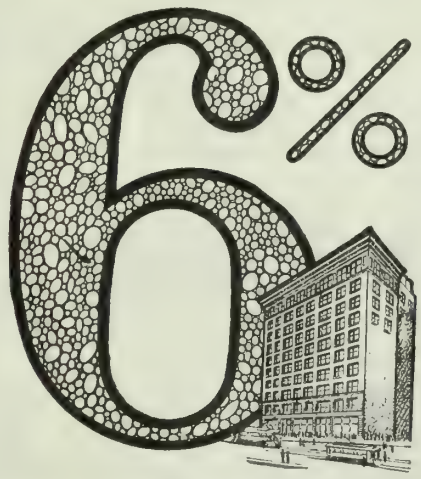
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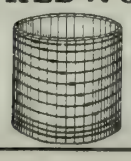
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THE MARKETS.

San Francisco, Oct. 11, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Trading in this market is largely of a routine nature, with few large transactions, though there is still some buying in the north for shipment in this direction. The movement in the North, however, is limited by lack of export tonnage, and there is considerable accumulation at shipping centers.

California Club	$1.50	@1.55
Sonora	Nominal	
White Australian	1.65	@1.70
Northern Club	1.50	@1.55
Northern Bluestem	1.70	@1.75
Northern Red	1.65	@1.70

BARLEY.

An easier feeling is noted in futures, but the cash grain remains strong. The better grades of feed are extremely scarce and some sales have been reported above quotations, though the general range of prices remains about as before.

Brewing and Shipping	$1.67½	@1.72½
Choice Feed, per ctl	1.65	@1.70
Common Feed	1.55	@1.60

OATS.

No further change is noted in prices, but the situation is very strong. There is a good demand for all varieties, especially for seed, and offerings are light. Many California buyers are operating in the North.

Red Feed		$1.75
Gray	1.65	@1.70
White	1.70	@1.75
Black	1.75	@1.90
Red Seed	1.90	@2.00

CORN.

There is very little movement in this market, though California grain is in fair demand in the country. Little Eastern grain is offered on the spot, and there is no particular demand.

Cal. Small Yellow	$1.80	@1.85
Eastern Yellow		1.70
Eastern White		1.70

RYE.

This grain remains dull and largely nominal at the former quotation, cheaper offerings receiving little attention.

Rye, per ctl	$1.55	@1.65

BEANS.

Prices seem to be settling down to a fairly definite basis, though changes are still rather frequent. Local dealers report a very fair demand for most varieties for shipment at present values, and new crop stock of most lines is now coming forward in good shape. Considerable damage to colored descriptions from wind and rain is reported in the valley district, but dealers state that the damage is less than first supposed, and will not affect the market in any way. Bayos have again been marked down, and are still inclined to easiness, while cranberry and horse beans are a little higher. Large whites have also been marked up a little, and both large and small whites are firm, with a fairly active demand. Colored beans in general are easy. Limas are quoted about as before, but lower prices are expected in the near future, as supplies available for immediate delivery are increasing, and the trade is buying only for current needs.

Bayos, per ctl	3.65	@3.75
Blackeyes	3.50	@3.75
Cranberry Beans	3.60	@3.75
Garvanzos	3.00	@3.50
Horse Beans	2.75	@3.50
Small Whites	3.75	@3.85
Large Whites	3.70	@3.75
Limas	5.10	@5.20
Pea		4.25
Pink	3.50	@3.75
Red Kidneys	5.75	@5.85

SEEDS.

Prices remain as before. Alfalfa is now moving freely, and there is an increasing demand for other lines.

Alfalfa	18	@18½c
Broomcorn Seed, per ton		$28.00
Brown Mustard, per lb		5½c
Canary		4½c
Hemp		4½c
Millet	3	@3½c
Timothy	Nominal	
Yellow Mustard		5¾c

FLOUR.

The local market remains active, as for some time past, and all California mills are very busy. A heavy export movement continues in the North, but advance orders are falling off.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.80	@5.00

Hay and Feedstuffs.

HAY.

Arrivals are somewhat less than for last week, and still consist mostly of alfalfa from the river districts. Grain hay is coming in slowly, as the crop is well cleaned up from the fields, and additional supplies must come from the warehouses. The current demand around the bay is rather slow, as most large consumers have taken on quite liberal supplies during the last few weeks. A revival of demand is expected before long, however, and will probably be accompanied by a further advance in values. Meanwhile the market is quiet and without much feature. The better offerings of alfalfa are moving off well, though considerable low-grade stock is slow of sale. Straw continues firm as last quoted.

Choice Wheat	$18.00@20.00
Good Wheat Hay	13.00@17.50
Other Grade Wheat	10.00@12.50
Wheat and Oats	10.00@17.00
Tame Oats	10.00@16.50
Wild Oats	8.00@13.00
Alfalfa	8.00@11.50
Stock Hay	6.00@ 7.50
Straw, per bale	35@ 70c

FEEDSTUFFS.

Owing to the scarcity of the raw grain, rolled barley and oats have taken another jump, and bran also is higher. Alfalfa meal has been slightly advanced in sympathy with the general firmness, and all descriptions of feed are in good demand.

Aalfalfa Meal, per ton	$17.00@19.00
Bran, per ton	28.50@29.50
Oil-cake Meal	43.00@45.00
Cocoanut Cake or Meal	25.50@26.50
Cracked Corn	38.00@39.00
Middlings	34.00@36.00
Rolled Barley	35.00@36.00
Rolled Oats	35.00@36.00
Shorts	32.00@33.00

Garden Truck.

VEGETABLES.

Supplies of onions have been ample for all demands, but recent arrivals have been rather light, and values are steadily held. Numerous changes are noted in garden truck, as some lines are coming in more freely, while the surplus in other varieties is being cleaned up. Green peas, string beans, and green limas are all quoted at the same range, the latter being higher than last week. Tomatoes are also a little higher, as recent arrivals have not been so excessive as for some time previous, though the market is abundantly supplied. Green corn is again in oversupply, bringing prices down to a comparatively low level, while green peppers are offered freely at a decline. Cucumbers, okra, and eggplant are all doing a little better, and the best lots of carrots will bring an advance, while cauliflower is cheap.

Onions: Yellow, ctl	75@	80c
Garlic, per lb	3@	4c
Green Peas, per lb	3@	4c
Tomatoes, per box	30@	50c
Cucumbers, per box	60@	75c
Cabbage		75c
Carrots, per sack	75c@	1.00
Cauliflower, per doz		50c
String Beans, lb	3@	4c
Lima Beans, lb	3@	4c
Summer Squash, per box	65@	85c
Okra, per box	50@	60c
Green Corn, per sack	1.00@	1.50
Eggplant, per box	40@	60c
Green Peppers, per box	35@	50c

POTATOES.

Several cars of Oregon potatoes, the first of the season, have appeared on the local market, and find a moderate demand at considerably better values than river stock. The latter, however, is not overplentiful at present, and is somewhat firmer than last week. Salinas Burbanks and sweet potatoes are quoted as before.

River Whites	90c@	1.15
Sweet Potatoes, per ctl	1.75@	1.90
Salinas Burbanks	1.60@	1.65
Oregon Burbanks	1.30@	1.40

Dairy Produce.

POULTRY.

Arrivals of Eastern poultry are more than liberal, five cars having arrived the first of the week, and large shipments of California stock are also coming in. Most of the latter is of very ordinary appearance, and little of it will command top prices. Small hens are hard to move, though broilers are firm. Arrivals of spring turkeys are still light, and all offerings find a ready sale at former quotations.

Large Broilers	$ 3.50@	4.00
Small Broilers	3.00@	3.25
Fryers	4.50@	5.50
Hens, extra	8.00@	9.00
Hens, large	5.00@	6.00
Small Hens	3.50@	4.50
Old Roosters	4.00@	4.50
Young Roosters	6.00@	7.00
Young Roosters, full grown	8.00@	9.00
Squabs	2.00@	3.00
Geese, per pair	2.00@	2.50
Ducks	4.00@	7.00
Turkeys, live, per lb	24@	27c

BUTTER.

Supplies of high-grade fresh butter have been diminishing of late, and aside from Eastern ladles everything is quoted higher. Storage stock is beginning to come out, and is selling very little below last week's quotation on fresh stock.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	28	28	28	28½	..	29
Prime Firsts	25	25½	25½	25½	..	27
Firsts	24	25	25	25	..	26
Seconds	22	22	22	23	..	27
No. 1 Packing stock	20	20	20	20	..	21
East Ladles Extras	21½	21½	21½	21½	..	21½
Storage Extras	..	..	..	..	..	26½

EGGS.

Arrivals of late have been very moderate, and the production is very light, but extras have nevertheless been easy most of the week, owing to the reluctance of dealers to carry any surplus. A little stronger feeling is apparent at present, and firsts have advanced. Storage stock is becoming something of a feature in the market.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	41½	41½	40½	40	..	42
Firsts	39	39	39	39	..	39
Seconds	21	21	21	21	..	21
Selected Pullets	33	33	33	32½	..	32½
Eastern	25	25	25	25	..	25
Extras	..	..	..	26½	..	26½

CHEESE.

The market for most grades remains as before, with trading of moderate proportions. Monterey cheese is stronger, with diminishing supplies.

Fancy California Flats, per lb	14	c
Storage	14	c
Firsts	12½	c
New Young Americas, fancy	16	c
Monterey or Jack Cheese	14	c

Deciduous Fruits.

FRESH FRUITS.

The market has been somewhat broken up by the holiday, but trading has been fairly active, and the market in general is in rather better shape than last week. Watermelons are still arriving as fast as they are wanted, and prices are unchanged, while good lots of nutmegs are selling readily at fair prices. Blackberries and huckleberries are stronger, but there has been a considerable surplus of strawberries, which have to be moved at low prices. Fancy apples are doing a little better, though ordinary lots receive little attention. Ordinary offerings of pears are firmer, while peaches are weak, only the most attractive lines being in demand. Fresh prunes are firm, with light supplies and a fair demand. Wine grapes remain firm, and it is expected that good table grapes will show some strength within a few days, as little really attractive stock is coming in.

Watermelons, per doz	$ 1.00@	2.00
Nutmegs, per box	60c@	1.00
Raspberries, chest	5.00@	8.00
Blackberries, chest	6.00@	7.00
Strawberries, chest	2.50@	4.00
Huckleberries, lb	8@	12½
Cranberries, per bbl	9.00@	9.50
Apples—		
Fancy, box	1.00@	1.35
Choce	60@	75c
Peaches, lug box	75c@	1.00
Small box	40@	75c
Prunes, crate	75c@	1.00
Figs, box	60@	75c
Pears, Bartlett, box	1.25@	1.75
Other varieties	75c@	1.00
Quinces, box	65c@	1.00
Grapes—		
Muscat, crate	60@	75c
Isabella	60@	85c
Seedless	50@	75c
Cornichon	65@	85c
Other arieties	40@	65c
Pomegranates, small box	65@	85c

Dried Fruits.

The only quotable change this week is a decline in evaporated apples, which are offered in increasing quantities. Prunes remain very firm, but there is no great activity at present, as the bulk of the crop seems to have been taken out of first hands, and those who still hold odd lots are in no hurry to sell. It is almost impossible to get anything in large sizes, and many packers who are unable to make full deliveries are preparing to make cash settlement. There is very little movement in other lines of tree fruits. The greater part of the crop is in the hands of packers and jobbers, who are not willing to increase their supplies at present, but with every prospect of a shortage before next year's crop is available the stocks remaining in growers' hands are firmly held. Reports on the raisin market are conflicting. Local packers report considerable movement at the range quoted for some time past, while press reports from producing districts, as well as from the East, quote 4½c sweatbox for muscatels. Last year's raisins are practically off the market, and the new crop will soon be under cover. Trading is quiet in most consuming markets, though packers are taking a little more interest than for some time past.

Evap. Apples, 1911, per lb	7½@	8½c
Apricots	13	@14 c
Figs, new crop		4 c
Peaches, new crop	9	@ 9½c
Prunes, 4-size basis, new crop contracts	5½@	6 c
Pears, new crop	8	@ 9 c
Raisins—		
Loose Muscatels, in sweatbox	3¾@	4 c
Thompson's Seedless	6	@ 6¼c
Seedless Sultanas	5	@ 5½c

Citrus Fruits.

The Eastern fruit auctions are very active in their demand for both oranges and lemons. Prices are some higher than last week. Shipments from southern California are holding up well for the fag end of the season, being about 30 cars per day of oranges and 15 cars of lemons. Total shipments from that section for the season to October 8 were 36,379 cars of oranges and 6519 cars of lemons. To the same date last year shipments were 24,962 cars of oranges and 4617 cars of lemons.

At the New York auction, Monday, October 9, nine cars of valencia oranges were sold, averaging from $3.70 to $6.50 per box. Lemons averaged $5.85.

At Boston, the same day, oranges averin California for the week (seven days) $4.80 to $5.90.

At Philadelphia two cars of oranges sold from $2.85 up to $5 per box, and lemons brought $4.60.

It is stated that the market is more active than usual, because of the non-arrival of early fruit from the South, owing to the order that no green fruit be shipped.

At San Francisco Mexican limes are lower, with larger offerings. Grapefruit is firm at the recent advance, while oranges and lemons are steady, with about the average routine demand.

Valencias, choice to fancy	$ 3.50@	4.50
Grapefruit	4.00@	4.50
Limes	4.50@	5.00
Lemons	1.50@	5.50

Nuts, Honey, Hops, Etc.

NUTS.

New California walnuts find a good demand all over the country, the opening prices being evidently satisfactory to the trade. Almonds are quiet, but are steadily moving off, and are expected to clean up in good shape.

Almonds, 1911 crop—		
Nonpareils		18½c
I X L		17¼c
Ne Plus Ultra		16½c
Drakes		14½c
Languedoc		14½c
Hardshells	8	@ 8½c
Walnuts, 1911 crop:		
Softshell, No. 1		14 c
Hardshell, No. 1		13½c
No. 2		11 c
Budded		16½c

HONEY.

Shipments are still going forward from several districts, and there is a fair Eastern demand, though the local market shows little feature. The general range of prices remains as before.

Comb, white	13	@15	c
Extracted, water white	8	@ 9	c
Amber	7	@ 7½	c
Off grades	5	@ 6	c

BEESWAX.

With a shipment due from Manchuria, and considerable quantities offering around the State, the market is weak, and buyers are inclined to hold off. So far quotations remain nominally as before.

Light	28	@30	c
Dark	23	@26	c

HOPS.

There is a little more movement than for some time past, several lots having been sold recently in northern California, and while the sales were made on private terms, the prices are said to have been the highest of the season. There is considerable trading in Oregon at 32 to 33½c.

1911 crop	35	@40	c

Live Stock.

DRESSED MEAT.

Cattle remain firm as before, and sheep are steady, while hogs are weak, with a further decline in both live and dressed stock.

Gross weight:			
Steers: No. 1	5¼	@ 5¾	c
No. 2	5	@ 5¼	c
Cows and Heifers: No. 1	4¼	@ 4½	c
No. 2	4	@ 4¼	c
Bulls and Stags	2	@ 3	c
Calves: Light	6½	@ 6¾	c
Medium	6	@ 6¼	c
Hogs: Grain-fed, heavy			6½c
150 to 250 lbs			6¾c
100 to 150 lbs			6¾c
Small prime wethers	3¾	@ 4	c
Large prime wethers	3¾	@ 4	c
Ewes	3¼	@ 3½	c
Lambs			4¾c
Steers	8¾	@ 9¼	c
Cows	8	@ 8½	c
Heifers	8	@ 8½	c
Veal, large	10	@11½	c
Mutton: Wethers	8	@ 8½	c
Ewes	7½	@ 8	c
Lambs	9½	@10½	c
Hogs, dressed	10	@11	c

WOOL.

A few odd lots of fall wool have changed hands, at a wide range of prices, but quotations are still largely nominal. The market has been quiet, and buyers have not yet shown much interest, though values are expected to be established on a more definite basis this week.

Spring Clip—			
Choice Southern, Year's sta-			
Northern, year's staple	14	@16	c
ple	10	@12½	c
7 months	8	@11	c
Lambs, spring	8	@10	c
Fall Clip	5	@10	c

HIDES.

Prices show no quotable change, but the market is easy, and purchases are made for immediate needs only.

Heavy Steers, over 56 lbs			11½c
Medium			11 c
Light Steers, under 48 lbs.			10½c
Heavy Cows, over 50 lbs			10½c
Light Cows, 30 to 50 lbs			9½c
Kip			11½c
Veal			16 c
Calf			16 c
Dry—			
Dry Hides	17½	@18½	c
Dry Bulls			15½c
Dry Kip, 10 to 15	18	@18½	c
Dry Veal, 5 to 10			19½c
Dry Calf, 7 down	23	@23½	c
Sheep Skins—			
Long Wools	$ 0.85	@ 1.25	
Medium Wool, 6 to 9 mos	50	@ 75c	
Short Wool, 3 to 6 mos	30	@ 50c	
Lambs	35	@ 50c	

HORSES.

Sales during the past week have been larger than for some time previous, with liberal offerings of many classes of stock. A lot of drafters sold recently did not bring the range quoted for corresponding weights, but the animals failed to show the other qualities desired. First-class drafters could probably be readily sold for full values, as there is a constant demand for this class of horses.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	210@250
Chunks, 1350 to 1500 lbs	175@225
Wagon Horses, 1250 to 1350 lbs.	120@175
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	110@125
Old Mares	90@115

MULES.

200 lbs.	$240@290
100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

SPECIAL DECIDUOUS MARKET

Sacramento, Cal., Oct. 7, 1911.

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (seevn days) ending Friday morning, October 6, 1911, as reported by the California Fruit Distributors:

Peaches—38 cars. The report for this week includes several cars of peaches that should have been reported heretofore. Owing to the failure of the car-line to report this shipment at the proper time, the actual movement this week has been swelled by about 8 cars. Salways are now nearly done. Another week will probably entirely finish them.

Plums—A few scattering shipments are still going forward. Belated reports received at this office would indicate the shipment for the week of 10 cars, but as this is a mistake, and there are practically no plums now moving, this report will not appear as indicating the movement for the week.

Pears—91 cars. Contrary to expectations, the movement of fall and winter pears has been greater this week than last. The fruit continues to be of splendid quality. Shipment is now nearing its end, and will last but a few days longer.

Grapes—633¼ cars. Although this report indicates the foregoing as the movement for the week, it has been swelled by cars which should have been reported to us last week. The actual movement for the week was about 560 cars, consisting almost entirely of Tokays. There are a few Cornichons moving, but practically no Emperors. Some Malagas continue to go forward from the Fresno district and will continue in limited supply for the next 10 days or two weeks. Shipments of Tokays from Lodi remain about stationary, while an increase is noted from the American River district.

The Eastern fruit auctions show a better demand and higher prices for grapes than for some time past. On Monday, Oct. 9, at New York, there were 44 cars sold. Malaga Grapes, $1@1.25; Tokay grapes, 85c@$1.15; double crates Tokays, $2.90; half crates D'Comice, $1.90; Clairgeaus, $2.75; D'Anjou Pears, $3.40.

At Chicago the same day 31 cars were sold. Malaga Grapes, $1@1.30; Tokay Grapes, 85c@$1; D'Anjou Pears, $2.80; Howell Pears, $2.70; Bartlett Pears, $2.50; Beure Bosc Pears, $3.30; Cornichon Grapes, $1.15; Salways, $1.30; Italians, $1; Elberta Peaches, 70c.

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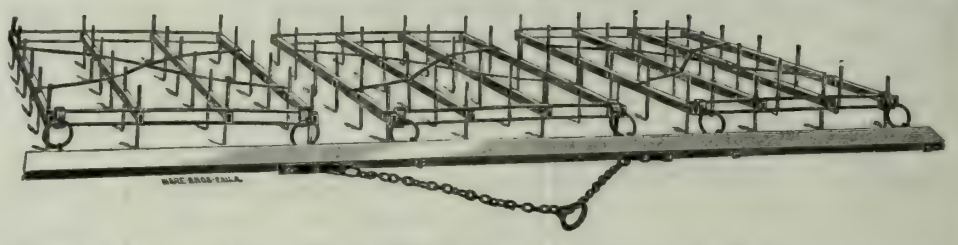
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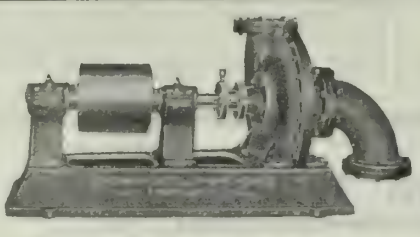


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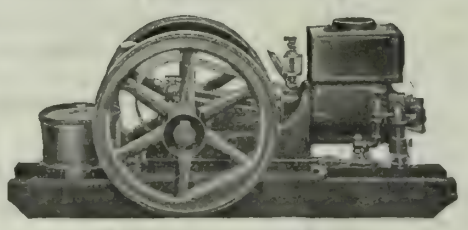
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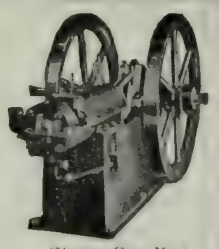
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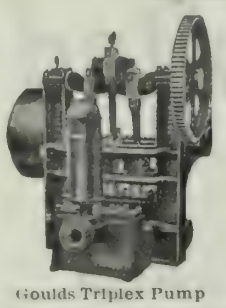
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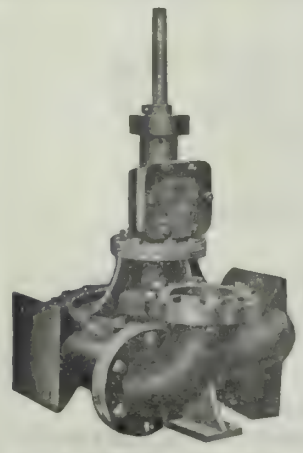
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THE PACIFIC RURAL PRESS

Vol. LXXXII. No. 17. SAN FRANCISCO, SATURDAY, OCTOBER 21, 1911. Forty-first Year.

HORSES BY THE POUND.

Written for the PACIFIC RURAL PRESS by Mr. D. J. WHITNEY.

No observer of the price of horses can fail to notice the change that has come over the demand for them in recent years. The light driving horse has found less sale, while the heavy draft animal is more in demand than ever. In spite of all that is said, there can be no doubt that the automobile is largely responsible for this state of affairs, at least in regard to the lessened demand for the light weight animal.

At the same time it must be said that this change is not appreciated as it should be in many places, and many ranchers continue to raise the 1100 or 1200 pound horse because they consider it best on the farm and do not stop to think that a gain in weight means a large gain in selling price in case they care to dispose of it.



Representative Percheron Stallion of McLaughlin Brothers.

That the automobile has almost driven the light driving horse out of the market there can be no doubt. Formerly every doctor and every business man whose business called him from one part of the city to another had his own horse and buggy; now the light runabout is used instead. Joy riding has supplanted buggy riding or a fashionable drive in the carriage, and even the saddle horse has given way in large part to the motorcycle. Neither saddle horse nor driving horse has gone entirely, nor will they for many years, but the big demand for them seems to have passed. Even sports conspire against the horse, and the city dweller who used to sit on the grandstand and watch the horse races now sits on the bleachers and cheers for the home team, leaving his money with the baseball magnates instead of the bookmakers.

Draft Horses Coming Strong.—The position of draft horses proves again the old adage that "the race is not always to the swift," for while the driving animal is almost out of the running, the increase in draft horses has prevented the total number of horses decreasing at all. The auto may cover the ground quickly, but in spite of motor trucks and tractor engines the draft horse still seems to have the pull that is wanted, and the heavier he is the bigger the price he commands, even if he can hardly run to save his life.

Perhaps in no other way can the necessity of getting weight in a horse be shown as well as by calculating the price per pound that is paid for the various types of animals and seeing how rapidly the price increases as weight is gained. Of course, weight without quality will not bring a high price, but other things being equal, extra weight means extra money.

A table showing prices for horses in the San Francisco markets can be found in the market reports of the PACIFIC RURAL PRESS. The prices of necessity will be higher than those ruling in the country and apply only to animals of good bone, conformation and style. They show, however, the difference that is made by a few hundred pounds of solid muscle and the bone to carry it.

Nine Cents a Pound.—With ordinary farm workers quoted at $95 to $110, nine cents a pound might be considered a fair average. Choice driving horses, of course, will sell for $150 or so, but even these are at a big discount compared with what they would bring six months ago. Good delivery wagon horses up to 1250 pounds are a little more expensive, being worth 10 and 11 cents a pound. Wagon horses weighing about 1300 pounds can be seen to be worth 12 or 13 cents per pound, while chunks of 1400 or 1500 pounds, such as could be raised by breeding a good farm mare to a choice thoroughbred stallion can be sold for about 15 cents. Still heavier draft animals rise in price to a cent or so above this figure, and heavy drafters of good quality are worth 18 to 20 cents, or just about twice as much per pound as horses more than half their size.

The prices for light and heavy mules is also illuminating. Thus a 900-pound mule of good quality seems to be worth about 17 cents a pound, there being a good market for such animals in spite of their small size. A half a ton mule averages 18 or 19 cents, and a 1100-pound animal 20 cents, and the largest sized mules 21 cents a pound. The striking thing about this is the small gain in price that accompanies a substantial gain in weight. Thus while there is a difference of 100 per cent per unit of weight between the lightest and heaviest horses, the difference with mules is but 4 or 5 cents.

These high prices for mules may be somewhat misleading and indicate that it would be more profitable to raise mules than horses, but when it is considered that the horse that can be raised from a mare will be much heavier than a mule from the same mare, the difference in price practically disappears. There is no doubt, however, but what mule raising is very profitable, a fact which has long been appreciated.

Light Mules, Heavy Horses.—It is at once suggested in seeing the vast

(*Continued on Page 331.*)

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Oct. 17, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.38	1.63	2.67	72	46
Red Bluff	00	1.26	1.55	90	46
Sacramento	00	.20	.86	86	46
San Francisco	00	.28	.86	87	52
San Jose	00	.31	.81	90	40
Fresno	00	.10	.62	90	46
Independence	00	.70	.61	80	34
San Luis Obispo	00	.02	.93	94	42
Los Angeles	00	1.23	.35	94	52
San Diego	00	.22	.32	82	50

The Week.

During the week there has been a high heat and dry wind, which have helped to close the season well for those who had unfinished fruits or uncovered produce of other kinds in the foregoing showers. Probably the week has also been helpful to beans which were retarded in ripening by the new surface moisture, although the high winds did beat around and waste bean crops in process of harvesting. A Stockton report says: "The wind was the strongest known at this season in years, and many of the dry beans were scattered for miles"—which report, for the carrying power of wind, we are disposed to put in the front rank of that kind of falsification. Perhaps this buoyancy of California beans may be ere long reduced by the report which comes from Boston in the form of a declaration by Miss Bertha Stevenson, a Radcliffe college graduate who, ten years ago, with $300 capital and fresh from college, opened her first modest little lunch room and bakery in Cambridge. She now has professors on economics and hygiene lecture to her cooks and other help, and therefore puts up thoroughly scientific and up-to-date provender. When asked, "What do Bostonians like best, Miss Stevenson replied: "Of course I know that I should say 'beans,' but the truth must out. Beans come in a poor second. Beef stew is always in the lead." And Miss Stevenson ought to know, for she serves meals to six thousand people daily.

To Diversify Tule Land Products.

Possibly it was owing to this new mark of degeneracy in Boston that directors of the Delta association, representing 200,000 acres of rich land in the delta of the San Joaquin and Sacramento rivers, met in Oakland to consider the opening of an experimental farm in the delta, in charge of experts, for the purpose of increasing the revenues of the land by using a greater variety of products which experiment may show to be adapted to local conditions of soil and climate. There is much interest manifested in these lands and capitalists are freely investing in them largely in expectation of profitable production of beans in much greater volume than at present. These investors should take heed of Miss Stevenson's announcement. They would do well to undertake to grow more beef—not for Boston, but for San Francisco.

Women Will Vote.

Several weeks ago we refused to nag our readers with the harrowing details of a suffragette campaign on the ground that they already knew the fundamental principles of justice upon which the issue rested and would approve them without the frantic exhortations which campaigners were indulging in. To be perfectly frank about it, we feared these Greeks even in their ambition to give good gifts to mankind. We believe if the whole suffragette campaign had been cut out the amendment would have passed by a much larger majority. Probably these misguided sisters are congratulating each other upon saving a desperate situation by their devoted wails and wheedles addressed to the other sex. This is what machine politicians often do, unconscious that the principles involved are often obscured or even rendered hateful by their styles of advocacy. We are quite sure this was the case with the equal suffrage amendment. In the first place the organized opposition to it would never have arisen had it not been for the conviction on the part of hundreds of our best women that the issue was being urged in a way unworthy of women, and this wedge, which need never have been entered, was driven to its utmost reach by interested men who had other purposes to serve. We know of hundreds of women who rejoiced at the affirmation of the fundamental principle by the legislature who later wavered in their support, and finally openly opposed it, because its advocacy was undertaken in such an unwomanlike way. It was unfortunate. If there had been no campaigning, we believe this amendment would have led the list. The men of California would have voted for the amendment in a way which would have properly demonstrated their honor, respect and confidence for California women. More than this, if the towns had not been given the chance for opposition which the style of the campaign invited, the rural districts would have had the opportunity to demonstrate their overwhelming support. The vote shows how strong this rural support was, and it is unfortunate that it was so largely obscured by the necessity of counting so large a part of it against urban and suburban opposition. When the vote comes to its last analysis we believe it will be conceded that the amendment was endangered only by fear of women on the part of those who are commercially interested in forms of indulgence which women are likely to proscribe. It was in places most notable for such traffic that equal suffrage received fewest votes, and in this result our best women played into the hands of our worst men. It is now time for the "suffragette" to permanently retire from public view. Women will vote for the right. They do not need to be exhorted as women and they cannot be wheedled into political support of women because they are women. Women will vote; let them have a square deal and a chance to see the right and their influence will be powerful for good. They cannot be led by the nose politically, as too many men are.

Women in the Vintage.

Women voting like men and women working like men seem to be associated ideas, but there is of course no connection historically or otherwise—in fact quite the opposite. In places where women do field work like men they are farthest from voting, and probably the men who consign women to field work are not very near voting either. And yet we believe field work is in itself no obstacle to voting by either men or women. It depends, of course, upon why it is done and who it is done for. Either man or woman in a free country who takes to the field to build up a home and independence, loses nothing of honor—in fact may get a view of life which qualifies for citizenship. We have much experience in this State upon which such a claim might be firmly grounded. California women are helping themselves and those dependent upon them and are honored in it. Accounts come of the timely service of women in the Swiss vintage. In several cantons male labor was almost unobtainable, so the farmers' wives and daughters turned out to gather grapes in wooden buckets and carry them to the vats or carts. What men could be obtained concentrated their efforts on the rougher work. So heavy was the vintage in some quarters that the women worked over 12 hours a day. They received 60 cents a day, and, according to ancient custom, were allowed to take away as many grapes as they wished every night. The part to which we object is the compensation received for such service. It is certainly only a third of what women can easily secure for such labor in California. And yet freetraders or reciprocity advocates would not hesitate to bring California products into competition with the products of such wages. We expect that women voting in California will help to protect the products upon the price of which their own compensation may depend. In this they will be wiser than some men are.

Better Men and Women Coming.

Reflecting upon men and women in Europe suggests that they propose to secure better men and women there in the way we are securing better plants and animals in this country. It would be conceited in an American to claim that we have so much the advantage of the world as is freely conceded to us abroad, but the concession is pleasing, just the same. This is cabled from Paris this week: "The extraordinary results which American investigators have attained in the mixing of vegetable species so as to produce original and more useful varieties have been more discussed by the European members of the International Genetic Congress than any other new material brought before that body of savants at the conference just ended in Paris. This association deals with the principles that underlie the propagation and development of life, both plant and animal, leading up in the end to the intricate research into the conscious modification of the human species." We must confess that we do not quite know how they will do it. Perhaps something will be clearer in this line before the next meeting, which is likely to be in San Francisco during the coming World's Fair, for which President Taft broke ground amid glorious ceremonies last week. It is very interesting to know that Prince Roland Bonaparte, whose absorption in science has entirely withdrawn him from politics, did much to make the congress a success, and M. Phillip Vilmorin, the secretary, are in favor, on account of the interesting work of Americans, of holding the next meeting in San Francisco during the exposition year. Mr. Walter T. Swingle of the Department of Agriculture, one of the delegates of the United States government, persuaded many of the European members to favor the long journey to San Francisco. Mr. Swingle is well known to Californians and his service to the State in this line will not be forgotten. It is of course the fame of Luther Burbank which joins with that of California to attract the congress to the place where world-beating work is done, and Mr. Burbank will doubtless have achievements by that time which will surprise even those who know most about him.

Man's Best Friend—the Bee.

The old stories about the dog and the horse as protectors of their owners from great perils have become quite trite, and it is refreshing to have something new in animal devotion. It comes from Minnesota—rather a cool place for a hot story. It is told by a farmer, and therefore has added interest. According to Robert Schultz, who was attacked and brutally beaten by two robbers in his barn near Hamel, a swarm of bees came to his assistance and routed his assailants. "I began to make a noise that I always use to call my bees," said Mr. Schultz, "and they began to swarm into the barn. One lighted on the back of one robber and he ran out of the door yelling with pain. Other bees attacked the other, and he ran, too." Now we need to know what kind of noise a man makes to call bees; we are somewhat familiar with the noise which he makes when he is trying to get away from them.

Kipling Forgiven.

We frankly forgive Mr. Kipling for his misrepresentation of the American people to which we have several times alluded and restore him to his old pedestal. A man who can write the exaltation of the noblest art of men which we print upon a following page can do many foolish things which mankind will hasten to forget. The poem comes from a new book of Kipling's on the history of the English people which every one will wish to read as soon as he can get it. It will no doubt be enjoyed even by those Americans in Canada whose desire to get into this country with their products Mr. Kipling did much to deny. By the way, those Canadericans will have plenty of time to read Kipling during the coming holidays. We have just heard that a proposition for the Canadian railways to be allowed a reduced rate this winter for so-called "home visitors," excursions from western Canada to Chicago, Kansas City, Omaha, St. Louis and other places, has been rejected by Western Passenger Association lines. They profess to see in the proposition a scheme of the Canadian railroads to induce thousands of other Americans to move to Canada, and they are surely right. Those Americans will do everything they can to raise the price of the land they have gotten possession of—even to bringing in thousands of other Americans to whom they sell out. Perhaps Mr. Kipling was right after all: Americans are too restless to settle down as loyal subjects.

Queries and Replies.

Grasses for Bank-Holding.

To the Editor: Can you advise us in the selection of a grass to be used on levees, to keep it from washing. We do not care to use the Bermuda or Johnson grass, as these are dangerous to the farming lands. What we desire is a grass that will grow in good dirt with no water to support it during most of the year, except the annual rainfall of Fresno county. Of course, this grass will also have to endure a great deal of water during the flooded season of the year. We have heard that the Italian rye grass would be suitable for our purpose, but are undecided.—J. G. C., Fresno.

The rye grasses do not have running roots; therefore are not calculated to bind soil particles together as Bermuda grass does. If you want a binding grass, you must take the chances of its spreading to adjacent lands. Of course, if you could get a sod of rye grass it would prevent surface washing from overflow, etc., to a certain extent. We are not sure how far it would prevent bank cutting by the flowing water. The only way to determine whether it will be of any use to you or whether you can get a permanent growth of it, will be by making a trial. Seed should be sown now or as soon as the ground becomes moistened by rain. It is a very safe proposition, because if you succeed in getting a stand of the plant, and it is willing to live through the summer, you will be the gainer, because it is one of the best pasturage grasses for places in California where it will consent to grow, and it is not liable to become an annoyance by taking possession of adjacent land, because it would be readily killed by cultivation.

Planting Walnuts.

To the Editor: I have a friend who has bought twenty acres of land adjoining me, and he is about to set it out in walnuts and has asked my ideas regarding same. I told him I believed if I was setting out another orchard I would set it out with grafted trees on the Black Walnut root instead of setting out the Black Walnut root and afterward grafting them in the field, for from my experience I believed the best way was to graft the trees in the nursery and then set them out. I would like very much to have your ideas on this subject, and do you not think he will gain some time by setting out the grafted trees, rather than setting out the Black Walnut trees and then grafting them afterward?—J. V. S., San Francisco.

We have no doubt whatever that the most satisfactory way to plant walnuts is to buy trees grafted in the nursery upon the California black walnut root. Many people have planted nuts in place because they thought they could get a better root system (with the necessity of grafting afterward), but our observation is that there is no particular advantage in the root system of the non-transplanted tree. As for planting black walnut seedlings, the difficulty of getting a uniform stand with orchard grafting of seedlings is exceedingly great. It may cost your friend more to begin with grafted trees, but he will save time and vexation by making the increased outlay.

Sacramento Valley Lands.

To the Editor: In your paper of August 25 I read the account of the trip to upper Sacramento Valley, and would like to know how I could get in correspondence with the companies or owners of this land? Does the river ever overflow these lands? Are there any railroads near?—A Subscriber, Kerman.

The lands to which we particularly referred in the article you mention are still held in large tracts and we expressly stated that they stand ready for purchase in tens of thousands of acres by those who are ready to do the development work and subdivision which will make them available in farms of ordinary size. Some of the lands in these tracts are subject to overflow for a brief period. They are not what is generally meant by lands needing reclamation, but are, for the most part, high and dry, and will do their best work by irrigation. Practically all of the lands we visited are within hearing of the locomotive whistle. Aside from these large tracts, there are large areas of similar land already under development and subdivision, and who has them can be learned from our advertising columns.

Sweet Potatoes.

To the Editor: Will you please let me know in the RURAL PRESS what kind of soil and climate it takes to grow sweet potatoes, and if I could grow them in any part of Contra Costa county, and about what time is the best to plant them?—A Subscriber, Martinez.

Sweet potatoes do best in a light warm loam which drains well and does not bake or crust by rain or irrigation. Sprout the tubers in a hot-bed or cold-frame in February and break off the shoots and plant as soon as you are out of danger by frost. Sweet potatoes are more tender than common potatoes. Full details of growing are given in our book on "California Vegetables." There are places in Contra Costa county where they ought to do well, though some parts of the county do not have enough summer heat.

Summer-Fallow.

To the Editor: I recently bought an 80-acre ranch at Sheridan, Placer county, and was intending to put 10 acres to peaches and 50 acres to wheat or barley, but the residents at Sheridan tell me that the land must be summer-fallowed before I can do anything. The soil is a red loam and has not been plowed for six years. I have made arrangements for the wheat seed and the trees, and would like some reliable information as to what to do.—Purchaser, San Francisco.

Your local advisers are probably right as to the necessity for summer-fallowing in order to conserve moisture from a previous year's rainfall and to get the land otherwise into good condition. We might, of course, have such a generous rainfall so well distributed that an excellent crop might come without summer-fallowing, and the results will be certainly most directly conditioned upon the rainfall. If it should be small in amount, you might not recover your seed. By the same sign you might not get much growth on your fruit trees, but you can help them by constant cultivation and by using the water-wagon if the season should be very dry. Therefore, you are likely to do better with trees than with grain without summer-fallowing, although even for trees it is a decided advantage.

Rape. Milk-Testing. Milo.

To the Editor: Would you kindly advise me as to whether rape would be a good pasture crop sown broadcast? If so, at what time should it be planted. From whom might I get Dr. Wing's book on milk-testing? Will milo maize grow profitable in this county?—Subscriber, Sebastopol.

Rape can be sown as soon as your land gets moist enough from early rains to start the seed and hold the growth. It is a winter-growing plant in this State. We believe, however, you will get better results with common vetch, which is also a winter grower and more nutritious. If you desire one of the cabbage family, kale will probably serve you better than rape. Wing's "Milk and Its Products" can be furnished from this office at $1, postpaid. Milo is one of the sorghums and will only grow during the frostless period, like Kaffir, Egyptian corn, and other sorghums. It will do well with you, but probably make less growth than in the interior valleys.

Irrigating Potatoes.

To the Editor: Could you give me any information on potato culture in this locality? My potatoes sprouted and grew new tubers before the parent plant had fully matured. I have been told that this is caused by irrigating too freely, but it seems the water was needed. The temperature rises to about 100 degrees and often a little higher.—N. E., Wasco.

Potatoes can be grown very successfully by irrigation, providing the irrigation is applied before drying out of the soil renders the plant partially dormant. When the soil is allowed to become too dry and then water is used, a second growth is started just as you describe. The secret of success is keeping the soil continually at the right moisture, so that the first growth of the plant may continue regularly until the tubers are brought to maturity.

"The Glory of the Garden."

"Our England is a garden that is full of stately views,
Of borders, beds and shrubberies and lawns and avenues,
With statues on the terraces and peacocks strutting by;
But the glory of the garden lies in more than meets the eye.

"There's not a pair of legs so thin, there's not a head so thick,
There's not a hand so weak and white, nor yet a heart so sick,
But it can find some needful job that's crying to be done
For the glory of the garden glorifieth every one.

"Then seek your job with thankfulness and work till further orders,
If it's only netting strawberries or killing slugs on borders;
And when your back stops aching and your hands begin to harden,
You will find yourself a partner in the Glory of the Garden.

"Oh, Adam was a gardener, and God who made him, sees
That half a proper gardener's work is done upon his knees,
So, when your work is finished, you can wash your hands and pray
For the Glory of the Garden that it may not pass away!
And the Glory of the Garden it shall never pass away!"

—Rudyard Kipling.

SEED SOWING.

Written for the PACIFIC RURAL PRESS
By G. H. HOPKINS, Tropico.

Anyone can sow or plant seeds, but to do it right is quite another matter. In determining the amount to sow, one should consider freshness of the seed and strength of the young plant, as well as the condition of the ground. We have before mentioned the importance of having the soil in that condition where there are no lumps, and compact, so that the small seed may be sure to come in contact with the earth. Then with plenty of moisture the seeds have a much better chance to germinate. Another thing, if the seed bed is lumpy, many of the seeds may start, but moisture may give out, and the struggling rootlets, not being able to penetrate moist soil, will die. It is a pretty good rule to sow light seed rather thick, and thin out, discarding weak, puny plants and leaving the stronger. Where possible, one should have a seed drill for sowing vegetable seeds. As manufactured at present, they work good, and after getting them set to sow the amount desired, all will be alike. Hand-sowing may answer in a small home garden, but at best is a back-breaking job, and when the wind is blowing a difficult and wasteful process. The proper depth to sow seeds is also important. If sown too deep many will not germinate, especially when the ground is cold and wet. Tiny seeds cannot be sown too near the surface if covered at all and in moisture.

Seeds of peas and beans that have a large root-system should be planted three or four inches deep, according to the condition of the soil. The writer knows from experience that deep planting of peas will result in a more vigorous vine and consequently a larger crop of well-filled pods.

Growing Cabbages.—Growing cabbages for market is an extensive business in many parts of California. For the Eastern markets they are planted so as to reach the East in the early spring. Many carloads are shipped every season from Orange and Los Angeles counties, and usually at remunerative prices to the growers. Cabbages delight in a good loamy soil, not too light nor yet too heavy. Here again the writer advocates close planting. It will require a richer soil, but the results will warrant it. Plants set in rows 30 inches apart and 16 or 18 inches apart in the row will require about 12,000 plants per acre.

Small varieties like Early Jersey Wakefield can be set 2 feet by 16 inches, and would need nearly 20,000 plants per acre. Planting in rows 3 to 3½ feet apart and 2 feet in the row would require only from 5000 to 7000 plants per acre. So one can easily estimate the difference in returns from the different plantings. The plants should be kept growing from the time they are planted until matured. To do this, constant cultivation with hoe and cultivator will be necessary. The soil must not be allowed to bake, and cultivation should be done after each rain or irrigation,

Raising vegetables or fruit for market is a different proposition than raising them for home use only. By market we mean placing produce on the public market or among the commission men, or shipping to the Eastern markets. After our vegetables or fruits have reached maturity our troubles have just begun. Forty years ago wheat and cotton were about the only products of the farm that were shipped any great distance. Now vegetables and fruits of all kinds as well as grains are shipped to points across this continent and to foreign countries. The business has become so vast, especially here on the Pacific Coast, that to handle the shipping business it requires men who are expert in that line. To get the best prices and hold the trade, it is absolutely necessary that the box or crate be neat and substantial, and, most important of all, that nothing but a perfect article be packed therein. This all requires more expert help, or rather management. With Eastern carload shipments, organization of some kind is the only method, and under the management of some one capable of handling any large business. Coming down to the man who sells in the local markets, we find that to get best prices each individual must have a certain amount of salesmanship. Here a good article and a neat package counts, too, but a good deal depends on the natural or cultivated faculty of selling goods. Many times the writer has seen individuals in the Los Angeles public market with loads of identically the same fruit, or perhaps a load of melons, where one would get 10 to 20 per cent more for his load than the other. Some seem to have an intuition as to the condition of the market. A sort of feeling as to whether to sell early at any old price or hang on and get a good price. These conditions prevail in all markets. At times the buyers do not seem to care whether they buy or not. To judge of these conditions is necessary to sell successfully. In shipping to local commission men or dealers to the best advantage it requires a certain amount of tact besides business sagacity. Oftentimes a commission man will make better returns to a man whom he knows to be a good business man than to one whom he knows or thinks is an "easy mark." Therefore, we say, to be successful in raising anything for market, one must have a head for business. Time was when it was thought that anyone could succeed at farming. Now it is known that to be successful, one must have a well-balanced mind to grasp the scientific and economic details of the business.

When the fall rains appear, sow seed of the California poppy (Eschscholtzia). Sow broadcast in a well-prepared bed where they are to remain. For vacant lots or other places in town or city, nothing is nicer. They make a dazzling display besides making a flower garden of what would otherwise be a weed patch. The seed is not very expensive, so that the expense would be only nominal.

Among flower seeds the annuals are not used so much in California as the perennials and biennials. The hardy annuals are all right and should be sown more than they are. Many of them will seed themselves in this coast country, as the wild flowers do.

Some of the catalogues are describing a new Antirrhinum or double white Snapdragon. It is said that out of the mouth-like aperture of the flower emerge petals of different forms, all together making a fantastic display. They should be valuable as cut flowers.

Pulverized sheep manure can now be procured and is valuable for top dressing lawns. It is said to be non-odorous and free from weed seed. Being so fine, the water from the hose washes it down to the roots and an immediate effect results.

THAT CAULIFLOWER PERFORATOR.

To the Editor: I will say in reply to subscriber's questions regarding perforations in cauliflower, that I have had the same trouble. The little white butterfly is accountable. If he will look close he will find a green worm on the under side of the leaf. Try watering with spray instead of putting water on the roots, and water every day thoroughly. Have good drainage for the plants. MRS. W. M. BUCHANAN.

The Cabbage Butterfly.

By Miss CLAIRE A. HEALY, Salinas.

Among the few butterflies in evidence during the months of July and August, the white cabbage butterfly (Pieris rapae) is possibly the most conspicuous. Its creamy white wings flutter gently as it makes its way in and out about the cabbage, the cauliflower, and in fact almost any of the members of the cruciferous (mustard) family. The pretty little thing looks so harmless that it seems a shame to insist that without doubt it is the most injurious to agriculture of all our species of butterflies. Yet this is true, so the statistics say.

The male and female are very much alike. The female has two brownish-black spots on each fore wing, while the male has only one on each fore wing. The butterflies themselves do no damage as they flit about in their apparently careless way. But if you watch the female very closely you will see that often when she stops, she places a tiny milk-white egg on the leaf. Each little egg hatches into a wormilke caterpillar, but has the battles of life all about him. He has no social tendencies like the tent caterpillar, but eats his way around and through the leaves on which his thoughtful mother has placed him. He is a soft, light-green, almost hairless grub, having a head slightly larger than the body and a greenish lemon-yellow dorsal band. After eating continuously for two or three weeks, according to the abundance of food, the larva, or feeding form, now nestles itself into a sleeping case, from which the winged form soon comes out. There are three or four broods of this a year, so that it is present nearly the entire season, and needs to be fought constantly.

The practical method by which we destroy leaf-eating caterpillars is to put a poison on their food-leaves. This was feared in the case of cabbage leaves for the caterpillar, lest we should poison ourselves, for we are leaf-eaters, too, in this case. The fear has been largely abandoned, because the cabbage grows from the inside and is constantly pushing out the leaves which have the poison, and spraying with arsenate of lead is freely used for the pest, because in getting the cabbage ready to cook, the outer leaves which may have poison are always thrown away. But this pest must be watched for before the cabbage begins to head. We will then have a chance at the spring and summer broods. If we destroy these, then the fall broods will not amount to much. If, however, the grower is fearful about using poison, he can spray with hellebore or pyrethrum mixed with flour. Sometimes salt water sprinkled into the head will produce the desired effect.

We have known that this cabbage butterfly (Pieris rapae) has been troublesome for so many years that we presume it has always been here. But this is not so. The story of its introduction is given by Dr. Scudder of New England. He says: "This species is a recent importation from Europe. The insect reached Quebec about 1860. How it came, no one knows: perhaps in a lot of cabbages imported from abroad; maybe a fertile

female was brought over as a stowaway. At all events, it came. Estimates show that a single female of this species might be the progenitor in a few generations of millions. In 1863 the butterfly was already common about Quebec and was spreading rapidly. By the year 1881 it had spread over the eastern half of the continent, the advancing line of colonization reaching from Hudson Bay to southern Texas. In 1886 it reached Denver, as in 1884 it had reached the headwaters of the Missouri, and it now possesses the cabbage fields from Atlantic to Pacific, to the incalculable damage of all who provide the raw material for sauerkraut. The injury annually done is estimated to be hundreds of thousands of dollars.'' The magnitude of the result seems to be far greater than the cause. The little insects, when there are enough of them, can do a great deal of damage. But you must not hate all the butterflies just because there is one that causes lots of trouble.

GROWING PEACH STOCK FROM THE PIT.

We have heard of some disposition among Eastern nurserymen to buy peach pits in California this summer. The standing of the California peach pit was first recognized some years ago and the use of it has been increasing. The reason why there is more demand this year can be found in the following paragraph from the Rural New Yorker:

''To grow a peach seedling requires a great amount of careful attention in getting the pits, having them germinate, and getting them to grow big enough to be budded the same year that the seed is planted. Northern nurserymen experience more difficulty that the southern growers, but this work has been done in the North to get trees adapted to the climate. It is the common experience of nurserymen that peach pits taken from budded varieties will not do so well as the natural pits that are gathered in the mountains of Tennessee and North Carolina. If these natural pits could be had elsewhere, they would undoubtedly be just as good, but there is where they grow in quantities large enough to supply the demands of Northern nurserymen. They are gathered in small lots by the country people there and sold at the local store. From there they get into the hands of seed companies and nursery firms of the South, who sell them in large lots to northern nurserymen at prices ranging from $1 to $3 per bushel. This year, however, the frosts destroyed practically all the peach crop in the South, and consequently pits will be very scarce and high. Nurserymen for next year's planting will have to rely on the supply they have on hand, and on what they can pick up of last year's seed. These natural peach seeds are small in comparison with the pit of a budded peach. They send up a strong thrifty seedling, and a bud inserted from the scion of any standard variety of peach will live and do well on them, while on the other hand, if you take, for instance a Crawford peach pit for this purpose, it will not do as well, the bud will not be so apt to live in it, and the young tree is more subject to peach diseases. For these reasons nurserymen do not find it profitable to use any other than the natural southern grown peach pits.''

Not So in California.—The foregoing is generally interesting, but it does not, of course, apply to California. We have no trouble getting a peach seedling large enough to bud all the way from June to August. It is also true that we have not found it necessary to hunt wild pits. The pits of budded varieties and the seedlings of the varieties chiefly grown in this State are strong and free-growing and are held to be, by some Eastern nurserymen, better than Southern wild pits.

Growing Seedlings From Pits.—The writer quoted above proceeds to give some details of growing peach seedlings by Eastern nurserymen, which will be interesting to our readers. Some sow them in the fall in rows 3½ feet apart and about two inches apart in the row. They are covered to a depth of about 3 inches, and some of this raked off in the spring when they are about to peep through. This method is attended with considerable risk. Often only half the pits germinate, sometimes none at all and the whole planting has to be plowed up. The Genesee valley has a fine silt loam that remains quite wet in places during the winter, and nurserymen there sometimes have remarkable success with this method. Like fall planting of trees, the seeds germinate and start to grow very early, and make a better growth than those planted in the spring.

The custom most commonly followed is to put the pits in sand in the fall and wet them down well. A trench is made for them right out in the open. They should not be buried too deep, as they need to have the frost get at them during the winter. It is claimed that the frost cracks them open. [But frost is not necessary, as demonstrated by California experience.—EDITOR.] Nurserymen buy a large number of pits and treat them in this way. They lease them in this trench for two or more years, going over them several times each spring and picking the meats out of the pits that have cracked open.

Another way now quite extensively practiced is to put the pits in a warm cellar in the fall and pack them in damp sawdust. A large percentage of them germinate in the spring, and they can be sorted out for planting. In this way nurserymen are more apt to get a good even stand than they would to sow the pits in the row regardless of whether they would germinate or not.

Cracking them open with a hammer of a peach cracker and then sowing the meats does not prove successful. The seedlings are weak, and only a small percentage of the meats grow at all. Peach meats should be planted about one-half inch deep, and not until the ground has warmed up. They are very delicate, and it takes them a long time to get over ground. When they do come up they should be kept free from weeds and well cultivated until they get a start. We do not as yet half appreciate the value, as a disease preventive both for then and for later on, in maintaining a steady, thrifty growth in a young plant. After they get well started the work on them up to September is comparatively easy. First of all the soil must be right; it needs to be of the sandy loam type and extremely fertile. The young seedlings must have careful and frequent cultivation during the hot, dry summer months, so as to keep up a vigorous growth until they are ready to be budded in the early part of September.

[As already stated, budding is usually done earlier in California.—EDITOR.]

A Great Citrus Crop.

Written for the PACIFIC RURAL PRESS
By H. W. KRUCKEBERG, Los Angeles.

With all due respect to the orange and lemon growing industry north of the Tehachapi mountains, southern California is the dominant factor in the production of citrus fruits in this country. At this writing (October 11) the total number of carloads of oranges for this season's shipments is 36,400, that for lemons 6,525, making a grand total of 42,925 carloads. At present the daily number of carloads going forth will average 35 of oranges, and possibly 10 to 12 of lemons. It is thought, on a conservative basis, that the crop-year will finally total 43,500 carloads. Estimated in boxes, the total is something like 14,200,000. Allowing for the cost of marketing in the East, taking into account distribution, jobbers' profits, etc., the final values of California's orange and lemon crop must represent a sum not far from $50,000,000. The significance of the industry in our rural economy is illustrated in its bearing on the prosperity of the smaller towns and communities. Thus we note the year's business done by the Claremont Citrus Association amounted to 691 carloads of oranges, selling for $400,816.12, of which sum the growers received $315,268.68. Another unit, the Mutual Orange Distributors of Redlands, shipped 3170 cars of oranges for the season, commanding $3,612,174. After deducting freight, icing, etc., there remained for distribution among the owners of trees, $2,250,000, representing an increase of 50 per cent over last year's business. It is factors like these that speak eloquently of the substantial character of the citrus industry. Is it any wonder that, in spite of some drawbacks, the State is still planting annually a large additional acreage to the kingly orange and the queenly lemon?

The Lemon Case Reopened.—Secretary Harold Powell, of the Citrus Protective League, on October 11 received a telegram from Washington to the effect that the Interstate Commerce Commission had set November 15 as the date for a hearing on the recent decision of the Commerce Court restoring the increased freight rate ordered discontinued by the Commerce Commission. The history of this case may be briefly summarized as follows: About the time the present tariff on citrus fruits went into effect, the railroads advanced the freight rate on lemons, from which the growers appealed to the Interstate Commerce Commission, which ordered the former rate restored. From this decision the railroads took an appeal to the Commerce Court, that body reversing the order of the Commerce Commission. Thus we have two governmental bodies rendering decision diametrically opposite. Now the Interstate Commerce people will reopen the whole question, with the hope on the part of the growers and shippers that its next decision will be free of legal complications that will render further appeal to the Commerce Court futile. Secretary Powell says that there will be a strong delegation of citrus growers go to Washington to give testimony on the date of the rehearing.

The Walnut Situation.—The Southern California Walnut Growers' Association has just held a meeting in Los Angeles, at which the fact was developed that the present crop shows an increase of about 12½% over that of last year, and that the entire output totals about 11,000 tons; the quality is said to be fine. The market conditions were carefully gone over, with the result that the Association decided 14 cents per pound for No. 1 Softshells, and 11 cents for No. 2; No. 1 Hardshells, 13½ cents per pound, and for No. 2, 10½ cents. Allowing for the fine quality of the present crop, it is anticipated that no delays will be experienced in its disposal.

Another Industry Organizes.—The co-operative movement along sane and conservative lines is certainly a factor in our horticultural development, and one, too, that is destined to become more firmly established as rural industry grows and multiplies. The latest to follow this lead is the California nursery interests, one of our big lines of activity representing millions of investment and doing an annual business that also totals into nine figures. The specific objects and aims are both general and specific, as will be noticed by the following declarations:

''Objects and aims are to protect, foster, and develop the commercial production and sale of plants and trees; to show where wear and tear can be diminished, better conditions in the control of injurious insects and plant diseases brought about, and intelligent, equitable and uniform quarantine legislation put in force; to secure better transportation facilities at less cost; to regulate methods of handling the business along lines insuring a more uniform system of grading nursery stock, especially in fruit trees and shrubs; to secure a more uniform and scientific nomenclature in the classification of flowering and ornamental plants; to (in so far as practicable) ''test out'' new introductions of plants and fruits with a view to learning their value; to awaken a keener interest and a broader intelligence in California's horticultural development, to the end that methods in public and private plantings will be along practical lines and the chances of failure reduced to a minimum.''

With such men as W. V. Eberly, George C. Roeding, John S. Armstrong, Leonard Coates, Fred H. Howard, F. H. Wilson, E. Wightman, Max J. Crow, Chas. Howard, C. C. Morse, and many others, the new organization evinces strength and wearing qualities. The second meeting will probably be held in conjunction with the State Fruit Growers' Convention.

AGRICULTURAL REVIEW.

With the Fruit Men.

As a further step toward keeping out the Mediterranean fruit-fly, the State Horticultural Commissioner has ordered all bananas and pineapples from Hawaii to be packed in material in which there is no danger of the fly being found. This step was taken after the return of E. K. Carnes, superintendent of the insectary, from Hawaii.

An effort is being made to have inspectors from the Department of Agriculture stationed in the citrus packing-houses to see that no oranges are sent out in an unripe condition, rather than to have them located at the receiving points in the East. It is stated that fewer inspectors would be required by this method.

American growers of citrus fruits in Cuba have formed a Cuba Fruit Exchange. The Exchange consists of an argricultural supply department (buying), a commission department (for the sale of produce in island markets), and a shipping department.

Shipping of fruit from Penryn, Placer county, which began with strawberries in April, closed last week. Shipments were 60% of normal, but returns were fully up to the average.

Auction sales of Anaheim oranges in New York brought $5.90 last week, or within 5 cents of the record from that district.

The Moreno Citrus Association has decided to ship its fruit through the Highgrove Fruit Exchange, as usual. A motion to have the Association leave the California Fruit Growers' Exchange was defeated by a large majority.

In his annual report, Horticultural Commissioner R. P. Cundiff, of Riverside county, states that the acreage of citrus trees has been increased in the county by about 2600 acres, about half of which were lemons. Of deciduous trees plantings have been made of apples, apricots, almonds, prunes, and peaches. The Commissioner states that the ladybird (Scymnus vagans) has held the red spider in check.

Apple men in Washington estimate that the annual orchard value of the apple crop of the State, when orchards now planted come into bearing, will amount to $75,000,000.

E. W. Ehmann, of Oroville, after a trip through the State, estimates that the olive crop will be the largest in the history of the State. Owing to a cool summer, the crop wil be later than usual in ripening.

From present indications it appears that orange shipping from southern California will be about three weeks late.

In the Lindsay, Tulare county, citrus belt it is claimed that over 2500 acres will be set out to citrus trees this season. There are about 12,000 acres there already planted.

Raisin and Grape Notes.

The Greek laborers imported into the raisin district of the San Joaquin by P Sioris, organizer for the Migratory League, are reported to be replaced in large part by the Japanese, whom they were designed to replace. Sioris has opened a free employment office for the use of all nationalities except the Japanese.

Judge M. K. Harris, of the California Raisin Exchange, has appointed upon the committee to help him organize the Exchange, H. H. Welsh, A. G. Wishon, R. Frisselle, Chester H. Rowell, and W. R. Nutting.

J. H. Allison, a recent arrival in Fresno county from the East, reports that Eastern jobbers are injured greatly from the variation in price of raisins, and therefore is heartily supporting the Raisin Exchange as a method of making prices more stable.

The warm dry weather recently has done a great deal toward getting the raisins in the San Joaquin off the trays and into the sweatboxes in the proper condition. Coincident with this has been a large amount of buying at figures much more acceptable to the growers than most packers were quoting previously. On October 15, about a quarter of the crop was said to be ready for shipment.

The holding off of shipments of Tokays on account of low prices seems to have justified itself by the extra amount of sugar that has been present, so that the prices have been good enough recently to indicate that table-grape growing is not so much a question of overproduction as of sending out a high grade of product by all shippers. Most of the shipment is now from the American River districts.

Independent wineries around Santa Rosa are said to be paying $20 and $21 per ton for choice varieties of wine grapes.

Ranchers at Elk Grove, Sacramento county, are trying to obtain a piece of land suitable for the proposed experiment station of the U. S. Department of Agriculture for testing resistant varieties of grapes.

General Agriculture.

The International Institute of Agriculture reports the wheat crop of the world this season to be 829,782,823 bushels, as against 825,957,642 bushels in 1910-11. Rye is slightly less this year, as is barley, while the oat prospects are better. As a whole, the cereal crops are very nearly the same as a year ago.

W. S. Miller, of Maine Prairie township, Solano county, has just harvested a large crop of barley raised on reclaimed adobe land. The barley was planted after the rains had ceased and was irrigated. This is the first experiment in this line in the district.

On the Hammers ranch, near El Centro, 500 acres have been set out to barley this fall, most of which is already above ground.

Cantaloupe growers of Imperial county are now arranging for the acreage to be set out the coming season so as to prevent overproduction.

A much larger acreage of beans than is usual is being harvested in Stanislaus county. Growers report good success with the crop.

Hubbard & Lester are seeding six sections west of Alpaugh, Kings county, to grain.

The five-acre cotton patch on the Imperial townsite yielded six bales of cotton this year.

Dr. Franceschi, of Santa Barbara, has received a large collection of seeds, mostly of flowering trees and shrubs, from central Africa, which he will test in this State.

S. E. L. Wharton, of Tulare has harvested a large crop of beans from a considerable acreage set out this spring as an experiment.

Harold Trumbull, of Bakersfield, realized $200 from two acres of peanuts this year.

Horticultural Commissioner A. R. Gallaway reports that the hop crop of Sonoma county was close to 96,000 bales this year.

From 16 acres of cotton near Calexico, Leslie Bennett reports harvesting 24 bales of cotton, with more to come.

The Egyptian cotton crop is reported to be 15% below the ten-year average.

The crops of this State, according to the U. S. Department of Agriculture, on October 1, were 103.5% of average. For the country at large apples were 114.1 of average, lemons 104.6, grapes 103.4, oranges 101.6, onions 89.7, beans 95.1, tomatoes 93.9. Prices on October 1, as compared with the same date in 1910, were for potatoes 55.2% higher, barley 45.6 higher, hay 22.7 higher, wheat 5.7 lower, chickens 6.0 lower, butter 9.2 lower, eggs 10.7 lower.

Heavy rains in Manchuria are said to have seriously injured the soy bean crop.

Miscellaneous News Notes.

The supervisors of Fresno county have determined to stop the work of squirrel eradication December 1, until the rains have ceased in the spring.

The directors of the Modesto irrigation district have reduced the hours of irrigating for 1912 from 30 to 20 minutes per acre.

The directors of the Oakdale and South San Joaquin irrigation districts have

Fruit Growers' Talks

No. 10—How Can We Help You?

One of the strongest features of the work of the California Fruit Distributors is the constant aim to help the grower. To do this more effectively they want to hear from every grower personally—or by letter—with some suggestion for the good of the cause. Now, gentlemen, you all have ideas upon the various phases of the fruit industry—let's hear them.

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awarded contracts to James A. Greene & Co. of Chicago for work on section 2, north of Stanislaus river. The contract price is $637,574.

E. Smoll, of Melrose, is preparing two acres in Castro valley, Alameda county, for mushroom raising.

A large hatchery at Hayward, Alameda county, is being completed. The management will make a specialty of White Leghorns.

Surveys have been completed for a dam at Pollasky, Madera county, which will furnish enough water to irrigate 200,000 acres of land.

Secretary of the Interior Walter Fischer has released 560,765 acres of land in the Shasta National Forest for settlement.

Squirrels in forest reserves in the San Joaquin valley counties are to be poisoned, according to an order issued by Acting Forest Director C. S. Smith.

An election to determine the formation of the Wilber Reclamation district in Kings county will be held November 9.

Systematic work in mosquito eradication has begun at the Los Molinos colony, Tehama county.

A large dam is being surveyed for at Newville, Tehama county, to impound water to be used in irrigating land around Corning.

The Converse Eucalyptus Co. has been formed to plant out 400 acres of land near Corning, Tehama county.

Farmers near Lovelock, Nevada, are organizing to form an irrigation district.

The Farmers' Club of Ukiah is preparing an exhibit for the California Development Board in the Ferry Building at San Francisco.

THE WEST SIDE OF THE SAN JOAQUIN.

To the Editor: I was very much interested in an article entitled "The Transformation of the San Joaquin Valley," published in the RURAL PRESS some time ago. It was an excellent article, but treated only of the east side of the valley. I feel duty-bound to let you know that we are doing some transforming on the west side also.

Here at Patterson, for instance, we believe we have one of the most unique irrigation and colonization projects in the country. The Patterson ranch, originally the Rancho del Puerto, comprises 18,000 acres of land lying in a strip three miles long and nine miles wide, between the Southern Pacific railroad and the San Joaquin river. This body of land has been brought under irrigation by means of one of the finest pieces of irrigation work to be seen anywhere.

A GREAT PUMPING ENTERPRISE.—On the bank of the San Joaquin river a powerful pumping plant has been installed, lifting the water directly from the river to the main canal. Big 20-inch pumps were especially designed for the work. Each is driven by a separate electric motor, and their combined capacity is 50,000 gallons per minute.

The main canal is 3½ miles long, heavily lined with concrete throughout. The highest point of the land being some 70 feet above the river, the land was laid off in five units and the canal divided into five sections, each section having its pumping plant to lift the water to the higher level. All these pumping plants are electrically operated, the same as the one at the river, and at each one there is an immense concrete reservoir, the total capacity of these reservoirs being 5,100,000 gallons at normal flow-line. To govern the flow-line in the main canal, automatic concrete spillways are installed in each section. Any excess of water is returned through these spillways either to the reservoir below or directly to the river by way of the waste ditch, which also serves as a drainage canal.

This plant will eventually be owned by us. We get a share of stock with every acre of land, and when 75% of the land is sold, the irrigating system will be turned over to the settlers. Then the only cost for water will be the operating expenses.

The soil here is a little heavy, but it is very deep and rich, and free from either alkali or hardpan. In the short time that the colony has been opened, a large acreage of alfalfa has been successfully started and fruit orchards of nearly every variety known to California have been set out. The company maintains a demonstration farm for the benefit of the settlers.

THE TOWN AND COUNTRY.—The town of Patterson is laid out after the city of Washington, D. C., with the postoffice and office building in the center of the circular part and broad avenues radiating to the residence sections. The town already has a $25,000 hotel, a $20,000 bank building, and a $25,000 school building, all of concrete construction, as well as a number of other store buildings and many fine residences.

The land is divided into 10 and 20-acre tracts, each fronting on a broad avenue. Las Palmas avenue, extending from the town across the tract to the river, is 80 feet wide and three miles long. It is parked and lined with palms and other trees. Sycamore avenue parallels the railroad at a distance of one mile and extends the length of the tract. It is lined with oleanders and sycamore trees, and has a circular park at every mile planted with trees and flowers. Building restrictions on these boulevards insure high-class improvements.

We are proud of Patterson, with its productive little farms and its beautiful homes in the country as well as in the city. We invite you to come and see us, believing you will be as much impressed as with your trip on the other side.

Patterson, October 16. CITIZEN.

PRIZES TO GOOD FARMERS.

Last week the Sacramento Valley Irrigation Co., of Willows, gave out the annual prizes to the best farmers in the district in which their lands are located. The judges of the several farms entered in competition were Prof. E. J. Wickson and C. B. Messenger. The judges had decided on a point system of making awards. They were not told the names of any of the contestants, but each farm was numbered and the numbers were the only means of identifying the various ranches examined.

The following awards were made:

Best General Farm: First Prize—G. N. Davis, of Princeton, Colusa county, registered Holstein-Freisian cow. Second Prize—L. L. Grieve, of Princeton, three registered hogs; Third Prize—E. E. Woods, Princeton, 25 pure-bred chickens.

Best Farm, First-Year Development: First Prize—S. C. Davis, of Glenn, Glenn county, Jersey heifer; Second Prize—R. H. Russell, of Willows, pair of registered pigs.

Best First-Year Orchard: First Prize—John Suchy, Willows, $25 worth of nursery stock. Second Prize—C. Schuler, of Willows, $15 worth of nursery stock.

Best First-Year Stand of Alfalfa, five acres or more: First Prize—W. H. Hubbard, of Princeton, mower. Second Prize—J. S. Windell, of Glenn, rake.

Best Preparatory Work for Alfalfa, five acres or more: First Prize—L. J. Lowry, of Willows, 100 pounds of alfalfa seed. Second Prize—R. C. Jesse, of Glenn, two-horse Fresno scraper.

One thousand head of cattle were sold by Frank Fernald of Elko, Nevada, at $33 each.

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Have you determined upon the varieties?

Have you decided where you are going to buy?

Are you satisfied that you are getting the best?

Will the trees be "True to Name" and high grade?

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FARM BOOKS.

The following list of farm books are kept in stock and will be mailed on receipt of prices quoted:

The Book of Alfalfa, by Coburn	$2.00
Feeds and Feeding, Henry	2.25
Farm Development, Hays	2.00
Soiling Crops and the Silo, Shaw	1.50
Swine Husbandry, Coburn	1.50
Studies in Horse Breeding, Carlson	2.00
Greenhouse Management, Taft	1.50
Mushroom Culture, Falconer	1.00
The Study of Corn, Shoesmith	.50
Plant Life on the Farm, Masters	1.00
The Hop, Myrick	1.50
The Book of Wheat, Dodlinger	1.50
Meadows and Pastures, Wing	1.50
Trees of California, Jepson	2.50
Asparagus Culture, Hexamer	.50
New Onion Culture, Greiner	.50
American Cattle Doctor, Dadd	1.00
Home Pork Making, Fulton	.50

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Written for the PACIFIC RURAL PRESS
By Mr. R. C. SESSIONS, San Francisco.

(Continued from page 290, October 7th.)

JIM SMITH'S PROBLEM.—Jim Smith made enough money "sky-farming" leased land to buy 320 acres of land, upon which he decided to raise alfalfa. The soil was a sandy loam and would require about three inches of water for each of three irrigations a year. Jim was not so strong for work as he used to be, so he decided that from 5 in the morning until 6 at night, with an hour off at noon, or a 12-hour day, would be about the right irrigating period. He figured out from a pump catalogue that a 10-inch centrifugal pump would irrigate his land at this rate in 16 days, which is time enough, with some to spare between cuttings. Jim knows the value of a large head of water, and says that he does not want to be irrigating all the time, but that he wants some time to do other things.

He had four wells bored and the water stood 20 feet from the surface of the ground. The well borer told him, and the neighbors agreed with the well borer, that to get 750 gallons a minute out of each well, the water would probably draw down about 17 feet more, making the total lift out onto the ground about 37 feet. When allowances are made for friction, velocity head, etc., the total head against which the pump would have to work is about 40 feet. Allowing for a loss in the pump and belt, about 50 horsepower are needed to do this work.

JIM WANTED STEAM.—Jim was familiar with steam-engines and boilers, and the first thing that occurred to him was that he would have a steam-engine to run the pump. He could have oil delivered at the plant for $1.05 a barrel. The blacksmith's oldest boy wanted to run the plant for him for $3 a day and board himself. Jim had spent nearly all his money to buy the land, so he went to the bank and asked for a loan, which the bank agreed to give him at 8% gross.

THE BLACKSMITH WANTED GAS.—The blacksmith heard from his boy that Smith was going to put in a pump, and because he was an agent for a gas-engine and a pump, he started in to talk gas-engine to Jim. He said that the gas-engine plant was cheaper than the steam-plant and was less trouble to run. The cost for fuel was less he said. His youngest boy would run the gas-engine plant for $2 a day and board himself. This was a dollar less than the older boy wanted to run the steam-plant, and the blacksmith said that, because the gas-engine did not need constant attention, the boy could help with the irrigating.

JIM'S BROTHER-IN-LAW WANTED ELECTRICITY.—Jim's wife's brother worked for the electric power company. He said that a motor was the only thing. That Mrs. Smith could have electric light in the house, an electric iron, and a motor to run her washing machine. Jim could run the motor himself and could go off in the field and watch the water. A motor cost less than the gas-engine and it cost less to run it.

In a few days the district manager of the power company came out in his automobile to see Jim. He said that he would let Jim have current for 2½ cents for a kilowatt hour at the rate Jim would probably use it in his 50-horsepower motor. He said that this was only good for certain months in the year, but Jim and he decided that the irrigating season was within this period. The main power-line was two miles off from the place Jim wanted to put the pump, and the district manager said that Jim would have to pay for the branch line, but that the power company would put it in for cost. About $2,000 was a rough estimate of the cost of the line, the manager said. The manager took out a contract, all filled out, and handed it to Jim with his fountain pen for him to sign. Jim said that he guessed he would look it over, that he had not made up his mind yet. Jim put the contract in his pocket and the manager went back to town.

JIM'S PUZZLE.—The more Jim thought about it the more mixed up he got. When the blacksmith was arguing it seemed that he should get a gas-engine, and when he met the district manager of the power company he was almost convinced that he should have a motor. He kind of had an idea that he would get along

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The Boys' Corn Club of one county in Mississippi averaged something like 74 bushels of corn to the acre, while their fathers averaged about 18 bushels **on the same farms**, the same season.

THE REASON?

The older men—**practical farmers**—knew all about growing corn, and would not listen to scientific advice. The boys **didn't know**, and therefore followed scientific direction.

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It is well worth your while to verify this statement, and when in doubt as to the Sodium Chloride content of a Cyanide, have a reputable chemist furnish you an analysis. It may prove a good investment.

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HAVE YOU ALFALFA SEED?
Send for free leaflet describing our process of
RECLEANING ALFALFA SEED—BAG AND BAG ALIKE
and its advantage to you.
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THE HIGHEST GRADE
In development of root, stalk and branch.
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CHUL WHEAT
This new hard milling wheat leads all in yield per acre; is quick in maturing; large gluten content; late harvesting, without waste.
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For samples and prices address D. W. LEWIS, Corcoran, Cal.
A few carloads of fancy white Sonora.

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SPHAGNUM MOSS For Sale
Wholesale and Retail
LOUIS F. SCRIBNER
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Snow's Nursery
Citrus Stock a Specialty
Will accept future contracts on Citrus Stock. also Apricots.
H. K. Snow, Jr., Prop. OXNARD, CAL.

better with a steam-engine, and his nephew who worked in an ice plant in the city told him that if he did not get a steam-engine, he was crazy; that motors burn up and that a gas-engine was never known to run more than five minutes at a time unless you did not want it to.

JIM GETS AN EXPERT'S HELP.—Jim could not reconcile all these arguments and ideas, and it occurred to him that he would consult his engineer, the man who surveyed his land and laid out his ditches, checks, etc. He had a little other business to attend to, so he got on the train and went to the city and called on the engineer. He explained his predicament. The engineer, with the help of Jim's knowledge of local prices and conditions, figured out what each power actually cost in each case. Here it is:

Cost of Steam Power.—The engineer thought that because the water was apt to scale badly, and because the price of oil was pretty high, a high-speed compound condensing plant should be figured on. The cost for oil figured $0.006; attendance, $0.005; supplies, $0.0007. Taking repairs at 2%, interest and taxes and insurance at 8%, and depreciation at 12%, the fixed expense, based on a first cost of $90 a horsepower, amounts to $0.034. Therefore the total cost per horsepower-hour is $0.047

Cost of Gas Power.—The blacksmith claimed and was willing to guarantee a fuel consumption of one-tenth of a gallon of engine distillate per horsepower-hour. Jim said that distillate could be laid down at the depot for 8 cents a gallon and that it was worth $1.50 for a half a day to haul the empty drums to town and bring back four full drums to the ranch, so that the cost of the distillate is $0.0084; attendance, $0.003; and repairs and supplies, $0.002. Taking interest and taxes and insurance at 8%, and depreciation at 10%, the fixed expense on a first cost of $35 a horsepower is $0.0109. So that the total cost per horsepower-hour is...$0.0243

Cost of Electric Power.—At 2½ cents per kilowatt, the cost for current is $0.022. The cost of attendance, supplies, and repairs was so small, that Jim and the engineer left it out. Taking the interest, taxes, and insurance at 8%, and the depreciation at 5%, the fixed expense as based upon a first cost of $22 per horsepower for the motor, etc., and $38 per horsepower for the branch line, amounts to $0.0135. This makes the total cost per horsepower-hour $0.035

The engineer said that the cost of the steam plant might be cut down somewhat by using tubular boilers and a non-condensing engine, but that this cost was already so high that it would not be worth while to figure it further. Jim's hunch was wrong.

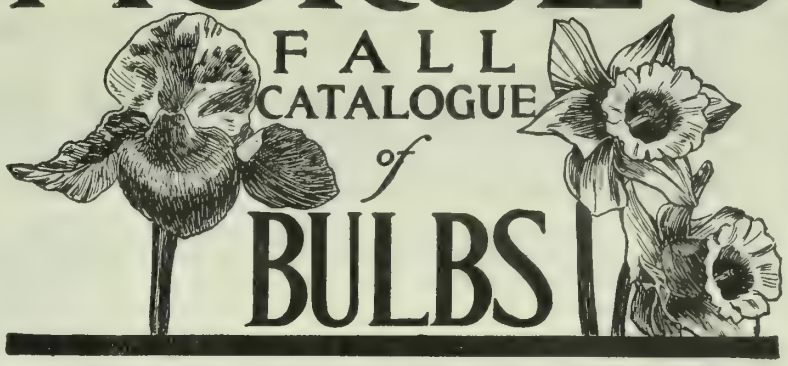
The cost of the branch line was what was making the electric power so high, the engineer said. The engineer said that a 2200-volt motor could be used and the transformers done away with, thus making a much cheaper plant. Jim thought that the risk of having this voltage on the ranch, and particularly down in a damp pump-pit, was too great, and said that he could never forgive himself if any member of the family were ever hurt. He said that he himself did not like the idea of handling any such voltage. Jim said that maybe he could get the power company to stand part of the cost of this line, because they would get it back from other farmers who would do the same as he was doing. The engineer figured that if Jim could get the power company to give him a rate of 2¼ cents per kilowatt and only charge him a third of the cost of the branch line, or $600, then the cost of the electric current would be $0.0237, or a little less than the cost of the gas power. Unless he could get this reduction he would do best to get a gas-engine. If he got the reduction he could take his choice, because there was only a very small difference. The engineer advised him, in case he got a gas-engine, to get the one the blacksmith was selling, because it is a good engine and the fact that the blacksmith's boy would run it and that his father was the agent, left no chance for any excuse that the engine was not run properly.

MORE EXPERIENCE.—Jim went home, and the next day went to see the district manager of the power company. When Jim made his request for a lower rate and that the company stand part of the cost of the pole line, the district manager flatly refused to make any concessions at all. He said that the engineer did not know what he was talking about. So Jim went over to the blacksmith and told him that he had decided to get a gas-engine and wanted his best price. He told the blacksmith how he had determined which was best, and the blacksmith said that, while he could not figure it out, he knew that it was so, because he had been selling a lot of gas-engines lately and it seemed to work out that way.

CHEAPER JUICE.—Now Jim is a pretty big man in the community, and the manager of the power company got to thinking it over and decided that, after all, he might do what Jim wanted. Other farmers might follow Jim's lead and a good deal of business be lost. So he went out that night in his auto and told Jim that if he would keep it under his hat, he would give him a 2¼-cent rate and only charge him $500 for his share of the branch line. Jim's wife urged him to get the motor. She said that her brother knew what he was talking about. To please his wife, Jim told the manager that if he would fill out the contract, he would sign it. The manager had one all ready. Jim said that he wanted his engineer to see it, and that as soon as he could mail it to him and get it back again he would return it signed. The engineer returned it and said that it was O. K. with the exception of some fine type which he advised Jim to have crossed out. The manager refused to do this, but seeing that Jim was determined to have his way or get a gas-engine, he brought the contract around and Jim signed it.

One day, two years afterward, Jim was sitting on the bank of the main irrigating ditch idly watching the cool water go whirling by. It was a hot day, and it was pretty near noontime. He had been tinkering with a new water-seal on his pump and had just climbed up out of the pit. As he sat looking down the ditch and across the field, he saw a well-boring rig being taken out of the adjoining field. This meant the finishing of the fifth plant like his which had been put in. He had kept faith with the power company. His neighbors were all paying the 2½-cent rate and had paid the cost of their branch lines. Jim had had no serious complaint to make, although some of the other farmers were complaining about a minimum charge that had been made for one month when it had rained unexpectedly and they had not used their power. This was provided for in the fine print in the contract; Jim had had this crossed out or he would have had to pay it also. Jim wondered if when the time came to renew his contract he would again get the 2¼-cent rate or would have to pay the 2½-cent rate like the rest of his neighbors. He could always get a gas-engine, he thought. Maybe his engineer would sharpen his pencil and figure out how he could get a 2-cent rate, and then he could let his neighbors have his old 2¼-cent rate. Maybe he would sell his ranch before that time. The Canal would be finished in a year more and the Fair would bring a lot of people from the East who would buy land. He heard his wife calling and looked over toward the house. Lunch was ready, so he shut down the pump and started across the field.

MORSE'S



Write for our new catalogue of Bulbs, contains also Pansies and Sweet Peas: all things to plant now. Mailed free.

Easter Lilies (Postage additional, 25c doz.)	$1.50 doz.
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Oxalis, any sort (Postpaid price)	25c doz.
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Order now and plant early for Spring Flowers

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LILLY'S SEEDS



VERY SPECIAL OFFER

Here is a collection of gorgeous blooms for your garden—a choice collection of four of the most beautiful ever-blooming flowers, hardy and easily grown, consisting of one package each of

LILLY'S NICOTIANA (Flowering tobacco)—A new hybrid giving a continuous display of gorgeous clusters of purple, white, violet, rose, crimson and pink blooms—plant grows about three feet high.

LILLY'S CARNATION POPPY—A magnificent double variety with carnation-like flowers, fringed.

LILLY'S JAPANESE PRIMROSE—An exquisitely bright and showy flower of oriental appearance, mixed colors.

LILLY'S GIANT MORNING GLORY—A tall variety of luxuriant foliage thick with gigantic blossoms measuring four to six inches in diameter and of exquisite shades and colors.

The above magnificent collection will be mailed you for 10c.

Don't fail to send for our Seed Annual for 1912, containing 132 pages fully illustrated, giving accurate descriptions of everything for the farm and garden. Sent free on request. Write Dept. B,

THE CHAS. H. LILLY CO.,
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EUCALYPTUS SEEDS

In large or small quantities, 33 species to select from. Write for free pamphlet, "Eucalyptus Culture." It tells you how to sow the seed, raise the plants and plant out in the field. Also describes all the leading kinds, gives their uses, etc.

Trial packets 15c each, 4 for 50c. Write for prices in quantity.

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A FREE BOOKLET ON
Rhubarb Culture
$1000 profit per acre; plant now. Berry plants of all sorts. Cut this adv. out and mail today.
J. B. WAGNER, Pasadena, Cal.
The Rhubarb and Berry Specialist
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PLANT NOW —THE— FEIJOA

The new commercial tropical fruit. Will stand a temperature down to 10 or 12° above zero. Send for special circular on this fruit.

WEST INDIA GARDENS,
Subtropical Plants and Trees,
Altadena, California.

To Exterminate
GROUND SQUIRRELS, GOPHERS, also BORERS, ROOT APHIS, etc., on Fruit Trees
CARBON BISULPHIDE
Is the only effective remedy.
For sale by dealers and manufacturers
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THE HOME GARDEN
Should be supplied with a variety of
Berry Plants
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Rhubarb
Send for prices.
G. H. HOPKINS, Tropico, Cal.
P. O. formerly Burbank, Cal.

King of All Orchard Heaters

(Undisputed)

Hamilton Regulated Reservoir Orchard Heaters

FIRE CONTROL ADVANTAGES

Fire controlled, burning oil only in proportion as the frost conditions require; just slide the cover and get as much or little heat as you want; which is economy in fuel.

Fire control, large capacity, giving large volume of heat at your command. Can be regulated to compensate for taper walls, getting the extra heat needed at early cold hours of morning.

RESERVOIR FEATURES

Large capacity, 3 and 6 gallons; absolutely dispensing with night filling.

Reservoir principle, requiring less often to fill, which is economy of labor.



The most value for the money.

Cheapest per acre, because less number of units are required, made possible by fire control.

Uniform temperature is maintained. Not possible with FIXED FIRE heaters.

CONSTRUCTION

Made of 26 gauge steel, it is cheapest per pound of metal per heater and provides storage of 150 and 300 gallons of oil per acre, at 50 heaters per acre.

Seamless Regulated Hamilton, that have no seams to leak; with

Cover sliding on, cannot blow off, thus preventing rain getting into oil. By closing covers, fires are put out.

Shallow, preventing tipping in the orchard and spilling contents.

They will NOT blow up, NOR will the covers stick.

How shall I know that the Hamilton Heaters will meet the requirements? An inspection of the device will convince you of its practicability, and for its efficiency, let us send you our RED BOOK telling the experiences of those who have proved the worth of Hamilton Heaters. We can substantiate all our claims of efficiency by references to many satisfied users.

WE HAVE TERRITORY OPEN FOR A FEW LIVE AGENTS. WRITE AND GET OUR TERMS.

Hamilton Reservoir Orchard Heater Co.

Grand Junction, Colorado

CHARLES D. FILSTEAD, General Agent, 723-724 W. P. Story Bldg., Los Angeles, Cal.

TOMATO BLIGHT AND DROP.

We are not at all sure that it settles the question, but the statement of Mr. J. D. Yancy, of the State of Washington, is that Western tomato blight is caused entirely by dryness of the atmosphere. He gives this account of his belief:

From my own experience and that of others I am led to believe that it is a bacterial disease which may be aggravated by a lack of moisture in the air, to a certain extent, but probably more so by a lack of moisture in the ground. But to prove that neither of these conditions, nor both combined, is the sole cause of the blight, I will cite the fact that the tomato was in former years reared to perfection in the Wenatchee, Columbia, and other valleys of the Northwest, where today it blights very badly. Last year out of 100 plants set out, less than half a dozen matured fruit. They were planted on land that was new, but lacking in humus; had good cultivation, but little water; planted late; variety, Stone.

This season we put out some 400 plants in loamy soil, containing a plentiful supply of plant food, and given good cultivation. With the setting of the first clusters of fruit about 5 per cent of the plants had developed well-defined cases of blight. At this time half of the patch was given a thorough irrigation, but owing to the press of other work at the time, the balance of the planting was only dry cultivated.

Now for results. In the irrigated part of the field not another case of blight has occurred, and the vines are carrying as fine a crop of tomatoes as I ever saw, while in the non-irrigated portion blighting has continued at about the same rate. Unaffected vines seem thrifty, but are maturing very little fruit. We planted early this season. Varieties planted, Stone and Clark's Early Jewel. I cannot see that either one of these varieties is more subject to the blight than the other, but I do think that a blight-resistant strain can be developed.

In the meantime, plant as early as possible; cultivate and irrigate thoroughly, and remove all vines which show symptoms of blight.

UNCLE SAM'S IRRIGATED FARMS.

The following is an official statement of operations to July 1, 1911:

Progress has been rapid and the activities of the Bureau have been extended to 28 projects, which to date involve the expenditure of approximately $59,580,000 in the United States proper.

In the eight years of its work the service has built 5967 miles of canals, many of which carry whole rivers. It has excavated 19 miles of tunnels and built 24,235 canal structures and 2193 bridges. It has completed three of the highest dams in the world. Its excavations of rock and earth amount to the enormous total of 73,660,000 cubic yards. Its roads have a total length of 570 miles; telephones, 1694 miles; levees, 75 miles. It has purchased 905,682 barrels of cement and has manufactured in its own mill 340,000 barrels.

As a result of its work, water is available for 1,086,000 acres of land. The gross value of crops produced on the lands irrigation by the Government projects in 1910 was $20,000,000. As a result of the work of the Government it is estimated that land values have increased more than $105,800,000.

Approximately 14,000 families are now residing on farms which are being watered by the Government canals. Not less than 25,000 people have been added to the population of the cities, towns, and villages as a direct result of the Government work.

CLASSIFIED ADVERTISEMENTS.

Rate, 1½c. per word. No order for less than 25c. per week. If you have anything to sell, or want anything, use these columns.

FARM LANDS.

$1000. About 20 acres suitable for fruits, dairy and poultry, ½ mile from Nevada City, Cal. Excellent local market. Good 5-room house and buildings. Ideal climate, fine scenery. Plenty of wood. Water for irrigation. A comfortable home that will make you a good living. A bargain. Address, Owner, care Pacific Rural Press, San Francisco.

$10.00 per acre, 4,400 acres, 20 miles from Monterey bay; stock and grain rancho; abundance of water; profitable, well improved. Circulars of JOHN F. BYXBEE, Palo Alto, Cal.

$27,000 buys best improved and best paying bearing apple orchard in Sonoma county, near Sebastopol. Circular and photos of JOHN F. BYXBEE, Palo Alto, Cal.

1920-ACRE RANCH FOR SALE.—One of the best subdivision or dairy propositions in the Sacramento valley. Butte county. Mostly level bottom loam soil. Two cow-barns, capacity 400 head. Horse barn, 60 head. Numerous corrals and hog sheds. Ten-room dwelling. Blacksmith shop and out-buildings. Entire place fenced and cross-fenced into many fields. All improvements in good condition. Abundance of wood and water. Three miles from railroad station. Apply owner who must sell account other business. Price, $50,000. PAUL GOODLOE, 1049 Phelan Bldg., San Francisco.

$6,000—20 acres, highly improved income property near Vacaville; 10 acres fruit, 10 grain; furnished house, farming implements; water piped; horses, turkeys, geese, chickens. For particulars, address Owner, P. O. Box 314, Vacaville.

$1500. Eighty acres in Browns Valley Irrigation District, near Marysville, Cal. Thirty acres cultivated, balance oak timber and pasture; 8-room house; school across the road. Address, Owner, care Pacific Rural Press, San Franscisco.

FOR RENT.

FOR RENT—37 acres of fruit and 8 acres of vines on shares. Only experienced man need apply. D. F. Conant, Route 5, Box 64, Modesto, Cal.

WANTED.

WANTED—Man wants dairy ranch on shares. W. Williamson, Box 44, Modesto, Cal.

WANTED—A mare, weight 1300, sound, gentle, true, and in foal. 37th and West Sts., Oakland.

POSITIONS WANTED.

LAND OWNERS—If you need a superintendent or agriculturist, a man of experience and executive ability, address Box 110, Pacific Rural Press.

HELP WANTED.

WANTED—A sober, industrious and competent working foreman on hop and fruit ranch. State experience and give references. Address W. F., care Rural Press.

THE WORLD'S HOP CROP.

Consul Joseph I. Brittain, Prague, Bohemia, under date of August 26, says:

A great decline is expected in the German hop crop, where the crop is estimated at 20,900,000 lbs., while in 1910 it was about 44,000,000 lbs. In France the yield is estimated at 4,950,000 lbs., Belgium and Holland 6,050,000 lbs., Russia 6,600,000 lbs., England from 30,800,000 to 35,200,000 lbs. England consumes over 66,000,000 lbs. annually, hence to a great extent must depend upon imports.

The London Financial Times says: For some years the average prices for hops have been so unremunerative that many growers could not continue to grow hops, and the position predicted has arrived, in which the supply is considerably below the demand and consumers have to face the unique fact that the world's stock is practically exhausted, with about half a year's yield, and a tremendous risk in the future of a still further shortage. Messrs. Manger and Henley estimate the English yield will prove to be about 327,000 hundredweights of 112 lbs. on, say, 35,000 acres, rather more than half the annual consumption, which is still increasing.

HORSES BY THE POUND.

(Continued From Page 321.)

difference in price between heavy and light horses and the less difference between heavy mules and light mules that the production of mules from small brood mares, and the production of heavy colts from large brood mores is a policy that might well be adopted, since small mules can be readily sold for good money while small horses may go begging.

If a man has a couple of mares from which he can get colts that will grow into 1600 pound geldings worth $225 each he had better breed them for that purpose, while if his mares are so small that their foals will grow up small, apparently he might as well breed them to jacks and be done with it.

With the increasing difficulty of getting enough large, good quality brood mares, a filly will be of even more value than the above figures. By breeding to jacks, however, all chance of getting a large animal that can be bred is lost.

BREEDING FOR QUALITY.—Whether an owner breeds his mares to a stallion or to a jack the benefit for size is just the same. If from the same mare he can get an 1100 pound gelding or one weighing 1400 pounds, it is self-evident that the larger animal will bring the greater profit, even if the service fee is larger. If he can gain or lose as much in weight with different jacks, the profit will be the same. But while a man is breeding for size he must realize, as stated before, that quality counts for as much as weight, and govern his choice of a sire accordingly.

The quality of the brood mare is also a fundamental part of the breeding, and a class mare of any size should seldom be bred to a jack. Yet the number of high class mares that are leading around mule foals is said by some persons to be lamentable, owing to the growing difficulty in obtaining brood mares that have the "class" and the growing demand for good large horses. At the same time, when mules are in such a demand and the production is going to continue anyway, it may be considered regretable to see scrub mares that are going to produce a poor class of offspring bred to stallions, when they might just as well be bred to jacks and the mules be sold for more than the colts could ever hope to be. The scrub blood would then not be perpetuated, while with colt production it would be limited to poor quality, but the very best type of mares should seldom be used for mule production, or very inferior mares used to raise horse colts.

THE VALUE OF APPEARANCE IN BREEDING.—Appearance also counts for more with a horse than with a mule as man will not pay out a lot of money for the sake of being seen with an ill-shaped, off color horse, while mules at the best are not so handsome but what a man can forgive an animal for his appearance provided he can do his work properly.

Thus with a mare that is off color, of poor conformation and style and otherwise likely to produce a poor quality foal, if she is worth breeding at all, might bring good returns to her owner when used for mule production, while he would hardly come out even in raising colts.

The gist of it all, then, is that, other things being equal, the larger an animal that can be secured, the better; the better the quality, the better the price; that small mules will sell well when small horses won't; that large horses are always in demand at double the price in proportion to their weight as compared with small horses, and that poor quality mares might better be used to produce mules rather than colts, and that whether mares are to be bred to stallions or jacks, the larger the size of their offspring the better.

HORSES AND CATTLE.

N. H. LOCKE CO., Lockeford, Cal., are offering registered Jersey bulls and bull calves of the choicest Island and American breeding, from prize winners and big producers; also a carload of unregistered Jersey cows, and a car of Jersey heifers, unregistered.

JOHN LYNCH, breeder of Registered Short-horns; milk strain. High class stock. First-class dairy breeding. Smooth cattle. Best pedigree. P. O. Box 321 Petaluma, Cal.

PURE-BRED SHORT-HORNS, Poland-China hogs, and Shropshire sheep. Roselawn Stock Farm, Woodland, Cal.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

A. W. MORRIS & SONS, Woodland, Cal.—Importers and breeders registered Holsteins.

STEVENSON & WAGNER, Newman, Cal.—Holstein-Fresian bulls, heifers for sale.

SWINE

FOUR OAKS STOCK CO., breeders of Berkshire and Hampshire hogs and Importer Hampshire Down sheep. Woodland, Cal.

POLAND CHINA HOGS; Barred Rocks and Black Minorca poultry; young stock and eggs for sale. M. Bassett, Hanford, Cal.

GEO. V. BECKMAN, Lodi, San Joaquin Co. Cal. Registered Poland-China Hogs, both sexes.

G. A. MURPHY, Perkins, Cal. Breeder of Champion Herd of Berkshires; also Short-horns.

LOCUST GROVE FARM. Ripon, Cal. Berkshires. Size and quality.

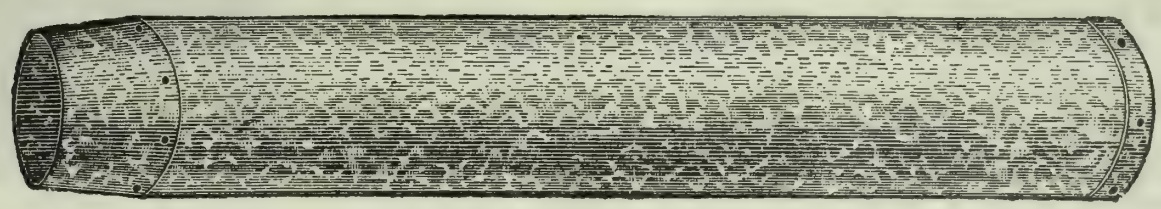
KNOB HILL STOCK FARM—Reg. Poland-China swine. A. M. Henry, Farmington.

BERKSHIRE AND POLAND-CHINA HOGS. Both sexes. C. A. Stowe, Stockton, Cal

STUDARUS & CUNNINGHAM, Mills, Cal Registered O. I. C. swine.

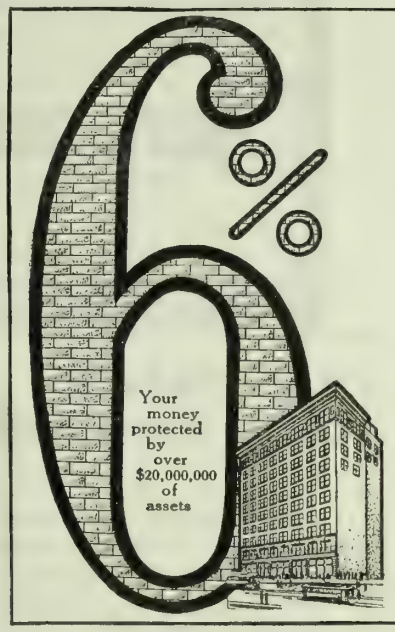
CALIFORNIA NURSERY CO., Niles, Cal Breeders of Thoroughbred Berkshires.

SAVE YOUR TIME WATER AND GRADING BY IRRIGATING WITH AMERICAN SURFACE IRRIGATION PIPE



The PIPE RECOMMENDED BY ALL USERS. It is the ONLY SCIENTIFICALLY CONSTRUCTED SURFACE IRRIGATION PIPE on the market. THERE'S NO ROUND SEAMS TO LEAK, retard the flow of water or weaken the pipe. This pipe is easily handled and cheaper than flumes. It will last a lifetime. For irrigating alfalfa it is the only pipe to use. We make RIVETED PIPE AND TANKS. Write for Illustrated Catalogue also SPECIAL IRRIGATION FOLDER which may mean much to you.

American Steel Pipe & Tank Co., General Offices 342-43 Pacific Electric Bldg., Los Angeles, Cal.



Our securities are backed by assets of over $20,000,000, consisting largely of real estate in the city of Oakland.

The Realty Syndicate has been established for 16 years and during this long period has enjoyed the confidence of the people of California.

In buying "Syndicate Sixes" you buy direct from the Company—you deal with the officers of the Company.

We have several booklets telling about "Syndicate Sixes" and our great real estate holdings which we will gladly send you. Write for one today.

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Make Your Money Earn 6%



CHOICE CHEAP CONCENTRATED
MODESTO ALFALFA MEAL
FOR
CATTLE POULTRY SWINE
FOR PRICES SEE OR WRITE
THE GRANGE CO., Modesto, Cal.

FIGHTING HOG CHOLERA.

From almost every county of Missouri there have come to the Agricultural College during the past three months appeals for help to check the ravages of hog cholera. The veterinary department has been taxed to its utmost capacity to supply serum as fast as the calls have come, but with its present equipment this has not been possible.

Over 54,000 doses have been sent out from the serum laboratory at Columbia during the first eight months of 1911. Fifteen thousand hogs have been inoculated for the prevention of cholera during the month of August alone. Last winter the legislature of Missouri appropriated $25,000 to aid the work of the veterinary department in fighting hog cholera. To say that double this sum is being saved to the farmers of Missouri every month of the year as a result of this original investment of $25,000 is an entirely conservative statement.

[The foregoing from Missouri shows what a beneficent work this hog cholera prevention is and how the growers appreciate it. The same thing is in progress in this State. The Experiment Station at Berkeley is doing its utmost to keep up with the demand from growers for serum. Those who do not know about it should send to the station for circulars of information.—EDITOR.]

The Piedra Pintada rancho of San Luis Obispo has been sold to Stanley Bell.

Producing a New Milch Goat for California.

Written for the PACIFIC RURAL PRESS
By Mr. PAUL PARKER.

Every few years some fad will flame up in the animal world. Animals that are not seeking notoriety will suddenly find themselves thrown into the glare of the limelight by a misguided enthusiast who makes actualities out of possibilities and mountains out of hile hills. "Get rich quick" is the slogan, and the credulous bite in haste and repent at leisure. Chinese pheasants, Belgian hares, and milch goats have all run the gantlet and gotten themselves in bad repute through no fault of their own.

On the other hand, there is always a few people who are never carried off their feet by the faddist and realize that there are certain limitations to all things. Such is the case with the Schmidt Bros., and their band of milch goats at Soledad, Monterey county, California. August Schmidt, who has charge of the goats, doesn't expect to have the dairy cows doing stunts over the moon or to drive them out of the dairies when he perfects his goat, but he hopes to produce an animal that will be large, hardy, and a big milk-producer: a goat that will be cheap in price and easy to care for, so that when cow's milk does not agree with a baby, a goat can be introduced into the back yard and the pride of the household can get milk that bears a closer resemblance to mother's milk than any other kind. Goat's milk is thicker and sweeter than cow's: the odor which is often found is not due to the taste in the milk, but to outside agencies tainting it, such as the smell from the buck or manure. Mr. Schmidt keeps his bucks away from the other goats for this reason and also to prevent any kids coming out of season.

In order to perfect a goat that will be best adapted for California conditions, Mr. Schmidt is crossing the hardy Angora with the Maltese—the best of the Spanish milch breeds—and the Saanen. one of the most popular goats in Germany and Switzerland. His first object was to produce a large animal that could with stand the vicissitudes of winter and summer on the open range. To this end he makes his goats forage for themselves on the rocky ranges where they keep fat on land over which the other stock can't even climb. This last spring when the storms were very severe around Soledad, not a goat was lost, although, as a general rule, they do not survive very wet weather. During the last five years Mr. Schmidt has lost only two kids; one was killed by an eagle and the other by a coyote. And in each case it was due to a young doe deserting her kid. The country where the goats range is infested with eagles and coyotes, but the old does keep them away. For this reason there is no necessity of a herder, especially since they will always come home at night without being driven.

In order to get the size, a doe is at least a year old before she is bred. Both the doe and the kid are liable to be stunted if they are bred earlier than this. Instead of weaning the kid after four months' time, it is allowed to go six months. This gives a growth than can not be obtained in any other way. Most of the does have twins, but occasionally there will only be one; in this case the lone kid is allowed to take all the milk it can use and the rest is given to some other kid that is not doing as well as it should.

If any of the kids show signs of horns the hair is scraped back and caustic applied. A goat with horns is a nuisance, not only to the people, but to the other animals. Mr. Schmidt finds that the horns appear mostly with the Angora crosses, and never with the Saanen. Some of the Angora-Maltese crosses are giving over a quart a day, and they were not started milking at the proper time. It is found that in order to make a good milk-producer out of a doe she should be milked dry two and three times a day. This should be commenced immediately after the first kid is born. Also, by extending the weaning over such a long time it has a tendency to lengthen the period of lactation, for the Angora, through years of breeding, only gives milk three or four months and then dries up.

The kids come in the early spring after the heavy storms are over. This is done to prevent them from getting chilled, because they usually die after such an ordeal. Also, the green grasses increase the flow of milk and the little fellows get a better start in the world. Of the cultivated crops, carrots are the best milk producers; they have the same effect on a doe that they do on a ewe.

When the does are about to kid they are watched carefully, and after the youngsters appear they are kept in a separate field until the doe gets well acquainted with them. Whenever a doe does not acknowledge her kid, they are put together in a small pen for a few days, and after that there is never any danger of her not letting them suck. When there is any danger of a heavy storm while the kids are small, gates leading to sheds are kept open, because the doe will scent the storm and get under cover before the rain falls.

Since Mr. Schmidt is striving to build up the female side of the goat family, he seldom ever keeps the bucks of the crosses. Unless one looks especially promising, it is killed and eaten when about seven weeks old. At this age the kid is very palatable, resembling lamb to a great extent, and they often weigh as much as 20 pounds. Unfortunately, after a kid gets much older than this, the meat is strong, and unless onions or herbs are cooked in conjunction with it, a person has to be rather hungry to eat it.

Mr. Schmidt finds the cost of raising these goats practically nothing, as they get most of their food on the range. The Angoras prefer the blackberry vines to anything else, so that they are helping him clean up his land. The effect of the bark on the milk is not very noticeable, especially if it is made into cheese.

SUPERNUMERARY TEAT.

To the Editor: On the upper part of one of the hind teats of a young Jersey cow that freshened recently for the first time, there is a small growth from which the milk comes more plentifully than from the natural opening below. How, if at all, can this opening be closed without drying the cow? The milk from it runs all over the milker's hand and makes milking very disagreeable.

ANSWER BY DR. C. A. PYLE OF THE SAN FRANCISCO VETERINARY COLLEGE.

The only thing that can be done until the cow is dry is to tie the small teat up before milking. This can be done with a string, rubber band, or an ordinary clamp. If it is so small that the opening cannot be tied, there is nothing to do, except, perhaps, to use her as a nurse for calves. Two of these might run with her at a time, making way for others as soon as they are able to look after themselves. Quite a number of calves can sometimes be handled in a single year



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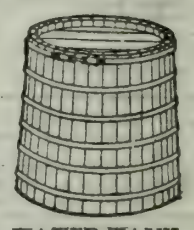
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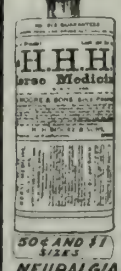
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by a cow affected this way, and the benefit to the calves might be nearly as much as by using the cow for butter production. When the cow is dry the teat can be amputated and the opening will close when the sore heals, or a stick of lunar caustic can be inserted into it, causing a wound that will heal solid.

DAIRY NOTES.

The San Francisco Dairy Exchange is preparing to move from its present quarters in Merchant street to the second floor of the Hanford Block, Market and Davis streets. W. H. Rodenberger has been elected secretary of the Exchange for the ensuing year and Thomas Harris, of Harris, Roden & Co., grader and weigher.

In spite of the fact that quotations for storage butter were not made on the San Francisco Dairy Exchange until a little over a week ago, there has been a good deal of movement of both butter and eggs from cold storage since the last week in July, while it was not until a month later in 1910 that a similar movement began. This was due to the fact that there was too much storage butter at the end of the season this spring and the dealers are making sure that this will not happen again. The movement from storage began this year when fresh extras were quoted at about 25 cents, while last year no sales of similar stock were made until butter had reached 30 cents. The price of fresh extras has thus risen 5 cents in spite of competition from a good quality of storage butter. It may be noted that the arrivals in the San Francisco market have decreased rapidly during the past month and a considerable movement to the North begun. Less eggs were received in the week ending Octobr 12 than during a corresponding week in 1910; this for the first week since the last of June. A year ago at this time butter was practically at the highest price for the year.

The Western Meat Co. is preparing to operate a large creamery at San Francisco, having cream shipped in from country points, as do the Central and Western Creamery companies. J. V. Canham, superintendent of the company, has been looking over the dairy districts of the west side of the San Joaquin with a view to establishing cream deposits there.

The California Creamery Operators' Association is completing arrangements for the convention to be held in San Luis Obispo the latter part of November.

The 600-acre ranch of P. M. Lansdale, two miles west of Merced, is being turned into a vast dairy ranch. A herd of thoroughbred Holsteins will be purchased and permanent improvements amounting to $50,000 made on the place.

The F. C. Butler cheese factory at Novato, Sonoma county, was destroyed by fire last week.

An exchange says that a dairy cow of Joseph Barndollar, of Laurel Colony, Tulare county, recently gave birth to three calves within 20 days. Two came on September 10, the third following three weeks later.

Harry Quinn, one of the best-known sheepmen of Tulare county, is having 240 acres of alfalfa land near Porterville fixed up as a first-class dairy ranch.

The health authorities of San Francisco recently barred out a large amount of milk from Vallejo dairies on the ground that the herds were suffering from tuberculosis. The order will be effective till the herds are cleaned up in this particular.

Dairymen of Corcoran, Kings county, are organizing an association with the object of creating a large supply of certified cream to be sent to the Los Angeles market. The regulations of the Association include inspection of dairies, the tuberculin test of cattle, cement floors and managers, cooling of cream to 40 degrees, milking in closed pails, and a bacterial count of not more than 3000 per cubic centimetre.

A condensed-milk factory may be located soon at Hughson, Stanislaus county.

The city of San Diego is passing a dairy ordinance requiring inspection of all dairies supplying milk to the city, and making other rules regarding the standard of cleanliness and composition of the milk. A number of the dairymen in the vicinity are organizing an association for mutual protection. As in most cases of dairy regulation, a big fight is being made over bovine tuberculosis, and the dairymen also claim that many of the proposed regulations cannot be observed at present prices.

The Ayrshire Association has just admitted a number of cows to advanced registry. The percentage of butter-fat averages a little less than 4.00 for the cows now admitted and the amount of butter-fat for the year for mature cows varies from 296.6 to 518.7 pounds.

LIVE STOCK NOTES.

Anthrax has been found among cattle near Farmersville, Tulare county.

Losses of a couple of carloads of hogs shipped from Porterville to San Francisco are reported, the animals being badly affected with tuberculosis.

A number of farmers and stock breeders near Woodland have combined in purchasing a registered Shire stallion, three years old and weighing 1900 pounds.

R. D. Finks and Joseph Sutton, of Maxwell, Colusa county, have purchased one of the prize Percherons of the last State Fair. The price paid was $3000.

Frank Crane, of Livingston, Merced county, has returned from a trip to Arizona, where he purchased 600 head of range cattle for his ranch.

Fear of an early winter has caused stockmen to move their stock from the mountains to the valley much earlier than usual this year.

Hog cholera has broken out at Lakeville, Sonoma county.

W. F. Bernstein, of Kings county, and Elias Gallup of the same place, both raisers of thoroughbred Poland-China hogs, have made a number of sales as a result of the show at Hanford.

In the monthly report of Dr. George Gordon, live stock inspector of Kings county, it is stated that anthrax was found in the southern part of the county. One case of lumpy jaw was found at Lakeside. Glanders were found in six horses during the month, but it is thought that the disease is now checked. Only two arrests were made for violations of the State dairy law during the month. An examination of former Texas tick territory by Federal and State verterinarians shows that the ticks have been entirely eradicated.



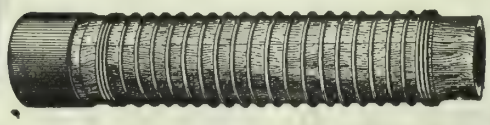
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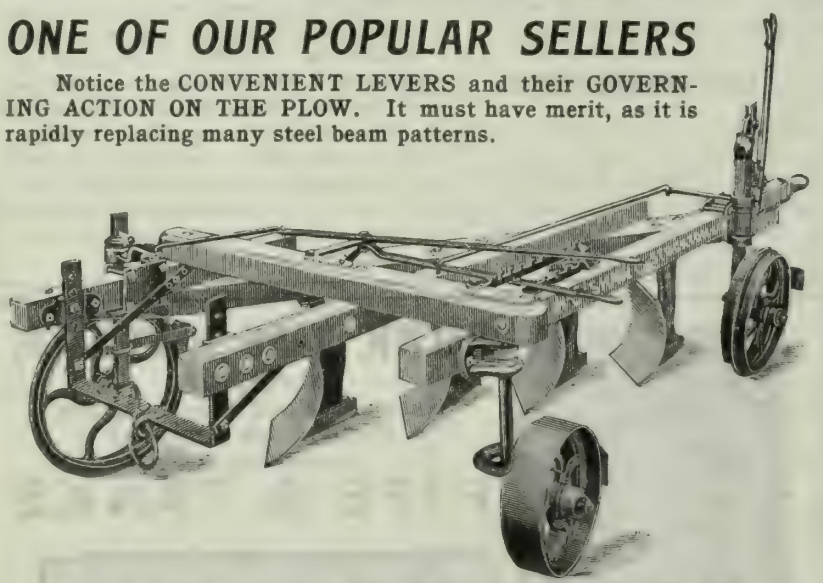
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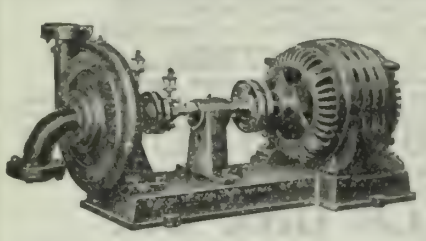
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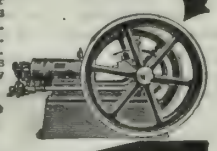
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Internal Poultry Parasites.

Written for the PACIFIC RURAL PRESS
By M. RUSSELL JAMES.

(Concluded from page 275 of the issue of September 30.)

The efficacy of the various tapeworm remedies was tested at the Maryland Experiment Station with the following consions:

Epsom salts and turpentine, when administered as directed in the foregoing pages, have proved to be the most effective agents for allaying the troubles arising from the tapeworm disease.

Epsom salts may be given in two ways: Dissolved in warm water and the liquid used to wet the mash, or by giving each fowl the liquid with a spoon or medicine dropper. The dose ranges in quantity from 10 grains for a week-old chick to 50 grains for a mature fowl, or in more familiar terms, one-half teaspoonful to mature fowl and one teaspoonful to six half-grown chicks or fifteen small chicks. The point is that each fowl gets sufficient to thoroughly clean out the intestinal tract.

MODUS OPERANDI OF TREATMENT.

A strongly purgative dose of epsom salts given to the affected fowls while fasting carries off the segments of the tapeworm, leaving only the head or parts attached to the intestines. After the operation of the salts, some nutritious and easily digested mash should be fed the fowls; then with a soft rubber tube or catheter from two teaspoonfuls to a half ounce of turpentine (for a grown fowl) should be introduced directly into the crop. The turpentine passes immediately into the intestines and destroys the heads of the worms left behind after the purgative has torn away the long ribbonlike band of segments. At the station this treatment saved all birds taken in time. Where the turpentine cannot be introduced directly into the crop, it will lessen the severity of the treatment to mix it with half its bulk of sweet oil.

ROUND WORMS.

These are much more common than tapeworm and much less serious. They are from one-third to five inches in length, pointed at both ends, but sharper at the head end. A few of them seems to affect the fowl little, but when numerous the fowl becomes dull, pale-combed, and usually with diarrhea. Sometimes they become so rolled and matted in the intestines as to completely stop their natural functions. The same treatment as for tapeworm will be quickly effective, but they will often yield to milder treatment. Sanotine in the proportion of 2 grains to each mature fowl, is a common remedy. This may be dissolved in water and used in the mash, followed by a dose of epsom salts or castor oil. In less serious cases of all kinds of worm diseases, an excellent remedy is coal oil and castor oil, half and half, a teaspoonful morning and night for a few days.

PREVENTION OF WORMS.

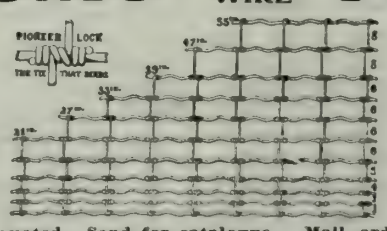
As with all other poultry diseases, the best remedy for worms is prevention of worms. The fact that infestations of worms are becoming epidemic even on this Western Coast is a clear call for a change in the conditions under which tne average flock of poultry is kept. The practice of keeping poultry, year after year, on the same ground and even in limited space without cleaning or disinfecting it in any way; of allowing the droppings to bank up in the poultry houses for six months or a year (some backyarders and farmers never clean their poultry quarters); of throwing the poultry food into the filth and slime of the yards and coops; of letting fowls drink dirty dribbles of water out of slimy vessels; of feeding the fowls sticky, soured and mildewed food, raw or tainted meats, half rotten green food and vegetables; of throwing the diseased carcass of fowls and other animals where the poultry range instead of burning all such —these are practices which must eventually bring all known and unknown plagues into the poultry yard. And the worst of it is that the plagues and epidemics will not remain with the breeders of them, but are likely to spread to the well-cared-for fowls, near and far.

The following worm-preventative measures are given by Dr. Salmon: "Parasitic infestation of the digestive tract should be guarded against by hygienic means as far as possible. One of the most important of these is to move the fowls upon fresh ground every two or three years, or certainly in all cases where such parasites are frequently observed in the intestines of the birds. Another practical measure, which may be adopted at the same time, is to remove the excrement daily from the houses, and destroy any parasites or their eggs which may be in it, by mixing it with quicklime or saturating it with a 10 per cent solution of sulphuric acid. The acid is cheap, but requires that great care be taken in diluting it, owing to the danger of its splashing upon the clothing and flesh and causing severe burns. It should always be poured slowly into the water used for dilution, and on no account should water be poured into the acid, as it will cause explosion and splashing. When treating diseased birds, these should always be isolated and confined, and their droppings treated as just recommended."

Worms of all kinds are much more serious with chicks and half-grown chickens than with mature fowls; even if the worms do not destroy them outright, they sap the vitality and retard the growth of the young fowls. Incubator chicks are particularly subject to worm diseases, owing to large numbers being kept together in limited space. Where practicable, the brooder runs should be changed to fresh ground each season. In any case, they should not be used as chicken pens during the off season of hatching, but should be limed, spaded and planted to barley; after which they will be practically fresh

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ground. Chicks should never be allowed to sleep upon or eat among the droppings. Their brooders should be made clean and sweet just before they turn in for the night. Raw meat or milk should never be given to brooder chicks. Both of these foods tend to worms. Many of the old Petaluma poultrymen will not use milk even in the mash for their brooder chicks.

NATURE'S VERMIFUGE.

"Salt is a preventative of worm infection," declares the noted veterinary, Dr. Smead. "In fact, it is Nature's vermifuge. Charcoal is the great antacid of the universe. Now a word about bitters. People and animals have an inherent craving for a bitter taste in the mouth at times. Could salt, charcoal, some harmless bitter plant or root, with a little iron added, be furnished animals when they need it or when their desires are for it, I fully believe that worms would have a hard job to live in their intestines."

A South Dakota farmer says that he keeps some salt mixed with pulverized sulphur near the water tank where his calves can help themselves when they go in to drink, and that since adopting this plan he has had no occasion to vaccinate against blackleg. A sheep raiser in New York asserts that a mixture of salt and sulphur not only keeps down the internal parasites to which sheep are particularly subject, but that it in a great measure does away with external ones, such as ticks and the like.

These facts contain a hint to the poultryman. Of course, fowls can not be given salt in the manner and quantity that others animals are. But all mashes, meats and such food may be salted the same as well-salted food for the table, with the same results. As to sulphur, we have long made a practice of giving our fowls some in their mash every two or three weeks during hot, dry weather, allowing a teacupful mixed with the shorts to dry the mash for fifty fowls. If the fowls showed any symptoms of worms we should give this three days in succession; then skip three days and give for another three days. Powdered charcoal should also be frequently added to the mash. Coal oil is another of Nature's vermifuges. In chances of infection it should be kept in the drinking water—not too much, just the faintest film. This will likewise prevent the spread of cholera, roup and chickenpox.

The drinking fountain is too often the fount of infection for worms and other diseases in the poultry yard. Wash and dry the vessels, then wipe them thoroughly with a clean cloth wrung out of coal oil. This is a thorough and wholesome disinfectant and should be used every few days, or every day when disease is in the flock. This together with keeping the vessels brimming full of pure, cool water, will do much in itself for the health of the flock and the profit of the business.

SAN JOSE POULTRY AND DOG SHOW.

Written for the PACIFIC RURAL PRESS
By M. RUSSELL JAMES.

(Continued From Last Issue.)

THE PULLET BUSINESS PAYS.—Mr. Baldwin, of the large White Leghorn plant at San Jose, whose advertisement appears from time to time in these columns, is making something of a specialty of the pullet end of the business. He sells pullets of various ages at the following rates: 10 weeks old, $8 per dozen; 3 months old, $15 per dozen; laying pullets, 5 to 7 months old, $24 per dozen. Even at these attractive prices for the producer, he has as yet not been able to supply the demand for White Leghorn pullets. In fact, Mr. Baldwin is so full of business that he has not entered any birds in the shows this season. In addition to being a White Leghorn specialist and running a large poultry plant, his bump of invention has been busy and he has just completed two labor-saving devices for large poultry plants. One is a feed hopper for dry mash which overcomes the defects of such hoppers on the market in regard to the feed clogging and not giving down. His invention is operated by a treadle in the shape of a perch-like platform which connects with a finger-like arrangement inside that keeps the feed in light and friable condition. When the fowls step upon the platform or treadle to reach the feed the resultant motion causes the feed to scatter into the feed-trough.

Mr. Baldwin's other invention is a much more pretentious affair; in short, it is an arrangement for brooding chicks in the distillate-heated brooder room that supplies a regular heat where it is needed, and also a movable hover for the chicks, and with no danger of the heat dropping out and the chicks piling up and dying by hundreds as is often the case with the ordinary distillate burner and brooder room. We have no space to give the details of this ingenious invention, which is complete to the smallest detail, but to those interested in brooding chicks by the thousands it is well worth a trip to San Jose to see it in operation. At the time of our call there were 800 four-day-old chicks in the brooder room, all chirp and lively and not one had turned up its toes. Mr. Baldwin estimates that these two devices will save him the $700 he paid out for labor last season and enable him to double his output for this season.

THE GARDEN CITY.—Names are often misnomers, but the appellation of Garden City is rightly given to San Jose. In visiting some of the poultry plants for which that section is noted, we rode through miles of homes of varying degrees of pretension and beauty, but always there was a large garden, and the humblest dwelling was partly hid and made wholly attractive by trees and vines and flowers. Such homes, connected with those of the larger garden or farm, are not only the foundation of a stable government and the basis of its prosperity, but they are the very soul of our civilization. The person who has spent his childhood in such a home and grown up along with the other growing things out-of-doors may get off his base for a while in the artificial life of the city, but in the end he will gravitate back to the simple and normal.

Here, too, in this city of orchards and gardens we found the person of whose existence our editor is a bit doubtful: the farmer woman—not the farmerette—who not only directs the work of the farm and orchard, but does much of it with her own hands—and she doesn't have to, either.

Mrs. Moore, the owner of one of the fine orchards out Campbell way, and head of the famous Barred Rock poultry plant of Moore & Mann, is the lady. No; she doesn't need to do such work, or any work, for that matter. She has the means to devote her days to pleasure, society, or any of the light and pleasant things supposedly dear to the feminie heart, but she finds health and pleasure in growing beautiful fruits, flowers and vegetables, and prize-winning fowls and animals. Her barns, which she planned herself, are solid structures with concrete flooring, and remind one of the fine buildings on the Minnesota farms for the storing of grains and the housing of stock; the concrete basement cellar, which is also of her planning, is a model for the cool dry storage of dairy products and fruits. Neither does Mrs. Moore neglect the internal affairs of the home. The jars of canned and preserved fruits in this same basement run up into the hundreds; one gets real cream and butter and fruit with the bloom on it at her table, and one comes away from her cozy home with a pleasant taste in the mouth and a pleasant memory in the heart.

A proof of Mrs. Moore's skill as an orchardist may be seen in the property which she bought last year. It was a run-down orchard which it was thought would have to be grubbed up; but through proper cultivation, spraying and irrigating, the prune and apricot trees were loaded with fine fruit this season. Here is one of Mrs. Moore's fruit-growing pointers: As soon as the fruit is gathered, she thoroughly irrigates the trees. This causes the buds to set strongly for the next season's fruit.

Mrs. Moore is also a live influence in the community, belongs to the poultry and agricultural associations, and is full of enthusiasm for the general civic betterment. We give this instance of a busy agricultural woman's life because it has a hint for the women who are growing listless and grouchy simply because they feel the interests of life slipping away from them. Productive work full of live interest is a very fountain of youth for women as well as men.

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WHITE PLYMOUTH ROCKS—Eggs, $3 per setting; cockerels, $5 and up; trios, $10 and up; my Oakland 1910 4th prize cock, $25; 2nd prize cock, $50. Wallace Rutherford, Napa, Cal.

S. C. B. MINORCA EGGS for hatching at $6 per 100; can fill large orders; 12 yards large beautiful hens, excellent layers. Black Beauty Poultry Yards, Dixon, Cal.

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BRONZE Turkeys and Eggs. Ed Hart, Clements, Cal. Large size, good plumage, early maturity.

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HATCHING EGGS—White Leghorns. Circular 164. A. H. Gregory, Fruitvale, Cal.

PIGEONS! SQUABS PAY! LARGEST squab plant in Sonoma county offers young unmated Carneaux $8 to $12 a dozen. Good crosses, $6. Mated working color banded crosses, $2 pair. Maltese hens, $3; Carneaux, $3 and $3.50. Bolton Squab Factory, Healdsburg, Cal.

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ROSE MONT POULTRY PLANT
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The Home Circle.

Opportunity.

Master of human destinies am I!
Fame, love, and fortune on my footsteps wait;
Cities and fields I walk; I penetrate
Deserts and seas remote, and passing by
Hovel and mart and palace, soon or late
I knock unbidden once at every gate.
If sleeping, wake; if feasting, rise, before
I turn away. It is the hour of fate,
And they who follow me reach every state
Mortals desire, and conquer every foe
Save Death; but those who doubt or hesitate,
Condemned to failure, penury, and woe,
Seek in vain and uselessly implore—
I answer not and I return no more!

—Senator Ingalls.

Opportunity.

They do me wrong who say I come no more,
When once I knock and fail to find you in;
For every day I stand outside your door,
And bid you wake and rise to fight and win.
Wail not for precious chances passed away;
Weep not for golden ages on the wane;
Each night I burn the records of the day;
At sunrise every soul is born again.
Laugh like a boy at splendors that have sped,
To vanished joys be blind and deaf and dumb;
My judgments seal the dead past with its dead,
But never bind a moment yet to come.
Though deep in mire, wring not your hands and weep;
I lend my arm to all who say, "I can!"

—Walter Malone.

The Passing of the Cattle Barons of California.

The loss of cattle and horses during the famine years was one of the greatest calamities that ever visited California. The assessed value of property in Los Angeles county in 1860 was $3,650,930; in 1864, $1,622,370. Over two million dollars of property was swept out of existence, a percentage of loss greater than that of San Francisco by the earthquake and fire in 1906. On the cattle there was no insurance or salvage; the loss was total.

The great drouth began in 1863 and lasted two years. In the winter of 1862-63 the rainfall was less than four inches and in 1863-64 it was little more than a trace. By the fall of 1863 all vegetation had been licked up from the sun-baked plains by the hungry herds and cattle were dying of starvation.

As the time for the rainy season approached the rancheros anxiously scanned the heavens for signs and portents of coming storms, but none appeared. The heavens were as brass, and the former and the latter rains came not. The winter passed and the hot, dry summer was upon them. Cattle were dying by the hundreds every day. Herds of gaunt skeleton-like forms moved slowly over the plains in search of food. Here and there, singly or in small groups, poor brutes, too weak to move on, stood motionless, with drooping heads, slowly dying of hunger.

In the long stretch of arid plain between Los Angeles and San Diego there was one oasis of luxuriant green. It was the vineyards of the Anaheim colonists, kept green by irrigation. The two square miles of colony ground were surrounded by a close-set willow hedge, and the streets were closed by gates. The starving cattle, frenzied by the sight of something green, would gather around the inclosure and make desperate attempts to break through. A mounted guard, armed, patrolled the outside of the barricade, day and night, to protect the vineyards from insursion by the starving herds. There was no relief for the wretched condition. There was no means of shipping the starving cattle out of the country and no feed to ship in. The small amount of feed raised by irrigation was scarce sufficient to keep a few domestic animals alive. Hay sold for $150 a ton and feed barley for $100.—Prof. J. M. Quinn in Pacific Monthly.

How Fast Does Corn Grow?

How fast does corn grow these hot days and nights?

Wallace Rankin, the hardware dealer, says a traveling man lost $5 on a wager in Oswego recently because he took the wrong end of a bet with a farmer as to how fast corn reaches heavenward. The traveling man bet that a stalk of corn would not grow six inches in the time named. The traveling man lost his wager by an inch, and the farmer won his by one inch and five hours.

The wager was made as the result of remarks made by the farmer as to how fast corn was shooting up. He got off the old remark about it growing so fast in the night that he could hear its joints pop.

The drummer laughed at him and told him he was mistaken.

"It's easy for you to say your corn is growing that fast," he remarked, "but you haven't got any money to back up your claim."

"Yes, I have," said the farmer. "I've got plenty of money, and I hate to get more by taking it from you on a dead-sure thing, but since you're such a wise one and have tried to run a bluff on me I'll just cover your $5 and bet you that corn grows six inches in thirty-six hours."

It looked like a find to the drummer, and he put up the coin. The pair agreed on umpires and went to the farmer's field. There they selected a likely stalk and tied a string to it, well up and just long enough to touch the ground.

Mr. Rankin happened into Oswego just as the crowd started out to see what the corn had done. It had been about 31 hours then since the mark was set. He went along with the party. They found the string elevated quite a bit above the ground, and when a foot rule was put to it there were just seven inches from the end to the soil. The farmer got the money.—Chanute Tribune.

Fruit Pastes.

These are a very attractive addition to dessert. They are made from the pulp of ripe fruit boiled to a thick paste with sugar and dried, when they may be cut in fanciful shapes or they may be dried in fanciful molds. They should be kept in a tight tin box with paraffine paper between. Care must be taken in the making, as the least scorch ruins them; also, the best white cane sugar must be used and no iron or tin dish or spoon come in contact with them, else their color will be injured.

Orange Paste.—Take a half dozen large navel oranges; grate the yellow part of the rinds; then squeeze out the juice in a separate dish; scrape the pulp from the orange skins and boil it and the grated peel in a little water till very soft and and rub through a hair sieve; strain the juice into this and add twice the weight of sugar; boil and stir till a thick paste, then dry on plates or in molds.

Apple or Quince Paste.—Wash and prepare the fruit carefully, and boil the peelings and cores, using the water strained to cook the fruit in which has been sliced and pared. Boil the fruit very soft and rub through a sieve; add an equal weight of sugar to this pulp and boil, stirring constantly till a thick paste; then dry.

Marmalades of the various kinds, boiled very thick so that they will solidify when cold, and put into little jars or glasses, are a pretty addition to the menu either as a dessert with cream or to be eaten with meats. They can be turned out whole and sliced when served.

Menu for a Harvest-Time Festival.—An up-to-date menu for a supper on any such occasions consists of hot chicken bouillon with whipped cream; chicken salad, olive sandwiches, fruit salad, cheese sandwiches; mushroom duck and hot biscuits. Dessert: coffee mousse, topsy-turvy cake, fancy cakes, bonbons, and hot coffee.

Coffee Mousse.—This is coffee ice cream frozen to look like moss, and made by soaking one-fourth box of gelatine in a cup of water, then set over hot water till dissolved; add 2 cups of whipped cream and 1 scant cup of powdered sugar; for flavoring, 3 tablespoonfuls of very strong and clear coffee. Stir up from the bottom carefully till it begins to thicken; then pour into a mold; place a buttered paper over it and the lid on tightly; pack in salt and ice for an hour.

Get Out of Doors.

Trudeau's classic experiment points us in the right direction. After inoculating a number of rabbits with tuberculosis, he confined a number of them indoors and turned the others outdoors. The latter all recovered, while the former all died.

This experiment shows that a rabbit living upon its natural food and under a natural environment is proof against tuberculosis. There is abundant reason to believe this equally true of man.

In other words, tuberculosis is not a necessary evil of human life, but is a natural consequence of erroneous habits and departure from natural conditions. Man is naturally an outdoor animal. A mole lives a healthy life in a burrow. A man must live in the fresh air and the sunshine.—Medical Record.

Not Exactly.

Conductor—did you get out and stretch your legs when we stopped at the junction?

Passenger—Well, not exactly; I went into the dining-car and had them pulled.

New to the "Beat."

The New Girl—An' may me intended visit me every Sunday afternoon, ma'am?

Mistress—Who is your intended, Delia?

The New Girl—I don't know yet, ma'am. I'm a stranger in town.

The farmer is the most vitally interested person in the United States in every sort of legislation—especially that which affects taxes. No difference who pays the taxes, sooner or later, directly or indirectly, they come out of the primary producer, the farmer.

The fact that Lincoln was a rail-splitter doesn't indicate that all rail-splitters may be Lincolns, or that splitting rails is any particularly essential training for the presidency.

Adapt yourself to circumstances. When you go out to dinner wear a vest the same color as the gravy.

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OUR YOUNG FOLKS' DEPARTMENT.

Conducted By M. Russell James

THE DOGS AND PET STOCK AT THE SAN JOSE SHOW.

Dogs, like poultry, have a standard by which each breed is judged, and to secure a prize in its class the dog must score in points somewhere near the hundred mark, the same as a fowl, the one getting closest to that mark capturing the blue ribbon. As these faithful home companions are dear to the hearts of all boys and of most girls as well, the annual exhibitions of the kennel clubs are both interesting and instructive to the young folks.

At the San Jose dog show the first bench was occupied by five prize-winning St. Bernards that looked like lions in their shaggy brindle and tawny-orange coats. One can understand how that shocking mistake came about when some years ago a man stabbed his would-be rescuer to the heart thinking the great beast was pulling him from the snowdrift to devour him. For all their immense size and formidable appearance, the St. Bernards are gentle and obedient in temper, with great affection, especially for children.

As our young folks know, this breed of dogs has saved thousands of exhausted travelers in the Alps, and other localities and countries as well. For nearly a thousand years these dogs have been bred and trained by the monks for this work of rescue. In the Hospice of the great St. Bernard on the heights of Mons Jovis, in the Alps, is an old painting of Bernard de Menthon, the founder of the Hospice, which was built to succor the pilgrims to Rome, accompanied by his dog. The dog represented is believed to be the progenitor of the famous race of St. Bernards.

The collies made up the largest class in the show, and were a fine display. These shepherd dogs have become quite the fashion in England and America, and it is said their luxurious life as pets in the homes of wealth is undermining those valuable traits which have made this breed famous. In their proper place as guardians of the farmers' flocks, collies are invaluable. The nature of the collie is to protect stock and keep it in its proper place, and every farmer should keep one or more of these valuable dogs.

The fox terriers were another large class at this show, and these, too, represent another valuable breed, and one that is suited to either city or country as a house dog. It is only within the last thirty years that this breed has become the fashion, and displaced the black-and-tan, of which it is a cross. But the fox terrier is a useful dog, being a fine ratter and a good watchdog.

Then there were Airedale and bull terriers and Boston terriers, Irish terriers, and the pretty spaniels with their big drooping ears and long soft curls; and Pomeranians with their woolly hair and ribbons, and toy dogs not much bigger than one's first—all of them made for grooming and petting and tricks and pink satin cushions. But we will pass over these pretty creatures and mention a few more of the dogs of importance.

One of these is the sportsman's delight, the aristocratic greyhound. As this animal is black, the name seems a misnomer, but on looking up the subject we find that the term is a "corruption of the word gaze-hound, signifying that it pursues its game by sight and not by scent." The point of interest in this breed to those who are not sportsmen is its antiquity. Over the plains of Egypt, on monuments erected more than three thousand years ago, can still be deciphered the chiseled form of the greyhound beside that of his royal master; for until within comparatively late years the greyhound could be owned only by princes and nobles, and to kill or even maim a dog of this breed was punishable by death.

Two other remarkable breeds of hunting dogs at this show were the English setters and the pointers. These dogs point out the game and then stand rigid until the hunter shoots it and tells them to fetch it. This is called "holding a point." The owner of the first-prize pointer said that this dog had often "froze one point" (huntsman parlance) for twenty-five minutes.

And now a word about another ancient dog which certainly can boast the ugliest "mug" of all the canines. This is the bulldog, so named because in olden time it was bred almost exclusively for bull-baiting. The nature of this breed is to take hold without warning (the bulldog seldom barks) and keep hold, its ugly retroussé or pug nose allowing it to breathe freely while holding on "till the cows come home" or a piece comes out. This vicious trait, known as bulldoggedness, while pretty bad in the lump, when diluted by more amiable traits, is the foundation of hold-to-it-iveness, courage, endurance, force, without which all races—men as well as dogs—would drop out of existence like the dodo. A noted dog fancier says: "There is scarcely a species of the canine tribe which has not at some period been crossed with the bulldog, that it might from him imbibe those sturdy and lasting qualities which distinguish it."

But the most vicious and unreliable, and lacking in character, of all dogs, as we learned from the attendant, are the Esquimaux or sledge-dogs of Alaska and the frozen North. There were four of these shaggy beasts entered by one exhibitor, and it was quite a feature of the exhibition when they were harnessed to a wheeled sledge and driven through the principal streets of the town.

BANTAMS AND OTHER PET STOCK.

There was a fine display of Bantams, made up of all the popular varieties of these miniature fowls which are being described in this department. The saucy little Games, the Seabrights with their wonderfully laced golden and silver feathering, the beautifully crested Polish, the motherly little Cochins and the odd and pretty Back-tailed Japanese Bantam, together with the sprightly Rose-comb Blacks and Leghorn Bantams, made an attractive and interesting exhibit.

There is no prettier pet for either a boy or a girl than a pair of Bantams. A nice house can be made for them cut out of a drygoods box, and with a small run fanced and covered with inch-mesh netting, they will be safe from all dangers and a constant source of pleasure to their young owners, and at the same time supply them with dainty little eggs for their breakfast. The boy who drives the butcher cart in our neighborhood has invested some of his earnings in a pair of Game Bantams, and he declares that they are "great, if they are little," and that he gets more fun out of them than from any of his pleasures.

The pheasants made a pretty exhibit with their funny long tails, ringnecks and speckled coats and briliant red and gold colors. A sad incident occurred in this class. A little San Jose boy had a pair of pet pheasants on exhibition. The cage containing them was placed next to that of a pair of coons. The sight of their natural enemy so frightened the pheasants that in dashing against the top of the cage to escape the vicinity of the coons, the male bird broke his neck.

One of the daintiest exhibits in the show was a cage of fan-tailed pigeons. These little creatures were so exquisitely white and pretty that when they spread their tails like dainty fans they looked like delicate snow toys.

Then there were canary and other small birds and talking parrots, and waltzing Japanese mice, and a few cats and kits; but the exhibit of unending interest to old folks and young folks alike were a pair of monkeys and a baby monkey. The male monkey that was in a cage by himself would stand up and dance by the half hour at night when the band played. Monkeys, like children, are fond of candy, and this one was given a piece pretty strong with peppermint. He evidently thought that something had got on the sweet, and he reached down and picked up a piece of paper from the floor and rubbed the candy good and hard; then he tasted it again, gave it another wiping, tasted it and in disgust threw the candy as far as he could send it. But the mother monkey and her baby were the funniest. She would gather the little creature in her arms and wrap herself about it so that just its little round head and funny face could be seen. Then she would part the hair on it with her hands and look for lice and fleas exactly like a human, and the little monk just like a child, would get tired of being cleaned up and pull itself away impatiently to climb over the cage and look for some mischief to get into.

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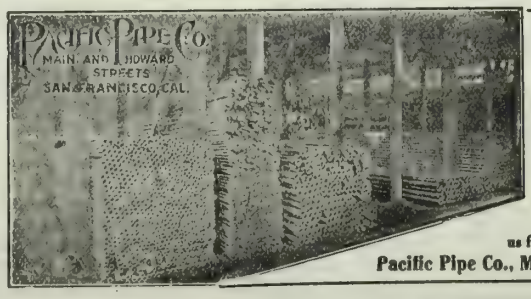


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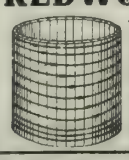
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THE MARKETS.

San Francisco, Oct. 18, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The local movement continues fairly active, though operations are on a rather limited scale. Local buyers are still operating in the north, though the export movement is moderate. Prices are firmly held all along the Coast.

California Club	$1.50	@1.55
Sonora	Nominal	
White Australian	1.65	@1.70
Northern Club	1.50	@1.55
Northern Bluestem	1.70	@1.75
Northern Red	1.65	@1.70

BARLEY.

Futures have recovered from the recent weakness, and the cash grain is extremely strong. Supplies are light, and good prices are obtained for very poor stuff. All desirable brewing and feed barley is higher, and there is still considerable demand for brewing in the East.

Brewing and Shipping	$1.72½	@1.75
Choice Feed, per ctl	1.70	@1.72½
Common Feed	1.65	@1.70

OATS.

The demand continues as active as ever, and offerings are steadily diminishing. Everything is closely held, and red, gray and white oats are held at an advance.

Red Feed	$1.75	@1.80
Gray	1.70	@1.75
White		1.75
Black	1.75	@1.90
Red Seed	1.90	@2.05

CORN.

California stock finds a very fair demand through the country, prices standing as before. There is little trading locally on Eastern grain, but prices on both grades have been advanced.

Cal. Small Yellow	$1.80	@1.85
Eastern Yellow		1.75
Eastern White		1.80

RYE.

There is no movement of any consequence, as desirable offerings are scarce. Some off lots are offered, but good stock is held at an advance.

Rye, per ctl	$1.[illegible]

BEANS.

Beans are now coming forward freely from producing districts, and there is a fair movement to the East, as buyers are taking more interest with the approaching end of the harvest. Prices are still subject to considerable change, but the market appears to be somewhat steadier than for the last month or two, and prices are improving in some lines. Large and small whites are again higher, and cranberry beans have made a slight advance. Horse beans, however, are a little easier, and red kidneys have taken a sudden drop. Other lines are unchanged. The harvest in the lima bean districts is about over, and is progressing rapidly in the valley districts. The damage suffered in the latter section was slight, and a very heavy crop is reported in some parts of the Sacramento valley. Lima beans are now available in ample quantities for all current needs, and are accordingly rather easy. Buyers are not yet willing to enter the market on a very large scale, anticipating a further decline within the next month or two.

Bayos, per ctl	3.65	@3.75
Blackeyes	3.50	@3.75
Cranberry Beans	3.60	@3.85
Garvanzos	3.00	@3.50
Horse Beans	2.75	@3.25
Small Whites	3.80	@3.90
Large Whites	3.75	@3.85
Limas	5.10	@5.20
Pea		4.25
Pink	3.50	@3.75
Red Kidneys	4.60	@5.00

SEEDS.

The dry weather has interfered with the demand in some lines, but there is still a fair movement, and greater activity is expected within the next few weeks. Prices are steady, and show no quotable change.

Alfalfa	18	@18½c
Broomcorn Seed, per ton		$38.00
Brown Mustard, per lb		5½c
Canary		4½c
Hemp		4½c
Millet	3	@ 3½c
Timothy	Nominal	
Yellow Mustard		5¾c

FLOUR.

Trading is active, both for local and export account, and values are firmly maintained at the former level.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.80	@5.00

Hay and Feedstuffs.

HAY.

The market at present is a rather featureless and uninteresting affair, as the larger consumers locally have accumulated fair supplies in the last month, and are not buying much at the moment. Arrivals have been decreasing rapidly, and still consist largely of alfalfa. The latter is moving off fairly well, being in better demand than last month, and the small arrivals of grain hay are also readily disposed of at full prices. Increasing activity is expected in the interior, as many districts have about used up their crop, and must get hay from other points. The outlook, of course, depends greatly on the supply of green feed from now on, but dealers are confident that the market will be firm for the remainder of the season, and look for a further advance.

Choice Wheat	$18.00@20.00
Good Wheat Hay	13.00@17.50
Other Grade Wheat	10.00@12.50
Wheat and Oats	10.00@17.00
Tame Oats	10.00@16.50
Wild Oats	8.00@13.00
Alfalfa	8.00@11.50
Stock Hay	6.00@ 7.50
Straw, per bale	35@ 70c

FEEDSTUFFS.

The feed market remains about as before, all lines being firm, with a good demand. The upward movement of prices in alfalfa meal, rolled barley and oats continues, other lines being unchanged.

Alfalfa Meal, per ton	$18.00@19.00
Bran, per ton	28.50@29.50
Oil-cake Meal	43.00@45.00
Cocoanut Cake or Meal	25.50@26.50
Cracked Corn	38.00@39.00
Middlings	34.00@36.00
Rolled Barley	36.00@37.00
Rolled Oats	36.00@37.00
Shorts	32.00@33.00

Garden Truck.

VEGETABLES.

Large speculative buying of onions has been the feature of the past week, and with surplus offerings going into strong hands the market is firm at a slight advance. Prices show a firmer tone on many other lines of vegetables The strictly summer lines of garden truck in particular are arriving in much smaller quantities than for the last month or two, and high prices are quoted on summer squash, eggplant, okra, green peppers, etc. No more green peas are coming in, and green corn also is practically out of the market. Cauliflower is higher, while cabbage is easy. The tomato crop is being cleaned up, and arrivals have been excessive all week, causing prices to sag badly.

Onions: Yellow ctl	85@	90c
Garlic, per lb	3@	4c
Tomatoes, per box	20@	40c
Cucumbers, per box	75c@	$1.00
Cabbage	65@	75c
Carrots, per sack	75c@	1.00
Cauliflower, per doz	65@	75c
String Beans, lb	4@	6c
Lima Beans, lb	3½@	4c
Summer Squash, per box	1.00@	1.25
Okra, per box	90c@	1.00
Green Corn, per sack		1.50
Eggplant, per box	60@	75c
Green Peppers, per box	50@	75c

POTATOES.

Potatoes are rather quiet at present, and while offerings of local stock are not excessive, there is considerable Oregon stock on the market. Prices on river and Oregon potatoes are a little higher, but there is no strength to the market. Sweet potatoes are lower, with liberal supplies.

River Whites	95c@	$1.15
Sweet Potatoes, per ctl	$ 1.65@	1.75
Salinas Burbanks	1.60@	1.65
Oregon Burbanks	1.40@	1.45

Dairy Produce.

POULTRY.

Wild ducks are beginning to figure in the market, though the regular lines of poultry still find a fair demand. Eastern arrivals are about average, but with light offerings of California chickens the market is cleaning up better than last week, and better prices are obtained for fryers. Broilers are also in demand, and there is a good market for squabs and rabbits. Good young turkeys find a ready market at quotations.

Large Broilers	$ 3.50@	4.00
Small Broilers	3.00@	3.25
Fryers	5.00@	6.00
Hens, extra	8.00@	9.00
Hens, large	5.00@	6.00
Small Hens	3.50@	4.50
Old Roosters	4.00@	4.50
Young Roosters	6.00@	7.00
Young Roosters, full grown	8.00@	9.00
Squabs	2.00@	3.00
Geese, per pair	2.00@	2.50
Ducks	4.00@	7.00
Turkeys, live, per lb	24@	27c

BUTTER.

The local demand is quite active at present, and with moderate arrivals the market shows increasing strength. Notwithstanding some fluctuation, the general range on most grades is higher than last week.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	—	30	—	24½	30½	30½
Prime Firsts	—	27	—	27	27	28
Firsts	—	26	—	26	26	26½
Seconds	—	23	—	23	24	24
No. 1 Pack- East Ladles Extras	—	21½	—	21½	22½	22½
Storage Extras	—	26½	—	26½	27	27

EGGS.

Prices continue to advance, extras being about 6c. higher than a week ago. The present high prices of extras have caused a greater demand for lower grades, and firsts have taken quite a jump, some advances being noted in all other grades. Storage stock is now moving freely at appearing quotations.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	—	43	—	45	45	48
Firsts	—	39	—	39	39	44
Seconds	—	21	—	21	25	25
Selected Pullets	—	32½	—	33½	36	38
Eastern Extras	—	25	—	25	26½	30
Storage Extras	—	26½	—	26½	26½	26½

CHEESE.

Y. A.s are easy, but arrivals of new flats have been rather light of late, and prices are higher. Monterey cheese is firm, with little on hand at present, although increased arrivals are expected.

Fancy California Flats, per lb	14½c
Storage	14 c
Firsts	13½c
New Young Americas, fancy	15½c
Monterey or Jack Cheese	14 c

Deciduous Fruits.

FRESH FRUITS.

The approaching end of the fresh fruit season is indicated by numerous advances in prices, though so far few varieties have been dropped from the list. Blackberries are about out of the market, but raspberries are still fairly plentiful. Nutmeg melons are in good demand, and with rather light offerings prices are considerably better. Watermelons are also held a little higher. The best lots of strawberries command an advance, while huckleberries are lower. Apples are steady, with a very fair shipping movement in the better varieties, and all descriptions of pears are higher, Bartletts being rather scarce. Arrivals of good peaches are diminishing, and good prices are quoted on mountain and Oregon fruit. Prunes are considerably higher, late plums selling at slightly lower prices and figs are cleaning up well at firm figures. Table grapes are moving off well, with a good demand for shipment, although supplies here are still ample and prices unchanged on the leading varieties.

Watermelons, per doz	$ 1.25@	2.00
Nutmegs, per box	75c@	1.25
Raspberries, chest	5.00@	8.00
Strawberries, chest	2.50@	5.00
Huckleberries, lb	8@	10c
Cranberries, per bbl	9.00@	9.50
Apples—		
Fancy, box	1.00@	1.35
Choce	60@	75c
Peaches, carriers	60@	75c
Small box	40@	90c
Prunes, crate	85c@	1.00
Figs, box	85c@	1.00
Pears, Bartlett, box	1.00@	1.50
Other varieties	60c@	1.50
Quinces, box	65c@	1.00
Grapes—		
Muscat, crate	60@	75c
Isabella	60@	85c
Seedless	75@	90c
Cornichon	60@	75c
Other arieties	40@	65c
Pomegranates, small box	25@	40c

Dried Fruits.

Conditions in the dried fruit market show little change, and in most lines the market is not very interesting to growers, most of the crop having been moved out of first hands. Except on prunes, the packers have about all they need for the early trade, and are turning their attention to the packing and delivery of the stock. There will doubtless be a renewed demand for peaches, apricots, etc., later in the season, when the little held by growers should clean up at high prices, but there is nothing doing in these lines at present. Prunes are pretty well taken out of growers' hands, but there is a strong demand for Eastern and export shipment, and prices have again been advanced. There is still considerable variance in reports on the raisin market. Local packers have reduced their offers on loose muscatels and sultanas, and the Eastern market is also weaker, while press reports from Fresno have been quoting an advance. Local packers, however, show many contracts closed in the last few days at the quoted range, and any higher prices that may have been paid are doubtless for immediate delivery to short interests. The larger packers appear in no great hurry to buy, as the Eastern market is quiet, though a good many growers are still holding out. The New York Journal of Commerce says:

"Packers' views on prunes are strong, especially where the large sizes are under consideration, and there is less disposition shown by second hands to resell. Still, some resale business is being done and sales of several cars for prompt shipment at 5¾@6c f. o. b. four-size bulk basis, according to asortment, are reported.

"New crop prunes are beginning to arrive quite freely as the goods are being hustled forward from the Coast under the new fast freight arrangement, to fill early contracts. Most of the stock now coming in is said to be going directly into consumption or to fill up jobbers' spot stocks, which were almost out when the new fruit began to arrive. Raisins in the seeded grades are about the dullest article on the list, and the fact that a concessionary spirit is manifested by packers does not help to stimulate demand for forward shipments. A decline in prices on November shipments, or rather a shading of prices on that option to the extent of ¼c as compared with the recent inside quotation of 7c f. o. b. for fancy seeded on October shipment, is noted in the advices received by wire from the Coast.

"The general tone of the market for peaches on the Coast is reported to be firm in spite of the fact that some sellers have recently manifested an inclination to shade quotations. Buying interest at this end appears to be slack. Apricots are inactive and prices are nominal."

Evap. Apples, 1911, per lb	7½@	8½c
Apricots	13	@14 c
Figs, new crop		4 c
Peaches, new crop	9	@ 9½c
Prunes, 4-size basis, new crop Contracts	5¾@	6¼c
Pears, new crop	8	@ 9 c
Raisins—		
Loose Muscatels, in sweatbox	3½@	3¾c
Thompson's Seedless	6	@ 6¼c
Seedless Sultanas	4½@	5 c

Citrus Fruits.

The citrus year is rapidly drawing to a close, and but few cars of oranges of the old crop remain in the State. Speculation as to the size of the coming crop is now in order. In Tulare county the new crop is estimated at 3000 cars, but the shipping may be a little late. However, some oranges will go from the northern sections early in November. A great fight is being made by the Florida Citrus Exchange in an effort to keep shippers from sending out green fruit artificially cured.

At the Eastern auctions prices are very good, and demand active. At New York on Monday, Oct. 16, valencia oranges brought from $3.80 to $5.60 per box, and lemons sold for $6.10 and $6.35 per box. At Boston the same oranges were a trifle higher than the above figures, while lemons were a little lower. At Philadelphia oranges averaged from $2.90 to $5.10, and lemons brought from $3.50 to $5.45 per box.

In the local market citrus fruits seem to be attracting a little more attention of late, and with moderate arrivals the market shows some firmness all around. The inside figure on both valencia oranges and lemons has been advanced, and

seedless grapefruit has been selling up to $5.

Valencias, choice to fancy	$ 4.00@ 4.50
Grapefruit	4.00@ 5.00
Limes	4.50@ 5.00
Lemons	2.00@ 5.50

Nuts, Honey, Hops, Etc.

NUTS.

As formerly reported, the walnut crop in southern California was well cleaned up at opening prices, and shipments are now being forwarded rapidly, as the harvest is well under way. Almonds also are moving off fairly well, though there are still a good many lots in growers' hands.

Almonds, 1911 crop—	
Nonpareils	18½c
I X L	17¼c
Ne Plus Ultra	16½c
Drakes	14½c
Languedoc	14½c
Hardshells	8 @ 8½c
Walnuts, 1911 crop:	
Softshell, No. 1	14 c
Hardshell, No. 1	13½c
No. 2	11 c
Budded	16½c

HONEY.

The local market is quiet, with prices about as before. The crop is steadily moving East from producing districts. A local packer has purchased the Kings county pool at a price in the neighborhood of 6c.

Comb, white	13 @15 c
Extracted, water white	8 @ 9 c
Amber	7 @ 7½c
Off grades	5 @ 6 c

BEESWAX.

There is no great demand at present, though some wax is being shipped in from the country. Prices stand as before.

Light	28 @30 c
Dark	23 @26 c

HOPS.

Some sales have recently been closed in northern California within the range quoted, though as far as can be learned the top figure has not been paid for some time. Sales in Washington have been made at 35c or better, but growers there are holding for 40 to 45c.

1911 crop	35 @40 c

Live Stock.

Heavy hogs are quoted a fraction higher, but there is no strength to the market, as offerings are ample for all current needs. Other lines of live stock are unchanged, though dressed steers are a little higher.

Gross weight:	
Steers: No. 1	5¼@ 5¾c
No. 2	5 @ 5¼c
Cows and Heifers: No. 1	4¼@ 4½c
No. 2	4 @ 4¼c
Bulls and Stags	2 @ 3 c
Calves: Light	6½@ 6¾c
Medium	6 @ 6¼c
Hogs: Grain-fed, heavy	6½@ 6⅝c
150 to 250 lbs	6¾c
100 to 150 lbs	6¾c
Small prime wethers	3¾@ 4 c
Large prime wethers	3¾@ 4 c
Ewes	3¼@ 3½c
Lambs	4¾c
Steers	9 @ 9½c
Cows	8 @ 8½c
Heifers	8 @ 8½c
Veal, large	9½@11½c
Mutton: Wethers	8 @ 8½c
Ewes	7½@ 8 c
Lambs	9½@10½c
Hogs, dressed	10 @11 c

WOOL.

A sale in northern California has been postponed to next week. Buyers appear to be taking little interest, and report a quiet and rather easy market, values being largely nominal.

Spring Clip—	
Choice Southern, Year's sta-	
Northern, year's staple	14 @16 c
ple	10 @12½c
7 months	8 @11 c
Lambs, spring	8 @10 c
Fall Clip	5 @10 c

HIDES.

Prices are steadily maintained at the former level, though the demand at present is light.

Heavy Steers, over 56 lbs.	11½c
Medium	11 c
Light Steers, under 48 lbs.	10½c
Heavy Cows, over 50 lbs.	10½c
Light Cows, 30 to 50 lbs.	9½c
Kip	11½c
Veal	16 c
Calf	16 c
Dry—	
Dry Hides	17½@18½c
Dry Bulls	15½c
Dry Kip, 10 to 15	18 @18½c
Dry Veal, 5 to 10	19½c
Dry Calf, 7 down	23 @23½c
Sheep Skins—	
Long Wools	$ 0.85@ 1.25
Medium Wool, 6 to 9 mos.	50@ 75c
Short Wool, 3 to 6 mos.	30@ 50c
Lambs	35@ 50c

HORSES.

The general range of prices remains about as before, though sales for the past week have shown a little more firmness in the market. This is partly due to the fact that some very attractive stock is being offered at present, but there is also a little more demand in the retail city trade. Little difficulty is experienced in selling horses of desirable type, and buyers show more interest than for some time past.

Desirable Drafters, 1700 lb. up.	$300@350
Light Drafters, 1500 to 1650	210@250
Chunks, 1350 to 1500 lbs	175@225
Wagon Horses, 1250 to 1350 lbs.	120@175
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	110@125
Old Mares	90@115

MULES.

200 lbs.	$240@290
100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

SPECIAL DECIDUOUS MARKET

Sacramento, Cal., Oct. 14, 1911.

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, October 13, 1911, as reported by the California Fruit Distributors:

Peaches—16 cars. A few peaches are still offering, but the quantity is inconsiderable, and there will probably be no more of them after the following week.

Pears—50 cars. Fall and winter pears continue to go forward in satisfactory volume. There are not many cars of this fruit now left, probably not more than 25 or 30.

Grapes—518¾ cars. Grape movement continues about stationary, and probably will remain at about this figure during the remainder of the season. It is reported that there are not many Tokays left in the Lodi district, but there are plentiful supplies yet to be shipped from the American river and from other sections. Cornichons are going forward in increased volume, but there will be no large supplies until after Tokays are exhausted. Emperors have not begun to move yet.

Total shipments to October 11 were 10,396 cars compared with 11,018 cars to the same date last year.

The Eastern auctions show an increased demand for California fruits and advanced prices. On Monday, October 16, at New York, the following prices were received: Beure d'Anjou pears, boxes, $3.30@4; Malaga grapes, $1.10@1.35; Malagas and Rose Peru, $1; Calmyrna figs, $1.65; Tokay grapes, 85c@$1.15; Cornichon grapes, $1.20@1.55; Winter Nellis, $2.20; Clairgeaus, $2.80; D'Comice Pears, $2.65; G. Morceau pears, $1.55@2.35; Easter Beure pears, $1.60.

IRRIGATED LANDS

20 to 40 acre tracts in cheapest and best irrigated district in the West; fine alfalfa, fruit and vineyard land, $100 up per acre, ¼ cash, balance easy terms.

Good improved land in alfalfa or bearing trees from $200 to $300 per acre; easy terms.

MODESTO LAND CO.,
MASONIC TEMPLE,
Modesto, Cal.

640 ACRES

Alfalfa or Fruit Land

At Elmira, Cal.

For Sale as a whole or in subdivisions to suit. Fine soil, plenty of water. For prices and particulars, write owners

WM. R. and F. L. HAY,
Elmira, Cal.

PUBLISHER'S DEPARTMENT.

THIS IS AN ACTUAL FACT.

Last week we received a little booklet on advertising gotten out by F. B. Cozzens of Chicago, who, by the way, is the owner of an orange grove at Fair Oaks, Sacramento county, California, and for years a subscriber to the PACIFIC RURAL PRESS. In the booklet Mr. Cozzens tells the following story about advertising:

A FRUIT GROWER'S TESTIMONY.

"I own an orange grove in central California and I subscribe to an agricultural paper called the 'Pacific Rural Press', which I read very carefully in an effort to keep up to date in agricultural lines—with more or less success.

"In growing oranges we use considerable fertilizer. As I was reading the paper one day my eye caught the advertisement of the Mountain Copper Co., Ltd., of San Francisco, offering high-grade fertilizer for sale. As I had had some difficulty in getting fertilizer on time from southern California, I opened correspondence with the Mountain Copper Co. In doing so I made no mention of the Pacific Rural Press. The results of this correspondence has been that I have bought nearly $2000 worth of fertilizer from the Mountain Copper Co. in the past three years.

"They sent a representative up to my place to form an opinion as to whether I was buying what the soil needed; this representative succeeded in interesting a number of other growers in our vicinity, and the Mountain Copper Co. is seling, I believe, not less than $5000 worth of fertilizer annually to the small community in my neighborhood.

"The advertisement of the Mountain Copper Co., Ltd., in the Pacific Rural Press disappeared from its columns almost immediately after I noticed it and has never appeared there since.

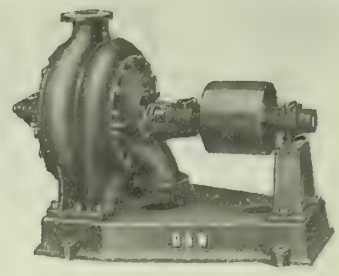
"I have no doubt that when the Pacific Rural Press advertising man called on the Mountain Copper Co., Ltd., to ask them to keep their adertisement running, he was informed that 'they had never received an inquiry.'"

We wish to thank Mr. Cozzens for sending us a copy of the booklet, and also to call the attention of our subscribers to the point so plainly made. If readers of the PACIFIC RURAL PRESS would make it a rule, when writing to an advertiser, to say where they saw the announcement, the merchant would consider it a favor and we would be greatly benefited. Such a paper as the PACIFIC RURAL PRESS, and practically every other paper, can not be maintained from subscription receipts alone, and as a matter of fact many advertisements are valuable to readers, constituting a public market-place or clearing house. To be mutually beneficial, the only direct way is to mention the fact to the adertiser that you read his announcement and want further particulars about his goods.

If our readers will keep this in mind and *do it*, the RURAL PRESS will gain thousands of dollars in advertising receipts.

Another new book of interest to farmers has just reached our desk from Ginn & Co., publishers, of New York and San Francisco. The book is entitled "Principles of Rural Economics" and treats of a phase of agriculture which has as yet been little exploited in text-book literature. Instead of explaining to the farmer how to grow crops and make his farm pay, the author takes up such questions as the place of agriculture in national prosperity, the characteristics of rural life, the significance of rural as distinguished from urban civilization. It is the purpose of this book to give to agricultural students a more definite idea of their place in the economy of modern life, and to others a knowledge of the dignity and honor of the most ancient and honorable of all occupations—that of the farmer. The book contains 386 pages, is bound in cloth, and sells for $1.30.

A lot of new farm books have been received at this office. See advertisement in another column for list and prices.



Off Year Crops Pay The Greatest Profits

The surest way of growing fruit every year and producing a superior quality is by using an independent pumping plant.

This insures the right amount of water at the right time, and is comparatively inexpensive.

The extra profit on one off-year crop will pay for your pumping plant several times over.

DOW PUMPS

because of moderate first cost, simple design, and low operating costs, are exceptionally well suited for independent pumping plants. Talk it over with our engineers. Their advice may be helpful.

AGRICULTURAL PUMPS

is chuck full of practical information. Your name and address brings one.

DOW PUMPING ENGINE CO.
412 Sheldon Bldg., San Francisco
233 S. Los Angeles St., Los Angeles

For economical deep well pumping investigate the

DOW NON-PULSATING PUMP

CARBO STEEL POSTS FOR ALL

PATENTED TRADE MARK

Standard Staples and Standard Tools

The one post for all purposes
Catalog 11

CARBO FENCING

American Steel Post Company

Violet and Santa Fe Ave.
Los Angeles, Cal.

The Fresno Scraper



Send for Raisin Machinery Catalogue.

FRESNO AGRICULTURAL WORKS

FRESNO, CALIFORNIA.

MT. DIABLO CEMENT

best for foundations, dairy floors, fruit dryer floors, etc., etc.

SANTA CRUZ LIME

best for bricklaying and plastering.

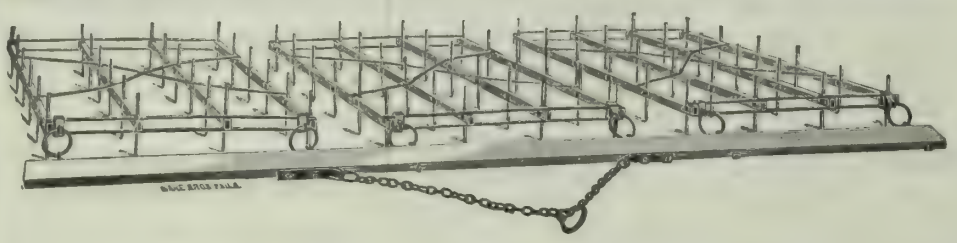
MT. DIABLO ◇ LIME

best for spraying and whitewashing.

WRITE FOR INFORMATION AND PRICES ON ALL BUILDING MATERIAL.

HENRY COWELL LIME & CEMENT COMPANY

9 MAIN STREET, SAN FRANCISCO



The Benicia Angle Steel Spike-Tooth Harrow

A California Product For the Pacific Coast Farmer

The Benicia Angle Steel Harrow

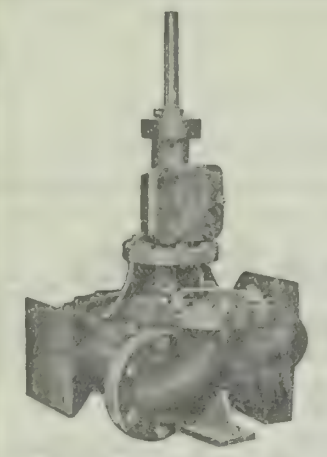
Is the strongest and most satisfactory Harrow ever offered the Farming Public.

Design Right
Principle Right
Construction Right
Prices Right

WRITE FOR CATALOG AND PRICES

We Manufacture Farm Implements Adapted to Meet All Pacific Coast Conditions.

BENICIA IRON WORKS, Benicia, Cal.
MAIN OFFICE AND FACTORY



KROGH PATENT WATER BALANCED VERTICAL PUMP

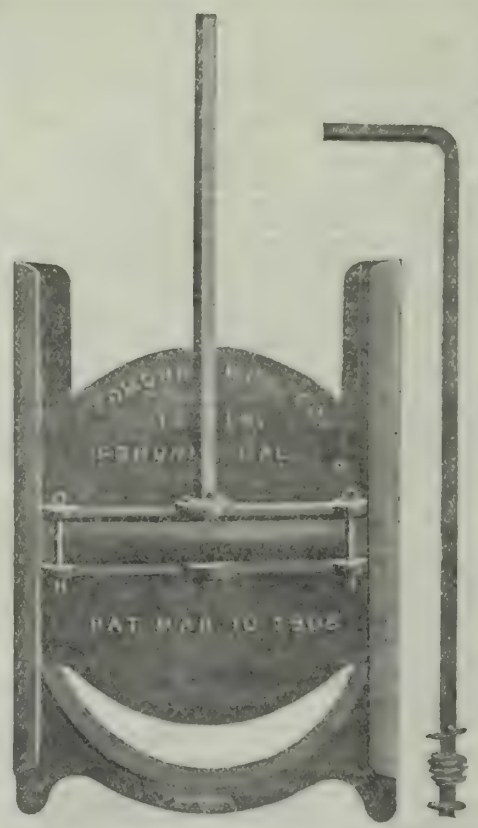
KROGH'S NEW VERTICAL PUMP

The Krogh New Water Balanced Vertical Pump contains many new and valuable improvements, same being fully explained in our Bulletin R-10, which will be mailed upon request.

We have a branch in Los Angeles at 206 N. Los Angeles Street.

The pump can be seen in operation at our place of business.

KROGH MANUFACTURING CO.,
149 Beale St., San Francisco.



GIVE THE POMONA PATENT PRESSURE GATE A TRIAL.

No rubber or wooden facing to rot or wear out. Absolutely water tight when closed. Locking mechanism is protected against rust or clogging with sand or dirt. Simple in construction. Cheap in price and as durable as solid iron.

THE LOCKING DEVICE

Is the simplest made, merely a tapering screw with split tapering nut socket. It locks the cover in any desired position or locks the faces, making an ABSOLUTELY WATER TIGHT JOINT.

TWO FOOT HANDLE FURNISHED WITH EVERY PRESSURE GATE FREE.

ALSO A FULL LINE OF CIRCULAR VALVES FOR ORCHARD AND ALFALFA IRRIGATION CARRIED IN STOCK.

Write for descriptive circular and price list.

POMONA MFG. CO.
POMONA, CAL.



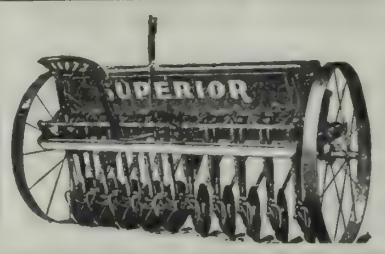
Irrigation Problems

The continual cleaning-out of weedy ditches is but one of the disagreeable and expensive features of old-style Irrigation Methods.

Why waste time and money in this way, or in costly experimenting, when the experience and advice of Irrigation Experts is yours for the asking.

The "K. T. SYSTEM" will solve this, and all your Irrigation Problems. Just ask for the 6th Edition of our Brown Book (free).

THE KELLAR-THOMASON MFG. COMPANY
1234 EAST 28th ST., LOS ANGELES, CAL.



Superior Grain Drills

Plain and Fertilizing

The best equipped drill offered today. Sold by us for years. Let us tell you about it or ask your dealer to order one.

THE H. C SHAW CO., Stockton, Cal.

CALIFORNIA STATE LIBRARY

THE PACIFIC RURAL PRESS

Vol. LXXXII. No. 18. SAN FRANCISCO, SATURDAY, OCTOBER 28, 1911. Forty-first Year.

Pros and Cons of Pear Production.

Written for the PACIFIC RURAL PRESS by D. J. WHITNEY.

Few fruit trees are more in demand this year than pears, especially Bartletts. Bartlett pears, like apples, can thrive in many climates and under many conditions, but California and Oregon outclass all other States in the quality of the fruit grown and the amount produced per acre, so that there is little competition in this fruit from other parts of the country. Some pears are grown in practically every deciduous fruit section of the State, but the main pear growing sections in the order of their importance are the Sacramento river, the bay counties, and the northern coast counties. Of these districts the Sacramento river produces the most and the highest priced fruit at present. The bay county pears usually bring a little lower price in competition with these. The northern Coast range counties produce a very high grade pear, but the small amount grown so far and the difficulty of getting it to the market prevents as much profit as may be expected in future years.



Well-Shaped Young Pear Tree Needing the Winter Pruning.

Cost of Production.—The price of stock for planting has risen this year with the demand to be $30 per hundred, against $25 in other years. As pears are usually planted about 100 to the acre, the initial expense is rather greater than with most deciduous fruits. While other crops can be raised between the rows until the trees come into bearing, the grower has to wait four or five years before the trees themselves begin to pay expenses.

Aside from this, the greatest cost in the future will be spraying for thrips, which will cost at least $12 or $14 per acre, and is essential if a crop is to be expected. The cost of pruning after the trees have begun to bear well is comparatively little in comparison with most other fruits, and the trees are so hardy and so little subject to disease or insect pests, except the blight and thrips, that ohter expenses are nominal.

The cost of picking is also less than with almost every other fruit, owing to the size of the pears and average small size of the tree. With a good average crop picking is but $4 and $5 per ton, and from five to ten tons can be expected per acre.

Few other fruits bear so consistently from one year to another or are affected less as far as the crop is concerned by weather conditions. This prevents the market from being flooded one year and bare the next, prevents excessive variation in price and insures a more steady income than from most crops. That is, provided that thrips are controlled. If they are not kept down, there will probably be no crop at all.

Selling the Fruit.—In disposing of his crop three ways are open to the grower. Most of the best pears are either sent East or to the local markets for direct consumption, and this generally pays best. Other good pears and most of the culls go to the canner. Windfalls and the rest of the culls are dried.

The returns from pears vary largely with the time of ripening, as can be seen from the prices in the San Francisco market during recent years. In the opening week of the market, which is generally the first or second week of July, the price per box in 1908 was $1.25; in 1909, $1.20 to $1.85; in 1910, the same, and this year, $2 to $3. The cheapest part of the season is during August, when in 1908 prices remained at 30 and 50 cents per box to 90 cents. In 1909 the price was from $1 to $1.25, in 1910 from $1.10 up to $1.50 and $1.60, while this year 50 cents to $1.25 and $1.50 was the price during most of the month. In each of the four years the second week in September saw a rise to $1.25 up, while the end of the season usually sees choice pears selling at $1.50 or $2 and up. Thus pears ripening in August can be seen to be of the least value as a rule for shipping purposes, while September is a better month, and the latest ripening pears are best of all.

One of the most serious difficulties that is being found at present is where Orientals are handling and packing the crop, and no small part of the loss to pear shippers this year is attributed to the fact that a close enough watch could not be kept upon the packer, who insisted upon putting in scabby and otherwise inferior pears. This may be remedied in the future, although a detriment to the grower now.

Canning and Drying.—As a canning fruit pears rank high, and canners claim that all that can be produced here can be well taken care of. There is competition from the East and from Texas, but the California and Oregon pears are of superior quality and can be sold at a higher figure.

The prices paid by the canners this year can probably not be expected again unless under exceptional conditions, and $40 per ton would be about the top price in the best of seasons. At present canners state that they would be willing to contract for choice pears at about $5 less than this figure. Choice canning pears must be over 2¼ inches in diameter and 60 per cent of them over 2½ inches.

Second grade pears are worth about half or two-thirds as much as the choice fruit. They must be over 2 inches in diameter, but may be misshapen, bruised or hurt by scab. It is seldom that at least $20 per ton cannot be obtained for them, as pears are usually dried when $18 or

(*Continued on Page 350.*)

Pacific Rural Press

Issued Every Week at 420 Market Street, San Francisco.

TWO DOLLARS PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

PACIFIC RURAL PRESS CO. - - - PUBLISHERS

Advertising rates made known on application.

E. J. WICKSON - - - - - - - Editor
FRANK HONEYWELL - - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Oct. 17, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.38	1.63	2.67	72	46
Red Bluff	00	1.26	1.55	90	46
Sacramento	00	.20	.86	86	46
San Francisco	00	.28	.86	87	52
San Jose	00	.31	.81	80	40
Fresno	00	.10	.62	90	46
Independence	00	.70	.61	80	34
San Luis Obispo	00	.02	.93	94	42
Los Angeles	00	1.23	.35	94	52
San Diego	00	.22	.32	82	50

The Week.

We always like to take a look at southern California in the autumn after the citrus shipping season has made its record and before the flock of Eastern winter-fliers occupy all the perches in the delightful winter resorts. We enjoy the expansive summery smile of the hotel clerk which says, "you can have a whole floor if you wish"; it is so much more encouraging than his winter pinch of features which says, "we may find you an inside room with a window in the elevator shaft, because you are an old patron of the house." We enjoy seeing people who are breathing a little after pushing out 45,000 carloads of citrus fruits and before they start upon the greater records of the following season. We are glaid to see also that in the development of the country, there is, outside of the tourist hotels, not so great a contrast between the summer and winter population as there used to be. Evidently the south is increasing its census of permanent residents and producing activity is greater than purveying. This is discernible in the towns and is even more clear in the country where the rural residences are multiplying and where small tracts in intensive culture show the increasing numbers of small farmers. These are appearing not only in the well known coast valleys but in the more remote parts where pumps and wells are giving to each owner his own irrigation system. In fact everything we saw during a hasty run through many parts of the south was indicative of interest, confidence and activity inspired thereby. It is a good time to go south if one desires to see the south herself at work upon her own affairs, because one is not so apt to get resident and visiting millionaires confused as he will be later in the year. Besides, one can enjoy the south now at a little lower cost of living—but that may not be much of a consideration now that our farmers are as rich as common report makes them.

Re-Investments by Southern Sellers.

We were interested to see again the unique activity of southern land-traffic people after a long run of months in less explosive atmosphere of central California. It was the dull season for big deals to Eastern millionaires, it is true, but the dealers manage to keep their sight good by constant pursuit of smaller game which the one-way cut-rate movement brings within range. We were really surprised to see so much Castle Garden sass at southern transfer points—so many bundles of babies in the places of walking sticks and umbrellas. These newcomers are, however, not even pawns in the southern California game; they are not even burnt matches in the ash-tray. As in other parts of the State, the chief real estate transactions seem to be sales to Californians who still have thirst for land in spite of the scratches they lately received from eucalyptus wild cats. In fact this experience has taught lessons worth more than they cost. So far as we could judge, there is now more traffic in good land and less in dreams. A very large part of the trade is in land in the several citrus districts north of Tehachipi and in northern valley lands generally to those who have sold improved southern fruit properties at high prices to Eastern investors, or have saved a lot of money from the products of such properties. These people are ready investors in the good land and abundant water of the San Joaquin and Sacramento valleys. We were told by one young man, who was disporting such goods in the smaller towns of the southern citrus district, that he had disposed of three hundred thousand dollars worth of land in parcels of various sizes in one Tulare county enterprise, with which he is connected, to southern California citrus and walnut growers. We are glad to see this new land going to Californians with money for re-investment, for they know how to handle the land and to hasten the unearned increment thereof, which is usually worth all it costs to the investing tenderfoot. These old, successful Californians make few mistakes and they cause a development enterprise to go ahead without halting. The pure tenderfoot is an interesting bird, but at first he is just as apt to claw as to sing. Then this process of re-investment in new lands by Californians saves our State from provincialism, for which it is plenty large enough. It stirs up the people and makes for harmony and homogeneity. It gives all parts of the State better understanding of each other and will unite them all in support of great State institutions, which to duplicate is to degrade. It will cause a proposition for State division to raise a laugh—just as Los Angeles did two years ago when it cried for State division because the State Board of Equalization ordered it to pay its share of the State taxes. No part of California is so great and good as the whole. It is more fun to be the tail than not to run with the dog at all. We are glad the Los Angeles real estate people are making so much money selling northern Califonia lands. They know a good thing when they sell it.

Fundamentals in the Imperial Valley.

We were pleased to see so many indications of firmly established prosperity in the Imperial valley, during a visit to the far southeast which we made last week. The towns are growing, the farms multiplying, the trains running full of local travel, the people talking of their satisfaction and other very obvious marks of progress are discernible. A closer agricultural view gives recogtion of striking results in several lines of production which sustain good relations to each other and to the up-keep of the land and may therefore be regarded as fundaments, the profit of which will give plenty of capital for the extension of many specialties which should be tried out agriculturally and commercially. Alfalfa growing is still the basic line of the valley agriculture. There is still large feeding of beef cattle—both those locally bred and stop-over steers from Arizona and New Mexican ranges, which are held there for a time to put on weight and form upon the rich valley pasturage, and to some extent also, we presume, with the barley and sorghum grain which is produced in almost phenomenal crops as compared with those of the older farming lands of the State. There has also been realized since our last visit a large increase of the butter product by old and new creamery establishments with the fullest equipments in manufacture and refrigeration. The pork product is also expanding profitably. All these items of progress are greater utilization of what have been recognized from the first as adaptations of the valley and that they have increased to such an extent that the alfalfa product is nearly all marketed in higher priced forms rather than as hay, is a matter of much economic moment. One of the newer things is the extension of interest in the cotton product, which is greater than we have been able to realize from printed reports. We have never realized before the contrast between the cropping-weight of sorghum grown for grain as compared with sorghum grain crops in the San Joaquin and Sacramento valleys. The "Dwarf Milo" is now the most popular sorghum, and it certainly puts a solid brown carpet of heads over the field which we have never seen equaled elsewhere. Its shortness of stalk, abundance of leaves and weight of heads seem surely to put it at the head of its class. We were interested to see that a thoroughly rational rotation is being much thought of, viz.: the running of land three or four years to alfalfa, then plowing under for cotton, Milo or other field crops—probably several which are not yet much thought of. Under local conditions there does not seem to be much difficulty about getting the alfalfa under and keeping it there. The soil is usually silty loam of very great depth. There is very great variety in intrusions of fine and course streaks and hard pan and alkali scattered around, but the usual depth of the soil and the vast stretches of flat land make the situation ideal for such deep plowing as can be cheaply done on a large scale by tractors and their great plows. It looks to us as though the heavy work of the valley would soon be largely done with these capacious appliances—owned by large ranchers and hired for custom service by owners of smaller tracts—and these things, we believe, make for good farming under local conditions most notable. It might seem to some extravagant to plow down a three or four year old good stand of alfalfa, but the crops upon an alfalfa sward are so good and it is so easy to get alfalfa to start full from the seed that the Imperial farmers think covering down alfalfa a less sacrifice than it is apt to be held in other regions. If a small farmer can get a good breaking with a tractor once in a while, he can do the intermediate cropping with his own teams—in fact it is so easy that it is a temptation to slackness, for we saw both cotton and sorghum volunteering in a way to disconcert a lazy man surely. Now obviously the plowing under of alfalfa makes for aeration, nitrogenating, also the deep penetration of moisture and soil fertility, which involves all the most recent science of the subject. It therefore underlies a heavy production of cotton, grains, root crops and other good things in field rotation—and all these things are surpassing ordinary standards of acre production. Upon such a basis as this, expansion in early fruits and vegetables and other high-cost-of-production-and-distribution specialties can be projected as fast as market demands make them profitable. For these reasons it seems to us that the Imperial valley is sound in its fundamentals. What it can do to advantage beyond will be demonstrated by the experience of the most progressive farmers

aided by the systematic local research provided for by the last legislature in the establishment of a branch of the University of California Experiment Station near Meloland, a centrally situated point between El Centro and Holtville. Land for the station has been donated by the county board of supervisors, with contributions from public-spirited citizens of the county.

A Peanut Paean.

We were shocked on arriving in Los Angeles the other day by the announcement that the Park Commission has ordered that extra sacks be given with bags of peanuts sold in parks and that shells be put in these sacks and be carried to waste cans so as not to litter walks and lawns. Our first sad wonder at this latest outbreak of municipal tyranny was whether any of his vested rights would remain to the American boy in this age of civic sanitation and neatness. Pursued in the East by maternal mandate not to whittle on the front piazza, nor to make mud pies on the back steps, nor to let his muddy dog foot-print the freshly scrubbed kitchen floor, he has been forced to seek grime and gladness in the swimming hole or the wood lot. In these recourses the country boy has been blessed with opportunities beyond the reach of his city cousin, to whom about the only chance to make a muss was to possess a bag of peanuts, install himself on a carved-stone bench in the park and surround himself with an aureole of shells, the crisp crunching of which, beneath the feet of passers by, was comforting music to his enslaved soul. And now he must carefully draw a peanut from one bag and impatiently push the discarded shells into another—crushing his bold, free spirit down to the conventionality of his trim little sister as she threads beads according to the tradition of her sex. Will the boy submit to this thralldom? He will not. He will scorn the park and its school-like proscriptions. He will take his bag of peanuts to the house top, and, finding sympathetic encouragement in the soot-shooting chimneys, will throw his trash to the four winds of heaven—shouting meantime defiance to the authorities and comfort to his turbulent soul: "I will be free."

But lest this declaration of ours for the boy be declared by the hard-headed reader to be mere sentiment, and bad sentiment at that, we haste to point out that this regulation by the Los Angeles Park Commission has most menacing industrial relation. We call the attention of the new Court of Commerce at Washington that it is clearly "in restraint of trade." To curb the boy's appetite for peanuts is to endanger one of the most fruitful lines of dago trade. To wreck the peanut distributors is to crush the demand on the face of California peanut growers. Of what use will it be for us to summon our most eloquent exhortations in behalf of the "triple-jointed, hump-backed California peanut and to point out the fine, moist California loams which can alone produce them? Why should we longer try to arouse patriotic, producing fervor in the hope of rolling back upon the Orient the half-million dollars' worth of inferior Japanese peanuts which are now sold upon this coast? Shall we have no regard for our "business interests" in the passionate pursuit of reforms? Certainly not; we stand pat on the California peanut interest and say: "thus far and no farther!" We scorn the suggestion that the peanut shelling machine will settle the problem. A bag of naked salted peanuts is a murderous device; the boy will swallow them in masses with the chance of mastication and salivation which the contemplative crushing of single nuts invites. To swallow handfuls of salted peanuts will take the jump out of a boy just as the shot did for the "jumping frog of Calaveras." It will make him as salt inside as a pork barrel and will create a thirst which no fiddling sanitary faucet can satisfy. It will cause him to plunge his head into the horse-trough where glanders watches for its prey. Shall we save the litter of the shells and lose the boy? A thousand times, no. We stand for the peanut pure and undefiled. We are ready to give our lives for the peanut of our grandfathers—only wondering how those respected old parties escaped doing it themselves.

The Horticultural Commissioner.

And now the great political plum, the horticultural commissionership, which Governor Johnson has had so much trouble to shave down, has fallen into the open hands of Prof. A. J. Cook of Pomona College, Los Angeles county. Candidates from the upper part of the State have to console themselves with the assurance that the office has been predestined for southern California, and we presume Prof. Cook's support in that part of the State was considerably weightier than that of any other aspirant. But Prof. Cook was a central Californian before he was any other kind and was a resident of Sacramento county before any of his competitors for the office were born. He should therefore not be considered a southern Californian, except for present political purposes, and his appointment will bring him back to the county where he did his share of the pioneering educational work acceptably. Prof. Cook has always been a teacher and has the art of it both for youngsters and adults developed to the last degree. Some of his pupils are now doing exceptionally fine county horticultural work, and he will be likely to hold to high standards in the equipment of other counties—a matter with which under the new law the State Commissioner has much to do. Prof. Cook has fuller knowledge of pests, both scientific and practical, than anyone who has held the office since its creation, and he certainly has a fine field to put his knowledge to good use by improving machinery for pest exclusion and reduction which is possible under the new laws and ordinances thereunto provided. This is the distinguished field of the horticultural commissioner, and if Prof. Cook can keep his assistants fighting pests instead of fighting him and each other he will do the State a great service. In this work we believe he will have the support of the fruit growers in all parts of the State.

Queries and Replies.

Potatoes After Alfalfa.

To the Editor: I have been a successful potato grower in Ohio. I have made some attempts at growing them here, on irrigated sandy loam soil. This is of the best alfalfa soil and is now in its fourth year of productiveness in that crop. I would like to grow potatoes in a small way and would be pleased to have you suggest the preparation of soil, the variety, and where seed can be obtained.—A. H. Gaberel, Hughson.

Proceed just as you would at the East in getting potatoes upon a red clover sod. Turn under the alfalfa deeply now if the soil will work well, and roll your sandy soil. You must use a sharp plow to cut and cover well. If there is moisture enough the alfalfa ought to be decayed by February when you could plant potatoes safely, probably, unless your situation is very frosty. If you plant early you ought to get the crop through without irrigation if you cultiavte well and keep the land flat. Early Rose ought to serve your purpose, and you can get the seed at any country store. For a later crop plant Burbanks. It is wise to try a small patch at first, as you propose. There are some things you can only learn by experience.

The Use of Gypsum.

To the Editor: I am intending to fertilize my alfalfa. Should like to know about using gypsum. Have heard it stimulates the growth temporarily but in three or four years hurts the land. I have heavy land.—Grower, Merced.

We have often stated the function of gypsum, which is (a) to supply lime when the soil lacks it, (b) to make a heavy soil more mellow, and (c) to act upon other soil substances to render them more available for plant food. These are some of the soil aspects of gypsum; it may have plant aspects also. It is too much to say that gypsum hurts the land: it does, however, help the plant to more quickly exhaust its fertility, and in this respect is not like the direct plant foods which comprise the true fertilizers—one of which gypsum is not. It might be best for your pocketbook and for the mechanical condition of the soil to use it, but do not think that it is maintaining the fertility of the land (a service which we expect from the true fertilizers) except as it may supply a possible deficiency of lime.

Do Not Plant Almonds in Place.

To the Editor: I have 30 acres which I intend to plant to almonds and peaches, and I thought of planting the sprouted nuts and pits where I wanted my trees, and budding the same there in orchard form. As one or two years' use of the land is not considered, what is your advice? My idea is to plant in orchard at start so as not to disturb roots, as when grown in nursery and transplanted in orchard. Would it not progress as rapidly? Would you advise budding peaches on almond root; if not, why? My idea is it would give a longer-lived tree.—Subscriber, Yuba City.

We would do nothing of the kind. If we decided it better to grow trees than to buy them, we would grow and bud the seedlings in nursery and not in the field. Field budding is open to all kind of injuries and growth from it, when saved from cultivation and all kinds of intruders is irregular and uncertain. As for starting the roots from the nut in place, it is largely a fanciful consideration. We count it no gain for the walnut which makes a tap root, and still less gainful for the almond and peach, which usually make spreading roots. To cut off a tap root does not prevent the tree from rooting deeply if the soil is favorable. As to use of the land, you lose time by growing the seedlings in place. The peach does well on the almond root if soil conditions favor the almond. Perhaps it gives longer life to the peach, but the profitable life of the peach tree in a proper soil does not depend on the root; it depends upon the treatment of the top in pruning for renewal of branches.

Sunflowers and Soy Beans.

To the Editor: I would like information concerning cultivation, method of feeding and food value of soy beans. Also sunflowers.—J. W. G., Haywards.

Soy beans are grown like other beans, in rows which, for convenience in field culture, should be about 2½ feet apart and cultivated up to blooming time at least. They should be sown after frost danger is over and the weather is settled warm, for they enjoy heat. For feeding they can be made into hay before maturity, or the beans can be matured and prepared for feeding by grinding. As with other beans, small amounts should be used in connection with other feeds. They are a rich food and somewhat heavy on the digestion. The same is true of sunflowers, except that the seed is richer in oil than in protein, as beans are. Sunflowers in field culture are planted and cultivated like beans. The seed is flailed out of the heads after they lie for a time to dry.

Lessons From the Pear Thrips in 1911.

Written for the PACIFIC RURAL PRESS
By J. D. WHITNEY.

A trip through the prune and pear districts, now that the crops have been harvested and the damage that the thrips has done can be appreciated, reveals several important facts: first, that there is an extreme lack of correct information concerning the proper methods to use in its control; second, that there is a great misapprehension regarding the cost of spraying and the ground that can be covered with an outfit; and third, that many growers are relying on getting through the season of 1912 without spraying as easily as they got through this, and that they may be badly injured if they do.

It can be stated at the outset that the pear thrips has been thoroughly investigated by Government entomologists, first by Mr. Dudley Moulton for the U. S. Department of Agriculture, and later by Messrs. S. W. Foster and P. R. Jones, the latter of whom is still carrying on the work. Practically all possible methods of control were tried out in these experiments, and both the spray and the method of applying it have been decided upon.

Other independent investigations have been carried on by Mr. Earl Morris, entomologist for Santa Clara county, and only the lime-carbolic mixture recommended by him, and the tobacco emulsion mixture recommended by the Government entomologists, can be considered standard and effective sprays. Publications regarding the results of applying these sprays will be out later from each of these sources and will be discussed later in the PACIFIC RURAL PRESS, so that their relative merits need not be considered now.

Next Year Worse.—Along the Sacramento river the thrips were bad this year, and no great change is expected in 1912. In the coast counties, especially in the Santa Clara valley, the thrips were much less destructive than usual, and this has unfortunately caused the impression among many growers that spraying can be dispensed with and a fair crop obtained. This, however, is probably a mistake, as the last season was very hard for the thrips, while this coming season everything is favoring their development in large numbers.

The reasons for fewer thrips in 1911 are four. In the first place, heavy spring rains washed large numbers to the ground, where they died without maturing. Again, in the fall, with few rains and dry soil, there was not sufficient moisture for them to moult properly, and many more perished. This spring a large part of those that were left emerged too soon from the ground and many died, and when the main body came out they were so reduced in numbers that much less damage than usual was done. Then the fruit buds on prunes were very numerous, and much fruit set well in spite of the insects. In pears, where there were fewer blossoms, the less number of thrips the damage was about as usual.

Next year, however, the thrips are expected to be heavy. Nothing except the little spraying that was done checked their increase this spring; the ground this fall is moist enough for their proper growth; fruit buds will be no more numerous than before, and even if they were, it would not help much; the insects will be out in full strength, and the man who is banking on next year being like this is laying up trouble for himself.

An added benefit from controlling thrips will result from the fact that the dried-fruit market is expected to be practically bare and prices correspondingly good. Then if few growers spray, the crops will be so poor that the man that has prunes will wax wealthy enough to buy his neighbor's unsprayed orchard and have money to spare. In other words, instead of this year furnishing a reason for not spraying in 1912, it furnishes the reason for the reverse.

Mistakes Regarding Cost.—Much spraying seems to have been prevented this season through misapprehensions regarding the cost of application, and the same thing bids fair to continue unless steps are taken to prevent it.

When the first work was done it was the object of the investigators to kill the thrips at all events, and as a result strong sprays were used, the ground was gone over very slowly, the trees were sprayed thoroughly, and the material laid on thick. Later the spray was thinned out as much as possible, the expense of making it reduced to the lowest possible limit, and the ground gone over as rapidly as economic conditions demanded. As a result the cost has been reduced to only $12 or $13 per acre for the three applications required by the tobacco emulsion method, and somewhat less for the one application of the lime-carbolic method.

The amount of ground that can be covered by an outfit has been correspondingly increased, until last spring, for example, on the Quito ranch of E. L. Fellows, on the Saratoga road, 200 acres were gone over one time in 4 days and 2 hours with four outfits, including 17 men and 16 horses. Allowing $100 for depreciation of each outfit, the total cost per acre was $13 for three applications. The tobacco emulsion method of the Department of Agriculture was used. Thus it can be seen that one power-outfit for 50 acres is enough. And the saving in prunes in one year should be enough to pay for the outfit, cost of spraying, and all. As all of the orchard was sprayed in this case, what the actual saving was cannot be said.

On the H. Curry orchard at Berryessa, a fertilized and sprayed block of prunes gave 13.9 tons of dried fruit to the acre. An unfertilized block gave 13.04 tons, and an untreated block only 10.6 tons. The spraying was done twice by the tobacco emulsion method at a cost of $13 per acre, so the saving can be seen at once. On less heavily bearing trees the saving might be less, but if the thrips were bad it might very easily be a great deal more.

A Spotted Crop.—This year some sprayed orchards gave practically no crop, owing to weather and other conditions, and some unsprayed orchards gave heavy crops because thrips were not numerous, anyhow; but in practically every orchard where spraying was done according to recommendations and not just for experiment, and a block left unsprayed, very appreciable results were achieved. These, however, will be considered in the reports of the officials of the county or Department of Agriculture to be issued later. By these final methods, cost of work and saving can be known more definitely.

As a demonstration of the unsettled condition of the public mind regarding the proper methods, it may be stated that in looking over numerous reports from growers, the cost per acre varied from $1.50 to $34, and the land covered per day from about 2 acres to 15; amount of spray per tree, from a gallon or less to four and over, and the same active ingredients that were to go in 200 gallons of water were put in 100 gallons, with a little more for good measure. Both the Government and county will give the formulas and methods that have been found best after long experience, and it would appear advisable to apply to them for it, instead of experimenting for one's self.

Besides the two standard sprays mentioned above, there are two other methods of control or partial control previously recommended, but not found entirely satisfactory. The fall cultivation for sandy soil is generally looked upon with disfavor, although in several cases it appears to have been without doubt of great assistance. In most cases the growing of a cover crop and fertilization to strengthen the trees against the thrips, and then relying upon spraying, appears better.

The burning of sulphur was tried by many prune growers, in some cases with results that proved quite effectual in at least lessening the numbers of the insects, while little damage, if any, was done to the trees. In other cases, the entomologists at work in the district state that the damage to trees was appreciable and the damage to thrips of no great amount.

Little Spraying Yet.—The amount of spraying that is done is still woefully small. In 1909, according to Mr. P. R. Jones, there was practically no spraying for thrips in the Santa Clara valley with the government spray. In 1910, 500 acres were sprayed in this way, and this year 1500 acres. This does not include orchards treated in other ways, a number being treated according to unofficial and ineffectual methods. To do the spraying, about 45 power-outfits were purchased this year, these being practically essential if the best results are to be expected. These figures show the vast amount of improvement that could be accomplished if every grower would do what he could.

The lessons of it all are that the spraying is needed, that it promises better next year than this, that the cost has been cut down to a minimum, the best methods fixed, and no excuse for private experimentation left, and that, if done at all, it should be done according to official recommendation.

There is some doubt as to the results to be expected in the pear orchards of the Sacramento river, owing to a greater difficulty in getting the spray on just when it is needed; but the results in Santa Clara and Contra Costa counties show what should be done, provided that the owner is not going to lay back and wait for Nature to do the work.

It may be said that the hope that Nature will come along with a parasite and save man the trouble of looking after his trees is not well founded. As far as is known, there is but one parasite on the thrips, and this is on a different species, and for various reasons cannot work on this to any advantage, and the only hope in sight is to spray.

Mr. Jones states that no great improvement over present methods can be hoped for in spraying in the future; that the Government has tried about everything, and the nature of the insect and its method of work limit decisively the ways in which it can be fought.

It may be interesting to state that the pear thrips has appeared in pear orchards of New York and is doing much damage. There is some doubt as to whether the same species of thrips is in England, as was reported last year.

THE AVOCADO BOOM.

Written for the PACIFIC RURAL PRESS
By H. W. KRUCKEBERG of Los Angeles.

No one fruit of a strictly semi-tropical nature has commanded wider attention of late years in southern California than the alligator pear (Persea gratissima), known also in Mexico as the "Ahuacate." Indeed, it may be truthfully said that it is on the threshold of a boom. Nurserymen are growing blocks of trees in anticipation of a good demand. In view of this, Dr. Franceschi, who has certainly done much to introduce new and little-known fruits in California, gives the following suggestions for planting and caring for the seeds:

"Plant them as soon as received. They will retain their vitality only for a short time.

"Redwood sawdust mixed with one-fourth clean sand will make the best rooting material. If this is not available, sifted leaf mold with sand will do, or any other material which will be porous and will allow free expansion of the roots. Manure should be avoided; it may cause decay of the young roots.

"Boxes about six inches deep should be used; if too deep, more difficulty will be found in transplanting.

"In whatever season the seeds are planted, it should be done under some shelter; either under glass, under cloth, or in the house, in order to insure an even temperature and a more uniform degree of moisture.

"Seeds should be planted one inch apart, with their pointed end standing a little above the ground. Boxes must be kept moist, but they must have good drainage.

"Within three to five weeks germination will take place, the root plunging downward from the base of the seed, while the two sections of

same will be split open by the fast-growing plantlet. Sometimes two or more sprouts will emerge from one seed; only the strongest should be left, except when found that each one has developed an independent system of roots.

"When the seedlings will have developed four to six leaves, it will be the right time to transplant them, before the roots grow too long and too much crowded in the boxes. This can be done either in pots, boxes, or cans, always employing good garden soil.

"Three or four months after having been potted, the seedlings should have grown strong enough for transplanting in the open ground, where they are sure to grow well under ordinary care. When about one year old they will be ready for budding or grafting."

The alligator pear does not come true to type and quality from seed, hence budding or grafting is essential to perpetuate the best fruit. The tree is adverse to drought, hence in California must be liberally irrigated; it likes a humid soil. Mueller, in his "Select Tropical Plants," says it is probably available for mild localities outside the tropics—a fact that intending experimenters should bear in mind.

Great Things About Barley.

[We have not allowed our readers to forget that there are great and distinctive things about barley from a California point of view. In the first place barley is the one cereal in the production of which California leads the United States—thereby redeeming in a way our insignificance in corn, oats, etc. It is true that we have lost position in wheat through our devotion to barley, but we could not lead in wheat if every barley straw we now grow carried a wheat head. At present we grow acceptable brewing barley without particularly trying to do so and no one can tell how fine brewing barley we could grow if we really tried. Since the reciprocity affair with Canada passed away, we have new encouragement to stick to barley and make our product both the largest and the best ever in the United States. Naturally the great malting interests desire this kind of work, for they cannot depend upon Canada without paying the duty, and no one likes to pay duty. So they began last week in Chicago a great barley and hop exposition which will hold until October 22, at which California will be represented by Dr. G. W. Shaw, cerealist of the University Experiment Station, and by other Californians, no doubt, who will go in a private capacity. This being the case, we give space to an interesting compilation of facts about American barleys, which our growers will do well to keep in mind.—EDITOR.]

Classification of American Barleys.—Barleys are commonly classified as two rowed, four rowed and six rowed. The European brewers generally prefer the two rowed varieties, which are plumper and starchier, while in this country the six rowed, of which the four rowed is but a slightly varied relative, is generally preferred because, while less starchy, it is more highly albuminous and therefore possesses more of the substance which brings about the inversion of starch into sugar, namely, diastase.

The common American brewing barleys arrange themselves in the following system:

1. Six rowed, erect—White Club.
2. Four rowed, drooping—Manchurian barley, Oderbrucker, Scotch, Ohio Fall, California Bay Brewing, Blue barley.
3. Two rowed, erect—Goldthorpe, Primus, Fan barley.
4. Two rowed, drooping—Common Chevalier, Horsford's Chevalier, Hanna, Princess.

Through several years' experimentation at the Wisconsin Agricultural Experiment Station it has been found that the six rowed barley is preferable to other varieties and more profitable for the average farmer to grow. The yield far surpasses that of the other varieties, and the market demands for the six rowed class far surpass those of all other varieties combined. At a conservative estimate 98 per cent of all the barley now grown in Wisconsin is six rowed barley. This being the type of barley most commonly used for malting in the United States, it is likely that most of the samples that will be shown at the barley and hop exhibition in Chicago will be of that type.

The experiments with two rowed barley through eight years' continuous breeding work clearly prove that in most regions the farmer cannot get the returns from this crop that can be secured with the six rowed variety. The straw seems to be very frail and lodges easily, thereby injuring the quality of the grain and reducing the yield.

Cleaning Barley for Seed.—One of the principal difficulties that have obtained in the growing of barley as well as other crops is that sufficient attention has not been paid to the seed, not only in the matter of fanning out all dead and degenerate berries, so as to seed only good and live grain and produce a good crop where no grains will fail to sprout, but also because there has been a lack of uniformity as to variety or strain. This is perhaps of more than ordinary importance in the case of barley and is one of the matters that will engage the attention of the barley and hop exhibition at Chicago in October, 1911. The barley which is used for malting purposes is put through an artificial process of sprouting in mass, in which necessarily all grains are treated alike. It stands to reason, however, that where plump and thin grains, mellow and flinty ones, starchy and albuminous grains are all steeped and sprouted under like conditions they will necessarily grow differently and cannot yield a uniform malt. This causes serious troubles to the consumer when he works up the malt in the further processes of manufacture and makes it difficult for him to finish off a uniform product. It stands to reason that where the different kinds of grains are all seeded in the same soil in like manner at the same season and grow under the same weather conditions the berries of different characters cannot possibly develop alike. The result will be an uneven stand, differences in the time of maturing, different action in the stack, etc.

Pedigree Grain.—Different strains of barley will grow differently on different soils and in different climates. In order to produce the best crops, which will also be the most abundant, it is therefore necessary to use pure strains, or, as the scientists call them, "pedigree" grain, where all the berries are of the same variety or strain and will behave alike under similar conditions. It is also necessary to find by experiment what particular strain is best suited to certain soils and climates and also what method of planting and cultivation is best adapted to the varieties and types. A great deal of work has been done along these lines by scientific investigators, particularly at the agricultural experiment stations of Wisconsin, Minnesota and California.

Prizes for Barley.—Awards for exhibits of barley at the second international barley and hop prize exhibit at Chicago, October 12 to 22, will be made as follows:

The awards will consist of over 100 cash prizes, totaling about $7000, which have been contributed by a number of associations of brewers, malsters and individual manufacturers. The highest individual prize is $300.

For the purpose of prize distribution each of the four botanically different types represented by (1) Manchuria, (2) California Bay Brewing, (3) White Club, (4) Chevalier will constitute a class by itself.

Prizes are also awarded according to geographical origin—by States—and commercial importance of the crop in the discretion of the committee on awards. Special awards will also be made in accordance with the conditions imposed by contributors.

The amount of barley offered for exhibit will be at least 60 pounds in bulk, with a sheaf of barley of at least 12 heads each. The specimens must represent a fair average product of one field on which they were grown and be taken by the grower himself from a quantity of 2000 pounds at least. All samples of barley must be properly certified to have been grown by the exhibitor according to the "rules and regulations" laid down.

The committee on awards embraces not only a number of the most eminent experts among scientific men, growers, dealers and consumers of these crops, but also specialists from the Agricultural Department of the United States and the several barley and hop growing States. Among those serving on the committee on awards are the following:

United States Department of Agriculture, Bureau of Plant Industry, Prof. M. A. Carleton, Prof. H. V. Harlan, Prof. W. W. Stockberger; bureau of chemistry, Prof. J. A. Le Clerc.

Agricultural Experiment Stations, Prof. G. W. Shaw, Berkeley, Cal.; Prof. Charles E. Saunders, Ottawa, Canada; Prof. Alvin Keyser, Fort Collins, Colo.; Prof. F. D. Farrell, Boise, Idaho; Prof. V. M. Shoesmith, East Lansing, Mich.; Prof. C. P. Bull, St. Paul, Minn.; Prof. Alfred Atkinson, Bozeman, Mont.; Prof. R. C. Doneghue, North Dakota; Prof. H. V. Tartar, Corvallis, Ore.; Prof. E. D. Ball, Logan, Utah; Prof. R. W. Thatcher, Pullman, Wash.; Prof. R. A. Moore, Madison, Wis.

The Purposes of the Judging.—The agronomists and chemists of the State agricultural colleges and several specialists of the U. S. Department of Agriculture have devoted a great deal of time to the study of barley and hops and their improvement. They have been advising the farmers to devote attention to the production of those properties in these crops which are most desired by the consumer. In this work, however, they have met with considerable difficulty from the fact that they have been unable to state positively what those properties are that the consumer desires. In the purchase of barley and hops the individual judgment of the buyer is often biased by personal preference and even prejudice; it has been difficult to define what character of goods would best meet the requirements of the market. This enterprise is intended to bring about improvement in the growing of barley and hops, and to lay down certain standards by which they can be valued regardless of the personal equation.

CANNING TOMATOES SCARCE.

A shortage in canning tomatoes which was mentioned in the PACIFIC RURAL PRESS of several weeks ago as being likely to develop, has occurred. The result of this is shown in a letter recently sent out by the California Canneries Company, which says in part: "There has been a tremendous advance in price of canned tomatoes in the last few days. This has been brought about through various causes. In the first place, certain large canning companies sold at very low prices early in the season, expecting to make a full pack. The lateness of the fruit crop this year caused them to lose the bulk of their September pack, which generally constitutes 40 per cent of the canned tomato output. In addition to this, the crops all over the country have failed, and it is now estimated that there will be a total shortage in the canned tomato output of the United States of millions of cases; that there will be packed in 1911 several million cases less than the normal requirements of the country, and when it is realied that the market opened on bare stocks everywhere, the circumstances that brought about the big advance in prices can readily be seen. Canned tomatoes are a staple of consumption as an article of food, and the present conditions in California are the most abnormal ever known."

Accompanying this shortage in canning tomatoes have been many tons of the market varieties which have remained unpicked, owing to the low prices being secured for them. Many of these tomatoes were grown in places where canning tomatoes might just as well be grown, and $7.50 per ton realized on contract prices, or as it happened, $8 and $9, which were paid when the shortage began to be appreciated. This price of $7.50 will be the contract price next year, according to buyers for canneries, and the grower can either take it or gamble on higher prices when the canning season opens.

Next season will open with a bare market, and indications point to good profits from tomatoes when the planting is done in the right places.

AGRICULTURAL REVIEW.

With the Fruit Men.

Consular reports from Italy, Spain, and Syria all state that the olive crops are promising to be extremely heavy and of good quality. The local crop is in about the same condition.

At the Watsonville Apple Annual there were approximately 40,000 paid admissions this year, against 10,000 less a year ago.

Hyde & Co., of Campbell, Santa Clara county, who have kept accurate data regarding prune shrinkage for 25 years, state that prunes in their vicinity shrank 2½ to 1, while the average is but 2¼ to 1. Orchards usually running 40s to 50s are running 50s to 60s. Mountain prunes are shrinking no more than usual.

Orange ripening in the Lindsay district will be too late this year to permit much shipping for the Thanksgiving markets.

The Butte County Citrus Association is finishing up a packing plant at the Western Pacific station at Palermo. It will be ready when shipping begins.

The Anaheim Fruit Association shipped 200 cars of fruit in the season just closed, or double the amount of the year before. The average price per packed box to the members was $1.53. Navels made up 50% of the shipments, valencias 30%, and other varieties 20%. The Association is arranging to purchase a fumigating outfit for the use of members.

A considerable planting to dates will be made on the Imperial experimental farm at Meloland this year.

The capital stock of the Fernando Fruit Growers' Association has been increased from ten to forty thousand shares.

B. A. Woodford, of the California Fruit Growers' Exchange, has returned from a trip through the East investigating market conditions for the coming citrus season. He reports that business conditions in the country at large are "spotted," being very good in some places and bad in others.

A. E. Davis, of Live Oak, Sutter county, has received $405 per acre for the past three years from five acres of olives.

Kerman, Fresno county, growers have appointed a committee to arrange for the construction of a dried-fruit packing-house at that place for next season.

W. C. Roberts, of Colusa, made $442 per acre from prunes this year and $320 from figs.

Packers in the Santa Clara valley are said to be having difficulty in securing sufficient cars for Eastern shipment.

Apple growers of Mendocino county recently met to plan for the organization of an apple growers' association, and to decide upon the best varieties of apples to plant.

Raisin and Grape Notes.

Raisin packers are reporting difficulty in securing sufficient female help, owing partly to the eight-hour law. Shook is also reported to be scarce.

In the Abbott case for the return of excessive payments for raisins by the old California Raisin Growers' Association, $79,000 was collected by October 15, and several executions were sworn out for persons who had not paid their share of the amount to be refunded.

Several carloads of grapes packed in redwood sawdust to preserve them until Christmas have already been shipped to Chicago. The work was done under the supervision of the Bureau of Plant Industry, and it is thought that the redwood sawdust will be as good a preservative as the Spanish cork packing.

Packers have rejected several lots of raisins recently owing to the lack of sugar. All raisins are said to be shy of this substance this year, although too early picking is responsible for much of the lack in many cases.

Koch Brothers, of Sunset Colony No. 7, Sutter county, are to put out 60 acres to Thompson's Seedless grapes this season.

Prof. Husmann, of the U. S. Department of Agriculture, is to deliver an address in Fresno November 2 upon "The Mission of the Vine."

The raisin crop of El Cajon valley is only about half as large as usual. No damage to the crop was done by rains that came during curing time.

Reports from Fresno are to the effect that 60% of the raisin crop has been sold, about 40% being in the packing houses or shipped.

Picking and shipping of the second-crop wine grapes has begun in Yolo county. Owing to warm weather, the sugar is higher than in the first grapes picked.

William Garden, horticultural commissioner of San Joaquin county, has gathered data to show that 9586 acres of table grapes in the State are not yet in bearing. He is recommending more planting of fruit and nut trees in place of grapes.

In Fresno county about three-fourths of the wine grapes have been disposed of. The second crop Muscats are not yet ready, although the price will be $12 per ton.

General Agriculture.

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Gladiolus, early flowering, pink or white (Postpaid price)	25c doz.

Order now and plant early for Spring Flowers

C. C. MORSE & CO., 123 Market St., San Francisco

Co. has been sold to Thomas Coulter, Harry Frazer, and S. F. Paul, who have been leasing it for several years.

On October 20, it is said, 3000 bales of hops were sold on the coast at about 40c per pound. Most of the hops were for immediate shipment to England. But few hops are said to be unsold in the State now.

A number of bean growers in District 70, Sutter county, are getting 36 and 37 sacks to the acre this year.

Several sugar companies in southern California have announced that next season beets testing 15% sugar or better will be paid for at $5 per ton. Variations in sugar content will be paid for in the same way as this year.

Ed Story, of El Centro, Imperial county, is organizing a Cantaloupe Growers' Association.

The Kings county pool of the honey crop has been sold for $115.50 per ton.

Some carob trees of South America have been found growing thriftily at Biggs, Butte county. The trees bear beans that are a fair stock food.

Through the good results of planting 500 acres in the San Fernando valley to sugar beets, 8000 acres will be put out to that crop next year.

At a meeting of the Lima Bean Growers' Association recently, it was stated that brokers were offering more for beans outside than inside the Association, and the Association has decided to take what steps it can to dispose of their crop without the agency of middlemen.

Miscellaneous News Notes.

The Patterson Irrigated Farms Association has been organized by ranchers at Patterson, Stanislaus county, with the object of marketing farm products by the co-operative system.

The Fred Kuster farm of 1562 acres near Erle, Yuba county, has been sold to city capitalists.

The Bernice Water Co., which recently filed on 50,000 inches of water in the Alamo river, Imperial county, has been incorporated with a capital stock of $450,000.

The Forestry Service of the U. S. Government will plant out 100,000 trees in southern California forest reserves after the first heavy fall rains.

Henry Smith, of Guernsey, Kings county, is having an artesian well sunk on his ranch. The well will be sunk 2000 ft., if necessary. A heavy flow has just been struck at Lanare at 980 feet.

A Farmers' Co-operative League has been formed by farmers of Harney county, Oregon.

The California Eucalyptus Co. of Oxnard is preparing to manufacture automobile spokes from eucalyptus wood.

Work on curing eucalyptus wood to prevent warping and checking was begun by the People's Water Co. in North Berkeley last Friday. The plant cost several thousand dollars and is being run with the advice and aid of the federal forestry service. Final results of the work cannot be expected for several weeks yet.

Farmers' Institutes are to be held in Mono county as follows: Independence, Nov. 13 and 14; Bishop, Nov. 15, 16, and 17.

The debts on the Kearney estate of Fresno county have been cleared by the University of California.

The Livermore Valley Poultry Association has set February 8 as the date for its first annual poultry show. The date for the Fresno Poultry, Pigeon, and Pet Stock Association show has been set for December 4 to 9.

A company of capitalists has purchased the Brack tract of 4346 acres near Lodi for $350,000. Most of the property is reclaimed land.

The State is to establish a forestry experiment station at San Diego this winter.

The Bullard tract of 6000 acres, north of Fresno, is to be put under irrigation at once, by the Fresno Canal & Irrigation Company.

Prizes for the San Joaquin Poultry Association show for Nov. 7 to 11 have been announced. Lectures on poultry will be given by authorities during the show.

The plant of the Central California Canneries at Yuba City will be enlarged soon, 15 acres of land adjoining it having been purchased last week.

The Alameda Sugar Co. at Alvarado has been receiving beets from land contracted this year so fast that it has been necessary to check shipments to some extent. The factory to be erected at Meridian, Sutter county, to replace the present plant, will have twice the capacity of this one.

The Southern Pacific is installing new grading and cleaning machines for handling barley at King City, San Lucas, Soledad, and Santa Maria, Monterey county.

W. E. Wilsie, who has been acting horticultural commissioner of Imperial county, was last week officially appointed to the position by the supervisors.

A bulletin on "Honey Plants of California," compiled by M. C. Richter, has been issued by the University of California. This is the only bulletin dealing with this subject in detail that has been issued for this State.

The plans for a drainage system comprising 6000 acres of land lying between Gridley and the Feather river as far south as Sutter county have been submitted to the supervisors of Butte county for approval.

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Hints for the Garden.

Written for the PACIFIC RURAL PRESS
By G. H. HOPKINS, Tropico.

In the vegetable garden continue planting onions, lettuce, turnips, beets, parsnips, and other hardy vegetables. It is a good time to plant onions for a main crop, and many of the market gardeners around Los Angeles are preparing to plant this month. In this locality Silverskins and Australian Brown are the varieties mostly planted.

TOMATO GROWING.—The tomato growers of Orange and Los Angeles counties who grow for the Eastern markets are beginning to ship the new crop. The plants are usually set out during July and August. We understand the estimated crop this fall is about five tons per acre, and, at the contract price of $25 per ton, will bring in nice returns to the grower. Only the best are shipped, each tomato being wrapped. The balance of the crop is sold to canners at $7.50 per ton.

At present many hundreds of acres are planted to this crop, and taken one year with another, it pays. Many of the planters plant between the trees of young orchards of fruit and walnuts, thus getting good returns from the ground while the trees are growing.

GARDEN THRIFT.—One can learn considerable gardening by watching the Japs. One thing in particular we have noticed, and that is they do not allow land to lie idle any length of time. After one crop is off, the ground is gotten ready for another crop; and at least once a year a heavy application of manure is plowed under. Another thing, all the space along fences or irrigation ditches or flumes is planted to something that will furnish an income or something for the table. The Western farmer is a little too easy-going, as a rule. He plans big things and does them, but often loses as much through waste and small leaks as is made in the larger transactions. Many of the foreigners who come to this country will make money where many Americans would go broke. It is true they do not live as well, but at the same time they waste nothing, so they save at both ends. However, we think that as the larger holdings are being subdivided into small farms, more care will be given to details.

SMALL FRUITS.—If blackberry or raspberry plants can be had and are planted in November, considerable fruit can be raised the first year, if planted where the growing season is late. Plants of this kind can be planted in November if reasonable care is given, so that they do not dry out before planting. We have planted the Surprise raspberry in October and picked a nice crop the following spring. This would not apply to growing plants. By this we mean that plants should be taken from plantations that are not under irrigation, so that they would be comparatively dormant. If old plants are being kept irrigated for berries, the young plants would have too much new tender growth, so it would be hard to get them started again before next spring.

STRAWBERRIES AND RHUBARB.—It is perfectly safe to plant strawberry plants and rhubarb this month. Either one can be planted from now on until April, so that the planters can choose such time as is most convenient to do the work. But it would be well enough to be making plans where such plants are to be set out. For either strawberries or rhubarb it will be well to plow the ground twice, plowing the first time this fall and cross-plowing just before planting. For rhubarb, plow under all the barnyard manure you can, for one cannot get the soil too rich for rhubarb. With strawberries it has been our policy to put the manure on the surface, allowing the rains to wash the strength into the soil. Before working the ground, prior to planting, go over it with a rake and gather unrotted chunks—and set fire to them. Where the ground is worked with hand tools the coarse litter will, if plowed under, interfere with cultivation. Besides, one cannot get the soil in the proper condition for planting when such stuff is plowed under.

HUMUS.—Of course it helps to make humus, but it is so slow to rot that we much prefer to plow under a green crop of some kind. And it is well to plan on doing so. If there is anything lacking in the soil of our valleys in California, it is humus. In the timbered parts of our country and over the great prairies of the Middle West where grass has grown year after year, the soil has plenty of humus. But our interior valleys have lain bare, or nearly so, for centuries, until brought under cultivation in recent years; so that, while the soil may have all the necessary chemicals, it will not give a satisfactory crop without this substance we call humus. Therefore, where nature has failed to provide, we will have to continue the work the best way we can.

ORNAMENTALS.—The planting of bulbs can be continued through November and also December. It takes considerable time to get a nice display of flowers from bulbs, for, unless one has a good bank account it will be necessary to start with a very few and allow them to increase themselves. In this way, in a few years one can have any desired quantity. The fact is, it is hard to find anything so gorgeous as a good-sized bed of amaryllis or lilies, or the aristocratic hyacinth. Large flowering bulbs of the amaryllis cost 25c each, and lilies about the same. By the hundred they are somewhat cheaper—hyacinths, $1 per dozen for named sorts. One could expend $50 to $100 for bulbs, according to size of grounds, and not have more than enough for one who loves flowers. For this reason the most of us will have to start in a small way and work up, adding new varieties from year to year.

A GARDENING SCHOOL FOR WOMEN.

To the Editor: Perhaps it will not be out of place for me to send you the enclosed clipping. I do it to give you an idea of what a few women are doing, and their work has been very successful so far. This farm school is a quarter of a mile from my farm. Perhaps you have forgotten me? For 20 years I lived near Visalia and was an officer of the California State Grange for 18 years. At my father's death I had to return here. When I sell I hope to return to California.

Jarrettown, Pa. E. C. SHOEMAKER.

[We of course remember Mr. Shoemaker as a progressive farmer, a friend of this journal and of all efforts for farming advancement. No doubt hundreds of our readers will also remember him and be glad to know that he may again become a Californian. The interesting school to which Mr. Shoemaker refers is outlined below.—EDITOR.]

Last Saturday a score or more of the members of the New Century Club of Philadelphia visited the Pennsylvania School of Horticulture for Women near Jarrettown, under the guidance of the club committee on Forestry and Outdoor Art, of which Miss Emma Blakiston is chairman, and on reaching Ambler were driven two miles to the school grounds in a huge "carry-all."

The club representatives first visited the main buildings of the school, which consist of a pleasant old stone farm

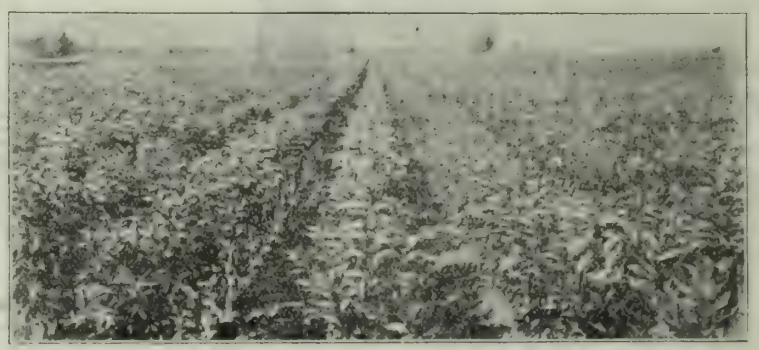
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house, situated on Limekiln pike, and its surrounding buildings, including the new dormitory that has just been completed. Twenty acres of well-cultivated farm land surround the buildings, and attractive flower gardens, where during the season just closing the embryo farmers, with the assistance of a few men to do the heavier work, have planted and garnered splendid crops. Part of these were for the use of the school and the rest went to the city markets, where they received high praise for their excellence.

This school is the only one of its kind in the United States. It began operations only last February, but already its growing waiting list demands larger accommodations. Two teachers, graduates in horticulture, composed the teaching staff in the beginning, and this summer three more were added. Miss Mary O. Collins is principal, and she has had a wide experience in the schools of horticulture in other countries. England, Germany, Belgium, Italy, Denmark and Russia all have schools of gardening for women, which have long since passed the experimental stage, and now have a recognized position in the educational world. Many of their graduates are filling responsible positions in private and public gardens, in managing their own country places or as consulting horticulturists and lecturers.

With this precedent established by the other nations, and knowing that interest in horticulture in this country was increasing, a body of people consisting largely of Philadelphia club women, associated themselves together in 1907 under the title of "Pennsylvania School of Horticulture for Women" with the object of founding and maintaining a similar institution in America where women should be taught by lectures and by practical work the art and handicraft of gerdening.

Thus far, of course, no pupil has covered her first year's work, and the course is two years, with a two months' holiday taken between the planting and harvesting seasons, according to the work they are doing. While horticulture proper—that is, the growing of vegetables, flowers and fruits—is the special subject of instruction, other subjects which naturally attend this line are provided for. Scientific work in botany, chemistry, geology and entomology, in so far as they are directly applicable are included in the theoretical course. Then, too, the curriculum includes garden carpentry, preserving of fruits and vegetables, bee-keeping, poultry raising, elements of surveying and garden design, demonstration and opportunity for practical work in the care of ordinary live stock, marketing of produce and agricultural bookkeeping and business correspondence.

During the summer the women sold the produce from nearly five acres of asparagus, about two acres of strawberries and smaller amounts of many fresh vegetables. Some two hundred grape vines are now in splendid bearing condition, while apples, pears, peaches and nut trees are soon to be robbed for the markets. Plans for winter work are already being made and the greenhouses and cold-frames for forcing purposes will soon provide hot-house delicacies which bring the highest prices in city markets.

The individual plots of ground allotted each pupil particularly interested the club women, for in these the individual taste of each pupil was shown. No rules govern these little plots, but the student may experiment along her special line for her own enjoyment outside of school hours. Some plots were dveoted entirely to flowers; others were laid out in formal garden design by those who are intending to be plain farmers and direct their own country places devote their small ground space entirely to crops of a hardier variety. Students must be at least high school graduates and must be 18 years of age or older. They are not definitely entered on the roster until they have passed a preliminary period of two months at school work.

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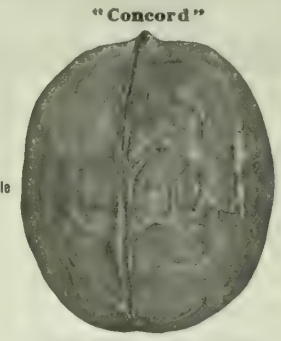
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The Fresno Scraper



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FRESNO AGRICULTURAL WORKS
FRESNO, CALIFORNIA.

PROS AND CONS OF PEAR PRODUCTION.

(Continued From Page 341.)

better is not offered, which is very seldom.

Such a large proportion of the fruit is shipped or sold to the canner that dried pears form a very small part of the dried fruits of the State, only about 1200 tons per year going out since the blight became serious. The cost of drying is little and the process simple, and the market for dried pears can be expanded greatly if it is necessary to increase the output largely. The price to the grower is 8 and 9 cents, and the past few years, beginning at 1910 and running backwards, it has been 9 to 13, 6 to 8, 6 to 8, and 9 to 12½ cents per pound. Only the poorest class of pears are dried, those that are not worth, either on account of their small amount or poor quality, sending to the canner.

REASONS FOR NOT PLANTING. — The above are sufficient reasons to explain why so much planting is being done. Two things that should discourage planting, or make the prospective grower pause and meditate awhile are the blight and the thrips. After he has balanced accounts he can go ahead and order his stock.

Something over a decade ago neither of these pests were giving trouble in this State. The blight came upon the scene, swept the San Joaquin valley clear of pear trees in other districts, threatened to destroy the industry in others, and almost put a stop to plantinging all over. Now the blight is no longer looked upon as a serious problem, although little or no planting is being done where trouble was at its worst.

No sooner was the blight question at rest than the pear thrips, evidently a native of the State but doing little damage, seemed to develop vigor and is now the biggest problem to the grower that there is, and one that may ruin the industry in some sections.

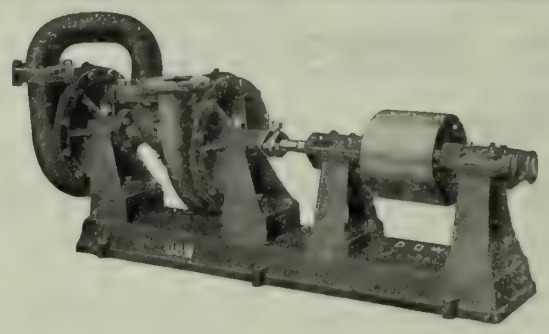
The control of this is said by the government entomologists to be nearly solved as can be expected, but, even so, the difficulty of spraying for it just at the right time, if weather conditions are unfavorable, or of doing a good job when the weather is right, is so great that it is doubtful if some growers can keep up the fight against it.

The effect of these two pests should be varied. The blight prevents production in some sections and thus keeps down competition, while being of little trouble or expense in districts where it has been cleaned out. The thrips will be a continual expense and trouble, but will so reduce production and limit the amount of first class fruit that the man who does attend to business and controls it will more than profit thereby.

For other pears besides Bartletts the market is so limited and consumption so small that no grower should make much planting without knowing just where he is going to dispose of his crop. The varieties that are profitable are those that can be sold very early or very late in the season. Considerable planting in comparison with the amount usually sold is, however, being done now.

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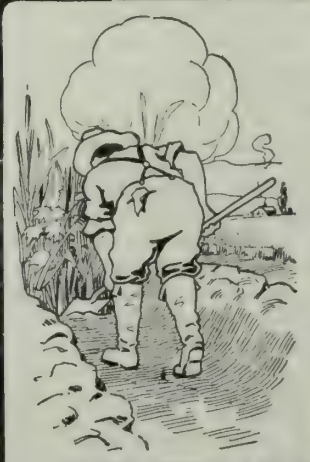
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DAIRY NOTES.

One of the greatest advances made for a long time in the dairy industry was the decision by the members of the Tulare County Dairymen's Association to have all cream produced or used by members of the Association graded into three classes according to quality and making a difference of four or five cents in price as a result. The grading will be put into effect when methods for doing so can be sufficiently developed.

The milk cow is being remembered by the naming of a new town north of Los Molinos, Tehama county, Dairy. The streets are named after the dairy breeds or after things connected with the industry.

A Chicago live stock paper quotes medium and good dairy cows at $40 to $52, with fancy Holsteins at $65 and $75. Poor cows are worth only about $30.

FOR SALE

Solid colored bull calf sired by Raleigh's King, a son of Raleigh's Fairy Boy 83767, who sold for $8200 in T. S. Cooper's 1910 sale, and undefeated champion in the show ring the same year—out of Blue Fox's Golden Rosebay, half-sister of the famous $15,000 bull, Noble of Oaklands.

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Los Angeles San Francisco

At the first meeting of the Dairy and Produce Exchange of San Francisco, Friday morning, October 20, in its new quarters in the Hanford block, W. H. Roussel, retiring as president after holding the office since the formation of the Exchange in 1905, was presented with a chest of silver by the members of the Exchange.

The John Offutt creamery and cheese factory on Sonoma mountain will resume operations November 1, after being closed down during the summer months.

The Selma, Fresno county, creamery has been sold to A. L. Harlow and W. E. Street, who will enlarge and improve the plant.

Sydney Jones, a prominent Eastern breeder, passed through the State recently with a small herd of registered Holstein stock which the New Zealand government will use to build up a large herd at the Wellington Experiment Station.

The new creamery at Quincy, Plumas county, was put into operation last week.

Mrs. M. A. Musgrave of Modesto has purchased a number of registered Jersey cows in preparation for building up a large herd of first-class cattle. D. F. Conant has also been making purchases of Jerseys.

Ferndale, Humboldt county, prices for butter-fat at the different creameries for September were 30¾ and 31 cents per pound, one creamery paying 33 cents.

In Kings county, where monthly prices are now being published, 28 and 29 cents were paid during September, two creameries making a difference of several cents in the prices of sweet and sour cream.

Over twenty families of Swiss dairymen are expected to move into Imperial county within the next month. At present 55 Swiss dairies are being operated in the county.

C. A. Starkweather has been in Stanislaus county for the past week, having completed an inspection of Fresno and Merced counties.

LIVE STOCK NOTES.

Anthrax has broken out in bad shape in Fresno county and County Veterinarian Williams has inaugurated a campaign of vaccination to check it. The disease is doing the most injury on the west side.

The stock of C. P. Cooper of Gonzales, Monterey county, was sold at auction last week, 130 head of horses bringing nearly $24,000. Two stallions sold for $1800 and $1500, and a jack for $1300. Most of the stock was sold to residents of the county.

One of the largest sales of stock to an Oriental made in this State for some time occurred at Chico recently, when a Hindu purchased 300 Angora goats on the Gianella ranch for shipment to British Columbia.

More Clydesdale fillies are being sent from Scotland to Canada in proportion to the total number of animals of this breed of horses sold, than to any other country.

DEMAND FOR SUCKING PIGS.

To the Editor: Will you kindly inform me if two months would be the right age for market pigs. If not, what is the correct age?

Sucking pigs should be marketed when six weeks or two months old, the latter being the extreme age at which they can be sold. It is seldom, however, that there is any demand for them except at Thanksgiving and during the Christmas holidays, and even then not a great many are sold in this State.

Large shipments of tomatoes are going east from Napa.



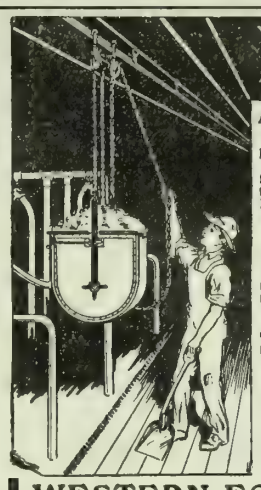
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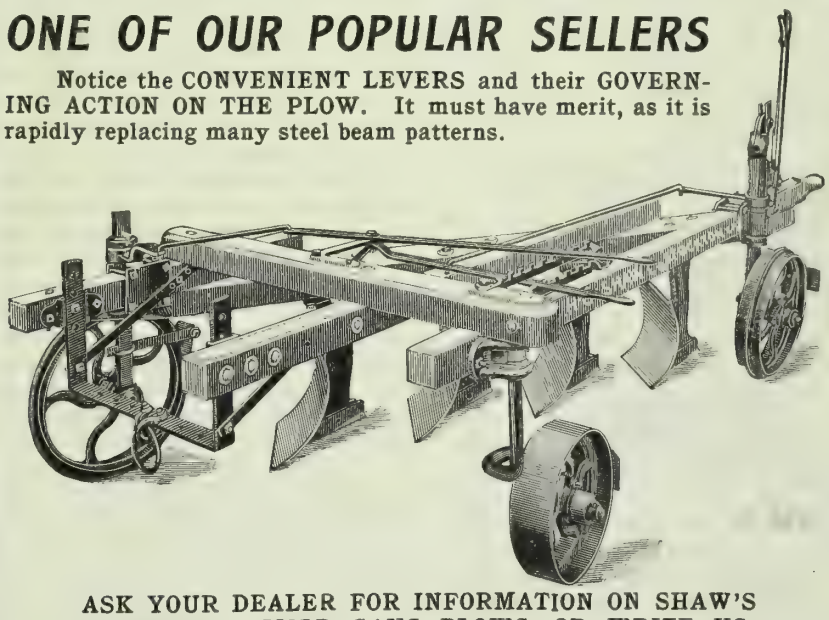
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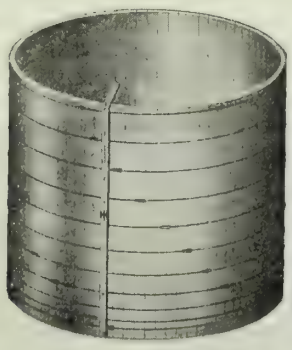
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Powdered Milk in New Zealand.

We are always glad to note the progress of efforts in California to give milk other forms than butter, because we are always on the verge of having a little too much butter for local demands, though fortunately keeping away from the verge by quite a margin during the last few years. Still it is important to do more in other ways of getting money out of milk. Humboldt county enterprises now cover more in this line than those of any other county, if we are correctly informed.

A very interesting account of the making of powdered milk in New Zealand and what is done with the product, is given in a recent consular report by U. S. Vice-Consul General Henry D. Baker, on special service in New Zealand:

The production of condensed and powdered milk is assuming importance in New Zealand, and during 1910, 235,590 pounds of preserved milk were exported to other countries, of which the United Kingdom took 185,812 pounds, the remaining shipments going chiefly to Australia and to the South Sea Islands. The total value of the preserved milk exported in 1910 was $25,984, which was slightly greater than the value of the imports, amounting to $25,417, although the imports exceeded the exports in quantity by about 60,000 pounds. The United Kingdom supplied New Zealand with 227,712 pounds, and Switzerland sent 30,092 pounds. The United States has not had any export or import business of importance with New Zealand in preserved milk. There is an import duty in New Zealand of 37½ per cent ad valorem on preserved, evaporated, or dried milk or cream, with a preferential reduction of 12½ per cent ad valorem on imports from British dominions.

POWDERED MILK BECOMING POPULAR.—New Zealand powdered milk is apparently gaining considerable reputation on account of its nutritious and keeping qualities, and it has become a formidable rival of condensed milk. Much attention has been paid to perfecting the processes of preparing powdered milk, so as to eliminate the difficulty which usually occurs in preserved milk preparations, the rising of the fatty globules to the top when mixed with water. The powdered milk is said to be much more digestible and more suitable for infants' food than condensed milk, as it is thoroughly sterilized and contains no cane or beet sugar; also the casein, in the process of drying the milk, is divided into fine particles as it is in human milk.

Powdered milk as produced here contains about 26% butter-fat, 22.9% proteids, 42.3% milk sugar, and 5.6% mineral salts. It consists of a flaky powder of cream color. Very complete sterilization is obtained during the process of drying off the water, but little or no alteration occurs in the essential elements of the milk. The milk is dried within two hours of its being drawn from the cow, the cans into which the milk is received having previously been washed in lime water, then in cold water, and finally sterilized with steam. Tuberculosis is guarded against by veterinary inspection of the cows, and also by the sterilization of the cans.

VARIETIES OF POWDERED MILK AND THEIR USES.—One kind of powdered milk is made entirely from skim-milk, and is used largely in biscuit factories and in the manufacture of milk chocolates, for which purpose it is exported to England. Its use by biscuit manufacturers is said not only to improve the flavor of the biscuits, but to add about 15 biscuits to the quantity made from every pound of flour used.

The powdered milk sold chiefly for infants' food and for use with tea or coffee is a desiccated milk to which cream and lactose have been added. This milk is now recommended by local physicians as superior to any of the imported preserved-milk preparations. It has recently acquired a reputation in connection with South Polar exploration; it was used by the Shackleton expedition, some of it having been the main food of Professor David's party that reached the magnetic pole. Two tons of this powdered milk has been ordered for the Mawson Antarctic expedition, which will leave New Zealand for the South Polar regions in November, and it is said that with pemmican it will be the sole dependence of the expedition in its final dash for the South Pole.

The New Zealand method of evaporating milk into powdered form has lately been introduced into Australia. It is anticipated that the development of this industry will still further increase the prosperity of the dairying interests of Australasia, especially as it may add considerable value to skimmed milk, which is now fed chiefly to pigs.

STERILITY IN COWS.

Among the problems that confront the dairyman and the veterinarian who is called upon to treat cattle, no problem is more difficult of solution than that of sterility, the cows often appearing to be normal in every respect, come into heat regularly, yet seldom or never getting with calf after service. Such a case was described in the PACIFIC RURAL PRESS of September 16. These cases are difficult to diagnose, especially when no examination can be made of the cow in question.

When no reason for sterility is apparent and no treatment is effective we would suggest than an examination into the amount of salt in the feed of the cow be made. It is claimed by a stockman writing in the Breeder's Gazette that salt in the feed will very often cause temporary sterility, not only with cows, but also with mares and other brood animals.

The theory was suggested many years ago when two young mares got into a sack of salt soon after service and soon after aborted. Since that time the theory that salt caused sterility was tested many times, with the result, it is claimed, that it proved correct in every instance. Thus mares who were served ineffectively were kept without salt and then were bred successfully at the first service. In other cases registered sows who had got with the wrong boar were dosed heavily with salt; the service proved effective, no apparent injury was done to the sows, and they were then bred to the right boars without any trouble.

The correctness of the theory is still in doubt, it being practically untried or unknown to many stockmen and veterinarians. It is generally admitted that a very little salt is considered a benefit to animals, while an excess is universally known to work injury to the system and cause trouble that might easily result in sterility. At all events the theory has sufficient backing to justify testing it when other methods fail.

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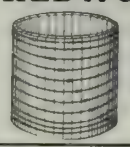
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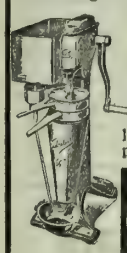
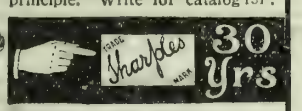
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Feeds and Feeding, Henry	2.25
Farm Development, Hays	2.00
Soiling Crops and the Silo, Shaw	1.50
Swine Husbandry, Coburn	1.50
Studies in Horse Breeding, Carlson	2.00
Greenhouse Management, Taft	1.50
Mushroom Culture, Falconer	1.00
The Study of Corn, Shoesmith	.50
Plant Life on the Farm, Masters	1.00
The Hop, Myrick	1.50
The Book of Wheat, Dodlinger	1.50
Meadows and Pastures, Wing	1.50
Trees of California, Jepson	2.50
Asparagus Culture, Hexamer	.50
New Onion Culture, Greiner	.50
American Cattle Doctor, Dadd	1.00
Home Pork Making, Fulton	.50

Send remittances to
PACIFIC RURAL PRESS,
420 Market St., San Francisco.

The Variation of Test in Hand Separator Cream.

From an address at the Ceres Co-operative Creamery by W. B. THURSTON, Dairy Division, U. S. Bureau of Animal Industry.

No doubt many creamery patrons have the idea that the man whom they hire to manufacture their cream into butter has an easy position and as he is given a good salary, he ought, for value receveived, to please every one all the time. Did you ever try it? Didn't work, did it?

The men in the creamery are the medium between the dairymen and the butter buyer, and unless a good quality of cream is delivered, a good quality of butter cannot be made. But, as you all know, one essential toward producing a good quality of cream is a feeling of friendliness, satisfaction and trust toward the creamery and its employes.

The best way to keep these essentials is to know that everyone is getting a "square deal," and correct weight and test. "Oh, yes," you say, "how do I know that it is correct? That is the way they get the overrun, by juggling the tests."

Just let me say this, that no man ever ran a creamery very long or very successfully who did not conduct a fair business. More especially is this true of a co-operative creamery, where there is absolutely nothing to be gained by incorrect testing.

There are several points to be touched upon in order to explain the variation of cream test, and I will endeavor to take them up separately.

Before we consider these topics, I wish to correct the impression that some people have, that they can churn a given weight of cream and thus secure a check on the test of the cream. Butter is only a little over 80% butter-fat, so of course there will be more pounds of butter than butter-fat. I trust that you already are thoroughly acquainted with this fact, but many people are not. For example, one day one of my patrons confronted me with the fact that he had churned 15½ pounds of butter from a five gallon can of cream, which on his last delivery had tested 35%, and he had received pay for 14 pounds of butter-fat. Of course, he suspected crookedness, and it took one hour by my watch to prove to him that he should have obtained 1½ pounds more butter.

Unless a correct sample of the cream is taken, the test of the cream amounts to nothing, and so great care is always observed in sampling and in preserving samples. As a rule, creamerymen are very careful about this.

We will now consider the milk before it is separated. In fact, we should not have time to do this, as the milk should be separated at once after milking, and as near body temperature as practicable, as at this temperature all cream separators do their best work. Several of our agricultural colleges have conducted experiments along this line and have found a variation of 1 to 5% at average skimming temperature, and wider variation in extreme cases.

The amount of flush water or skim-milk used to flush out the bowl after skimming, makes a difference in test of 1 to 3% in average cases; to as high as 10 to 15% in exceptional ones. Half the flush water leaves through the cream spout, so a little, well used, is usually sufficient. If the separator bowl vibrates or "wobbles," butter-fat is being lost in the skim-milk and the test of the cream will vary according to the vibration. This is practically nothing to a new machine or one in good repair, but in an old or worn one makes considerable difference, amounting from 1 to 15%.

The speed of the bowl controls the density of the cream as much as any other factor. The higher the speed the thicker the cream, and the slower the thinner. A single trial will prove this to your satisfaction.

No matter what the rated capacity of your separator is, it will do better work if fed a smaller amount of milk and will also separate a heavier cream. It is claimed by some authorities that a difference of 8% in the cream can be obtained by materially changing the flow of the milk.

To attempt to skim sour or cold milk is an imposition on any machine and cannot be done successfully, and when it is done under stress of circumstances, occasions a loss of butter-fat and a wide variation in the test.

Dirty milk should first be strained before separating to prevent dirt or hairs lodging in the cream screw or skim-milk tubes. Should this happen, a varying density of cream will at once result and the separation will not be complete. An unwashed or improperly cleaned bowl will also give the above results, as well as produce a very insanitary cream. The separator bowl should always be washed immediately after each separation, as it will only give best results when clean, and the slime left in the bowl will contaminate the following separation with a very lively assortment of bacteria.

A cheap separator will give more variation in the test of the cream from day to day than a good machine. A cheap article of any sort is a poor investment, and this is especially true in a cream separator, which may in a short time waste enough butter-fat in the skim-milk to have paid for a good machine.

Last, but not least, comes the cream screw. After constant use the end of the cream screw becomes gradually worn and cream is taken further from the center of the bowl and thus is a thinner cream. This one fact alone is often the cause of a patron becoming dissatisfied or losing confidence in the Babcock test.

As can be seen from the preceding, so many factors enter into the causes of the variation of cream as separated on the farm that the same test cannot be expected from day to day, even under the best conditions. Get all the information possible concerning the Babcock test, for the well informed patron is usually the most progressive one. The one who knows is usually the best satisfied.

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POULTRY NOTES.

Written for the PACIFIC RURAL PRESS
By M. RUSSELL JAMES.

AT THE STATE FAIR.—The poultry fanciers are still "hot" over their treatment at the recent State Fair.

That the building assigned to them was ill-ventilated, overcrowded and entirely inadequate, with comfort for neither poultry or poultry exhibitors, was not the worst of the matter. This was discounted by the lack of attention to the fowls and the personal treatment of the exhibitors. The poor fowls not only suffered from heat in the ill-ventilated building, but often for water and feed, while the filth was allowed to pile up in their cages. The exhibitors were compelled to coop and uncoop their fowls, and were given slack courtesy, which became downright disrespect to the women exhibitors. For instance, profane language was freely used in these ladies' presence, and often they were addressed as "Jones," instead of Mrs. or Miss Jones, as the case might be. Dust was carelessly swept upon them, and in one case dirty water was thrown upon a lady's feet.

It is almost unbelievable that such ungentlemanly and disrespectful conduct toward women could be possible in an American city, and that city in California. It is a disgrace to the State.

If press-wide publicity were given to such dereliction in duty and decency in the place of glossing over and hushing up the matter, such men would soon get out of positions of trust or, at least, be shamed into faithfulness and decency.

(From Consular and Trade Reports.)

GROWTH OF THE POULTRY BUSINESS IN SCOTLAND.—In this part of Scotland (Edinburg) poultry raising as an industry was long overlooked. The breeding of fowls was merely incidental to farming, and chiefly for the eggs they produced. In recent years a number of the farmers have been impressed with the importance of the home market for chickens. Dressed fowls are largely imported into Scotland from Ireland, and in moderate quantities from Russia, Germany, Holland, Belgium and France. In Scotland it is considered that the best table fowls are produced by crossing the Indian gamecock with the Dark Dorking, Buff Orpington, Houdan and Faverolle (white fleshed) and with Wyandotte and Plymouth Rock (yellow fleshed) hens. For egg production the White Leghorn stands first. The Brown and Black Leghorns, Black Minorcas, Anconas, and Andulusian are considered good. As yet comparatively few poultry keepers use incubators. During the last five years the Agricultural Organization of Edinburgh has devoted considerable attention to the poultry industry, especially to the formation of co-operative societies of farmers, and there are now 40 such associations engaged in the collective marketing of eggs and chickens.

POULTRY RAISING AN IMPORTANT INDUSTRY IN IRELAND.—In the year 1909, in addition to the home consumption, $12,933,864 worth of eggs and $4,171,933 worth of poultry were exported, and the industry is believed to be increasing. In many localities where the soil is too poor for crops farmers have found that the return from poultry raising has amply made up for the lack of productive soil, and they are turning their attention more and more to this industry. Considering the importance of the poultry industry in Ireland, it seems reasonable to suppose that if properly advertised and represented, American incubators could be sold here to advantage. Goods of this nature come in free of duty. The best advertising medium to reach poultry raisers in Ireland would be The Irish Homestead, No. 27 Clare street, Dublin.

POULTRY IN RUSSIA.—Some idea of the magnitude of the egg trade in Russia can be obtained from the exports, which in 1910 amounted to $32,799,835. It is believed that $100,000,000 is a low estimate of the value of eggs produced annually in Russia. Chicken raising, which formerly was carried on by the peasants on a small scale and in a haphazard manner, has in late years developed into a paying industry that has interested the higher class of farmers so much that they have gone in for better stock.

SOUTHERN CALIFORNIA WINS A. P. A. MEDALS.

Written for PACIFIC RURAL PRESS by
H. W. KRUCKEBERG.

During the last days of September there was held a meeting of the executive committee of the California branch of the American Poultry Association in Los Angeles. The business up for consideration was the awarding of the gold and silver medals offered annually to some one poultry exhibition held in each State under the direction of the Association. In making the award the committee was actuated by the fact that the California Confederation of Poultry Societies would meet in Los Angeles in conjunction with the Breeders' Association; that many members of the California branch will be present during that time; that a mail ballot vote suggested and carried out by the president shows in favor of the Poultry Breeders' Association of southern California; therefore, it is the sense of the executive committee that the A. P. A. medals and diplomas for this poultry show year be awarded to the Poultry Breeders' Association whose show will be held in Los Angeles, January 4 to 11, 1912. Competition for these trophies is open to the American, Asiatic, Mediterranean, English, Polish, Hamburg, French Game and Oriental classes of standard poultry. The silver medals cover the Bantam classes, turkeys, ducks, geese, etc.

POULTRY.

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FAMOUS BREEDER of White Plymouth Rocks. Eggs, Utility and Show Stock for sale; 75 choice cockerels now ready: Also White Crested Black Polish. Mrs. D. A. Robertson, R. 3, Box 16, 511 Willow St., San Jose.

DAY-OLD CHICKS—Barred Rocks and White Leghorn chicks, good laying strains; order early for fall delivery and avoid delay. Fairmount Hatchery, Box 29 B, R. F. D., Santa Cruz, California.

WHITE PLYMOUTH ROCKS—Eggs, $3 per setting; cockerels, $5 and up; trios, $10 and up; my Oakland 1910 4th prize cock, $25; 2nd prize cock, $50. Wallace Rutherford, Napa, Cal.

A SHORT CUT TO SUCCESS—Olson's White Leghorns. Day-old chicks or hatching eggs. They are money-makers for you. Prices low. O. A. Olsen, Sunnyvale, Cal.

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TWIN OAKS FARM—W. H. Bissell, Proprietor, Livermore, Cal.—Buff, White Orpington.

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BABY CHICKS from Hicks' Jubilee Hatchery have no superior in California. Will sell in small or large lots. Capacity 12,000. W. Leghorns, B. Rocks, R. I. Reds, B. Orpingtons. Send for price-list.

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OF THE BEST TYPE CAN BE FOUND IN MY YARDS.
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I have the largest flock of Black Orpingtons on the Coast.
The best testimonial to the merit of my birds can be found in my winnings at San Jose October 4th to 17th, 1911, where I took 1st and 2nd cock, 1st cockerel, 1st, 2nd and 3d pullets and the American Poultry Association Medal for best cockerel in the show.
In White Wyandottes, I have quality just as good.
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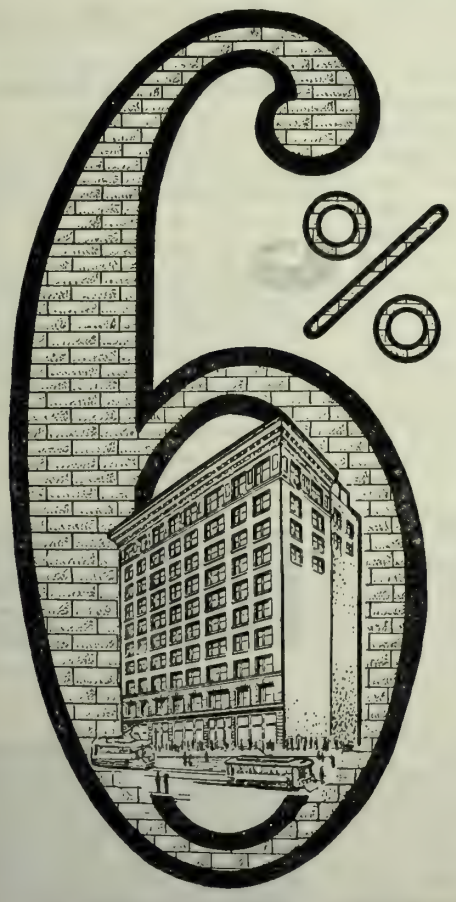
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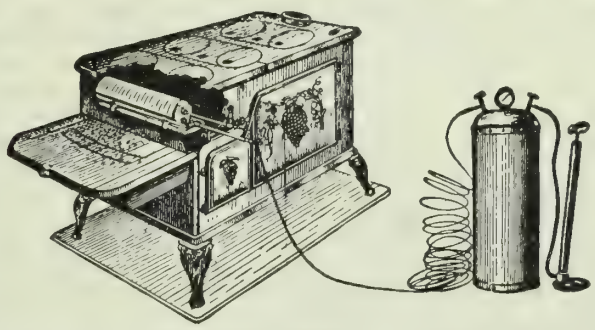
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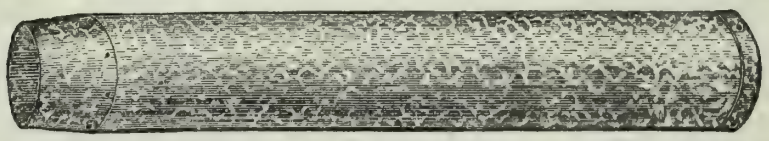
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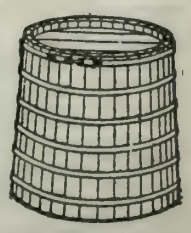
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A Perfect Day.

Count that alone a perfect day
When, with the folding leaves at night,
An inward voice may softly say:
"You've done your best since morning light."
Your best, which always must be poor,
With human heart, 'neath human sway;
But when you've done it swift and sure,
Count that alone a perfect day.

The sunlight trembles on the sea,
The soft breeze dies away in sleep,
The birds of passage wild and free,
Fly fearless home across the deep:
They turn not east, they trun not west,
But with true instinct keep their way;
When you, too, know your path is best,
Count that alone a perfect day.

When you have soothed a wounded heart,
And turned aside from grim despair
Some hopeless wretch; and kept apart
A soul and sin, with held and prayer;
When you, at night, on bended knees,
With conscience clear can truly say:
"O, God! what am I more than these?"
Count that alone a perfect day.

When the last sunset tints yon sky,
And golden gleams are on the hills,
While on your couch of pain you lie,
Strange music all the silence fills,
A new life current, strong and clear,
Is yours; around glad hymns of praise,
And then you know the voices near
Are angels of your perfect days.

—Agnes Marie Manning.

Going to Leave the Farm.

There was silence in the kitchen, save for the snapping of the fire in the stove, the ticking of the big eight-day clock in the corner and the rustle of the farmer's newspaper, and when Mrs. Harewood sighed deeply both her sister and her husband looked up in surprise.

"What's the matter, Sarah?" asked the latter. "That sigh was the loudest I ever heard you give. Has anything gone wrong? You look as though you have a big load on your mind."

"I have," answered his wife. "And it is a load you must share. Eli, I have borne it alone as long as I can bear it. There is a great trouble in store for us, husband—George is going to leave the farm."

"Going to leave the farm!" he replied at last. "Sarah, you must be dreaming."

Mrs. Harewood shook her head sadly. "I wish I were," she said. "No, Eli; it is true. George has made up his mind to leave us. I have noticed for months past that he seemed dissatisfied and restless, and since you sold Vixen he has grumbled a great deal about work and the dullness of his life. And today I heard him say to Jasper Flint that he would not be here a month from now; that he had enough of farm life; and if we refused our consent to it he would run away and take his chances."

"We'll see about that," said the farmer, angrily. "Consent to it! I rather think not! I won't consider it for a moment. What would he be worth a year from now if I let him go? He'd fall in with all sorts of rascals in the city, and get us all into trouble. Besides, I need him here. It'll be ten years at least before Harry can take his place, and he's got to stay if I have to tie him down."

"Why don't you make him want to stay, Eli?" asked the gentle voice of his sister-in-law.

"If he's got the city fever on him, all the talking in the world won't do any good," rejoined the farmer. "He wouldn't listen to a word."

"Don't talk. Don't let him ever suspect that you are aware of his desire to leave you. Try a new plan, Eli, a plan I have been thinking of all day."

"The best plan I know of is to tell him my mind freely, without any beating about the bush; and the sooner it is done the better."

"No, Eli, don't be above taking a woman's advice. Let me tell you how to deal with George. I have been here three months now, and I have taken a deep interest in the boy. I have seen his dissatisfaction and recognized the cause. I have heard him talking to Jasper Flint more than once, and only yesterday I heard him say that if he went to the city what he earned would be his own, but that here he worked from dawn till dark and was no better off at the end of the year than at the beginning. He says that Tom Blythe, who is in a grocery store in the city, gets twelve dollars a week, and Tom is only seventeen. Now, if you want George to stay on the farm, give him an interest in it, Eli. He is eighteen years old, and has worked faithfully for you ever since he could talk plainly. He has his food and lodging and two suits of clothes a year, to be sure, but all he actually owns is his collie dog, which is always at his heels. You sold the only horse you had that was fit for the saddle, and George was extremely fond of Vixen."

"It seems a pity to keep a horse that no one but George ever rode," said the farmer, "and she was too light for work. I'm a poor man, Hester, and can't afford playthings for my children."

"You can better afford to keep an extra horse than to have your soon leave you, Eli. Whom could you get that would take the interest in the work that George has? You have thought it only right that George should do a big share toward running the farm, and considered your duty done in giving him a home. You are disposed to think him ungrateful because he wants to leave you now that every year makes his services more valuable. But the boy is ambitious, and is not satisfied to travel in a circle. He wants to make some headway, and it's natural."

The farmer leaned his head on his hand, a look of deep thought on his grave, weather-beaten face. His gentle sister-in-law's plain speaking had given rise to thoughts which had never before entered his head.

"I believe you are more than half right, Hester," he said at last. "I'll think it all over tonight, and make up my mind what to do. I'd be lost here without George, and he shan't leave the farm if I can help it."

"Force won't keep him, Eli; remember that," and Mrs. Lucas, feeling that she had said enough, folded up her work, and taking up a lamp from a shelf by the stove, went upstairs to her own room.

Just at daybreak she was aroused from a sound sleep by the sound of a horse's hoofs in the yard, and looking out of the window she saw Eli trotting away on Roan.

"Where can he be going at this hour? When she came down stairs at 6 o'clock George was standing by the kitchen table, having just come in with two pails of milk. His face wore a discontented, unhappy look, and he merely nodded in return for his aunt's cheery "Good morning."

A few minutes later his father entered, but George, who had gone to one of the windows and was looking out dejectedly, did not even glance up.

"You were out early, Eli," said Mrs. Lucas. "I heard you ride away at daybreak."

"Yes, I went to Pine Ridge on a matter of business."

"That's where you sold Vixen, papa, isn't it," asked little Harry, and Mrs. Lucas saw a quiver pass over George's face as the child spoke.

"Yes, my boy, I sold Vixen to Lawyer Stanley. George," turning to his son, "I've made up my mind to part with that fifty-acre lot by the river. What do you think of that?"

"Of course you are to get a good price for it, sir," said the young man indifferently. It's the best piece of land you have."

"But I haven't sold it. I am going to give it away."

"Give it away!" repeated George, roused out of his indifference and staring at his father as if he thought he had not heard him aright.

"Yes, deeded it, every inch of it, to some one I think a great deal of, and who deserves it," laying his hand on his son's shoulder, and his voice weakened a little. "I'm going to give it to my son, George Harewood, to have and to hold as he sees fit, without question or advice."

"To me! You intend to give that fifty acres to me, father?"

"Yes, my boy, and with my whole heart. You've been a good son, George, and I only wish I were able to do more for you. But I am not a rich man, as you know, and I have your mother and three little ones to provide for, too. Still, I want you to have a start, and this fifty-acre lot will yield you a handsome profit. You can have three days a week to call your own, and that will give you a chance to work, and if you choose to break that pair of young oxen I bought the other day from Bagley you can have them for your trouble."

"This—this seems too much, sir," stammered George. "I don't know how to thank you."

"Too much! Then I don't know what you'll say to this," and the farmer took his son by the arm and led him out on the porch. "There's another present for you, my boy."

"Vixen!" The word came from George's lips from a long sigh of joy, and with one bound he was at the side of the black mare he had thought never to see again, and had both arms about her neck. "Oh, father, I'd rather have Vixen than anything else in this world!" And he buried his face in the pretty creature's mane, and in spite of his eighteen years, fairly broke down and sobbed.

That ended George's desire to leave the farm. He was never again heard to mention the subject.

But George never knew to what he owed the change in his good fortune.—T. F. Grover.

Married Men's Troubles.

It was married men's night at the revival meeting.

"Let all you husbands who have troubles on your minds stand up!" shouted the preacher at the height of his spasm.

Instantly every man in the church arose except one.

"Ah!" exclaimed the preacher, peering out at this lone individual, who occupied a chair near the door. "You are one in a million."

"It ain't that," piped back this one, helplessly, as the rest of the congregation gazed suspiciously at him. "I can't get up—I'm paralyzed."—Exchange.

No Boxes For Two.

Telephones girls sometimes glory in their mistakes, if there is a joke in consequence. The story is told by a telephone operator in one of the Boston exchanges about a man who asked her for the number of a local theater.

He got the wrong number, and without asking to whom he was talking, he said: "Can I get a box for two tonight?"

A startled voice answered him at the other end of the line: "We don't have boxes for two."

"Isn't this the ——— theater?" he called, crossly.

"Why, no," was the answer; "this is an undertaking shop."

He cancelled his order for a "box for two."—Boston Herald.



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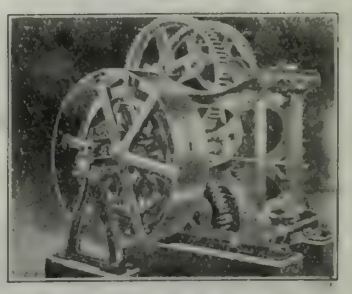
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Much joy we can win;
The world's for the people,
So—don't fence it in!

—Atlanta Constitution.

Poultry Course for Young Folks.

DESCRIPTION OF BREEDS.

CLASS X—ORNAMENTAL BANTAMS.

The odd and pretty, diminutive birds which make up this class are bred primarily for pleasure and the fancy. They are, however, very useful little fowls, nearly all varieties of them being excellent layers and good sitters and mothers. Since the propagation of pheasants and other game birds has engaged the attention of the States and the United States Agricultural Department, these light and careful little mothers have come into general use for the hatching and rearing of such birds.

Seven breeds and seventeen varieties are comprised in the Ornamental Bantam class, nearly all of which are exact miniatures of the various breeds of large fowls. The most remarkable of the breeds of Bantams that are entirely unlike any other breed of fowls is the Seabright Bantam.

The Seabrights are beautiful little fowls in two varieties, Golden and Silver. In the former the surface of the plumage is a golden yellow; in the latter, a silvery white; but the remarkable point about the plumage, and one which has been called the greatest achievement of the fancier's art, is the wonderful lacing of the feathers. Each feather is laced or bordered evenly all around with a narrow edging of glossy black. This breed is peculiar in that the male bird is hen-feathered; that is, without hackle, saddle and sickle feathers. Our young folks will notice that the cock or rooster has long floating feathers about the neck and in front of the tail, with two long curved feathers and a number of shorter ones hanging over the main tail feathers, while the hen has none of these. In the Seabrights the cock is feathered exactly like the hen; hence is described as hen-feathered.

The wonderful lacing and the hen-feathering in this breed did not come about by chance. The story of the production of this breed illustrates the work of the fancier and the skill and patience and time required to produce results of importance in that line.

In the beginning of the last century Sir John Seabright, an Englishman, formed in his mind the picture of a bantam fowl, gold in color with a complete lacing of black and hen-feathered, and set about originating a breed of bantams to meet these requirements. The Poultry Chronicle published in London in 1854 describes how he went about the work: "The last object that Sir John Seabright aimed at was to improve the Bantam to a clear, blue-legged bird, with proud erect carriage, golden color and perfect lacing. To effect this he obtained a buff-colored bantam hen at Norwich. She was very small indeed, with clear slate-colored legs. On the same journey he purchased a cockerel rather inclined to red in color, destitute of sickle feathers, with a hen-like hackle (this bird, an aged friend of mine told me, was a henny game, for he knew the person from whom it was bought; this no doubt had the permanent effect of making the Seabright hen-tailed.) At Watford he bought a smell hen resembling a Golden Hamburg. After this, by drafting for five or six years, he gained the very laced feathers he so anxiously sought by in-and-in breeding for about twenty years. He afterward had a white cockerel from the zoological gardens from which he developed the Silvers."

The Seabrights have a rose comb very like the Hamburgs, the same in hen as cock, except smaller; the wattles and ear-lobes are small, the color of the latter immaterial. They have a saucy carriage, with wings low and well-spread tail. Standard weight, 26 ounces for cock and 22 for hen.

The California Garden.

A crop which our young folks on the farm might find very profitable, and which could be handled easily by either the boys or the girls, or by both working together, is early market peas. There is just one point upon which the profit of this crop depends, and that is earliness. In marketing them, even a week may make the difference between a big profit or almost none.

This is a crop which is largely grown in the Castro valley upon knolls and foothills where the soil is so thin and light as to produce only during the wet season. Such locations are ideal places for the early pea crop; in fact, you will simply be throwing away your seed to plant it in the fall in heavy undrained soil; for even if the peas do not rot the crop will come too late to hit the early and profitable market. After the plowing is done the work consists of planting, hoeing, picking and sacking—all of which may be done by quite small youngsters. When it comes to picking things, from cotton to strawberries, the small folks with one hand tied behind them can beat the grown-ups.

The time to plant the peas is immediately after the first soaking rain. They should be planted in rows three feet apart and be thick in the rows, and in light soil covered to the depth of an inch. The kind to plant is the Alameda Sweets, so named from the county where they the so largely grown. This pea is strong and hardy with thick branching vines requiring no sticking, and is very prolific. The pods are large and well-filled and the peas are large, wrinkled and very sweet and remain in condition for the table a long time.

For our young folks living in the valleys and coast sections and able to get the use of some hilly or well-drained soil that is light and warm, we know of no better money-maker than a crop of Alameda Sweets that catches the market on the fly in February.

Be a Thoroughbred.

An old horseman who has bred and handled horses of many types says: "I have frequently been surprised at the answers given by the majority of people when asked the question: 'What constitutes the most striking difference between the thoroughbred and the common horse?' Nineteen out of twenty will name the beauty and the speed of the thoroughbred; but important as are both these qualities, neither answer is correct. It is simply that the thoroughbred when he is tired will keep on with an undiminished courage and ambition, while a common horse under the same circumstances will quit."

The mark of a thoroughbred in horses is also the distinguishing trait of the successful among men. Not exceptional talents or attractions bring one to the winning post in a long and wearisome race, but "undiminished courage and ambition." The great railroad magnate, Harriman, when asked for a rule to success, put the same thought in a different way. He said:

"A young man who will start with the determination of mastering what he undertakes is sure to get there; but he can't play with it. There is always a disposition in the make-up of humanity where man reaches a point at which he is willing to give up. Success lies in the determination to do the thing undertaken and to do it the best it can be done."

Even in the matter of health a great German physician has said: "When a man tries with all his power for a certain object and persists, he will attain it. We find daily examples of ordinary adventures who have striven for wealth and fame and gained them; why should it be otherwise with health?"

In whatever you undertake be a thoroughbred.

The Oldest Man in America.

An English traveler in a lecture on how to keep young says it consists in not getting into a groove and becoming too grave and settled. People should be interested in things, cheerful, open-minded, enthusiastic. "One of the youngest women I ever knew," he said, "was eighty-five; one of the oldest men I ever saw was twelve. He was an American, and to him there was nothing new under the sun."

Even Rats Are Useful.

In the Chicago Telephone Company rats are used in placing cables. "A rat is loosed in a pipe through which a cable is to be placed," explained F. H. Lawrence of the engineering department. "Then a string is tied to a ferret, which pursues the rat, carrying the string through the pipe. On the small string a larger one is attached, and on that a still larger, until a big wire cable is pulled through."

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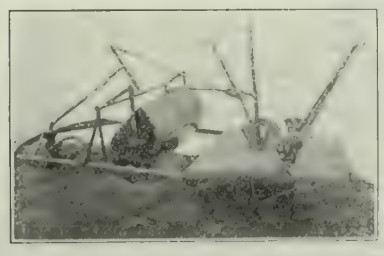
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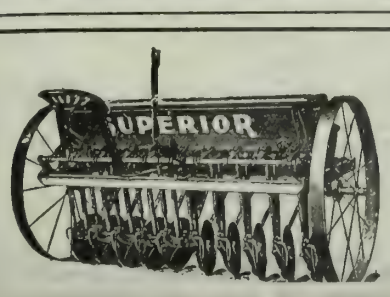


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THE H. C SHAW CO., Stockton, Cal.

THE MARKETS.

San Francisco, Oct. 25, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

This market is rather quiet at present, all prices remaining as last quoted, though all lines are firmly held. Local interests have purchased considerable wheat in the North, but deliveries are slow, owing to scarcity of coastwise tonnage.

California Club	$1.50	@1.55
Sonora	Nominal	
White Australian	1.65	@1.70
Northern Club	1.50	@1.55
Northern Bluestem	1.70	@1.75
Northern Red	1.65	@1.70

BARLEY.

Prices made another sharp advance, all grades standing 10 cents higher than last week. May barley has sold at the unusual figure of $2. There is a continued movement to the East, where the requirements of brewers are exceptionally heavy, and the scarcity of all grades in this market is beginning to be keenly felt.

Brewing and Shipping	$1.85	@1.90
Choice Feed, per ctl	1.80	@1.85
Common Feed	1.75	@1.80

OATS.

Oats are by no means plentiful, and the scarcity of barley causes more deman than usual for feed grades. Seed grades are also in demand, and all lines except black have advanced. A good deal of cheap black oats is offered.

Red Feed	$1.80	@1.85
Gray	1.75	@1.80
White	1.75	@1.80
Black	1.75	@1.90
Red Seed	1.95	@2.10

CORN.

There is not much feature to the local market, though some Eastern stock is coming in. Prices are firmly held at a slight advance, in sympathy with other markets.

Cal. Small Yellow	$1.85
Eastern Yellow	1.80
Eastern White	1.85

RYE.

This grain remains dull and featureless, prices being steadily maintained on all desirable offerings.

Rye, per ctl	$1.65

BEANS.

The crop is by this time pretty well under cover, and as the usual fall movement is well under way in most lines, values are becoming more definitely established. Quite a number of changes are noted this week, but all are in an upward direction, indicating a slight reaction against the recent weakness in several lines. The crop of limas, colored beans and some other lines has been fully up to expectations, but the last two weeks have brought out a marked revival in demand, and buyers no longer show any hesitation in entering the market. Limas have picked up in good shape, though it is impossible at present to tell whether this is due to conditions of supply and demand or to competition among buyers, brokers in southern California showing great anxiety to get beans outside the Association. The latter interest, after naming prices for delivery to the end of this month, has temporarily withdrawn from the market. Quite a lot of limas were produced in Lower California this year, and are now being shipped out via San Diego.

Bayos, per ctl	$3.75	@3.85
Blackeyes	3.75	@4.00
Cranberry Beans	4.00	@4.15
Garvanzos	3.00	@3.50
Horse Beans	2.75	@3.25
Small Whites	3.90	@4.00
Large Whites	3.85	@3.95
Limas	5.20	@5.25
Pea		4.25
Pink	3.50	@3.75
Red Kidneys	4.60	@5.00

SEEDS.

There has not yet been sufficient rain to bring out any heavy demand for most varieties, though there is more movement than for some time past. Alfalfa shows a wider range, but the cheaper offerings need re-cleaning.

Alfalfa	17	@18½c
Broomcorn Seed, per ton		$28.00
Brown Mustard, per lb		5½c
Canary		4½c
Hemp		4½c
Millet	3	@ 3½c
Timothy	Nominal	
Yellow Mustard		5¾c

FLOUR.

All Coast mills are still well occupied, with an active demand from local and southern buyers, though the Oriental demand has dropped off. Prices are firmly held.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.80	@5.00

Hay and Feedstuffs.

HAY.

No changes in price have been noted for some time, though the market shows a general firmness. Arrivals continue as before, and all the hay that comes in finds a ready market, though there is no heavy demand locally. The demand at some country points is increasing, and some sales have been made for shipments to southern California. Inquiries have been received from more distant points throughout the Southwest and from Mexico, indicating the likelihood of a heavy shipping demand later in the season. An extreme scarcity is reported in the East, and the general situation is favorable to a further advance, or at least the maintenance of present values.

Choice Wheat	$18.00@20.00
Good Wheat Hay	13.00@17.50
Other Grade Wheat	10.00@12.50
Wheat and Oats	10.00@17.00
Tame Oats	10.00@16.50
Wild Oats	8.00@13.00
Alfalfa	8.00@11.50
Stock Hay	6.00@ 7.50
Straw, per bale	35@ 70c

FEEDSTUFFS.

Rolled barley and oats are extremely scarce, in sympathy with the raw grain, but an insistent demand continues in spite of a sharp advance in quotations. The prices in these lines, however, are causing more attention to be turned to other varieties, and everything on the list is firm.

Alfalfa Meal, per ton	$18.00@19.00
Bran, per ton	28.50@29.50
Oil-cake Meal	43.00@45.00
Cocoanut Cake or Meal	25.50@26.50
Cracked Corn	38.00@39.00
Middlings	34.00@36.00
Rolled Barley	38.00@39.00
Rolled Oats	37.00@38.00
Shorts	32.00@33.00

Garden Truck.

VEGETABLES.

Onions continue extremely firm, principally owing to a strong shipping demand which has greatly reduced local supplies. Considerable stock is now being brought up from southern California. Some lines of local garden truck, such as cabbage, cauliflower and carrots, are lower, but in most lines prices still tend upward, though supplies are larger than at the close of last week. Arrivals of tomatoes, however, are smaller than for some time, and the prices show some improvement. String beans and green limas are both a little higher, and summer squash, though rather plentiful just now, sells readily at the old quotations. Okra and eggplant are unchanged, but all other lines of summer vegetables are higher.

Onions: Yellow, ctl	90c@	$1.00
Garlic, per lb	3@	4c
Tomatoes, per box	25@	50c
Cucumbers, per box	85c@	1.00
Cabbage		50c
Carrots, per sack		75c
Cauliflower, per doz	50@	75c
String Beans, lb	4@	5c
Lima Beans, lb	4½@	5c
Summer Squash, per box	1.00@	1.25
Okra, per box	90c@	1.00
Eggplant, per box	60@	75c
Green Peppers, per box	60c@	1.00

POTATOES.

There is little feature to the market just now. Supplies are ample, but no difficulty is found in obtaining the values quoted, Oregon and sweet potatoes being a little higher.

River Whites	95c@	$1.15
Sweet Potatoes, per ctl	$ 1.65@	1.85
Salinas Burbanks	1.60@	1.65
Oregon Burbanks	1.40@	1.50

Dairy Produce.

POULTRY.

Receipts of Eastern stock have fallen off somewhat, and arrivals of California chickens are also more moderate than for some time past. Dealers accordingly anticipate a better market in all lines of desirable quality. Some lines are already bringing better prices, and there is a good demand for large hens, broilers and fryers. Turkeys continue in demand, but are easier on larger arrivals.

Large Broilers	$ 3.50@	4.50
Small Broilers	3.00@	3.25
Fryers	5.00@	6.00
Hens, extra	8.00@	9.00
Hens, large	5.00@	6.00
Small Hens	4.00@	4.50
Old Roosters	4.00@	4.50
Young Roosters	6.00@	7.00
Young Roosters, full grown	8.00@	9.00
Squabs	2.00@	3.00
Geese, per pair	2.00@	2.50
Ducks	4.00@	7.00
Turkeys, live, per lb	24@	26c

BUTTER.

Some fluctuation is noticed in extras, though the general tendency is upward, prices being 3½ cents above the last quotation. Lower grades are also advancing. Arrivals are rather light, and there is an active demand both locally and for shipment.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	31½	32	34	32½	33	34
Prime Firsts	28	29	31	31	31	31
Firsts	26½	27	30	30	30	30
Seconds	24	24	24	24	24	24
No. 1 Peaking stock	22	22	22	22	22	22
East Ladles Extras	22½	22½	22½	22½	22½	22½
Storage Extras	27	27	27	27	27	27

EGGS.

Extras have advanced sharply since last Saturday, and other grades are also somewhat higher. The production around the Bay has decreased materially, and low-grade and storage stock is moving freely. No Eastern extras are arriving at present.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	47	47	48½	50	50	53
Firsts	44	44	44	44	44	45
Seconds	25	25	25	25	25	28
Selected Pullets	38	37	37	38	39	39
Eastern Extras	30	30	30	30	—	—
Storage Extras	26½	26½	26½	26½	26½	27

CHEESE.

New local flats continue in light supply, and are firm at an advance, Y. A.'s and storage stock remaining steady as last quoted. Monterey cheese is still rather scarce, and values are well maintained.

Fancy California Flats, per lb	15 c
Storage	14 c
Firsts	14 c
New Young Americas, fancy	15½c
Monterey or Jack Cheese	13¾@14¼c

Deciduous Fruits.

FRESH FRUITS.

A further advance in prices is noted in numerous lines, and general supplies of tree fruits are rather scarce. Few peaches are coming in, and fresh stock will soon be out of the market. Strawberries and raspberries are higher, but find little demand, while cranberries are moving more freely. Apples are moving off well, but with ample supplies are unchanged in value. A few late plums and figs are arriving, and prunes are being sold from cold storage. Grapes are the principle feature of the market just now. Prices are easy, as the market is heavily overstocked, and there is less shipping demand than a few days ago. Seedless grapes are a little higher, as few are now coming in.

Watermelons, per doz	$ 1.25@	2.00
Nutmegs, per box	50c@	1.00
Raspberries, chest	5.00@	9.00
Strawberries, chest	3.50@	5.00
Huckleberries, lb.	8@	10c
Cranberries, per bbl	9.00@	9.50
Apples—		
Fancy, box	1.00@	1.35
Choce	60@	75c
Peaches, small box	75c@	1.00
Prunes, crate	1.00@	1.25
Figs, box	85c@	1.00
Pears, Bartlett, box	1.00@	1.50
Other varieties	60c@	1.50
Quinces, box	75c@	1.00
Grapes—		
Muscat, crate	60@	75c
Isabella	60@	75c
Seedless	75@	1.00
Cornichon	50@	75c
Other arieties	40@	65c
Pomegranates, small box	25@	40c

Dried Fruits.

Packers are now extremely busy on deliveries, which are going forward as fast as a shortage of cars will permit. In most lines they have already secured ample supplies to take care of immediate requirements, and as the Eastern trade is in no hurry to order additional stock, comparatively little buying is being done except in raisins. Some are still in the market to some extent, but seem able to pick up such small lots of fruit as they require at about the prices quoted, though growers who are able to hold their fruit are inclined to do so. Prunes, of course, are still in strong demand, owing to the shortage, but it is becoming more and more difficult to get any large lots, and prices are firmly held. There is little immediate demand for apricots, and lower prices are offered, though the largest lots still in growers' hands, notably that of the Ventura association, have been withdrawn from the market in expectation of a better demand after the first of the year. The situation in raisins is uncertain. The crop is said to be turning out well, and some large packers, who have taken care of their current trade needs, have reduced their offers to 3¼ and 3½ cents, saying they can get all they want at these figures, while others are still paying 4 cents. The New York Journal of Commerce says: "Advices received by wire from the Coast reflect a firm feeling among most sellers of 1911 peaches from prompt shipment from the northern districts, but some concessions are obtainable from packers who have southern stock to sell. Eastern buyers are said to be showing more interest in forward shipments. Arrivals of new season's fruit are increasing and the spot market is easier in view of the rather limited consuming demand at this time. Old peaches have been pretty well cleared. The movement in California prunes for forward shipment from the Coast is restricted by the strong views of packers, but there is a fairly active demand for such new stock as offers on the spot. In apricots there is little doing for home consumption, and only occasional small sales for export are reported, the prices demanded appearing to be out of line with the views of most buyers. California seeded raisins are inactive, but there is no pressure to sell and the firm tone of the market is retained. Seedless varieties are in a strong position owing to the short crop, but buyers here hesitate to meet sellers' views and little business is being done."

Evap. Apples, 1911, per lb	7½@	8½c
Apricots	12	@12½c
Figs, new crop		4 c
Peaches, new crop	9	@ 9½c
Prunes, 4-size basis, new crop Contracts	5¾@	6¼c
Pears, new crop	8	@ 9 c
Raisins—		
Loose Muscatels, in sweatbox	3¼@	4 c
Thompson's Seedless	6	@ 6¼c
Seedless Sultanas	4½@	5 c

Citrus Fruits.

The balance of the orange and lemon crop from southern California for the past year is nearly all shipped, and the new shipping season opens next week. Up to October 22 there have been shipped 36,714 cars of oranges and 6,658 cars of lemons.

In the East prices continue high with good demand for all offerings. On the auction at New York, Monday, October 23, valencias averaged from $2.95 to $6.70 per box, and lemons ran from $4.75 to $5.80, the average prices being higher than the week previous. At St. Louis, Philadelphia and other auction points about the same prices were realized. On the same day at Cincinnati, Floridas brought from $2.25 to $2.65 per box.

There is no heavy movement of citrus fruits at present in the San Francisco market, though a lot of new oranges from the Oroville district have been sold for shipment to Australia. Supplies are light at the moment, and prices are well maintained, lemons being higher in sympathy with the strong Eastern market.

Valencias, choice to fancy	$ 4.00@	4.50
Grapefruit	4.00@	5.00
Limes	4.50@	5.00
Lemons	2.00@	6.00

Nuts, Honey, Hops, Etc.

NUTS.

Almonds are rather quiet, as the trade still appears reluctant to pay the prices asked, though the supplies held by growers are gradually diminishing. Walnuts are in good demand, with little stock remaining in first hands.

Almonds, 1911 crop—		
Nonpareils		18½c
I X L		17¼c
Ne Plus Ultra		16½c
Drakes		14½c
Languedoc		14½c
Hardshells	8 @	8½c
Walnuts, 1911 crop:		
Softshell, No. 1		14 c
Hardshell, No. 1		13½c
No. 2		11 c
Budded		16½c

HONEY.

The better grades of both comb and extracted honey are firm and in good demand, though lower grades find little sale. Prices are unchanged.

Comb, white	13 @	15 c
Extracted, water white	8 @	9 c
Amber	7 @	7½c
Off grades	5 @	6 c

BEESWAX.

The market continues quiet at unchanged quotations.

Light	28 @	30 c
Dark	23 @	26 c

HOPS.

Heavy sales have recently been closed in Oregon, the price going as high as 41 cents. Sales in California have also been quite large, the quoted values being firmly held.

1911 crop	35 @	40 c

Live Stock.

First-class beef cattle are a shade higher, and lambs also show a slight advance. A good many cattle are beginning to come in from Nevada. Hogs remain easy, though the movement is considerably larger than for some time past, arrivals finding a fairly good demand at the figures quoted.

Gross weight:		
Steers: No. 1	5½@	6 c
No. 2	5 @	5¼c
Cows and Heifers: No. 1	4½@	4¾c
No. 2	4 @	4¼c
Bulls and Stags	2 @	3 c
Calves: Light	6½@	6¾c
Medium	6 @	6¼c
Hogs: Grain-fed, heavy		6⅝c
150 to 250 lbs		6¾c
100 to 150 lbs		6¾c
Small prime wethers	3¾@	4 c
Large prime wethers	3¾@	4 c
Ewes	3¼@	3½c
Lambs	4¾@	5 c

DRESSED MEATS.

Steers	9 @	9½c
Cows	8 @	8½c
Heifers	8 @	8½c
Veal, large	9½@	11½c
Mutton: Wethers	8 @	9 c
Ewes	7½@	8 c
Lambs	9½@	10½c
Hogs, dressed	10 @	11 c

WOOL.

No business was closed at the Cloverdale sale last week, and fall wool in general is very quiet. Buyers show little interest in the market, the best figures offered at Cloverdale being 8½ cents, which was turned down. Quotations are largely nominal.

Spring Clip—		
Choice Southern, Year's sta-		
Northern, year's staple	14 @	16 c
ple	10 @	12½c
7 months	8 @	11 c
Lambs, spring	8 @	10 c
Fall Clip	5 @	10 c

HIDES.

A little more firmness is noted, in sympathy with the Eastern market, but prices have not been quotably advanced.

Heavy Steers, over 56 lbs.	11½c
Medium	11 c
Light Steers, under 48 lbs.	10½c
Heavy Cows, over 50 lbs.	10½c
Light Cows, 30 to 50 lbs.	9½c
Kip	11½c
Veal	16 c
Calf	16 c

Dry—		
Dry Hides	17½@	18½c
Dry Bulls		15½c
Dry Kip, 10 to 15	18 @	18½c
Dry Veal, 5 to 10		19½c
Dry Calf, 7 down	23 @	23½c
Sheep Skins—		
Long Wools	$ 0.85@	1.25
Medium Wool, 6 to 9 mos.	50@	75c
Short Wool, 3 to 6 mos.	30@	50c
Lambs	35@	50c

HORSES.

Recent arrivals have comprised a large assortment of stock of all varieties. All the drafters offered have found a ready sale at full quotations, though a good many of them have been deficient in bone. Delivery and wagon horses also find a fairly active demand, selling well within the quoted range of values. Unbroken range stock, however, has been rather hard to dispose of, such horses of light to medium weight selling at about $75. Local buyers are taking more interest in horses adapted to their needs, but other classes do not find a ready market.

Desirable Drafters, 1700 lb. up.	$300@350
Light Drafters, 1500 to 1650	210@250
Chunks, 1350 to 1500 lbs	175@225
Wagon Horses, 1250 to 1350 lbs.	120@175
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	110@125
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

Deciduous Fruit Shipments.

Sacramento, Oct. 21, 1911.

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, October 20, as reported by the California Fruit Distributors:

Peaches and plums will no longer be quoted, although belated reports would indicate that there are still a few of them moving. These care will show up in the final report for the season, but as they have no place at this time, shipments will no longer be noted in these letters.

Pears (32½ cars)—Movement of this fruit continues rather larger than expected. The shipment, however, is nearing its conclusion, and probably will not last more than another week.

Grapes (567 cars)—As indicated last week, the grape movement is nearly stationary. It is probable that next week about the same quantity will go forward as during the past seven days. Tokays are nearing their conclusion; another ten days will see the crop practically all moved. Cornichons are offering in increased volume. Emperors are ready to pick, and will be shipped as soon as Tokays are out of the way. All grapes are of fine quality. During the past ten days we have experienced an unusually fine f. o. b. demand, which has taken a large portion of our surplus stock. Markets have improved generally, and there is a better feeling all around. All of our customers who are figuring on storage stock should make their calculations in regard to Emperors, and place their orders as soon as possible for future shipment.

	Cars.
Total shipments to October 23	10,983
Total shipments same date 1910	11,223

PUBLISHER'S DEPARTMENT.

The retail and mail order department of C. C. Morse & Co., seeds and plant house, has moved back to its old location in the new building at 123 Market street, San Francisco. The new store room gives ample facilities to handle the business as well as to grow some, and our readers will find no better place on the Coast to get seeds and plants for this season's planting. The annual catalogue will be issued in December, while the fall bulb and seed catalogue may be had now upon appdication.

The autumn catalogue of the Chas. H. Lilly Co., of Seattle and Portland, has just been received. This catalogue treats of roses, berries, vines, hay and grass seeds, grain, vetches and fertilizers in a condensed form. It is well worth sending for.

The Fresno Nursery Co., Inc., announces that it has secured the services of Charles B, Harkness, an experienced nurseryman and well known at Fresno, who will have charge of the nursery work, besides select all wood to be used for propagating purposes.

Have you been reading the classified advertising column recently started in this paper? It will pay you to read every week the offerings made there.

Our poultry advertising columns offer good chances to get into the poultry game easily. As the hatching season approaches it will be well for readers interested along these lines to keep in close touch with the announcements in this department.

Subscription Agents Wanted

The PACIFIC RURAL PRESS wants a young man or woman in every county in the State to solicit for subscriptions. Good commissions allowed. Write us at once and we will forward necessary papers, blanks and instructions. You can make good money with a little effort.



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No. K-5, Silver-Plated, $3.50. No. K-6, Gold-Plated, $5.00
No. KJ-10N, Keen Kutter Junior, $1.00

The Temper's the Thing

WHEN you buy a pocket knife—a razor or a safety razor—any cutlery, in fact, how can you tell whether it is going to give satisfactory service? You can always examine their external points, such as handles, linings, rivets, springs and finish, but the *temper* is the important thing, and in ordinary cases you can tell nothing about the temper until actual use shows it to be good or bad. Keen Kutter Tools and Cutlery have been the standard of America for over 45 years as a complete line—every article of the highest quality.

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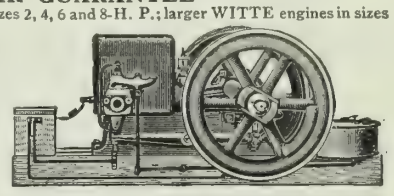
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That is the average cost per horse power hour when doing the work with a WITTE gas, gasoline, distillate and naphtha engine. Why pay 25 to 50 cents per hour for one hired man when for **one cent** the **work** of **several men** can be done better and quicker. You can do the work just when you want to and **ninety-five per cent of the money you are now wasting** then goes into your own pocket. We ship every engine complete with all instructions, nothing is lacking, simply put in fuel and water and it is ready for work. You take no risk for WITTE engines are good engines. They **"stay good."** That is why we can give you a

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1920-ACRE RANCH FOR SALE.—One of the best subdivision or dairy propositions in the Sacramento valley. Butte county. Mostly level bottom loam soil. Two cowbarns, capacity 400 head. Horse barn, 60 head. Numerous corrals and hog sheds. Ten-room dwelling. Blacksmith shop and out-buildings. Entire place fenced and cross-fenced into many fields. All improvements in good condition. Abundance of wood and water. Three miles from railroad station. Apply owner who must sell account other business. Price, $50,000. PAUL GOODLOE, 1049 Phelan Bldg., San Francisco.

$1000. About 20 acres suitable for fruits, dairy and poultry, ½ mile from Nevada City, Cal. Excellent local market. Good 5-room house and buildings. Ideal climate, fine scenery. Plenty of wood. Water for irrigation. A comfortable home that will make you a good living. A bargain. Address, Owner, care Pacific Rural Press, San Francisco.

$1500. Eighty acres in Browns Valley Irrigation District, near Marysville, Cal. Thirty acres cultivated, balance oak timber and pasture; 8-room house; school across the road. Address, Owner, care Pacific Rural Press, San Franscisco.

$6,000—20 acres, highly improved income property near Vacaville; 10 acres fruit, 10 grain; furnished house, farming implements; water piped; horses, turkeys, geese, chickens. For particulars, address Owner, P. O. Box 314, Vacaville.

$10.00 per acre, 4,400 acres, 20 miles from Monterey bay; stock and grain rancho; abundance of water; profitable, well improved. Circulars of JOHN F. BYXBEE, Palo Alto, Cal.

$27,000 buys best improved and best paying bearing apple orchard in Sonoma county, near Sebastopol. Circular and photos of JOHN F. BYXBEE, Palo Alto, Cal.

20 acres in Stevinson Colony, Merced county, for dairy purposes. For particulars and price, write V. NELSON, B. & B. Dept., care Morest, San Rafael, Cal.

FOR SALE.

MAMMOTH BLACKBERRY PLANTS—For Sale—Large, strong and well rooted, $15 per M or 2c each. Orders taken now for early delivery. L. E. BARLOW, Sebastopol, Cal.

DRAFT HORSE.—A gray gelding; 4 years old by April, 1912. Well broke; weight 1630 lbs.; sound; price $230. J. A. COVER, R. F. D. 5, Modesto, Cal.

WANTED.

WANTED—Man wants dairy ranch on shares. W. Williamson, Box 44, Modesto, Cal.

WANTED—A mare, weight 1300, sound, gentle, true, and in foal. 37th and West Sts., Oakland.

WANTED.—100 to 200 sacks of small, round, yellow corn. Give lowest price f. o. b. your depot. Sample. G. H. C., care Pacific Rural Press.

POSITIONS WANTED.

CAPABLE YOUNG MAN wants position as manager or foreman on fruit ranch. References. Box 61, Aptos, Cal.

LAND OWNERS—If you need a superintendent or agriculturist, a man of experience and executive ability, address Box 110, Pacific Rural Press.

HELP WANTED.

WANTED—A sober, industrious and competent working foreman on hop and fruit ranch. State experience and give references. Address W. F., care Rural Press.

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SALESMEN WANTED.—Exclusive territory, all or part time. Five lines, each top notchers appealing to everybody. Address with details, Dept. D., 301 Pine St., San Francisco, Cal.

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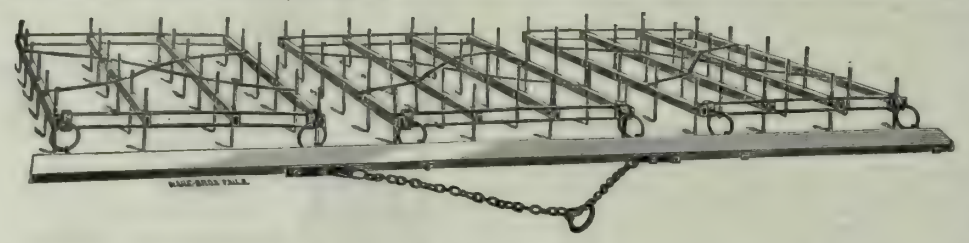
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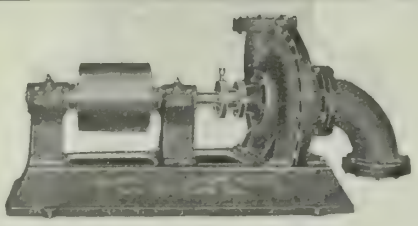
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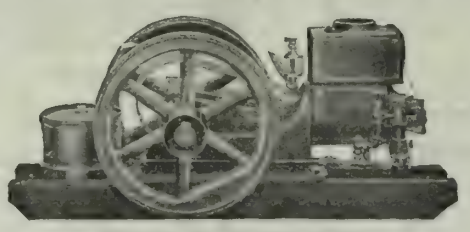
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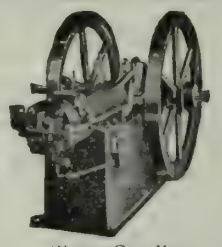
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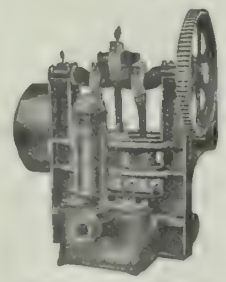
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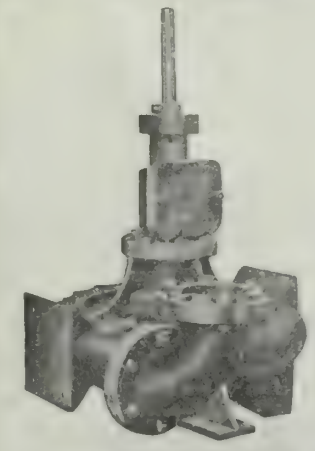
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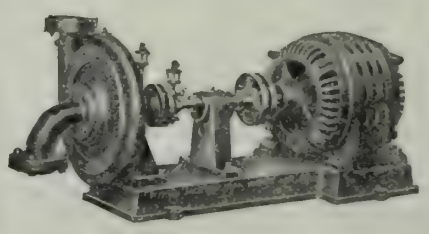
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THE PACIFIC RURAL PRESS

Vol. LXXXII. No. 19. SAN FRANCISCO, SATURDAY, NOVEMBER 4, 1911. Forty-first Year.

A Glance at the Raisin Situation.

Written for the PACIFIC RURAL PRESS by D. J. WHITNEY.

The disorganized condition of the raisin industry from grower and packer to jobber is again working injury to the producer, as the crop is being hurried from vineyard to the Thanksgiving market, and growers are wondering how they can get much good out of contracts a cent above market price and whether they had better sell now for what they can get or hold for higher prices in the spring.

The crop and market conditions of the raisin industry as summed up in the PACIFIC RURAL PRESS of August 19 appears to have held good. At present, conditions seem to be as follows: the crop several weeks late, packing houses full to the roof and rushing to get the goods to the East in time for Thanksgiving, the raisins in fine condition and little damaged by rain, prices about a cent below contracts and contracts being voided by the packers by the wholesale.

The beginning of the lower prices was due probably more to the late season and bearish reports to the trade by several packers than anything else. The combination of spring frost cutting back the vines and the following cool summer kept ripening and curing back several weeks and held the filling of Eastern orders, so that less goods were sold than could have been if there had been more time to dispose of the goods before Thanksgiving.

A second reason for the fall in price was the rejection of a number of lots of raisins that were cured before they were ready. Many of the contracts were for raisins that were to be delivered before October 25. Some of the growers, fearing that their raisins would not be ready in time, picked their grapes before they should, dried them in a hurry and rushed them off to the packing houses in poor condition. The raisins were rejected, owing to lack of sugar, and had to be sold at a lower figure and demoralized the market. Later other raisins which were in good condition were rejected, owing, it is stated, to the fact that the contract price was greater than the market price and quotations fell some more, and now the refusal to take goods contracted for appears to be the rule rather than the exception. One or two concerns are taking all the goods contracted for, while others are rejecting all, with the excuse that the rain has injured them.

The objection usually made to receiving contracted goods is that they were injured by the rain. It is noticeable, however, that similar raisins are being bought without question as to quality and sent to the best trade, and as a matter of fact the damage done by the rain was slight. Most of the goods were stacked, others were damaged to the extent of one-eighth of a cent a pound or so, the only difference being that they were made a little shiny by the moisture. None of them were sanded. As a matter of fact, in spite of the rejection of goods contracted for, the quality is fully up to average, and, owing to the cooler drying season, the raisins are softer and meatier than is customary, and in other ways are fully up to the average.



A Vineyard Scene at the Ripening.

The going back upon contracts has been so extensive that, as one grower said, "If this keeps up, no one in the future will be willing to sign a contract, as it will leave the packer to reject his raisins when the price falls, but bind him when the price goes up." To determine the value of contracts, Mr. Wylie M. Griffin has brought suit against the Inderrieden Company for damages through the rejection of several tons of Sultanas after they were inspected by a number of disinterested persons and found to be of fine quality and in first-class condition. Other growers have protested the rejection of their goods, had them inspected and sold to a different packer at a loss, awaiting the opportunity to recover damages through the breaking of the contracts.

Aside from the question of contracts most raisin men are wanting to

(*Continued on Page 365.*)

Pacific Rural Press

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E. J. WICKSON - - - - - - Editor
FRANK HONEYWELL - - - - - - - Manager

The Week.

Delightful autumn weather continues, and we are wondering how long it will proceed, without suggesting apprehension of a shortage of rainfall. It would, of course, be good to have a good wetting down to start field work and bring along the wild pasturage and relieve people from the mischief and expense of idleness. And yet the fine weather is not without its uses and values. The grape crop has been secured and the late grape shipments overland have brought the total carloads for the year to a better figure than was anticipated a few weeks ago. In some of the coast valleys there has been some grape injury by showers, but not such losses as a continued rain would cause. We are interested to see in a report from the Santa Clara valley this storm item: "Tens of thousands of dollars worth of good is being done to the peach, apricot and prune orchards by the storm." This is an appreciation of the injury to deciduous fruit trees by prolonged autumn dryness of the soil which we are glad to see emphasized. It is apt to be overlooked because the fruit has been gathered, the leaves are yellowing and falling and the impression is that the tree has finished its work and is glad to rest. This is a purely sentimental view and is probably not true to the tree. If we are to ascribe sentiments to the tree it would be more rational to believe that it should enjoy to complete its season's work by making good strong blossom buds for the next year, and this requires root action and leaf action, and both demand that the autumn soil moisture should not be too scant. It is therefore desirable that the rains should not be too light nor too long deferred; the degree of desirability depending, of course, upon the retentiveness or otherwise of the particular soil in which the tree is growing. When such moisture is apt to depart too soon irrigation earlier in the season would prevent it. We are evidently incurring many losses in thrift and productiveness of trees from autumn drouth even in the very places where spring and summer moisture may have enabled the same trees to make large crops. Even where this does not proceed to actual injury to the tree itself it may induce bearing in alternate years and disappointment. Therefore the Santa Clara grower who values an October storm highly because of its service to the deciduous trees makes no mistake and his conclusions should be thoughtfully received by all.

Women and the Eight Hour Law.

We cannot quite understand how the State Labor Commissioner is making trouble for women employed in agriculture when it was particularly stated that enactment of the last legislature should not apply to women in agriculture. It is announced from Santa Barbara that at the meeting of the Walnut Growers' Association a decision by State Labor Commissioner McLaughlin was announced forbidding the employment of children during school terms, and that this decision will force the retirement of scores of families who have camped in the orchards so that the women and children might devote their whole time to the gathering of walnuts. We are also told that the eight hour law probably will compel packing-houses to employ larger forces of women. The last statement we cannot understand, for it is applying the eight hour day for women to agriculture. The decision of the commissioner as to the duties of school children seems to belong to the school authorities rather than to the labor commissioner. This whole business of interfering with voluntary work by those who desire the money which light, open-air fruit work affords strikes us as a form of tyranny which should not be permitted in the service of the labor interest, nor any other. It has no relation to factory or sweat-shop activities which it is humane to regulate. We cannot conceive why women and children should not have the money which they can earn from picking up prunes or walnuts in the shade of the trees which bear them. They should not be forced to such labor, nor forced away from it. It is for them to decide what they shall do.

Coreless Apples.

An observation in the extreme northeast county of California seems to be exciting much interest in the district and in the adjacent parts of Nevada. C. S. Seager of Davis creek, Modoc county, is credited with having found in an apple orchard at Pine creek a tree bearing seedless and coreless apples. The tree from which they grew is seven years old, but has been eaten back each year by stock. This year it bore twenty-five apples, all perfect and coreless. Mr. Seager and his specimens seem to have taken botanical treatment as they passed through Reno, for we get this telegram: "A peculiarity is that the placenta seems forced out at the end of the fruit, and that dried-up stamens and pistils may still be seen." Lest some of our readers may see the above statement in other journals and be surprised thereby into thinking that Mr. Seager has found some very new and strange thing, we hasten to say that the phenomenon he observes is not very rare, is not at all new and is probably of no pomological importance whatever. It is not unusual to find fruit from unnatural or abnormal blooming omitting to form seeds and their usual enclosing vessels. Second-crop pears, for instance, are very apt to come that way. Coreless apples come to notice every little while, and the latest experience with them was a bogus nursery enterprise upon which many people, even some sharp Californians, lost money—for none of these freaks are good enough to meet the other standards of good apples, and therefore it matters little whether they have cores or not. Mr. Seager seems, however, to be very much exalted over his find and was in Reno on his way to Luther Burbank in Santa Rosa when he was caught by the telegraphing reporter. It is probable that the tree was thrown out of its natural courses by the continued browsing to which it has been subjected, and its product rendered thereby abnormal. The only question of interest which arises in connection with the fruit is what it may suggest about the navel orange, for that distinguished fruit has the same botanical trouble—the displacement of the placenta from the center of the apex of the fruit, but no apple doing the same thing has yet been found to be of any account.

Defacing Natural Scenery.

We wonder if Uncle Sam is not drifting into inconsistency. If we mistake not, there is a national law against defacing natural scenery by painting advertising signs across the face of nature. And yet it is now announced that the Government is to build a telephone system for the Forestry Service of the Coronado reserve. The first of these lines to be built out of Tucson is to be used in the Catalinas, and the wires are to be strung upon brackets nailed to the giant cactus because it is cheaper than to erect the ordinary poles. The giant cacti will not be sawed off and set up, nor will they be transplanted, but the growing plants will be used as a pole where it is found practical. Where they can be found in what approaches alignment, so that the line will not have to zigzag too much, the cacti up in the canyons through which the line will pass are to be utilized for the purpose of attaching brackets to which the wires will be fastened. We are not as great purists in this matter of using natural things as we ought to be, but while we are beset by advocates of government conservation of everything from the earth beneath, to the clouds above, it does seem a little startling for the Government itself to be spiking brackets on the giant cacti which surely answer all the specifications for conservation. They are unique specimens of rare vegetation, they are fast disappearing, the sight of them belongs to coming generations, and all that, and yet there they stand, torn and bleeding under the cruel spikes of the heavy cross pieces of the linemen! It makes our conservating soul boil to think of the outrage.

Wiley Worse and Worse.

When we wrote the impressive tribute to Dr. Wiley's willfulness, disrespect for scientific men not of his own stripe, disregard for the producers of California fruit products, etc., which appeared in the issue of this journal for July 29, we apparently forgot to praise him for not having ordinary common sense. It now appears that he is clearly entitled to this distinction also. We hear by grape-vine telegraph from one who is watching California interests at the national capital that Dr. Wiley is raising a ruction because certain work which one of his assistants did in this State has never been published officially to support Dr. Wiley's contention that sulphuring cut fruit before drying was not only undesirable, but unnecessary. This latest attitude of Dr. Wiley is what we rely upon in extending our tribute to his qualities so as to include lack of common sense. What Dr. Wiley's assistant really did in this State has long been known to California producers, for the PACIFIC RURAL PRESS three years ago told how he had found out that by steaming fresh cut fruit before drying a certain lighter color was attained, and that Dr. Wiley had decided that fruit thus treated ought to satisfy the purchaser—therefore sulphuring was unnecessary and he was a public benefactor for prohibiting it. Whether the consumer would be satisfied with a steamed substitute for sulphured fruit was an irrelevant question, for Dr. Wiley decided that he ought to be. And this is the great boon which he gave the fruit industry and is now peeved because his beneficence has not been officially published—for he seems to think that this would satisfy California producers; or at least ought to, and that counts with him as the same thing. Of course the facts are, first, that steaming cut fruit before drying does not preserve the natural color—it is about as near to it as nut-brown ale is to lemonade—and it is not what the consumer demands in first-class evaporated fruit. Second, it will not serve the purpose of sulphuring, which causes the fruit to hasten curing by the exudation of its surplus moisture, while a steam bath is likely to retard evaporation. Third, even if steam were desirable its provision would handicap curing because of the cost of providing and operating a steam generating plant, which those who now dry freely with sulphuring could usually not compass, and because it would reduce the product

of a day's labor to a fraction of what is now attainable. There is no reason why Dr. Wiley should complain that his fake discoveries are not published. The authorities of the Department of Agriculture have some regard for their own reputation for common sense and naturally do not desire to stand for his dreams. But Dr. Wiley goes on. It is part of his temperament never to admit anything that comes against his nut from the outside; everything he accepts must originate inside that receptacle; botanically speaking, he is an intellectual endogen.

To Rejoice and to Endure.

Oh, well, what is the use of being so cross as the last paragraph shows us to be? Why not rejoice and endure? Why not be like Mrs. May Connor of Merced county, who wins the championship as the long-distance rejoicer of the world by driving 168 miles in an open buggy with no company but a fifty-pound watermelon and a few vegetables and a bunch of cotton which are to be displayed in the exhibit of the California Development Board in the Ferry building. Mrs. Conner has a great belief in Merced county and enjoys things which are eloquent of it. No doubt she has been called to go buggy riding with many a stupider thing that a watermelon.

Queries and Replies.

Transplanting Old Trees.

To the Editor: I am planning to transplant seven fruit trees which are from 2 to 3 inches through the butt, about one foot from the ground. Varieties are two oranges, one lemon, two pears, one apple, and one English walnut which is nearly 4 inches through the butt. I wish to move them nearly a mile to where I am building a new home. Will you kindly, through your valuable paper, inform me the best way and the best month to do the work? Do you think the trees are now too large to do well if moved?—Suburban, Los Angeles.

The orange and lemon will do better in transplanting than the others. Take up the trees when the soil becomes warmed by the sun after the coldest weather is over. This might be in February with you. Cut back the branches severely and take up the trees with a good ball of earth, using suitable lifting tackle to handle it without breaking. Settle the earth around the ball in the new place with water, and keep the soil amply moist but not wet. Whitewash all bark exposed to the sun by cutting back. You can handle the walnut the same way—removing some branches close to the trunk and painting the wounds, but not shortening the branches which you choose to retain. The walnut would, however, probably get such a setback that it would be better to buy a new tree two or three years old and plant that. The apples and pears we would not try to transplant, but would rather have good new yearlings than to try to coax them along. Transplanting of deciduous trees should be done earlier in the winter than of evergreens.

Fertilizer for Sweet Potatoes and Melons.

To the Editor: I have sandy soil located near Turlock that has been used for sweet potatoes until it is worn out for that crop, and would like your advice as to the best fertilizer to use. Also, what fertilizer would be best for melons on land that has been planted to melons for the past three years, also quantities needed and best methods of applying.—Grower, Turlock.

There is not much difference in the plant food required by the two crops you mention, but both evidently need a freshened soil and an increase of humus. We should apply a half ton to the acre of a complete fertilizer, of which any of our advertisers in the fertilizer trade can give you descriptions and prices. If you wish to do a good job, start a growth of peas or vetches or burr clover, and sow the fertilizer evenly with the seed. Plow the growth under in February and roll (as the soil is sandy) to close down and promote the decay of the green stuff, which ought to be so well accomplished by the date that it is safe to plant sweet potatoes or melons that it will give no trouble in summer cultivation.

Clean Culture for Orchards.

To the Editor: Our climate and conditions are in many ways similar to yours, except that our rainfall is much heavier. We average about 35 inches, the bulk of which falls during June, July and August, our winter months. Now with this heavy rainfall is there any advantage to be gained by early plowing and clean cultivation right through the winter? Would such plowing and cultivation result in any serious loss of plant food? Would you advise an early or late application of nitrogen, such as nitrate or guano? If there is any loss from an early application, can it be determined by any means?—Reader, Groot Drakenstein, South Africa.

We presume you mean clean culture for fruits. Some of our fruit districts have as heavy winter rainfall as you mention. Whether they have that much or much less, the policy of clean winter cultivation has been largely abandoned. Nearly everyone is trying to grow something green during the rainy season to plow under toward the end of it. Even those who do not sow legumes for this purpose are plowing under as good a weed cover as they can get. This improves the soil both in plant food and in friability, which promotes summer pelveriation and saves moisture from summer evaporation. Much less early plowing is no wdone than formerly unless it be shallow to get in the seed for the cover crop; the deeper plowing being done to put it under. Guano can be applied earlier in the winter than nitrate, which can beturned in with the cover crop, while the former may be sown with the seed to promote the winter growth. We know of no way to determine whether you are losing your nitrate or not, except as the chemist might do it for you by before-and-after analyses. If you are a good observer you may detect loss by absence of the effects you desire to secure.

The Zante Currant.

To the Editor: Could you kindly give me information concerning the currant? Is the currant that grows here in the United States in any way related to the currant that grows in Greece? If so, could it be cured like the raisin, or even like the currant that comes from Greece?—M. H., Hanford.

The dried currants of commerce are made in Greece and in California (to a slight extent) from the grape known as the grape of Corinth. They are not made from the bush currant which is generally grown in the United States, and the two plants are not in any way related.

Fertilizing Peaches.

To the Editor: Will you kindly advise me through the PACIFIC RURAL PRESS what commercial fertilizer will be likely to produce good results in a peach orchard in this vicinity on what is called white ash land? How much can be put on safely on large 10-year-old trees?—Beginner, Selma.

As you have apparently had no opportunity to test fertilizers on your trees you should begin with a ton to the acre of a complete fertilizer to determine how they respond to fertilization. Make this application to a part of the orchard, so that you can make comparison with other parts not fertilized. Be sure that the cultivation and irrigation are thorough and adequate in both cases, so that the comparison may be fair throughout. While this is working out study a book on what special fertilizers are expected to do for a plant, like Voorhees' "Fertilizers," and study your trees to reach conclusions as to whether they need stimulation in growth or in fruit-bearing or both, or neither, and act in future according to your best judgment of the lessons which the trees will be trying to teach you. Fertilization is a matter of judgment, not of recipes alone.

Stimulating the Tragedies.

To the Editor: Am manager on a place that was run down when I came in November, 1910. Have about 1500 Tragedy prune trees which did not produce more that a crate to the tree. Trees were infested with brown apricot scale, red spider and pear thrips, also moss and smut. Have put parasites, suphured and sprayed for first three, also budded Clyman in every other row for fertilizing, and slit the bark of the trunks, and am sowing vetch for a cover crop now. Would a spray of lime-sulphur be better than caustic soda to clean off moss and smut, and stimulate the wood? The plum is the best-paying we have, and the neighbors have good crops, and would like any suggestions you can offer that would invigorate the trees. There are a good many dead twigs on the trees, and also dead branches in some. Am cutting out all of any size and painting the cuts with an asphalt, linseed and gasoline mixture.—Harry A. Runyon, Courtland.

If you do not get full crops of Tragedies with all these helps you will have to put down the trees as ungrateful. You are covering all the weaknesses of the trees known to us. If any reader can think of anything to do, let him help to keep Mr. Runyon busy. Probably he should try some commercial fertilizer to help the growth of his cover crop and put on some potash also for the tree. We would use the lime-sulphur spray to kill the moss, because it may hit a few destructive fungi and scales also.

Sour Sap.

To the Editor: Will you kindly inform me what remedy, if any, for a sour-sap condition in prune trees. I have a few that died and a few others that are only partly dead. If there is any remedy I can use to prevent any further loss I should like to know it? The soil is quite gravelly where this trouble occurred.—Grower, San Jose.

Sour sap most frequently results from standing water during the winter time. On such a gravelly soil as you describe this would not be expected. Sour sap also occurs from lack of water during the latter part of the growing season. To cure this a good irrigation in July or August would be found effective, because it would prolong the growth in the autumn and enable the trees to save their root fibers from perishing in the dry soil. The loss of these fibers causes congestion and fermentation of the sap in the main roots.

Root-Knot on Almonds.

To the Editor: I came from the East and bought an almond orchard here. There are a good many of the trees that have root-gall. Can you give me any information as to what to do for it?—Beginner, Butte county.

Where root-knots have not developed sufficiently to stunt the growth of an almond tree, the tree may be relieved of them by removing the dirt from the main roots and then cutting off the knots with hatchet or mallet and chisel, treating the wound with the Bordeaux mixture. Where the knots have developed so as to interfere with the growth of the tree, there is probably nothing to do but to set a new tree.

Apples in the North Bay Valleys.

[We have personally known Max A. Theilig for a score of years or more as a fruit grower of close study and wide experience in the Napa Valley. We are glad to draw from an address which he recently made at a University Farmers' Institute at Napa, some interesting conclusions of his concerning apple growing in that region.—EDITOR.]

Needs of the Apple.—The apple wants a good strong soil. A light soil, unless it has a heavy subsoil, is not so well suited, particularly for the late varieties, which need moisture to enable them to size up. Also, the apple can stand some heat, but more cold; it likes the cool ocean breezes; so the interior hot valleys of California are not so well suited in general as the coast and bay counties and the mountain districts. These latter, in particular, will produce apples that cannot be matched anywhere on this wide globe. Our own county of Napa has both the soil and climate for a good apple, and the fruit itself proves it. But as apple culture here has not been gone into as extensively as grape, prune, or pear growing, our county naturally ranks high as a vine, pear, or prune county. But we are almost unknown as an apple producer. Sebastopol or Watsonville have the call because of their larger apple acreage, but they have nothing on us in either size, color, quality, or productiveness.

Our Gravenstein apples are just as good in every way as the Sebastopol apples, and come in two or three weeks sooner, and our late apples rank in every way with the Watsonville product. Oregon and Washington apples are no better than ours in either size or quality, but they have one thing which we lack, and that is color. Their red apples, such as Ben Davis, Spitzenberg, Winesap, etc., have such a clear, transparent color, you think you can look right through them. That color we cannot hope to get except possibly in a few favored spots. This color does not make the apple any better in quality, but it certainly looks better, and looks are what sell. And let me state in this connection that the red-cheeked apple has the call; any red apple sells better than a green or yellow one, altogether regardless of quality and at times of size.

Locally Approved Varieties.—The earliest good apples we raise here are the Red and White Astrachans, which we begin shipping about July 1. I do not like the Red Astrachan. It does not size up; falls from the tree before it gets either size or color, and is an uneven bearer. When it does hang on and gets size and color, it is a fine apple, though a little coarse. The White Astrachan is a much more profitable variety to raise, making much better size. It comes in a trifle later, but is better all round than the Red Astrachan. The Alexander is a very large and showy apple, handsomely striped with red, and a very profitable apple to raise and sell—not to eat. Its quality is very poor, but it is one of the best sellers we have, is a heavy and early bearer, and is much in request as a shipper to Puget Sound ports and to the Middle West. I can recommend its planting for these purposes and will retract what I said about its eating quality to this extent, that it is middling-fair when cooked. But it is a money-maker for all that.

The Gravenstein.—However, the summer apple for excellence for Napa county is the Gravenstein, particularly for the southern part of the county. In color, size, and quality it is unsurpassed. A good bearer, growing to large size, where trees are well pruned and thinning is practiced, always crisp and juicy, even when dead ripe; an A-1 shipper, it commands the best market price and is always in demand.

I have generally commenced picking the last week of June, according to season, and sometimes had nearly the entire crop shipped before the Sebastopol Gravensteins came in the market. And the early apple catches the price. In this connection, let me say that for early apples we don't wait till they are ripe, but we pick them as soon as they are big enough for a four-tier apple, going over them three or four times in succession and always picking the largest, as there is no money in small apples.

Another thing in its favor is the fact that possible Gravenstein acreage is limited by nature. It does not do well either up or down the coast or inland valleys far from San Francisco bay. I should say a radius of 75 miles, with San Francisco as a center, would about take in the best of the possible Gravenstein country. I do not mean to say that there is no Gravenstein land outside of that, but that such possible areas are limited.

Fall Apples.—For Fall apples the King is a very good variety; very large, juicy, and crisp; good flavor, good bearer, but some years subject to water core. It generally ripens here in September. The Jonathan ripens at the end of September: a very good apple red cheeked, good bearer, but inclined to be small. The Rhode Island Greening has as a drawback its green color; otherwise it is a good variety, an old standard kind, in demand for cooking and baking, of good quality, a good bearer and thrifty grower. The Wagoner as a fall apple suits me best of all; a good and early bearer—fruit large, flat, yellow skin, red cheek and stripes; not of the best quality, but very good—and a good money maker. Its only drawback is the fact that when dead ripe it gets mealy. Picked in September it ripens during October; it is fine at Thanksgiving, and I have kept them until Christmas. Our Wagoner trees always give us a crop; from 10-year-old trees we have picked as high as sixteen boxes, and it is a very satisfactory apple all round. Our country is well suited for it. Plant more of them.

For late fall or early winter apples the Bellflower ranks as one of the best, where it does well. I do not think it is at its best in general in Napa county, except possibly in a few spots. Another thing I do not like about it is its thin skin. Because of this it requires very careful handling to keep it from getting bruised, and it is very hard to get the common help available to give it such care. But where it does get such care and does well, the Yellow Bellflower is one of the best apples to plant.

The Winter Apples.—The Yellow Newtown Pippin is of the very finest flavor, crisp, juicy, aromatic and firm; nobody in Napa county can make a mistake by planting Newtown Pippins for a winter apple. Large fruit, a good even bearer, a fine shipper and keeper, it easily ranks first for our county. Its green color is a drawback, surely, but the apple itself is so well known for its quality that in this case the color does not amount to much. There are many trees of this variety planted in Napa county now, and all, I believe, are doing well, but there is room for plenty more.

The Spitzenburg I believe to be well suited for the higher locations in this county. I do not think it does so well in the valley proper, and the tree itself is rather tender. The quality of the fruit is of the highest; large, oblong, color reddish on yellow skin. Where it does well this apple cannot be surpassed. The Winesap does well in our county; firm, crisp, juicy, and of fine quality, red cheeked, tree thrifty and vigorous, a good and heavy bearer. It runs a good deal to small sizes unless the tree is heavily pruned back and the crop thinned. A sub-variety of this, Stayman's Winesap, is reputed to have all the good qualities of the old Winesap, but it runs to much larger sizes. It is a good variety to plant and has always done well with me.

The Ben Davis is an old Eastern standard variety, much planted in Oregon and Washington, where it develops a beautiful color. It has little to recommend its planting here; its quality is very poor, coarse, dry, and spongy. The Gano is similar in quality to Ben Davis, but colors up better. In spite of their poor quality, they are good sellers, when well colored up, and are good bearers; but I do not like them.

Cook's Seedling.—A winter apple suitable for Napa county, and a very profitable one, is the Cook's Seedling, a Sonoma county seedling and known in the market as the Winterstein, or Winter Gravenstein. It is very large, flat, red streaked on yellow skin, fine flavor; a free and early bearer and a thrifty grower. It is about as profitable a late variety as the Gravenstein for an early apple. It also resembles the Gravenstein in this, that its favorable growing area is limited to the same extent. It does best and colors the best with us, and does well in either the valley or hills. It is at its best about Christmas, and I do not think anyone will regret planting out some trees of this kind if they can get them true to name. [There is confusion in making Cook's Seedling synonymous with Winterstein. Cook's Seedling is an old Sonoma county apple, striped dull red on a greenish yellow ground, rather oblong in form. Winterstein is one of Burbank's varieties and justifies Mr. Theilig's description and estimate of value.—EDITOR.]

I might mention many more kinds of winter apples, but I think the list given is sufficient. It insures a succession of apples from July to spring of varieties that have been tried and have given satisfaction.

Handling Apples.—A good apple always commands a good price, and good apple orcharding, take it year by year, is just as profitable, and often more so, than grape growing or prune or pear growing. But you must have the right apple and the right soil, and handle your crop in the right way. Spray thoroughly and at the right time—twice for early apples, four or five times for late apples—and you will surely keep them clean and free from worms. Then, when picking time comes, handle your apples more carefully than eggs. A drop of an inch will make a bruise, and the harder and greener the apple, the easier it is bruised. A ripe and mellow apple stands much rougher handling than a hard one. Then pack your apples honestly, and if you must ship on commission, ship to an honest commission man. There are such, though some growers doubt it. Go to San Francisco and find out for yourself—don't take the word of any drummer that comes along. And when you have found that honest commission man, stay with him. You may be sure a steady shipper gets the best returns in the long run, rather than one who ships here, there, and yonder, and who is soon spotted by all the people in the trade.

THE DEMAND FOR FRUIT TREES.

The demand for fruit trees for planting this year is as follows, according to one of the leading concerns of the State. By the demand can be seen what growers consider is giving them the biggest returns from their land:

In almonds the largest demand comes from Yuba, Butte, Sutter, and neighboring counties, the orders being very large from this quarter, although in smaller almond districts the planting is also increasing. Of the varieties, the Texas Prolific is said to be wanted slightly more than the others, although in nearly every case the orders come well distributed among the different varieties.

With cherries only a normal demand is felt, owing to the difficulty in getting a good crop in most locations. From the Vaca Valley, Santa Clara county, the Sacramento river, and places where cherries are known to do well, the planting is keeping up well; otherwise it is doubtful whether the planting is sufficient to keep up with the production.

The difficulty of securing good crops of apricots in most locations is also affecting the planting, although in Ventura county, where the most of the southern crop comes from, large orders are coming in, and the same is true from Santa Clara and Alameda counties. In the above cases the fact that not a very great acreage is left to plant in, and that other fruits do very well also is preventing greater planting than would otherwise be made. In the south the Royal seems to be the favorite, while the Blenheim is more planted in the north.

The demand for pears is one of the heaviest of any fruit. Most of this comes from the Sacramento river lands and Lake county. The memory of the blight is keeping the planting out of the San Joaquin valley. As a result of the big demand for these trees, the prices have gone up to $30 and $35 per hundred, as against $25 for 1910 and before. Bartletts, of course, make up practically all of the stock being sold.

With peaches there has been such a heavy de-

mand for stock during the past four years that no greater amount than usual seems to be desired, although the good prices for peaches this year is keeping the planting up near the former mark. For varieties the clings are being planted more than the freestones.

In the Santa Clara valley there is a fair amount of planting planned for French prunes, while in Sonoma county, especially around Healdsburg, a number of orders for Imperials have come in. Good prices for prunes have stimulated the demand in all of the prune-growing coast counties.

With plums for shipping, only sufficient to provide for a healthy growth is seen. Most of this comes from Placer county.

Both walnuts and olives are being sold up to the limit, the expense of production and the time required before a tree is ready to transplant keeping down the production and leading to the scarcity of stock. With walnuts the Mayette and Franquette in most nurseries are more desired than the older varieties, and with olives the Mission variety is most in demand.

Among apples, probably the greatest demand is for Gravensteins to be planted in Sonoma county. For the Pajaro valley and other apple-growing districts, the standard varieties there continue to be bought.

ANOTHER GLANCE AT THE RAISIN SITUATION.

(*Continued From Page 361.*)

know what can be expected in the way of prices next spring. Fortunately they are refusing to unload their goods on the market at present and there seems on this account to be little danger of the market breaking. There is, however, but little chance of prices improving very much for several weeks yet, as the packing houses are full to the roof, and with goods on hand or available from growers who are willing to take what is offered, the supply is ample for the Thanksgiving and holiday trade. It will also be several weeks before it can be known how the retailers are cleaning up the offerings in the East and the chance for disposing of all the crop at a better figure.

Using last year's experience as a guide the future looks very hopeful to the man that holds his goods until the tide turns. In the year 1910-11 there was a State crop of 56,000 tons and 25,000 tons or so of holdover to dispose of. This year the holdover was practically nothing and the production for the State but 48,000 tons. While the late season has kept back a few sales, the amount that is left in comparison with that of a year ago is extremely small and it looks as if nothing could prevent a clean-up of the crop at a good figure before the season of 1912-13 opens.

Competition from Europe cannot be very large, as data compiled by State Statistician George Robertson shows that the crop there is but little larger than in 1910, as stated before in these columns.

A comparison of prices this year and last should make prices before the summer is over considerably higher than at present. In both cases as the crop began to come in 3½ cents was close to the sweatbox price. There were much more goods to dispose of in 1910 than now, as shown above, at that figure, although before summer was over there was no holdover at a 4½ and 4¾ sweatbox price. The price, it is true, fell nearly a cent after the first of the year, although most of the goods on hand were sold after prices went up.

Another advantage this year over last is that the prices of dried fruits, which influence to some extent the raisin market, are much higher than a year ago and will leave a clearer field for their sale.

The California Raisin Exchange, which is being developed rapidly, will not be put into operation before spring so as to affect prices of this year's crop until that time. The committee appointed by Judge M. K. Harris to plan regarding the detail of the Exchange has reported in favor of beginning an active campaign for members at once and as soon as sufficient funds have been secured to start work gathering information regarding the industry so as to be able to do the work of the Exchange next spring or summer.

The Rose Sultanina Grape.

Written for the Pacific Rural Press
By Prof. Frederic T. Bioletti.

An article by Messrs. A. Tacussel and E. Zacharewicz has recently appeared in the "Progés Agricole et Viticole" on a grape called the "Tchekirdek Sis Rose," which contains matter of interest to Californian grape growers. This variety is identical with that distributed in California under the name of Sultanina Rosea, and is the rose-colored variety of the ordinary White Sultanina or Thompson's Seedless.

The observations of the authors on the pruning and grafting of this variety are particularly valuable, as they undoubtedly apply equally to the white form which is cultivated so largely in California. The pinching of fruit shoots in the spring and the leaving of two or three buds of strong laterals at the winter pruning have been often recommended in California for this variety, but have not become a part of general practice. The frequent irregularity of bearing of the White Sultanina makes it desirable that these practices should be given a wider trial here.

The Tchékirdek-sis rose was sent to us from Constantinople in April, 1901, by Mr. Charles Eckerlin. This is a rose-colored variety of the Sultanina or Sultaniehr, well known in France under the name of Seedless, and has been in our collection now for ten years. The absence of seeds which renders this grape so agreeable to the taste, the rose color of the berry, and the elegant form of the bunch will not suffice to make this variety suitable for growing on a large scale in France, because its berry is too small and the color not popular, but the numerous good qualities which we have found it to possess justify us in recommending it for home use and table decoration.

It does not rot readily on the vine and keeps well in the fruit-house. It is used, moreover, extensively in the Orient for the manufacture of raisins. It is grown principally in Turkey, the Archipelago, Asia Minor, and Persia. It produces abundantly, but requires generous pruning with long fruit cones. Mr. Eckerlin informs us that in order to obtain large crops it is advisable to leave more or less of the laterals on the heavy canes when these are left as fruit canes. It is on these laterals that occur the largest number of bunches. We have confirmed this view by trying the method on our trellised vines. Of course, after the shoots have developed, the infertile shoots should be removed and the tips of the shoots bearing bunches pinched. The pinching off of the tips promotes the production of numerous laterals which are used the following year to assure an abundant crop.

This variety gives good results when grafted on the Riparia x Rupestris hybrids, 3306, 3309, and 101^{14}, according to the soil. It is so vigorous that it tends to produce wood at the expense of fruit, and all methods that tend to make the vine fruitful are advisable.

Its affinity with resistant stocks appears to us to be good. It is not immune to fungous diseases, but is easily protected by proper measures.

University of California, Berkeley.

CITRUS PLANTING IN 1912.

Written for the Pacific Rural Press
By H. W. Kruckeberg of Los Angeles.

The maintenance of good average prices for oranges and lemons, coupled with a steady demand for a good product, has done much to sustain commercial interest in the planting of new groves of citrus fruits the coming planting season. Plantsmen having trees to dispose of report many applications for nursery stock, and look for the usual average in acreage to be put out. Trees are a trifle lower in price than they were two years ago, with the available supply of really good stock not overplentiful. Corresponding to the law of elimination in the fruit market, the varieties to be planted represent practically two of the orange, two of the lemon (with one decidedly in the lead), and one Pomelo. There is a scattering demand for a few other sorts, and a very light call for limes. Thus the economic conditions of the market-place set the pace; it is only the fittest that survive, which is only another way of saying that the Washington Navel and Valencia Late orange, the Eureka lemon, and Marsh's Seedless Pomelo, has 'em all "beat to a frazzle."

LESSONS FROM THE RECENT WATSONVILLE APPLE ANNUAL.

To the Editor: The second annual Apple Show recently held in Watsonville, and purported to be the largest of its kind ever held in the State, has come to a close; and the time seems now at hand to offer a few suggestions for future thought. Any enterprise undertaken on so large a scale must not only be successful financially, but must also carry with it other qualities worthy of the energy and ambition of the best brains of the community. Among these have been mentioned the advertising value of such a fair to the apple industry of the State; also the educational value to the producer and packer, tending toward a better and more uniform pack; the elimination of diseases such as worms, scales, and fungous troubles. In these the management has been fortunate, and, I believe, highly successful. The vast improvement of the fruit exhibited this year over that of last, leaves no doubt as to the truth of the above assertion.

Aside from the points mentioned, there are a few things which have been passed over lightly and which seemingly are worthy of more careful consideration. For instance, everywhere one could hear the remark among visitors that it was not right to award the sweepstake prize to an apple ranking low in production and inferior in quality to many others grown in the alley. The apple in question is the Red Pearmain awarded first prize for best carload lot, a pretty apple to look at, and unquestionably standing for the best pack and the most care in selection and grading of any carload exhibited, but representing less than 10 per cent of the total output of the valley, and possessing qualities scorned by most buyers. If such an award will tend to stimulate the production of Red Pearmains, it cannot be otherwise than a gross mistake. The judges were in no way to blame for such a decision, because they were restricted by a set of rules laid down by the directors of the show and in which the quality or flavor of the fruit exhibited had no place.

Among the visitors to the show were many buyers, men trained in the buying and selling of apples, but comparatively ignorant of the producing side. These people were prone to criticize the awarding of sweepstakes to a poor apple, complaining that it stimulated the price of the poor ones and discounted that of the others which constitute 90 per cent of the total output of the valley.

Another suggestion comes from the side of the producer. A stranger in such a show, who is contemplating growing apples, naturally looks upon the first-prize kind as the one to grow; thus stimulating the production of a poor apple. Growers from other fruit sections are also apt to get the same opinion and carry away ideas that, if put into practice, result in a failure both in poor yield and poor quality.

Another lesson that might be taken seriously by both grower and packer is the large number of scaly fruit placed on exhibit. One carload in particular had as high as 109 scaly apples in one box, the average being about 50. They comprised the San Jose, the Greedy Scale, and the Oyster Shell Bark. A few carloads of such sent abroad or placed on the Eastern markets will not be conducive to the best reputation of the Pajaro apples.

B. S. Brown,
Horticulturist University Farm.

Davis.

Heavy shipments of prunes have been made recently to Europe, the amount being unprecedented for this early in the season. The packers are said to be having great difficulty in covering sales of the larger sizes. The prunes from the north bay counties are said to have been about normal size and quality, the shrinkage being noticed most in Santa Clara county.

Milk Thistles and Mustard.

Written for the Pacific Rural Press
By Miss Claire A. Healy of Salinas.

The Milk Thistle.—Who doesn't admire the sturdy, resentful thistles? They seem to feel that life is one long warfare. Their only means of defense are their spines. These are always present to protect them from their enemies. Through their long struggle of centuries the plants that were the most difficult for animals to devour were the ones that were able to bear seed and plant the new crop. In this way there was a survival of those plants that were able to defend themselves the most perfectly. As a premium was put on spines, more of them were developed, and as a natural consequence we get this prickly spiney weed, beautiful to look at but very unapproachable.

Of all the kinds of thistles, the most striking in appearance is Mary's thistle or Milk thistle (Silybum marianum). This one is very common at this time of year. It grows on good soil as well as in rock or rubbish piles. This plant grows rather large, sometimes as high as six or eight feet, with large green leaves curiously blotched with white. Spines occur in great numbers along the margin of the leaves and on the flower buds. The large purple flowers are usually borne on a single stalk. At the present time the winged seeds in some localities are beginning to blow about, finding snug little places to begin the next generation.

As the milk thistle belongs to the true annual group, it is rather a simple matter to get rid of it. The best method is to cut it close to the ground just before blooming time and it will soon die out. This is only truly effective when every single plant in one section is cut down at one time. If one plant escapes, there will be hundreds of seeds ready for another start. The thistle at its seeding time is long past its beauty stage, so cut it down, spines and all, and burn the rubbish.

Mustard.—Just glance over the fields and roadsides any time during the months of May, June, and July, and notice the dabs of yellow that prove to be the flowers of the mustard. This is such a sturdy plant that, with practically nothing whatever to encourage growth, the mustard will grow and spread its flower-topped branches over all the standing neighbors. The mustard has adapted itself to this soil and climate. It seems to be here to stay. The Mission fathers found it growing in great luxuriance when they came to the Pacific Coast. Until then the right-of-way was not disputed by man nor plants. But as more of the fields were needed for agricultural purposes, the mustard, together with its companion vegetation, was driven out to give place to the new crops. The mustard to us is a weed because it persists in growing where we do not want it, although the black mustard is grown as a crop for its seeds, out of which the mustard of commerce is made.

To the casual observer there is only one kind of mustard, but after looking a little closer several rather distinct ones will be found. The most common is the White Mustard (Brassica campeatris). This is the mustard that grows so tall, with the pale yellow flowers in a loose raceme—that is, the leaves are bluish green, smooth, and clasping about the stalk. This characteristic is peculiar to the white mustard.

Another mustard that does not resemble the white very much is called Charlock (Brassica sinapistrum). This mustard has very small flowers, with small pods, somewhat twisted, erect, and close to the stem. The peculiarly striking feature just now in its seeding time is its widely branching habit. The long, awkward branches, from $1\frac{1}{2}$ to 2 feet, bear only the small twisted pod close to the stem. Altogether it is rather ugly in appearance.

There is one more common mustard in California, namely, the Black Mustard (Brassica nigra). The fragrant flowers are in close racemes at the ends of the long stems. The petals (the colored parts of the flowers) are twice as long as the sepals (the separate green points of the cup that encircles the base of the petals). The pods cling to the stem much the same as in the Charlock. The last two kinds named are so much alike that it is rather difficult to distinguish them, but the white mustard is easily distinguished because of its size, the arrangement of leaves, and the large spreading pods, as well as for the fact that it is so common—we find it everywhere.

Because the mustard plant is so common and gets in our way is no reason why we should let it remain. It is not wise to let the plants grow with the hope that the grain will mature first, as this is not true, because the mustard ripens at the same time, so that the seeds are mixed with the kernels of grain. There is then an added expense in trying to clean the grain of this seed. The problem of extermination has practically been solved on the basis of the old proverb that "An ounce of preventative is worth a pound of cure." So when the young plants have spread their first four leaves they are sprayed (by the use of proper machinery) with a solution of iron sulphate at the rate of two pounds to a gallon of water. The iron sulphate is placed in a coarsely woven sack which is suspended in a barrel of water, the ratio being kept as indicated above. This solution burns off the leaves and thus retards the growth of the mustard and allows the grain to get a good start. At first it was considered that the poison was taken into the roots by the circulation of the plant, but later experiments prove that the root is still alive and can put forth more leaves to take the place of those that were burned off. In the meantime the grain has been busy spreading out and growing tall, so there is little room left for the unhappy mustard that was put back.

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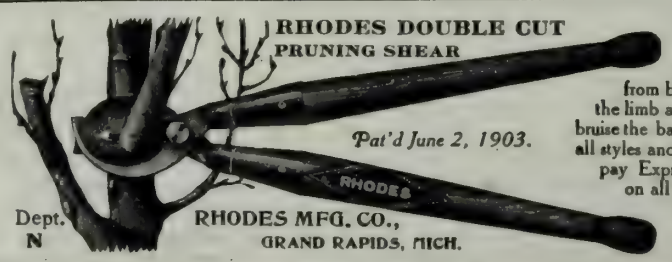
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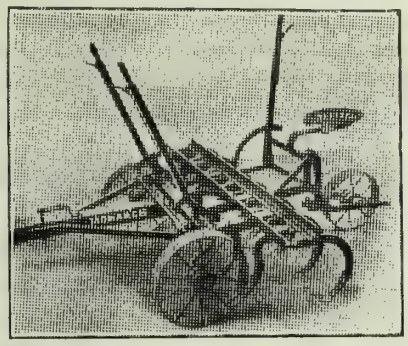
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Four of the plows have been finished and are now being used by this company at Oxnard, and at Lankershim, where they are plowing about 6000 acres.

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The Monarch Cultivator is designed for heavy work. Has great clearance (17 inches) between front and rear standards, which permits the working of trashy or lumpy ground, and lightens the draft.

Designed for field use, but has also become a favorite where deep cultivation is desired.

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The La Verne Rotary Cultivator carries no soil with it. Can be used at a greater depth and with less draft than any other cultivator on the market. Works close to the ground. Has no wheels or attachments to catch limbs or tear off fruit. Can be used close to the trees where other tools do not reach.

Farmers and orchardists using the La Verne Rotary Cultivator place their irrigation periods from one two two weeks further apart, as the La Verne leaves the soil in condition to absorb more water and to retain the moisture for a greater period of time.

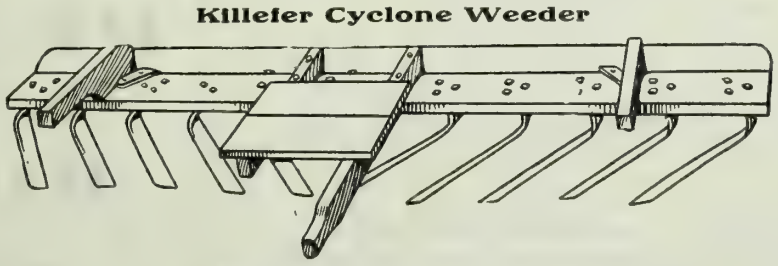
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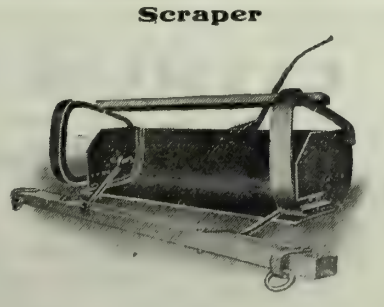
Killefer Cyclone Weeder

Our Cyclone Weeder is just what the name implies. It is the most effective tool for keeping down the growth of weeds after rains or irrigating an orchard, beet, bean or grain land. Does



twice the work with the same team of any other tool, and as the knives overlap each other, it is impossible to miss anything in their course. They are built in 6, 8, 10 and 12 foot sizes.

The Killefer All Steel Scraper



Our Steel Scraper is made of the best material in the market for this purpose. The blades are hard plow steel, giving the very best wearing quality. We particularly ask Dealers and Contractors to compare this Scraper, made in Los Angeles, with Eastern or other makes and note the strong manner in which it is put together. We carry repairs for this and all other makes.

Write for prices.

This Beet Plow is especially adapted to large acreage, as it does double the work of single plows with but little more draft, and leaves the ground in fine condition for hauling off beets, as it does not throw up large clods.

The Standard Shin Landside Point and Wings are made of very hard steel, which we have rolled for this work, and extras are always on hand for immediate shipment.

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2210 Santa Fe Ave., Los Angeles, Cal.

Southern California Fruits and Flowers.

Written for the PACIFIC RURAL PRESS
By HENRY W. KRUCKEBERG.

The center of attraction at the Pasadena Flower and Plant Show was a fine showing of semi-tropical fruit, mostly of home production, and a large and varied collection of dahlias showing types and varieties. The former was of interest to many fruit growers, due chiefly to the successful fruiting in favorable situations of such sorts as Persea gratissima, Anona chermolia, Feijo sellowaina, Casimiroa edulis, the mango, and a number of others. The exhibits consisted of both fruit and plant. Judging from the experiences recited by the exhibitors, it is safe to state that the time is not far distant when some of these will be a feature in the fruit markets of southern California.

The dahlias showed fine blooms in the following divisions: Show dahlias, Pom pons, Green Flowering, Decorative, Collarettes, Single, Double, and Cactus. One grower exhibiting claims to have six hundred varieties, the growing of which is a business by itself, full of detail and trouble from a classification and "true to name" point of view. The displays of ornamental foliaged plants, chrysanthemums, roses, etc., were all high grade.

THE SAN DIEGO $1000 ROSE.—At about the time the San Diego Panama Exposition took tangible shape, its board of directors announced a premium of an even thousand dollars to the plant breeder who would produce a fine new rose, to be known under the name of San Diego, and to be a feature of the exposition grounds during the life of the event. That the matter is not without its allurement to California's plant "sharps" is illustrated by the number that are already in line for the denarius that is dangling over the minarets of the exposition buildings: Howard & Smith, Percy Field, Mrs. Edward McCleery, Mrs. Lansing B. Hill, Los Angeles Cal.; Henry F. Shorting, Huntington Beach; Guy Bodenhower, Upland; F. J. Chipman, Alameda; Montariosa Nursery, Santa Barbara; Geo. H. Burchard, Eureka; W. H. Findley, Arroyo Grande; California Rose Co., Pomona; J. G. Morrow, Santa Ana; August F. Tower, Hanford; all resident of this State. Also the Brant-Hentz Flower Co., Madison, N. J.; E. G. Hill Co., Richmond, Ind.; Mrs. T. C. Adams, Columbia, Tenn.; W. B. McCurdy, Mankata, Kan.; W. C. Box, Gatesville, Texas; and John Cook, Baltimore, Md. Many of these are life-long friends of the PACIFIC RURAL PRESS, which makes us solicitous that a Californian will produce the winner. In the meantime, what has become of Burbank's prowess in this direction? Surely the man who gave the world the Shasta Daisy and the Formosa plum should be in the running in the matter of creating the San Diego rose.

PERMISSION TO MANUFACTURE POMACE WINE.

The United States Commissioner of Internal Revenue has issued regulations relating to the manufacture of so-called pomace wine and restricting its use to beverage purposes.

The regulations provide that any bona fide wine-maker may manufacture pomace wine from grape pomace, sugar, and water, not excluding harmless coloring matter, if he will file with the collector of internal revenue for the district a notice to that effect, together with a sketch of the premises and data concerning the utensils to be used.

Each manufacturer must keep a book furnished by the Commissioner of Internal Revenue, in which must be entered detailed statements of materials purchased, materials used, and product manufactured. A further record is to be kept of the product sold and the names of the persons to whom sold. Each manufacturer shall execute a bond that he will use no portion of the product of this manufacture in rectification. The permission thus granted is for the purpose of allowing manufacturers affected thereby to submit their case to Congress for the purpose of having their status determined by legislative enactment, and will be repealed 30 days after the expiration of the first regular session of the Sixty-second Congress, due to convene the first Monday in December, 1911.

A VALUABLE FORAGE PLANT.

To the Editor: In Cathay valley, a foothill valley in western Mariposa county, Mr. A. Camin has been experimenting on forage plants that can be grown without irrigation. The climate here is fully as hot as at Fresno, which is a much drier summer climate than the Stockton-Sacramento part of our great valley. It must be borne in mind to properly value his results with other localities that his section has an average rainfall of 25 inches, but the rains quit at the same time as elsewhere, and now for nearly seven months the forage plant I am to describe to you, Shallu, is still green and has not had a bit of water. An Easterner to be told of a surface rooting plant that would grow and thrive for over half a year without water would brand the statement as a California hoax.

Mr. Camin has this year and last experimented with seven different forage plants, as follows: Some vetches, Japanese and East Indian millet, Kaffir corn, teosinte, yellow maize and this shallu.

Shallu, to see it growing today is all the proof one wants of its advantages over everything else. The regular Egyptian corn that will grow and thrive in the interior where the common corn dries out must yield the palm to shallu, a sister sorghum plant from India.

Shallu is not exactly new in this State; it is known as California rice corn (erroneously sometimes as Egyptian wheat), but the farmer does not know it, unless a very occasional one. Shallu is a sorghum type plant from India, the land of alternating wet and dry seasons, as with us. Its particular merit for forage is its drouth-resistance, but in addition it has a stooling habit, which gives more leaves to the stalk, and it has nevertheless even more of a seed head than its sister plants. The stalks keep green and juicy through the dry summer; the seed is relished by chickens, hogs, horses and cattle, forming a large edible head. When ripe the seed pops like popcorn. It does best planted in rows like corn, then it lasts till late fall, but for early forage properties one can sow broadcast without any further attention. Dairy men would do particularly well to plant shallu broadcast instead of their usual Indian corn of no spreading habit and no drouth resistance. The shallu we refer to was grown on good dry land; how it would fare on poorer soil remains to be observed. This matter of a desirable forage plant on dry lands merits the consideration of farmers, cattle and dairy men, and we would like to hear from anyone who has grown shallu.

Berkeley. L. E. BLOCHMAN.

[The plant to which Mr. Blochman so interestingly refers has been, if we remember correctly, chiefly grown in the Tulare district, where it was known as "rice corn." Other obseration on the plant would be valuable.—EDITOR.]

KILLING MORNING-GLORY AT THE START.

John Shepherd of Berryessa, Santa Clara county, uses this method of killing morning glory when found starting in orchard or field: The plant is cut off a couple of inches below the surface of the ground and the root exposed, then a small amount of kerosene, about half a cupful, poured upon it and the ground covered. In practically every instance the treatment is entirely successful. It cannot be used, of course, on a large patch or where the plant is well established, but is very good to prevent this condition from developing.

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It is well worth your while to verify this statement, and when in doubt as to the Sodium Chloride content of a Cyanide, have a reputable chemist furnish you an analysis. It may prove a good investment.

The Roessler & Hasslacher Chemical Co.'s Special Fumigating Cyanide of Potassium 98-99 per cent and Cyanide of Sodium 128-130 per cent is manufactured expressly for fumigating. Contains no excess of chloride of sodium. It generates quickly. Reliable, Efficient, Economical.

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A few carloads of fancy white Sonora.

Some Mistakes in the Management of Reclaimed Salt Marsh Lands.

Written for the PACIFIC RURAL PRESS
By C. A. BODWELL, JR.

In a previous paper (November 5, 1910) the writer dealt in a crude way with some of the mistakes that have been made in salt marsh reclamation about the Bay regions near San Francisco.

It was not intended as a complete study of the matter, as might have been understood from the heading. It was meant in a general way to end where cultivation of the land would begin, or to cover some of the mistakes in the engineering part of the subject only. However, it was realized that the two lines of the subject are so close together that parts of one may be parts of the other. Therefore if there may have been references to agri cultural things in the former article, also there will be found in the present some matters more properly belonging to engineering.

That there have been mistakes in the management of these reclaimed marsh lands devoted to agricultural use is as evident as that there have been mistakes in their reclamation. This evidence may be readily and very frequently seen in tracts that are and have been for years operated at financial loss. These are tracts that from appearances seem to be simply losing propositions, which cannot get onto the right side of the ledger by any means of management, mismanagement or letting severely alone. There are others probably immediately alongside of such unwelcome possessions which may be among some of the best paying agricultural properties. Happily they are so, or the idea would become prevalent that this class of lands are not practical generally as an agricultural investment.

From those that are bringing in revenue, if their management as well as the methods of having reclaimed them are studied, there will be seen that if the same efficiency of handling and the same understanding of the peculiar conditions imposed could be put into the non-paying properties, they also would soon be on the other side of accounts.

The non-paying properties, in soil, in location and general conditions did not differ originally and before their reclamation and cultivation from those that have been made to succeed. Therefore if it is not mismanagement that is responsible for their failure, one is at a loss to find the cause.

Any of the marsh lands about the Bay region do not differ from each other in general characteristics, any more than contiguous pieces in the same locality differ. The only difference may be in the texture of the soil in places where the water of fresh streams in winter debouch upon the plain of the marsh. If such waters are the drainage from comparatively large areas of hill and valley and thus carry sediment in quantity; the land, or rather the peat top may be more silty than at distances from such stream discharges. The true type of marshes are found farther out and away from the influences of the fresh water carried silts. Another difference, though subterranean, is that in territory near the mouths of such streams, fresh water is found at comparatively shallow depths which is frequently under sufficient pressure to flow if reached with bored wells. This will make possible different cultures, or the planting of crops to which irrigation may be beneficially applied. However, in regions where this subterranean water is now known positively to exist and is actually available through flowing artesian wells, it is surprising that as yet there has been so little use made of it for irrigation. On the other hand, to what extent its value is appreciated by water companies is instanced by the People's Water Company in Alameda county, which near Alvarado pumps the larger part of the supply used for the city of Oakland. Pumping is accomplished by means of a centrally located compressed-air plant operating a number of scattered wells. This is taken in addition to that by the operations of the Spring Valley Water Company in the watershed of Alameda creek, which is the common source of water for both.

Of course it may never be expected that any of these areas of reclaimed marsh will become irrigated districts of any very great dimensions, but far greater use of water is possible than has as yet been made of the easily available supply. The subject is here referred to because the mistakes in the management of salt marshes being the topic discussed, the neglect to utilize those waters is considered one of the mistakes—wherever such waters may be so easily tapped.

The marshes which have probably the largest subteranean supply are those on the east and south sides of San Francisco Bay. Artesian wells are here so frequently seen that they do not excite the unusual comment which they do in other localities where not so numerous. This large supply over so great an acreage of flat lands is due to the very extended area of watershep contributing to it. Here may be found wells discharging over the tops of their casings, which are generally left two to four feet above the top of the ground, in quantities varying from five thousand to two hundred thousand gallons per day. The pressure or head is great enough early in the season to raise this water much higher. An instance was given of a pipe having been extended twenty feet in the air which still discharged, though in somewhat reduced amount.

In this locality the depth at which these waters are generally encountered varies from 250 to 1200 feet. It is, of course, down through the marsh and into the old gravel beds of ancient streams and shores. The top waters or those held by the marsh material are cased off, for they are naturally very saline.

There are other places on the shores of San Pablo bay where fresh water conditions are very likely to be similar. These might be mentioned as near the mouths of Sonoma, Napa, Petaluma, Novato, San Pablo and Pinole creeks, as well as other smaller streams. However, in these localities there has as yet been very little development in this line.

Before the formation of the marshes the fresh water streams emptying into the bay deposited layers and sand and gravel. They formed in a way sandy deltas, gradually extending outward on the bay bottom under water.

The fine matter comprising the marsh mud was then deposited on top of these gravel layers. When it had risen to about water level vegetation started, which, continually dying and partially decaying through the years, made the peat top or mat which is now seen from six inches to six feet in depth. These two stratas form an impervious covering to the fresh water saturated gravels. Therefore when a well is drilled through this covering, the water rises to a height corresponding to the pressure or head. Those water bearing stratas may extend for miles away from the marshes up the valleys and are the subsurface drains for an entire watershel. This when they are saturated, the run-off overflows and appears as surface streams.

In such locations there is all likelihood of the existence of more than one of these stratas. Those below the first are in older sandy deposits and are generally found beneath a layer of clay. The supply or heading is probably higher up, on the more elevated slopes of the valleys. They nearly always contain a greater supply and better water than that found in the first or higher sands.

(To be Continued.)

PROFESSIONAL DIRECTORY

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KERNS—SESSIONS ENGINEERS
Postal Telegraph Bdg., San Francisco

WILL YOU PROFIT BY THIS LESSON?

The Boys' Corn Club of one county in Mississippi averaged something like 74 bushels of corn to the acre, while their fathers averaged about 18 bushels **on the same farms,** the same season.

THE REASON?

The older men—**practical farmers**—knew all about growing corn, and would not listen to scientific advice. The boys **didn't know,** and therefore followed scientific direction.

THE MORAL:

It will pay you to use the service of an experienced Chemist and Soil Engineer to find out the particular needs of your particular soil and crop.

A number of my clients who followed directions have reported good results.

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THE FARMERS' FRIEND IS A Friend to the Farmer

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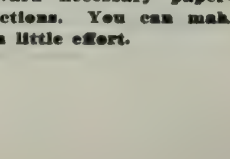
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Do the work at average cost of **One Cent** per horse power hour. Immense saving by our method of "pre-heating" the fuel. Built so perfectly that repairs cost less than **$1** per year average. Every valve is **vertical** and will not wear on the stem or slip inside. Freezing cannot injure bed as **cylinder and base** are **separate.** Hammered steel cranks, cut gears, etc.

GUARANTEED FIVE YEARS

We are experts in engine building; have done nothing else for twenty-six years. Our reference is thousands of satisfied customers. Our prices are right. All sizes, 2 to 40 H. P. Special inducements to introduce in new localities.



Write for free catalog stating size wanted.

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GOLD MEDAL
WALRUS BRAND
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FOR EVERY PURPOSE
HORSE COVERS, WAGON COVERS, ETC.

Made especially to stand the Pacific Coast Winter and Summer Climates.

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If not carried by your dealer write for catalogue and prices.

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TRACTION ENGINE
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A Holt caterpillar traction engine, in good condition, with two wagons for same. Burns distillate. For information write to

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The PACIFIC RURAL PRESS wants a young man or woman in every county in the State to solicit for subscriptions. Good commissions allowed. Write us at once and we will forward necessary papers, blanks and instructions. You can make good money with a little effort.

TREES

California Orchardists

Are reaping handsome fortunes from their investments.

There is hardly a man in California today who is not looking eagerly forward to owning an orchard and fulfilling the part of "Living under his own vine and fig tree" and sharing the pleasures and profits which can be derived.

TO THE PROSPECTIVE PLANTER THIS YEAR

we wish to call your attention to the great importance of securing:

FIRST—Trees which are guaranteed "True to Name."

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"The Fruit Growers Guide"

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Trial packets 15c each, 4 for 50c. Write for prices in quantity.

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Berry Plants

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Rhubarb

Send for prices.

G. H. HOPKINS, Tropico, Cal.
P. O. formerly Burbank, Cal.

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MOCOCO

SUPERPHOSPHATE

CHEAPEST FERTILIZER ON THE MARKET

For Sale by

The Mountain Copper Company, Ltd.
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Two Grain Drills for sale—cheap.

VILLA ANNA NURSERY

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FRUIT AND ORNAMENTAL TREES

Spineless Cactus a specialty. Send for circular.

Santa Rosa, Cal.

AGRICULTURAL REVIEW.

With the Fruit Men.

On the Rogers orchard of Adriatic figs in Merced, B. Hatch, the present owner, cleared $200 per acre this year. A photograph of the orchard is shown in the PACIFIC RURAL PRESS of May 27, 1911.

The Walnut Growers' Association of Santa Barbara has been notified by State Labor Commissioner McLaughlin that children will not be permitted to work in the orchards during the school terms.

Additions that will double the capacity of the plant are being made to the Curtis Olive mill at Bloomington, Riverside county.

It is reported that the Pacific Fruit Express, which owns the refrigerator cars in which California fruit is shipped, will move its general offices from Chicago to San Francisco soon.

County Horticultural Commissioner C. H. Stuart of San Diego reports that shipments of apples from the Julian orchards will be twice as big this year as last, owing in large part to better care and spraying.

The Vacaville Fruit Growers' Association has purchased the warehouse formerly occupied by the California Fruit Exchange. It shipped 200 cars this year, against 75 in 1910, and the membership has increased from 5 to 25. It is a co-operative concern.

Fruit growers of the Westfield district near Porterville, Tulare county, received 22½ cents a case of 19 pounds from fruit shipped this season.

The cottony cushion scale is giving trouble in Plano, Tulare county, orchards, and Commissioner Shulz has applied to the State insectary for parasites against it.

The first navel oranges from Lindsay this year were sent to Manila. From Butte county shipments of fruit began in time to leave San Francisco for Australia October 30. Picking began in both Tulare and Butte counties last week. The first carload of oranges were shipped from Porterville Wednesday, October 25. Shipments from Butte county packing houses began Friday, October 27. Splitting has injured much of the crop in Butte, but the trees are bearing heavily and returns will be good.

Commissioner Shulz of Tulare county is importing parasites of the soft brown scale for use in the Alta district.

The nuts of the Santa Ana Valley Walnut Growers' Association will be worth about $200,000 this year.

Shipments of fruit from the State have almost overtaken those of 1910, and are expected by the California Fruit Distributors to do so before the season has ended. In 1910 12 tons constituted a car, while this year the amount is 13 tons. Heavy shipments of grapes are what will make the increase this year, as less cars of other fruits were shipped.

The California Almond Growers' Exchange is to sell some almonds this year in cartons which will be sent directly to the retailers.

Nine tons of dried Calimyrna figs were shipped from a seven acre orchard on the V. Ralley orchard at Rio Bonita, Butte county.

King C. Gillette, the safety razor manufacturer, has purchased another large orange orchard near Lindsay, Tulare county.

Fred A. Hazzard of the Walnut Growers' Association of southern California is to leave for Europe soon to undertake a detailed study of the walnut industry and markets there. He expects to be gone two years.

J. S. Cone, manager of the Co-operative

Fruit Growers' Talks

No. 12 EFFICIENCY

The California Fruit Distributors pride themselves upon those efficient methods with which they are continually establishing, developing and maintaining new markets for the California Fruit Grower.

Be one of us—our organization and all its benefits—are at your disposal for the asking.

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Easter Lilies (Postage additional, 25c doz.)	$1.50 doz.
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Chinese Sacred Lily (Postage additional, 4c each)	1.00 doz.
Freesias, white (Postpaid price)	15c doz.
Oxalis, any sort (Postpaid price)	25c doz.
Gladiolus, early flowering, pink or white (Postpaid price)	25c doz.

Order now and plant early for Spring Flowers

C. C. MORSE & CO., 119 Market St., San Francisco

LILLY'S SEEDS

These 3 Vegetables for 10 Cents



This is not a bargain, but an introductory offer to get you interested in Lilly's Seeds, and to prove to you their quality and reliability.

LILLY'S "DELICIOUS" LETTUCE. A variety introduced by us, very early with fine, hard, medium sized heads, rich yellow heart, with a delicious buttery flavor.

LILLY'S "EARLIEST OF ALL" RADISH. A very small round bright red radish with white, crisp flesh of a delicious mild flavor. An excellent variety for cold frame.

LILLY'S "NEW WHITE QUEEN" ONION. A very early small round variety of fine, crisp flesh with deliciously mild flavor. A great favorite for the home garden, easily grown and matured.

The above three varieties are all regular 10 cent packages. We offer the three for 10 cents **to introduce.** Send money order or stamps.

Catalogue Ready for Mailing, Free.

Send for a copy of Lilly's Annual Seed Book, 126 pages, fully illustrated, with cultural directions.

Lilly's Seeds are the Standard of the West. They have given satisfaction to farmers for over a decade. They are particularly adapted to the climatic and soil conditions of the West. Our seeds are tested by us before being offered for sale. We have an expert seed tester, a government graduate.

THE CHAS. H. LILLY COMPANY
Seattle, Wash.

CALIFORNIA FRUITS AND HOW TO GROW THEM
Price $3
PACIFIC RURAL PRESS, - - - - - - - - - SAN FRANCISCO

Land & Trust Company of San Francisco, reports that two-thirds of the settlers on the Merced colonies are to put out part of their land to Calimyrna figs this year. Last year more than 1000 acres were planted to this fig in the county.

Consul General W. H. Gale of Athens reports that the Grecian olive crop promises to be the best for many years. The yield will be about 25,000,000 gallons.

The Ventura Dried Fruit Association has withdrawn their 900 tons of dried apricots from the market until the demand strengthens, as they expect it to do later. The fruit will not be sold for less than 16 cents a pound, according to present plans.

Raisin and Grape Notes.

Deliveries of second-crop Muscats have begun at $12 per ton. The raisins are practically all in the sweatboxes.

For 20 acres of Emperor grapes at Exeter, Tulare county, Cliff Dungan received $250 per acre. R. D. Williams was the purchaser.

R. L. Nougaret of the Bureau of Entomology has been making a trip through the San Joaquin examining into the damage done by phylloxera.

Suit has been begun by Wylie M. Giffin against the Inderrieden Co. on account of rejecting Sultana raisins contracted for earlier in the season at a price higher than is now being paid for similar goods.

A favorable report regarding the plan of the organization of the California Raisin Exchange as developed by Mr. W. R. Nutting has been rendered by the committee in charge and a campaign for members will be begun at once.

General Agriculture.

Rice harvesting has begun in the fields near Biggs and Gridley, Butte county. The Balfour-Guthrie Co. is getting 70 bags of 110 pounds per acre and better from their land.

Shipments of Emperors from Fresno are being held back by the number of Tokays still in the market. Heavier shipment is expected to begin very soon.

H. A. Scott of Porterville raised a crop of peanuts this year, the nuts averaging about two inches long.

J. Cunningham of Manteca, San Joaquin county, harvested 238 saks of sunflower seed, weighing 75 pounds each,

The Visalia and Corcoran plants of the Visalia Sugar Company, which have been closed for the past year owing to financial difficulties, are reported to have been sold to the San Joaquin Sugar Company, which will probably open them next season.

(*Continued on Page 381*)

The best blight resisting, well tested walnuts: heavy bearers: bloom late: mature early: grafted trees only.

"Concord"



Prices Reasonable

Liberal Discount to Dealers

"San Jose Mayette"



Send for catalogue and special circulars on New Fruits, Pedigreed Prunes, Eucalyptus, Etc.

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Morganhill, Santa Clara Co., Cal.

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FOR SPRAYING
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WHITEWASHING

We can save you money. Lime is a by-product with us. All we charge you is actual cost of handling. Acetylene Lime in putty form in iron drums

300 lbs. including drum 50 cents
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Drums alone worth price

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HIGH GRADE NURSERY STOCK

A full and complete line of **the leading varieties of Citrus, Deciduous Fruit and Ornamental Trees, Vines, Shrubs, Roses, Decorative Plants, Eucalyptus and Palms. Catalog Mailed Free.**

"The best is none too good and in nearly every case proves the cheapest.

A trial will convince you.

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Walnuts To Graft

(CALIFORNIA BLACK)

Will contract to graft where standing or will deliver in small or large lots.

Ornamentals (Medium to heavy grades)
Special prices to clear leased land.

Elm	**Umbrella** (Texas)
Maple	**Poplar** (Carolina)
Catalpa	**Mulberry**

Ready for early delivery.

G. E. AMES, Live Oak, Cal.



Citrus Trees Exclusively

Now is the best time to place your order for spring planting. Get same in while the first-class stock is available and avoid being disappointed later on.

WRITE US TODAY

Our booklet, "CITRUS FRUITS," mailed to any address on receipt of 25c.

San Dimas Citrus Nurseries

SAN DIMAS, CAL.

KIRKMAN NURSERIES



WHOLESALE GROWERS OF FIRST-CLASS NURSERY STOCK.

A fine lot of Peach, Plum, Pear, Apple, Apricot, Fig, and other deciduous fruit and shade trees.

Also a million rooted grape vines; a few thousand nice Orange and Lemon trees, and a lot of No. 1 Eucalyptus.

Shipments made from main nursery at Fresno, or from branch at Sacramento (corner 15th and K Sts.).

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WM. T. KIRKMAN, Jr. Proprietor,
J AND KERN STREETS, FRESNO, CAL.

GOOD CITRUS TREES

Expert grown, large, clean stock, up to size now, for 1912 spring delivery. None better anywhere. Our buds are selected with greatest care from best individual fruiting trees and positively guaranteed true to name.

250,000 Seed Bed Stock

Sour, Sweet or Pomelo—the **McMillan grown** kind—large clean plants from selected seed—the kind it pays to plant. Inspection and correspondence invited. Closest nursery to Los Angeles. Alhambra car.

McMILLAN CITRUS NURSERIES

Growers of Citrus Trees exclusively
Ten years in business and here to stay

Main 732—Home 3222 **300 So. Marengo Ave., Alhambra, Cal.**

To Exterminate
GROUND SQUIRRELS, GOPHERS, also BORERS, ROOT APHIS, etc., on Fruit Trees

CARBON BISULPHIDE

Is the only effective remedy.
For sale by dealers and manufacturers
WHEELER, REYNOLDS & STAUFFER
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Snow's Nursery

Citrus Stock a Specialty

Will accept future contracts on Citrus Stock, also Apricots.

H. K. Snow, Jr., Prop. **OXNARD, CAL.**

THE AVOCADO

The Most Valuable Fruit Grown.

New 20-page circular containing description, cultural directions, and much other useful information, free.

THE FEIJOA

The New Commercial Tropical Fruit.

Will stand a temperature down to 10 or 12 above zero. Send for special circular.

WEST INDIA GARDENS

Altadena, California.

California Horse Started Moving Pictures.

[We recently claimed that the origin of the now supremely popular moving-pictures must be credited to California agriculture. Some newer-Californians were quite surprised by the claim, and for their information and to refresh the memories of those who lived here at that time we take from the writings of Mr. Frederick J. Haskin, who is tracing moving pictures from their origin to date, some statements which relate to the California beginnings.—EDITOR.]

Without detracting from the merit of the hundreds of inventors who have done their part to make it successful, the moving picture may be credited to the genius of three men: Edward Muybridge, J. Marey and Thomas A. Edison.

THE TRIUMVIRATE.—Muybridge was an Englishman living in the United States, and it was he who devised the plan of taking a series of instantaneous photographs and of showing them in rapid succession so as to simulate motion. Marey was a Frenchman, and it was he who first used a continuous film and took series of photographs from one camera. Edison is, it is hardly necessary to say, an American, and it was he who made the film practical by perforating the ribbon and gearing it to a pin-sprocket wheel so that each successive picture would register exactly over its predecessor.

These are the three great discoveries that have made the modern moving picture possible. Although Muybridge was English-born, he did his work in California under the financial patronage of Leland Stanford; although Marey was French and worked in France, his experiments were made possible because of a subsidy obtained for him from the Smithsonian Institution; and as Edison is American-born, therefore the United States may justly claim credit for this great mechanical invention.

THE CALIFORNIA PATRON.—Leland Stanford some time Governor and Senator of California, forty years ago made a wager with a friend as to whether a running horse ever has all four feet off the ground at the same time. Muybridge was a photographer in San Francisco then engaged in making a photographic survey of the State. He was called in to settle the wager, and his expenses were guaranteed by Stanford. Muybridge became an enthusiast and resolved to determine the character of animal motion, a problem requiring a quicker eye than is possessed by human beings.

His experiments were begun at the race track at Sacramento in 1872. He set a number of cameras around the track at equal distances, sometimes using more than two dozen. Small strings were attached to the shutters. These strings were broken by the running horse and the photographs taken. Later an electrical device was employed to open and close the shutters. In his experiments Muybridge used only wet plates, employing a total of more than half a million plates. His was a task that might well have staggered a Hercules. He proved that the running horse never has all its feet off the ground at any time. But that was only the beginning.

HOW THE CALIFORNIAN WORKED.—Muybridge made glass positives from the negatives of a series of running horse photographs, mounted them on a wheel no less than thirteen feet in diameter, and, employing a magic lantern, projected them onto a screen at varying rates of speed, from twelve to thirty-two a second. This machine he called a "zoopraxiscope." He had based it upon the principle of the "zoetrope," a top popular in the early part of the nineteenth century. It was a revolving, open pasteboard cylinder with many lateral slits through which were drawn imaginary figures of constantly changing postures. By reason of the persistence of vision, the zoetrope had produced crude moving pictures, but such as were subsequently proved to be entirely false.

Muybridge first publicly exhibited his "zoopraxiscope" in San Francisco in 1880 in a lecture on animal locomotion, so that the California city may claim to have been the cradle of the moving picture art. He repeated the lecture and the exhibition in Paris in 1881, in London in 1882, and in New York, Boston and Philadelphia in 1883. While in Paris in 1881 he met and talked with J. Marey of the Institute of France. He had already conferred with Edison about the possibility of combining the zoopraxiscope with the newly-invented phonograph—a problem that is still far from a satisfactory solution, although successful "talking pictures" are a possibility of the future. Of his own experiments and of these two conversations with Marey and Edison was born the moving picture apparatus of today.

The invention of the projecting machine in 1895 made the moving picture a practacable thing and in 1896 the exhibition of pictures was begun on a commercial scale.

HOW TO GET A COYOTE.

Doc Reed an expert in wild life, gives an exchange this interesting story:

I often change my method of setting traps and baits, as sometimes coyotes will get shy on the same kind of bait one is using and will not take it. Then one must use something else. Rabbit is my favorite bait. A hawk torn to pieces and scattered around a trap is a good bait, or bloody chicken feathers with a little meat, and hog crackling is real good.

A good plan to catch a smart coyote is get the traps by the side of the road or trail that he travels, then make a small fire, broil a piece of bacon rind to a crisp and crumble this around the trap with a few bread crumbs, making as much of an appearance of a camp as possible. This will often throw the "smart aleck" off his guard. When they get so smart they will take no bait at all, it is necessary to set blind traps directly in the center of the trails or little washes which he travels, without any bait.

It is impossible to be too careful in setting traps where they cannot be seen and so that they will make a dead sure catch when they are thrown, but "keep at it" and don't let your pesky coyotes rest, you will get him after while.

Some men believe that a coyote will not kill a full grown goat or a bell goat, Mr. J. D. Smith of Sabanal, Tex., tells this:

"He once owned a small bunch of goats which ran at large about his ranch, they were all ages and sizes. One night they failed to come home and the next morning he went to look for them; he soon found the trail and below it a short distance he found a dead goat and farther on he found another one and so on, until he found 19 head, leaving only one more out of this bunch, a bell goat remaining, and continuing in the direction in which they had traveled he found the bell goats almost eaten up; nearby he found the coyote's den and pups, and killed them, but he was entirely out of the goat business.



CHOICE CHEAP CONCENTRATED

MODESTO ALFALFA MEAL

FOR

CATTLE POULTRY SWINE

FOR PRICES SEE OR WRITE

THE GRANGE CO., Modesto, Cal.



King Lancaster, Grand Champion Bull, California State Fair, 1909-1910-1911.

The only Bull three times Grand Champion at the Fair.

FOR SALE:

100 Short-Horn Bulls

Sired by grandsons of **King Edward, Hillcrest Hero, Choice Goods** and other prize-winning Bulls.

ALSO

300 Blacow Robert Glide French Merino Rams

Single or carload lots. For further particulars write

THORNTON S. GLIDE, Davis, Cal.

HENRY WHEATLEY

SALVADOR STOCK FARM, NAPA,

IMPORTER and BREEDER of SHIRES

Mr. Wheatley is at present in England buying Shire stallions. He will spare neither trouble nor expense in getting together the best lot of Shires ever imported into California.

If you are interested please send in your name and you will be notified when they arrive.

HENRY WHEATLEY

Cows Give 262 lbs. More Milk Daily

After substituting a part of their regular feed with Proteina, says a leading dairyman. ¶ Unequalled for Cows, Calves and Poultry, and fed at a comparative low cost.

46% PROTEIN - 10% FAT

Proteina is concentrated from the Soy Bean and contains 33⅓ more Protein.

The U. S. Agricultural Dept. says: "A bushel of Soy beans is at least twice as valuable for feed as a bushel of corn." ¶ POULTRY MEN FIND PROTEINA BETTER THAN BEEF SCRAPS FOR LAYING HENS. Write for signed letters from Poultrymen and Dairymen.

SOLD BY DEALERS OR PACIFIC OIL MILLS, SEATTLE

Proteina SOY BEAN OIL MEAL MANUFACTURED BY PACIFIC OIL MILLS SEATTLE

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DIEPENBROCK RANCH

LIVE STOCK IMPORTERS

RIVERSIDE ROAD, SACRAMENTO, CAL.

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ASK YOUR DEALER FOR

EL DORADO COCOANUT OIL CAKE

FOR

CHICKENS AND MILK COWS

Cheapest Food in the Market to-day. If your dealer doesn't carry it,

ADDRESS

EL DORADO OIL WORKS

149 CALIFORNIA STREET, SAN FRANCISCO.

Home-Grown Meats for the Pacific Coast.

Our readers know, of course, that a considerable part of the meat supply for our cities comes from States east of the Sierra Nevada and has been thence derived for many years. At the same time the Coast grazing and feeding grounds have not been used to their capacity. Perhaps our land-owners and capitalists seeking investments will pay more attention to the opportunity for home-grown meats when they see how Eastern stock-growers are counting upon our deficiency to give them a better chance in Chicago and other great Middle West consuming centers. Why should we starve the Middle West by drawing from the plateau States what we ought to grow for ourselves? Mr. Paul H. Brown gives in the Farm and Fireside, an Ohio journal, a very interesting account of present conditions and tendencies.

THE PACIFIC STATES A GOOD CUSTOMER.—For the past two years there has been a small demand by the meat-packing interests on the Pacific Coast for hogs and cattle on the east side of the Rockies. But till this season it was an experiment, both with the Pacific buyers and the stockmen selling to them, but from the volume of trade going west this fall, instead of east, it looks as though the experiment was a success and that a healthy, steady Pacific Coast market has been developed for our Middle Western stock.

OHIO REJOICES.—This is a big step forward for all the live stock growers of America. It is a direct benefit to the cattle and hog growers located between the Missouri river and the Rocky Mountains, for it gives them two competing markets, each anxious for their stock, and this year the competition between the Chicago and Pacific Coast interests for the large shipments of fat range cattle has been particularly keen. Often a single shipment has consisted of two and three trainloads of cattle. This is an indirect benefit, but nevertheless a sure one, to the cattle and hog growers east as far as Ohio and Pennsylvania, for it takes the big run of Western grass cattle out of Chicago, therefore out of competition with the same grade of killing cattle the Eastern farm has. This decreases the supply at Chicago, which will inevitably raise the price, and the Eastern growers are directly benefited by the raise.

SHEEP AND HOGS.—The hogs which go west instead of east are picked up in the eastern part of the two Dakotas and in Nebraska by buyers who buy direct from the farmers and from the local shippers. They accumulate their purchases for a week at some advantageous railroad town and then load a full tarinload of double-deck cars of hogs and send west over the Rockies.

This new outlet is perceptibly telling in the receipts of the Missouri river markets and is helping to maintain the prices at a high level, for these Pacific buyers are paying full market prices for the hogs in the country.

The sheep which the Pacific Coast packers are buying are being taken from the ranges and farms of Idaho, Oregon, and Washington, and this again lessens the enormous runs of sheep at the big centers.

THEIR EXHORTATION.—The Pacific Coast population is growing rapidly, and the people there must be fed, and it will be a long time, if ever, before they will be in any way self-supporting in their meat demand and supply. So the outlook for the meat-growers east of the Rockies and west of the Missouri river is exceedingly bright.

There has never been a better time for the Western farmers to stock up with the best of good cattle and hogs and stay in the business, and the Eastern farmer as well has the same good prospect; for the overwhelming runs of range cattle at Chicago are a thing of the past. The Chicago market will inevitably be better on account of this Pacific Coast outlet.

[Cannot our own people take a hint?—EDITOR.]

HOW TO GROW MORE RANGE LAMBS.

[As Uncle Sam has asserted his title to range lands and proposes to get money for forest conservation and extension by income from pasturage, it is very proper that he should show his tenants how to make more money than they could under the old free-range system. He is doing this by sending experts to kill wolves, coyotes and other marauding animals and by other means increase the flocks by baffling these enemies. One feature of the work is outlined below.—EDITOR.]

Experiments conducted in Colorado under the direction of James T. Jardine, Inspector of Grazing of the Forest Service, have led that official to strongly recommend tne general use of fenced lambing grounds throughout the sheep country of the West. This study was taken up in connection with the coyote-proof fence with which the Forest Service has been experimenting for several years, and the results proved highly satisfactory. An elaborate bulletin has just been issued giving much information which will be of interest to Western sheepmen.

A LAMBING GROUND.—According to Jardine, sufficient pasturage for lambing grounds for 1000 ewes can be properly enclosed with coyote-proof fence for $1000. Such an inclosure will enable three or four men to handle a band of 1000 head, and will result in a saving in labor of approximately $140, while an additional saving of $100 each season can be effected by reason of the fact that an increased number of lambs can be saved when handled in this way. Reckoning interest at 8 per cent, he figures that the fence would pay for itself in less than six years.

MANY LAMBS LOST.—In his report telling of the Colorado experiments, Jardine states that there are about 20,000,000 head of breeding ewes in the far western States. Ten per cent, or 2,000,000 lambs are lost each year when weaned or before they are three weeks old. Much of this loss could be prevented if lambing ground were properly fenced. Moreover, he finds that lambs raised on inclosed pasture are found in better condition and are heavier than those dropped on the open range, and as lambs make the most rapid and cheapest growth early, he figures that the inclosure method would result in an annual increase of 15,000,000 in the Western "lamb crop," representing a cash value of not less than $500,000.

HOW IT PAYS.—In summarizing the beneficial results obtained with the inclosed lambing ground, Mr. Jardine reckons first, on saving an additional 5 per cent of the lambs yeaned. The saving in labor, he points out, is material; three men being able to care for 1000 ewes, where on the open range, the same number of ewes need the care of from five to seven men. And three men, with an inclosed pasture, he finds, can give better care to ewes and lambs than can the greater number on the open range. The saving in labor he figures at $150 per month. This saving is possible, too, at a time when skilled labor is scarce.

Lambs that get their start on a good inclosed pasture take on flesh mare rapidly than those that have to rustle on the open range; they are subject to less danger; are not compelled to travel long distance from one feeding ground to another, and enjoy other benefits not found in the open country. Without doubt, he says, such a system of pastures makes more certain the percentage of lambs that can be saved.

The "Able Bodied"
SHARPLES
Tubular Cream Separator

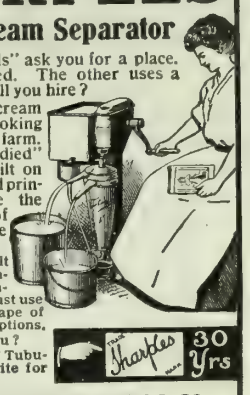
Two farm "hands" ask you for a place. One is able bodied. The other uses a crutch. Which will you hire?

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Los Altos Stock Farm, established for breeding with a choice selection of pure-bred, imported, registered stallions and mares with pedigrees running into the best blood lines. All of the big draft type, first class in every way. Some of the stallions and mares reach a ton in weight.

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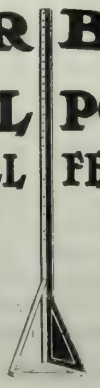
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Catalog 11



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Country Stallion Companies.

Written for the PACIFIC RURAL PRESS
By D. J. WHITNEY.

The advantages and disadvantages of forming a company of several farmers with a number of brood mares each for the purpose of purchasing a thoroughbred draft stallion has been discussed many times. This is the time of year when purchases of such stallions are usually made, and this year has been so profitable in most parts of this State that it is a good time to consider the subject.

Purchases by such companies are usually of registered stock, which is as it should be. It is a fact, however, that many grade stallions with a large per centage of thoroughbred blood are as good breeders as many registered stallions and can be bought for one-third the price. The advantage of buying a registered stallion is that the service fee can be increased, that it is easier to secure patrons when they know that the animal is standard bred and registered, and that if a wise buy is made the registered animal is sure to be worth much more for his colts alone than the extra price paid for him.

Two things are to be avoided in forming a company to purchase a stallion. The first is the higher price that is likely to be asked such a company for a good animal, and the second is that all registered stock is not first-class stock. Every breeder of thoroughbred beef cattle and sheep where the pedigree of each animal cannot be traced, and only the cream of the herd is registered, culls out the poorest calves and lambs every year for the sake of keeping up the general average of his herds and flocks. The same thing is done with poultry and every kind of animal or bird of choice breeding.

When, however, every animal is registered, the culling is often done by raising the colts to maturity and selling them for the best price that can be obtained for them. No matter how good the breeding animal is there will always be reversions to the type of some poor quality ancestor, or something else will occur that will prevent the proper development of individuals. In such case the registry book covers a multitude of faults, and proper feeding and care can hide others from anyone except the expert who almost instinctively knows a good animal from a poor one. In practically every instance, of course, the colt from the best registered stock will be superior to the average run of stallions, but, even so, there are no animals in existence from which culling should not be done for the good of the breed, and the buyer has to see that the culling is not done at his expense. One of the best ways to do this, of course, is to buy a known sire, whether stallion, bull, boar, or what not.

The second thing to look out for is a little extra on the price when it is known that a co-operative concern is purchasing a stallion. Under these circumstances it is customary to put about $500 onto a $3000 price, which can be avoided by skillful buying and ready cash.

An association should never be formed simply because an itinerent horse dealer with a stallion to sell advises it. This is a common way of selling scrub stallions at double the price of good ones, and has been the cause of more failures of stallion owning associations than any other one thing. The only way to do is to form an association, raise the money for a first class stallion and get a good buyer to visit several reliable breeders and pick out the best animal he can find for the price. To form a company to buy a stallion that is being peddled around is to invite disaster.

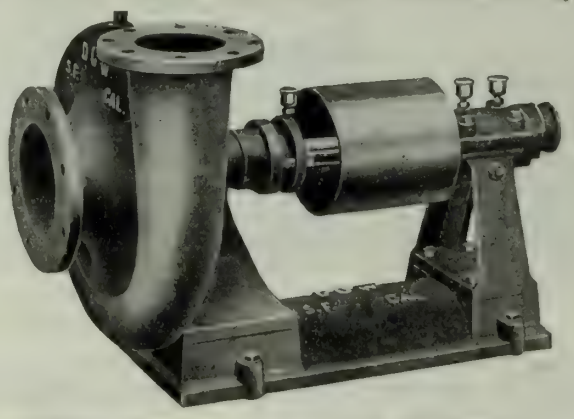
Many associations have been failures owing to poor purchases and poor management, but the advantages when well worked are many. In the first place the quality of the colts is benefited greatly, both of the owners and the surrounding farmers.

In the second place the saving in service fees soon makes up the initial cost of the animal. For $3000, which should purchase the finest kind of a stallion, ten men could each breed five mares per year and service fees to non-members would pay for all expenses. At $15 per service the animal would soon return the money originally paid out for him. Of course, for half this money a very good registered stallion could be obtained, and for still less a fine grade animal. Since, however, the cost of keeping and handling one stallion is as great as another, it is better to buy the best and the quality of the colts and greater service fee will soon make up the difference.

A good man to handle the stallion will cost from $40 to $50 per month and board and can do but little else during the breeding season but look after his charge. The rest of the year he can have plenty of spare time for other duties. The food of the stallion will cost about 75 cents a day. He might also be put to work and help pay for his keep at other times of the year, and by working hard, drawing a wagon or plow, he will be easier to handle and breed better. This is one advantage of buying a young animal that can be broke. In this connection it might be said that to keep an animal in a dark barn and give him but little exercise will injure his breeding capacity and his colts will not be what they should be. Plenty of fresh air and exercise and good food is good for the health of any living creature, and good results cannot be expected from any animal that is not in good health.

The choice of a breed is a matter of more or less indifference, provided the animal has the quality. City buyers, who take most of the finest draft geldings, will buy Percherons, Shires, Belgians or Clydesdales indifferently if they like the quality of the animal. On the stock farms, however, the Percherons and Shires seem to be in biggest demand with fewer Clydesdales than either of the other breeds. If, however, a man would sooner handle one breed than another, he can come out all right if he makes the proper selection in the breed.

One benefit to a co-operative concern is that there is a good number of mares owned by the members that can be served and that it is not necessary to go all over the country to find patrons. It is a common failing for farmers to refuse to patronize a stud because they don't like his owner or handler, or else they pay for the use of a very scrubby stud because the owner is a good mixer. When the stallion is owned by a dozen persons, each one has sufficient friends who will patronize the concern to furnish all the business that is necessary to make a success of it, and there is little time lost in drumming up trade. Then the assurance that the animal is worth breeding to, that most of their neighbors are breeding to it and the tendency to follow the crowd to patronize home industry, helps still more.



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Keeps barns clean and sanitary—Keeps cows healthy—they will give more and richer milk. Saves time, labor and money. A Louden Litter Carrier will save its cost many times in a year.

Loudens special electro-galvanizing process gives all Louden products a beautiful, lasting finish. Looks clean—easy to keep clean—never rusts—lasts much longer than ordinary hot process galvanizing.

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They Last Longer

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LIVE STOCK NOTES.

Dr. T. B. Spalding of Turlock is importing some registered Poland-China hogs from the East. His main boar is "A Wonder," who weighs 1200 pounds and is only two years old. He is also raising four varieties of fowls: White Rocks, White Leghorns, White Wyandottes and White Minorcas.

Owners of the various large herds of beef cattle in San Luis Obispo county are driving the stock in from the ranges to be fed this winter near the coast. J. and D. Schoengeld of that county went to Arizona last week to buy a train load of cattle which they will bring to the Coast to feed.

W. A. Perley of Chico recently sold his trotting mare "Dot" to a Canadian for $6000. Perley bought the mare a year ago for $150.

T. B. Gibson's herd of Shorthorns from Woodland, won at the State and district fairs of California, Oregon and Washington this fall, 32 first premiums, 21 seconds and 14 third prizes. The herd is now at the home ranch.

P. M. Landscale of Merced has begun to stock up his large ranch west of Merced, 80 cows having been secured. There are already 300 acres to alfalfa, but this will be enlarged greatly this fall and spring, and several hundred more cows purchased. Grade stock will be purchased with a few registered Holsteins and Holstein bulls to build up a thoroughbred herd.

Severe losses of sheep in Carson valley, Nevada, have been sustained through attacks by mountain lions recently.

A number of ranchers near Merced are organizing a co-operative association for the purchase of the imported Shire stallion Oxford Prince. The stallion weighs 1750 pounds, is three years old and was imported by J. Crouch & Son.

The fall wool sale at Cloverdale, Sonoma county, brought up only two buyers. Some wool was sold at an average of 8½ cents, a number of the owners refusing to sell at that price. There were 500 bales at the warehouse.

Albert Wilder of Yuba City recently disposed of 40 head of Berkshire hogs, one year old, weighing 250 pounds each and field fed, to the packer.

Large imports of live stock into Imperial county are being made. In one day last week 1900 head of sheep and two cars of thoroughbred Duroc Jersey hogs were received at El Centro, besides a number of dairy cattle. Beef cattle for winter feeding are also coming in plentifully.

The official list of members of the Percheron Society of America, which has just been issued, contains 3966 names. California has 22 members in the society, Illinois 963, Iowa 660, and nine other States more than 100 each.

An announcement of the premium list of the National Mid-Winter Sheep Show to be held at Omaha from December 13 to 16 in connection with the National Wool Growers' Association convention has been issued. Regular premiums will amount to $3000 in cash prizes, while special prizes will make the total awards almost double this.

State Veterinarian Charles Keane has lifted the quarantine against Texas fever in Santa Barbara county, leaving only parts of San Diego, San Luis Obispo, and Orange counties with the quarantine still in force. In 1906, when active work was begun in the extermination of the tick, the quarantined district included all of the southern part of the State up to the west boundary of San Benito county and south of Merced county. With the cleaning up of the Texas fever tick, other ticks which annoyed the cattle have been largely destroyed also. Very little fever is found in the district still under quarantine, and within a year or a little more the whole State is expected to be free from the trouble. The work was done by the Federal and State Governments working together, and is said to have been finished up faster and to better advantage in this State than in any other.

DAIRY NOTES.

The Anderson, Shasta county, creamery was opened last week

H. C. Porter has sold his interest in the Porter & Keese dairy at Alpaugh, Kings county, to the Pena Bros., who will continue to conduct the dairy.

Dairy cows from San Luis Obispo county have been shipped to San Jose the past few days to help supply the demand for milk there.

Articles of incorporation were filed last week for a new butter and cheese factory at Hughson, Stanislaus county. The stock was subscribed by the residents of that section.

The new plant of the Modesto Creamery Company now being completed is to be one of the most modern and complete in the State. A 35-ton refrigeration machine is being installed and will furnish 15 tons of ice per day for sale besides that used in the creamery. The creamery will have a capacity of 12,000 pounds of butter daily.

Work has been begun on a new creamery of the Cressy Land & Development Co. at Cressey, Stanislaus county. The creamery will have a capacity of a ton a day and will draw upon about 5000 acres of land now being prepared for alfalfa.

C. S. Baxter of Merced has just installed an 8-inch centrifugal pump and an 18 horse-power engine on his dairy ranch and will increase largely his alfalfa acreage.

Fred Jamison of Modesto is sending to the creamery from 98 to 104 pounds of butter-fat every two days from 45 head of grade and thoroughbred Holsteins. He recently began to use the Babcock tester on his cows.

The committee from the Tulare County Dairymen's Association that will decide upon a plan of grading and paying for cream is to be composed of L. M. Owens, J. A. McFarland and H. E. Ford from the first district, and U. M. Ferguson, Hill Dale and J. A. McKelvey from the fifth district. Members from other districts will be appointed later.

A number of dairymen supplying milk to San Diego claim that they will move from the county if forced to pay a license fee of $1 per cow as provided for in a new ordinance recently passed. The Dairymen's Association is planning to have the price of milk raised if the ordinance goes into effect.

Shipments of milk from the Azores dairy at Holt, San Joaquin county, to San Francisco have been stopped by the inspectors, as a very large percentage of the cows were found to be seriously affected with tuberculosis.

Davis & Peterson of Yuba City have received several cars of registered stock from the East recently.

T. W. Harlan of Willows, Glenn county, states that he is clearing $125 per month from 25 Jersey cows.

CLASSIFIED ADVERTISEMENTS.

Rate, 1½c. per word. No order for less than 25c. per week. If you have anything to sell, or want anything, use these columns.

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1920-ACRE RANCH FOR SALE.—One of the best subdivision or dairy propositions in the Sacramento valley. Butte county. Mostly level bottom loam soil. Two cow-barns, capacity 400 head. Horse barn, 60 head. Numerous corrals and hog sheds. Ten-room dwelling. Blacksmith shop and out-buildings. Entire place fenced and cross-fenced into many fields. All improvements in good condition. Abundance of wood and water. Three miles from railroad station. Apply owner who must sell account other business. Price, $50,000. PAUL GOODLOE, 1049 Phelan Bldg., San Francisco.

$10.00 per acre, 4,400 acres, 20 miles from Monterey bay; stock and grain rancho; abundance of water; profitable, well improved. Circulars of JOHN F. BYXBEE, Palo Alto, Cal.

$27,000 buys best improved and best paying bearing apple orchard in Sonoma county, near Sebastopol. Circular and photos of JOHN F. BYXBEE, Palo Alto. Cal.

20 acres in Stevinson Colony, Merced county, for dairy purposes. For particulars and price, write V. NELSON, B. & B. Dept., care Morest, San Rafael, Cal.

FOR SALE.

MISSION OLIVE TREES in any quantities, guaranteed true to stock, for delivery in fall of 1912. Address MILLS & JORDAN, 410 14th St., Oakland Cal.

POSITIONS WANTED.

CAPABLE YOUNG MAN wants position as manager or foreman on fruit ranch. References. Box 61, Aptos, Cal.

LAND OWNERS—If you need a superintendent or agriculturist, a man of experience and executive ability, address Box 110, Pacific Rural Press.

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If you have Garbanzo Peas or small dried peas to dispose of, quote your lowest price with samples. G. H. C., care Pacific Rural Press.



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Take Kearney St. Cars at Ferry or Depot

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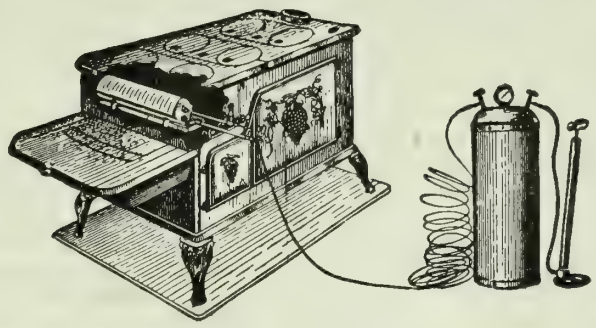
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MORE EFFICIENT than wood or coal, immeasurable comfort and conveniences.

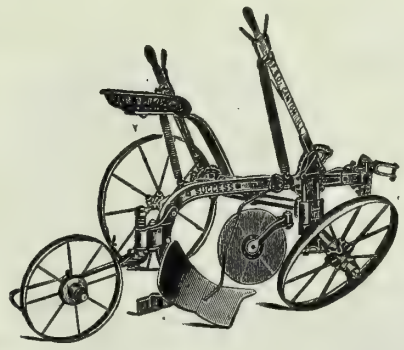
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P & O



SUCCESS PLOWS

A plow that has been on the market for years without a change in its construction; a plow that was so well built at the start that no changes have been necessary; a plow that has the largest sale of any riding plow made; a plow that is so simple it cannot get out of order, so strong that it lasts a lifetime—

Such is The Success.

It has the strongest and simplest frame ever put on a riding plow; the best hitch, the best landing device, the best rolling cutter, and best bottoms ever made. It has but two levers, but they give the same wide range of adjustments as plows with three or four levers. The **Success** is heavier, it has more material, but fewer parts, and therefore less complicated, than others. That is why it is simple, strong and durable. That is why we call it **The Success.**

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Plant of most modern equipment; 6000 laying hens (Standard Bred S. C. White Leghorns); all raised and kept under most sanitary conditions.

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Surplus stock after filling our laying houses.

1000 May and June hatched pullets from $8 to $10 per dozen.

300 Excellent Breeding Cockerels, $12 per dozen and up.

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R. N. FOSTER, Manager
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Written for the PACIFIC RURAL PRESS
By M. RUSSELL JAMES.

The following points of especial interest to farmers are taken from an article in the American Agriculturist, written by J. T. Campbell, a successful egg farmer in Pennsylvania. Being a systematic farmer, Mr. Campbell found that the poultry branch of his farm was paying much better than some other lines, so he gradually dropped the less profitable branches and increased the poultry until some nine years ago the production of a fancy grade of table eggs for the wholesale market became the chief business of the farm. "Our market for eggs of this kind," he says, "has developed faster than we can supply it. I have a comparatively small capital invested in the business. The chickens have paid their way and given a profit from the beginning."

This egg business, however, it must be remembered, was not started from the ground up. Poultry as a side line had long been one of the best paying branches of Mr. Campbell's farm. This merely proves how much safer and easier it is for the farmer to go into wholesale egg production than it is for the person who must break ground for the business.

A STRICTLY WHOLESALE BUSINESS.

"Being located 100 miles from our market, and having good shipping facilities, we have preferred to do a strictly wholesale business, dealing with reliable dealers who cater to a high-class trade. This system of handling the product has many advantages. The annoyance of small individual shipments, petty and bad accounts, is overcome in this way. There are thus some advantages in being remote from our market with good shipping facilities. We have the advantage of cheaper land, lower taxes and cheaper supplies. These things more than balance the expense of the longer haul. We secure better prices for the eggs since we are able to furnish them in larger quantity. Large white eggs command the best prices in our market and we must have the fowls that produce them most economically. After trying a number of breeds, we found the Single Comb White Leghorns to fill this need, and during nine years have had no other breed or variety.

STOCK MUST BE BRED FOR VIGOR.

"There are some general indications of vigor that no one can afford to ignore if the vigor of the flock is maintained. The bird of great vigor will be found to have strong straight legs set well apart; wings well and closely folded, head short and thick at the back of the comb; beak short, thick and sharply curved. Especially should the crow-headed, straight-beaked fowl be avoided. We aim to renew about half our flock each year. But it pays well to keep a really good hen several years. We have no secret method of selecting layers. We have learned by years of experience to know hens by their general appearance, and are guided in our selection by this appearance. We have never taken up with the fads and foolishness promulgated from time to time, but have followed our own well-outlined system to success.

HOUSING THE FLOCK.

"All care and selection in breeding for vigor will come to naught if the fowls are not housed and fed in such a manner as to aid in keeping up the vitality. Fresh pure air day and night is absolutely indispensable. For this reason we have for many years used the open-front house, which permits fresh air at all times but avoids drafts. Our houses are all very cheaply constructed. We now use a large number of portable colony houses. These small buildings are made on two hardwood runners and are 7x9 feet, with front walls 6 feet 10 inches; rear walls 5 feet 2 inches. A good farm team can readily move them, chickens and all, at any time. During the warm months we colonize the hens on various parts of the farm, giving them free range over green fields and cultivated lands, all of which helps to keep up the vigor and permits the fowls to secure the green grass which is the cornerstone of profitable feeding. This system reduces the labor of caring for the hens and helps very materially in keeping the sanitary condition good. We like to sow a few acres of small grains, and when these begin to ripen the fowls in the colony houses are moved out into these fields. During the winter the colony houses are drawn in conveniently to other buildings where the fowls can be readily cared for.

METHOD OF FEEDING.

"After years of study and experience our feeding system is reduced to a very simple basis. I have found that for best results the feed must be highly palatable, so that the hen will consume liberal quantities. It must be highly digestible, so a comparatively small amount of energy will be required to eliminate waste from the body. It must furnish the hen with everything necessary to nourish her system and for the production of eggs.

"In the first place the birds are on free range, which furnishes an abundance of green, tender grass and clover for eight months of the year. This grass and clover is the basis of our feeding. It gives the fowls an abundance of succulent bulky material which the smallest proportion of indigestible fiber. In winter, beets are used for green succulent food, a quantity being grown for the purpose. Some clover hay is also given dry.

"While the hens are on the grass range, our grain feed is corn, fed whole and usually scattered over the range morning and evening. All the fowls will eat is fed each time, no more. The corn furnishes the largest amount of carbohydrates, and is more highly digestible than any of our other grains and is also very much cheaper. A mixture, composed of two parts high-grade dried beef scrap, one part coarse wheat bran, and a small quantity of granulated charcoal, is kept in hoppers or on trays where the fowls have access to it. The beef scrap is the cheapest, most highly digestible and the most profitable source of protein for fowls.

ECONOMIC METHODS OF PRODUCTION MORE PROFITABLE THAN EXTRA PRICES.

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TWO POULTRY SHOWS.

Next week at Stockton the second annual poultry show of the San Joaquin Poultry Association will be held. The judges selected are R. J. Venn of Fresno, H. W. Gunston of Havilah and Miller Purvis of Wendall, Idaho. R. V. Moore of Oakland will be the pigeon judge, and William A. French of Stockton, superintendent. The Orpington Club of California will hold a regular meeting at Stockton during the show. More hand-

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some trophies will be given winners than perhaps at any other show in the State this season, and the prospects are for $2000 birds to be exhibited. Remember the dates, November 7 to 11.

The following week, from November 16 to 18 inclusive the Stanislaus Poultry Show will be held at Modesto. This will be the first effort by this association, and from the amount of enthusiasm and hard work being done by the members the chances are for a good exhibit. Many valuable cups have already been secured and good judges engaged. For further information, write to J. W. Guyler, secretary, Modesto.

HEN FRUIT AND WHOLESOME FEEDING.

Written for the PACIFIC RURAL PRESS
By HENRY W. KRUCKEBERG.

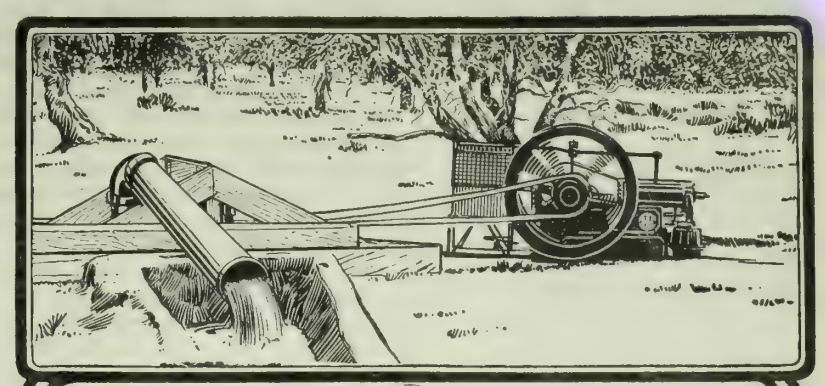
That the production of a prime quality of hen fruit is largely the result of wholesome feeding, conditions and environment answering to the requirements of good sanitation and cleanliness has long been recognized by experienced poultry breeders. The third element in the triumverate that stands for success is, of course, good stock answering to standard requirements. In verification of this, the writer was much interested in the following incident related to him during the session of the American Poultry Association by so good an authority as L. C. Byce, the nestor of the poultry industry of Petaluma:

"I never tasted finer eggs," said Mr. Byce, "than during my attendance at the late Santa Cruz poultry show. Indeed, so pronounced was the flavor and eating quality that I determined to know more about them, and from whose yards they were secured. So I went to my landlord to learn where he purchased his hen fruit. Having gained this information, I soon found my man, and saw just what I expected. On this model plant cleanliness prevailed everywhere. Scratching facilities were a pronounced feature, which is often an essential neglected by breeders. For your hen must work to maintain a physical condition for doing good business at the old stand. Houses were in fine condition, and the flock of White Leghorns—some 500 in number—were of fine quality and free from vermin and disease. The feeding(was along practical lines, showing a wholesome and well-balanced ration based on available supplies at the Santa Cruz markets. Here again cleanliness was the distinguishing feature—clean grains, clean and pure green foods, wholesome animal food, clear cut grit, and all the little attentions that stand for success. So pronounced was this that the owner is enabled to realize a comfortable living from his fowl, while his products command a premium over the ruling prices in the local markets. The points brought out in this experience are that poultry culture is not a problem in the abstract sciences, but a matter of close attention to details—an observation of the rules of cleanliness from within as well as from without. You cannot build a silk purse out of a sow's ear, neither is it feasible to grow fine hen fruit and good carcass in filthy quarters, nor by feeding contaminated and cheap feeding stuffs. Simple, isn't it? Yet how many have failed with the American business hen, by failing to observe basic principles?"

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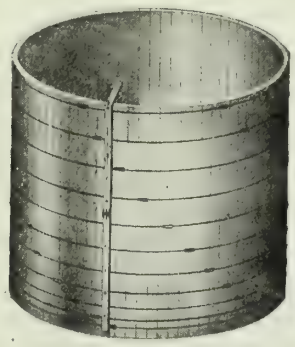
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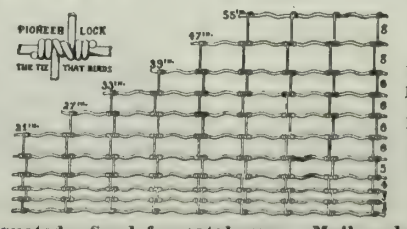
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The Home Circle.

Through Suffering.

God never would send you the darkness
If He thought you could bear the light:
But you would not cling to his guiding hand
If the way were always bright.
And you would not care to walk by faith
Could you always walk by sight.

'Tis true, He has many an anguish
For your sorrowing heart to bear,
And many a cruel thorn-crown
For your sorrowing heart to wear,
He knows how few would reach heaven
If pain did not guide them there.

So He sends you the blinding darkness,
And the furnace of seven-fold heat;
'Tis the only way, believe me,
To keep you close to His feet;
For 'tis always so easy to wander
When our lives are glad and sweet.

Then nestle your hand in your Father's,
And sing, if you can, as you go;
Your song may cheer some one behind you
Whose courage is sinking low.
And—well, if your lips do quiver—
God will love you the better, so.

—Author Uuknown.

A Case of Self-Defense.

When Winthrop received Mrs. Brisben's note asking him to dine with her that evening, he promptly and most ungallantly broke a previous engagement for that same evening, and accepted her invitation. With the same provocation he would have broken fifty engagements, had such wholesale wreckage been necessary; for Mrs. Brisben—well, from Winthrop's point of view there was no one in the universe quite like Mrs. Brisben, even though she had, on two separate and distinct occasions, flatly refused to marry him. Marry?" she had said. "Why, I wouldn't marry the best man on the face of the earth!"

That was three years ago, and so far she hadn't. And she and Winthrop were still friends, the best of friends. Winthrop found these two small half-crumbs of comfort much better than no comfort at all, and took such meagre goods as the gods provided him with an outward and more than visible gratitude, and an inward and fairly invisible fear that even these might at any moment be withdrawn.

She was going away soon for an indefinite period, Mrs. Brisben wrote Winthrop, and before going she wanted his advice on a most important subject—that is, important to her, as she explained.

He wondered vaguely, and with the same tinge of misgiving that he always felt when the advice summons came, what the fad was now. He had been made to give his learned counsel about so many of them, and there was always the chance—What could be more natural? She was young, not a pauper, and decidedly attractive. And the fad might strike her at any time; for Mrs. Brisben was subject to fads, the most adoring of her friends admitted that. Tennis, golf, bridge, motoring, each in its turn had ruled briefly, but with a sway that was absolute as long as it lasted. And not infrequently, in the dim and misty background, one could discern the man behind the fad—not always—give her credit for that. That was just it—you never could tell about Mrs. Brisben. She was, as a broker friend once said of her, "subject to sudden fluctuations. Fascinating as the stock market, and as uncertain."

But Winthrop knew how it would all end some day. And then, after he had kept a stiff upper lip at the wedding, and had almost overdone things in a mad endeavor to do the gay and festive act, he supposed he would take a long trip "somewhere east of Suez," and when he came back, three or four years later, they would invite him to dinner (Sunday dinner, probably, he thought, with a shudder), and he would be Uncle Ted to their children for the rest of his harmless friend-of-the-family life.

Still, the blow hadn't fallen yet, and Winthrop, walking along the avenue toward the big apartment house where Mrs. Brisben lived and charmed, squared his shoulders, held his chin up, and decided that, after all, perhaps a live dog was better than a dead lion, and that the gods might have been more cruel than they were.

"I was half afraid when I sent my note this afternoon that you wouldn't come," was Mrs. Brisben's greeting, as Winthrop, still a bit low in his mind, entered her attractive little drawing-room.

"Wouldn't come!" Winthrop held her outsretched hand just a trifle longer than was absolutely necessary. "Why on earth wouldn't I come?" He planted himself on the couch beside her, and, in a helpless masculine endeavor to make himself comfortable, began stuffing cushion after cushion behind his back.

"Why—it was such a late invitation." Mrs. Brisben bit her lip, and those fascinating dimples of hers capered about distractingly, as, with a deft touch here and a quick tug there, she adjusted the cushions so that their comfort-giving properties would be appreciated.

"Oh," laughed Winthrop, "you don't suppose I mind a little thing like that when you are at the other end of it?"

"Pretty, pretty, Master Ted!" Mrs. Brisben had a marked aversion to Winthrop's Christian name, and had rechristened him years ago. "But I was afraid my popular friend might have some other engagement."

"Well, cutting the 'popular,' I did have."

"Oh, what a shame!" Mrs. Brisben was all remorse.

"And with an attractive woman, may it please your highness."

"Oh, worst of all! Why did you come?"

"Well, didn't you say that you were going away and that you wanted my advice about something?"

"Ye-es, I did say that," Mrs. Brisben admitted.

"And isn't it the first duty of your soldiers to obey orders, madam? Only, for heaven's sake, don't give me away! At the present moment I am supopsed to be ill in my apartment with a sudden and severe attack of tonsilitis."

"I'm shocked, Ted, positively shocked," said Mrs. Brisben severely.

"But, my dear, didn't you say you wanted my advice?" said Winthrop.

"Yes, and I do want your advice; but I've always maintained that you were the one good male liar of my acquaintance. Now why on earth did you make it tonsilitis here in June? Appendicitis would have been much more—more seasonable; in fact, that's always in season—and certainly a little more romantic, for there would have been the possibility of an operation." Mrs. Brisben's eyes danced. "And then if this very attractive woman cared anything at all about you, she would probably fall right in love with you just out of pity. It hits some women that way. You are such an infant, Ted, in some matters! And I do want to do all I can for you."

"You can't imagine how I appreciate your kindness," Winthrop bowed elaborately.

"It's in return for the advice which I am about to receive," said Mrs. Brisben blandly.

"Well, out with it! What's the advice wanted about?"

"I'll tell you when we get to the salad course."

Winthrop jumped up and lighted a cigarette without so much as a thought of "by your leave." Perhaps the thing he had dreaded for years was about to happen after all. Disagreeable things usually did, if one really gave them time, he reflected, morosely. Why else should she keep him in suspense? And even go to the insulting length of dining him into good nature so that he would take his final conge like a nice, well-behaved little lap dog? The thing was not to be tolerated!

"Come, come, don't be unkind, Kitty! Tell me now!" Winthrop pleaded, between swift puffs.

"When we get to the salad course. By the by, it's to be your favorite—French chestnut."

Winthrop all but groaned. This concession to the inner man just about clinched matters. There was almost no room for doubt now. "Whom the gods would destroy they first fill full of favorite salad," he muttered, wratefully.

"What's that?" Mrs. Brisben perked her head on one side for all the world like an inquisitive canary.

"I said that my physician had forbidden me to eat salad," said Winthrop, without a blush.

"On account of the tonsilitis which you haven't, or that appendicitis which you ought to have?"

Winthrop gave his cigarette a vicious fling into the empty grate.

"Why, don't you say it?" inquired Mrs. Brisben, with a sweetness too sweet to be wholesome.

"Say what?" he growled.

"Why, what the old farmer said, 'These women is hell!'" She burst into a laugh so contagiously merry that Winthrop found himself grinning from ear to ear, despite a sturdy effort to the contrary.

"There!" with a satisfied sigh. "Now you look better. Really, you are not such a bad-looking chap when you smile and look pleasant. But when you are cross—" The rising inflection spoke volumes.

"Well, then, here's a bargain!" Winthrop sat down beside Mrs. Brisben again. "I'll promise to smile for ten minutes at a stretch if you'll tell me what you want my advice about?"

"Did you ever know such impatience?" She addressed the piano, apparently. "At the salad course," she said, impressively.

"For ten minutes at a stretch, mind you—a great treat."

"I wonder if you will?" she said, curiously. Her face grew suddenly serious.

The tone and the look sent a shiver down Winthrop's spine, but he answered with a brave show of gaiety, "Of course I will! Don't I always smile at your fads?"

"My what?" Mrs. Brisben sat up indignantly.

"Your fads."

"Insulting!"

"Oh, come now, Kit, play fair! You know you have them. Why, you are the most fickle woman in the world!"

"This from you—you of all the people on the face of the earth!" Mrs. Brisben, unlike most of her sex, was never quite so pretty as when she was a bit angry. "Have you forgotten, George Winthrop, that four years ago, in six short months, I, at your request, wrote letters to three different girls, congratulating them upon their engagement to you? Fickle!" Mrs. Brisben bridled.

"Oh," Winthrop was unashamed, "that was before—"

"Before what?" she snapped.

"Before I really knew you."

"Oh, fiddlesticks!" Mrs. Brisben screwed up her small nose disdainfully. "But," honestly," she went on, "fickle doesn't apply to me in any sense of the term. I despise being called fickle. I believe in



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squeezing the orange dry, that's all. Fickle people don't half squeeze, and they throw their oranges away—oh, so full of juice! Now, mine are mere shells when I get through!"

"Beautiful thought!"

"Yes, isn't it?" missing the sarcasm nicely. "I'm so glad you agree with me. Now, I go into everything with my whole heart and soul, and stay in just so long as it interests me. I can't help if things are so intrinsically stupid that they pall after a time. That's not being fickle. Didn't I play pretty good golf?"

A quizzical expression came into Winthrop's eyes as he nodded in assent. He and golf had been co-fads. But that was back almost when Adam was a boy—as much as three years ago, anyway.

"Wasn't my bridge a little above the average?" she persisted.

"Yes," Winthrop's tone was distinctly patronizing, "except when you would persist in making it 'no trumps' on nothing."

"Well, I got through with it in eight cases out of ten, which is more than you did with all your science."

Winthrop was forced to admit the truth of the statement. Mrs. Brisben's luck at bridge had been at once maddening and phenomenal.

"I remember one time," she pursued, triumphantly, "you made it 'no trumps' after long and serious calculation"—she drew down the corners of her mouth solemnly—"and when the hand was over there was hardly enough left of you to make a respectable ragout." She rubbed her hands gleefully at the recollection. "Fickle! You are as bad as the people who call things immoral just because they are too stupid to understand them. Honestly, now, didn't I run that little car of mine fairly well?"

"Yes; but everything is always in the past tense with you," Winthrop complained. "Don't you see?"

"That's only to make room for the better present, silly! Now, that's not fickleness; that's plain, pure philosophy. Two bodies can't occupy the same place at the same time. I learned that at school. Perhaps, if I expected to pass through this vale of tears fifteen or twenty times instead of a poor, pitiful, little once, I might try to make one orange last a longer time. But as it is, life is too short."

"Life is short," said Winthrop, oracularly, "and being short— Come, Kit, why not tell me right off what the advice summons meant?"

"When we get to the salad—" Mrs. Brisben stopped short in the middle of the word. Perhaps it was her very contradictoriness that impelled her. Perhaps there was something in Winthrop's face at that moment that aroused all her pity; for, the color rushing to her face, she said, swiftly, "Oh, there's no use of making so much fuss and mystery about it, Ted. I'm thinking of getting married, that's all." The words came out with a clear, sharp finality.

Winthrop got up abruptly, walked over to the mantelpiece, and stood, staring into the empty grate. The blow had fallen at last. For Winthrop, the bottom had dropped out of the universe.

"Well, Ted?" The silence was growing oppressive to Mrs. Brisben.

"When?" asked Winthrop, briefly, wheeling around and facing her.

"Before so very long."

"Who is the man?"

"I'd rather not tell you just yet, Ted. You see, there are several things to be settled yet. And it's not about the man that I want your advice. No one could give me any advice about him now." She drew herself up proudly. "But I want to ask you if you honestly think I would be happy married. You know me better than almost any one else does. I have had my own way for so long. I was so young when Mr. Brisben died!—eight years ago—and I was just twenty and had been married only three months! Why, really, Ted, it's almost as though I had never been married at all. I know I'd hate to have anyone interfere with me; to tell me to do this, and not to do that; to insist upon my getting up and eating breakfast with him, no matter if I was fairly dead to the world with sleep. I have a lot of quips and cranks, I admit—although I am not fickle," she added, severely. "I am putting the case to you fairly—I am very selfish."

At any other time Winthrop would have protested against this violently. Now the blow had reduced him to a state so apathetic that he let it pass unnoticed.

"Very, very selfish," she repeated. She paused a moment. "Now, Ted, honestly, what would you advise me to do?"

"Are you sure that you really care for him?" he asked, huskily.

"Yes, I'm sure that I really care," she half whispered.

Winthrop caught his breath sharply. The mean temptation was strong upon him to agree with her in her self-arraignment, to point out to her (and he felt that what he said would carry weight) that by the very contradictoriness of her nature, she would be eminently happier in her present state. In short, by hook or by crook, to oppose the marriage with all the strength and bitterness there was in him. Then he looked at her—at the face more lovely than ever with its added expression of tenderness; at the eyes, with that star-like radiance which told too well the truth of her half-whispered confession, and his real self conquered.

"If you really care, Kitty—" He hesitated. It is a difficult thing to read one's own death warrant, no matter how Spartan his courage may be. "If you really care—there's only one thing— Oh, Kitty, don't make me say it! You have no right to. Don't you know what it means to me? Don't you know that for years I've been hoping against hope?"' His voice trembled pitifully. "Ever since that day when you told me you wouldn't marry the best man on the face of the earth—"

"But, Ted, I am not going to," she interrupted gently. "You are not the best man on the face of the earth."

"What do you mean, Kitty?" he cried, aloud.

"Don't you know what I mean?" She gave a low, happy, little laugh.

Winthrop stood staring at her, dazed, bewildered.

"I mean"—she went toward him with outstretched arms—"that you are just Ted and that's best enough for me; but, oh, you're slow!"

Then Winthrop understood.

"Dinner is served, Mrs. Brisben," said Marie, softly; but the group at the other end of the room heard never a word of the mundane announcement.

Five minutes later Mrs. Brisben said, "Now, Ted, I want you to call up Amy Nelson for me and tell her the news."

"Who?"

"Amy Nelson. I want her to be the very first person of all to hear it."

"But I thought you didn't like her?"

"Not like her? Why, she once did me the greatest kindness one woman could do another."

"Why don't you tell her yourself, then?"

"Because I want you to. Oh, dear, are we going to celebrate by having a disagreement?" Mrs. Brisben looked ready to cry.

"Well, you see, Kitty, to be perfectly candid, Amy is the girl I had the engagement with for this evening."

"Oh, never mind a little thing like that. I'll trust you to spin a proper yarn."

Winthrop went out into the hall to the telephone. And in a minute, to Mrs. Brisben, listening eagerly in the little drawing room, came the following: "Hello! Is this Miss Nelson? Oh, how are you, Amy? Yes, a little better, thank you; just able to crawl to the telephone. I'm mighty sorry about tonight. I have a little piece of news for you. I should have told you tonight in person but for my sudden attack of appen"—(here Mrs. Brisben almost had a spasm)—"I mean tonsilitis. My engagement to Mrs. Brisben is announced—yes, Kitty Brisben."

In the drawing room Mrs. Brisben was capering about like a skirt dancer gone mad. "Butchered to make a Roman holiday!" she chortled. "Tied to my very chariot wheels! Cat!"

"Thank you very much," the voice at the telephone went on. "I'm sure we shall be. That's very kind of you. Good-by." Winthrop hung up the receiver with just the least suspicion of a bang.

"What did she say?" asked Mrs. Brisben, dimply adorably.

"Hoped I'd be happy."

"With that doubtful rising inflection?"

"Precisely."

"Lovely!" chuckled Mrs. Brisben.

"Wasn't really over-cordial. But don't let's waste time talking about her, when there's some one else I've wanted a thousand years to talk about."

"Oh, but we must, just for a minute—it's too good to keep. I've got to 'fess. Amy was here this afternoon and sat and raved and blew and bragged about you, until I all but passed away. Her engagement with you for this evening was the final straw."

"Then you knew?"

"Of course I knew."

Winthrop threw back his head and laughed.

"And she had no more than left the house than I made up my mind that—well, that I simply couldn't be—be bored by the ravings of any more women."

"A case of self-defense." Winthrop folded her in his arms as he spoke.

"Pure self-defense," she smiled up at him happily. "And—and then I invited you to dinner——"

"And I came——"

"If you hadn't——" Mrs. Brisbane's eyes flashed.

"But I did."

"And I, finding the coast apparently clear, did the rest. You never helped me a bit! I'm just another monument to the theory of Pursuer and Pursued! But; never mind. I'm so—so fickle, that I could almost hug—Amy Nelson!"

Then, for the third time, Marie, driven unwillingly to it (for she had a lover of her own and could sympathize) by an irate cook, announced dinner.

"Come, Ted, we'll soon be at the salad course!"—Household Journal.

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Millions of Dollars Due California for Government Irrigation.

Written for the PACIFIC RURAL PRESS
By A. R. KANAGA.

Though our reclamation law was passed eight years ago, and our Government is wisely spending $119,555,000 in reclaiming arid lands by means of irrigation, yet our State, which has more arid and semi-arid land than any State in the Union, has, up to the present time, received practically nothing from this national fund. Let us see how the other States have fared:

Arizona has received	$ 13,640,000
Colorado	9,865,000
Idaho	19,719,000
Nebraska-Wyoming	19,280,000
Montana	15,695,000
Nevada	6,380,000
New Mexico	10,250,000
North Dakota	880,000
Oregon	6,060,000
South Dakota	3,000,000
Utah	2,063,000
Washington	11,558,000
Wyoming	6,750,000

California's sum total in one project up to this hour is only $620,000, and the combined so-called Oregon-California and Arizona-California projects will complete every ditch on the California side for less than $250,000, and the latter sum will not be spent for years in my estimation—making less than one million for California.

New Mexico has one single enterprise that will cost $9,000,000, known as the Elephant Butte, or New Mexico-Texas project.

We have more semi-arid land than Montana, and I have been over that State from end to end, and yet they are in the front with $15,695,000 and our needs are the equal of that State, and we have the semi-arid land and the water just as they have, but those Montana men went after those millions while our people reposed in a somnolent sleep.

The land commissioners of Idaho in their last report say that 49 private irrigation companies are operating in that commonwealth. If that is true, a very large part of their land is taken up, and California has five times as much available land for irrigation as Idaho, and yet the latter gets $19,719,000 to our $620,000.

I have attended the last twelve sessions of our National Irrigation Congress, and when I contrasted the large attendance and vital interest of other States with the apathy of California, as shown in her half dozen delegates, I was discouraged beyond words to express it. Other States have been in this reclamation sack with both hands and feet in their wild scramble for money. You must remember that this money comes from the sale of public land, and our State has brought in fifteen times as much in this way as Arizona and some other States, and we have seven times as much arid land here as they have in the last-named territory, yet they have secured $13,640,000 and our State $620,000. You ask, What are we going to do about it? I answer, Get to work. Lay these facts before your Senator or your Congressman and send some delegates from your county to Chicago, and attend our next National Irrigation Congress and show your interest in vigorous and agressive action that one or two of the next projects taken up shall be in this State. Our State has today more than 1,500,000 acres of semi-arid land needing water. Yet this fund is being diverted to all other States but ours. We have only one man in our National Irrigation Congress on the firing line. I refer to Col. John Fairweather of Reedley, Fresno county. He has attended every session for the last fourteen years. How did it come that we actually got the little sum of $620,000 for the Orland project? Well, we owe that enterprise to the work of one man, Frank Freeman, a lawyer up at Willows. He worked in season and out of season for three years. Then he packed his grip and went to Washington, and through the labors of Congressman McKinlay secured the above sum. Another worker is F. G. Vivian, owner of the King City "Rustler." He has worked like a beaver for five years past to get Uncle Sam to irrigate the Salinas valley, and he will yet have success, for such labors never go unrewarded. You ask, Who is to blame? I will answer by saying, We cannot blame the Reclamation Service, for these men, from Fred Newell down, are a grand body of men, and simply go ahead and do what they are commanded to do.

No blame can be attached to our Senators or Congressmen. They did their work. They got the reclamation law passed, and it was then, and is now, up to the people to make their demand for Government aid. Now, I have seen nearly every irrigation project of any size west of the Mississippi river, both Government and private, during ten years past, and between 1899 and 1907 I owned the widest circulated irrigation journal in the world, and my duties made it imperative that I keep well informed on the subjcet, and what I say is based on a physical examination of the projects in the West. Now, as for the Oregon-California—or better known as the Klamath project: They have in Oregon 300,000 acres, and about 10,000 acres in California, and nothing will be done to reclaim our land across the line for years to come. This $4,860,000 spent by the Government was, and is, for Oregon and not for us.

Take the so-called Arizona-California project at Yuma. Five million dollars is being spent there, and it irrigates 110,000 acres in Arizon and only a small tract over in California, for only a small part is carried over on the California side, where most of the lands are included in the Indian Reservation, and not $100,000 will ever be spent on the lands on our side of the line. These last two projects have been paraded before our people as California enterprises, or joint ones, with States named, and I protest against their being held up as California projects in any respect. They are Oregon and Arizona enterprises pure and simple.

Our Government has now before it projects in course of building that are to cost when completed $119,555,000, and it is estimated that $50,000,000 will be spent by the Reclamation Service in the next five years, and unless we do something we will not get a dollar of it.

Now let us get something done for California, and do it right away. Let us commence on the Salinas valley, for here is the largest tract of semi-arid land in one body in our State. They have 400,000 acres of land between Salinas and Bradley. This land has today a nominal value of about $25 per acre, and with irrigation it will be worth six to ten times that sum. They have water, and the project is feasible, and the land is available.

I am not boosting Monterey county, for not a man down there knows that I am writing this letter—one that I am sending out all over the State to the press to see if we can't get the people awakened—and I am doing this at my own expense, for no one is contributing a dollar to this work.

What has probably misled the people was the belief that the so-called Oregon-California and Arizona-California enterprises were joint California projects and that as much money was spent for our own State as for the States of Oregon and Arizona; but in fact we got practically nothing from either, and I protest against these projects being paraded before the people as California enterprises, for they are not. I have been all over southern California, and they have a half million acres down there too costly for private enterprise, but capable of irrigation by means of storage reservoirs which our Government can build. Two big projects are now due us, and the people down there should have one of them, for they deserve it, and will get one of them if they go after it.

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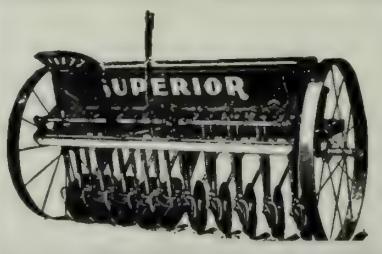
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AGRICULTURAL REVIEW.

(*Continued From Page 371.*)

from 10 acres of land this year. The land was dry farmed.

D. N. Morgan, formerly professor of agriculture at the Stockton and Imperial county high schools, has taken up ranching in Imperial county.

The owners of the Barron tract near Yuba City are having drainage ditches built to take off the river overflow water next spring so that the land will be ready for use earlier than it otherwise would be.

J. G. Buxton of Redondo Beach has produced 64 heads of wheat from one root as a result of experiments recently completed.

J. P. Cackler of Visalia has completed the harvesting of 25,000 sacks of Egyptian corn on the Huron sink. The total output from the sink, he states, will be about 125,000 sacks.

About 100 cars of sweet potatoes will be shipped from Livingston, Merced county, this year. Alfalfa planting will be done on about 1000 acres near there this fall.

J. M. Waltz of Wheatland has harvested his second crop of sweet corn from a field on his ranch.

The Sacramento Valley Sugar Company will complete its fall work early this month. The Alameda Sugar Company will be harvesting beets until several weeks later.

Recent sales of hops in Mendocino and Sonoma counties have ranged from 32½ to 40¾ cents.

Miscellaneous.

Charles S. Barrett, national president of the Farmers' Educational & Co-operative Union of America, is to arrive in this State soon, and on November 17 will be given a reception by the unions of Santa Clara county. He will also visit the other local unions of the State.

A meeting of members of the Fresno County Farmers' Union was held last week to consider plans for the enlargement of the plants of the concern.

A permanent poultry raisers' association is being formed at Oroville of Butte county fanciers.

Cotton growers of Imperial county are to meet in El Centro Saturday, November 4, to organize for the purpose of obtaining the best possible prices for their cotton.

The Imperial Farmers' Commercial Association, a co-operative marketing concern of Imperial county ranchers, took out papers of incorporation last week.

An experimental station for sugar-beet growing is to be started near Klamath Falls, Oregon, next season. A factory is also to be started at Merrill, 18 miles south of Klamath Falls.

Great success with straw roads on the light sandy soil near Angiola, Tulare county, has been achieved.

The Placer County Farmers' Union has been incorporated with a capitalization of $10,000.

A number of ranchers of the West Side, near Crows Landing, have contracted with C. H. Hatfield, the "rainmaker," for the seventh consecutive time to be furnished with 10 inches of rain during the coming season.

Two recent large sales in Stanislaus county were the 1680-acre Avena tract to F. M. Temple of San Jose, and the other a 960-acre tract near Collegeville to L. Sola of Linden.

J. C. Hillhouse has purchased 2500 acres of the Englebretzen place in Tehama county for use as a stock ranch and fruit growing.

A recent report on the Klamath reclamation project showed that the work was 67 per cent completed.

The Toombs ranch of 1000 acres of bottom land near Yuba City has been purchased by D. E. Jacques for private development.

The Arizona thistle, a serious weed in hot semi-arid districts, has been found near Porterville, and Horticultural Commissioner Schulz is taking steps to eradicate it.

It is stated that the W. S. Hall citrus packing house at Glendora has been leased and will be operated by W. T. Henderson & Son this season. This firm now controls sixteen packing houses in California and will prepare fruit for the Los Angeles auction market.

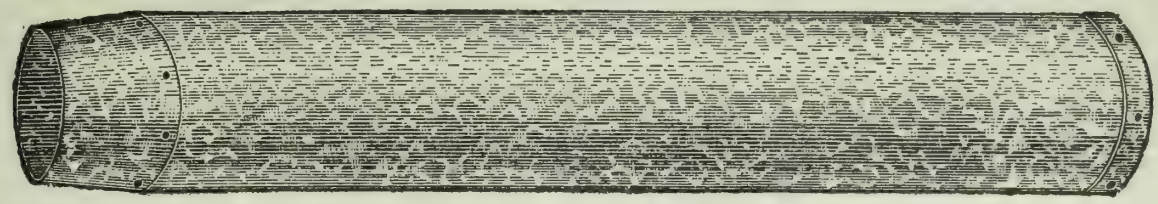
The Crocker-Huffman Land & Water Company of Merced has received ten registered Hereford bulls and ten Shorthorns from the East. The animals they replace, which are also thoroughbreds, have been sold to the Robinson Brothers Company of the same county.

THE PACIFIC LANDS AND PRODUCTS EXPOSITION.

Written for the PACIFIC RURAL PRESS
By HENRY W. KRUCKEBERG.

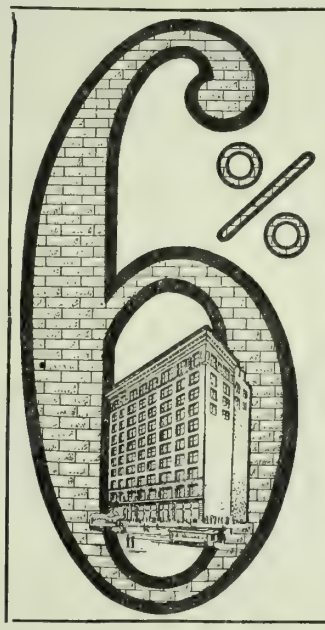
So pronounced was the success of this exposition in the city of Los Angeles a year ago, that its promoters and sponsors propose holding a second one next March, but on a much larger and more comprehensive scale, combining with it many of the features of the old-time citrus fairs and horticultural displays. In fact, it is designed to individualize on broad lines California's rural economy in all its diversified phases. Special effort is to be made to have it complete and comprehensive. Inducements are to be made to secure a large attendance—the scale on which it is being planned indicates that it will be in the neighborhood of 300,000. Details will appear later in these columns.

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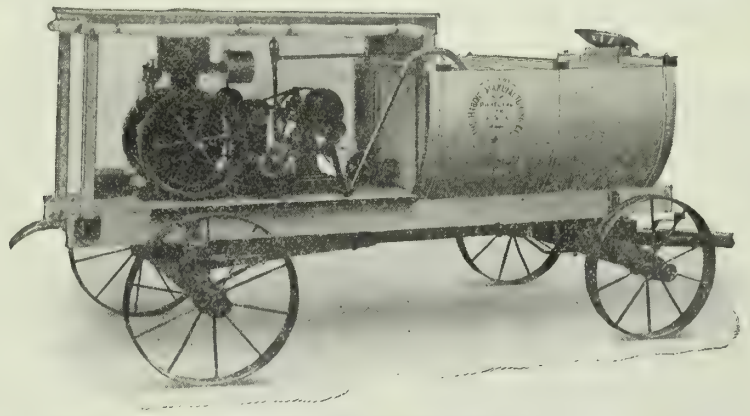
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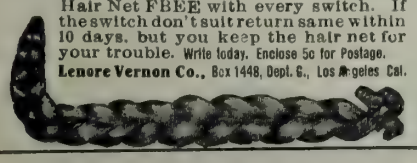
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THE MARKETS.

San Francisco, Nov. 1, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The local market remains quiet and steady at the former quotations. All grades are rather scarce locally, though there is considerable grain coming down from the North.

California Club	$1.50	@1.55
Sonora	Nominal	
White Australian	1.65	@1.70
Northern Club	1.50	@1.55
Northern Bluestem	1.70	@1.75
Northern Red	1.65	@1.70

BARLEY.

All grades have again advanced, but the upward movement seems to be about at an end, as buying is limited at present prices, and futures are a little easier. The supply is extremely light for this time of year, but buyers are reluctant to enter the market.

Brewing and Shipping	$1.90	@1.95
Choice Feed, per ctl	1.80	@1.90
Common Feed	1.80	@1.85

OATS.

The steady advance in barley has caused quite a heavy demand for this grain, and supplies are rapidly diminishing. The tendency of prices is still upward, some of the more desirable lines being higher, though ordinary stock is unchanged.

Red Feed		$1.85
Gray	1.75	@1.80
White	1.75	@1.80
Black	1.75	@2.00
Red Seed	1.95	@2.10

CORN.

Local corn is considerably higher, as there is a fair demand, with practically no desirable grain on the market. The Eastern grades have also been advanced again, supplies here being light.

Cal. Small Yellow	$1.85	@1.95
Eastern Yellow		1.85
Eastern White		1.90

RYE.

Some good lots of rye are now coming in, and are held considerably higher than what has been offered for some time past. Some sales are being made at the quotations given, but the demand is limited.

Rye, per ctl.....$1.75 @1.85

BEANS.

Arrivals have been quite heavy for the last week, and shipments are going forward in good shape, with a fairly active demand all over the country. Prices in general are pretty well maintained, and the market is in better shape than for some time past. Pinks, which are quite plentiful this season, are somewhat lower, but most other lines are steady as last quoted. The only lines to show any marked firmness are whites, which have been advancing for some time, and are again quoted higher. The market for lima beans is in fairly good condition, with a decidedly good demand considering the prices asked. The Association, which is said to control about half the crop, has been out of the market for some time, but new figures are expected from this quarter within a day or so. There are said to be several pools outside the Association, and with little stock in the hands of individual growers, prices are likely to be pretty strongly held throughout the season.

Bayos, per ctl	$3.75	@3.85
Blackeyes	3.75	@4.00
Cranberry Beans	4.00	@4.15
Garvanzos	3.00	@3.50
Horse Beans	2.75	@3.25
Small Whites	4.00	@4.10
Large Whites	3.95	@4.05
Limas	5.20	@5.25
Pea		4.25
Pink	3.40	@3.50
Red Kidneys	4.60	@5.00

SEEDS.

The movement of most lines is increasing to some extent, but so far the demand has been rather light for this time of year. All prices stand as before.

Alfalfa	17	@18½c
Broomcorn Seed, per ton		$28.00
Brown Mustard, per lb		5½c
Canary		4½c
Hemp		4½c
Millet	3	@ 3½c
Timothy	Nominal	
Yellow Mustard		5¾c

FLOUR.

There is little new in the market, the movement continuing active at the former range of values.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.80	@5.00

Hay and Feedstuffs.

HAY.

Arrivals for the past week have shown a material increase, due to heavy shipments of alfalfa from the river districts. Very little grain hay is coming in, though it is in strong demand. Some is being sold all the time at good prices. Inferior grades are in ample supply for present needs, and trading is rather quiet, although dealers look for more demand and better prices later on. The condition and outlook will be more definitely known within a few days, as the San Francisco Hay Association has its report of stocks on hand about ready.

Choice Wheat	$18.00@20.00
Good Wheat Hay	13.00@17.50
Other Grade Wheat	10.00@12.50
Wheat and Oats	10.00@17.00
Tame Oats	10.00@16.50
Wild Oats	8.00@13.00
Alfalfa	8.00@11.50
Stock Hay	6.00@ 7.50
Straw, per bale	35@ 70c

FEEDSTUFFS.

The upward movement on the leading descriptions continues, owing largely to the scarcity of feed barley, which causes a greater demand for other descriptions. Bran and shorts are lower in the northern market, with large accumulations at the mills, but this decline has not affected the local market, bran being higher than before.

Alfalfa Meal, per ton	$18.00@19.00
Bran, per ton	29.00@30.00
Oil-cake Meal	43.00@45.00
Cocoanut Cake or Meal	25.50@26.50
Cracked Corn	39.00@40.00
Middlings	34.00@36.00
Rolled Barley	39.00@40.00
Rolled Oats	38.00@39.00
Shorts	32.00@33.00

Garden Truck.

VEGETABLES.

Onions have again advanced, as there has been a good demand for shipment, and the bulk of the stock remaining on hand is rapidly passing into the control of local firms. A few lines of summer vegetables are higher, as supplies have been decreasing rapidly, but the arrivals for several days have consisted mostly of unattractive stuff, for which there is no great demand, and much of the offerings move even at concessions. Several lines will probably be out of the market in a few weeks more. Tomatoes are still fairly plentiful and find a fair demand at former quotations, while supplies of okra and egg plant are light, and all offerings are firmly held. Lima and string beans, summer squash and cucumbers are mostly of poor quality, and prices on these lines are lower. Cauliflower is coming in freely from nearby gardens, and is considerably lower.

Onions: Yellow, ctl	$ 1.10@	1.15
Garlic, per lb	3@	4c
Tomatoes, per box	25@	50c
Cucumbers, per box	75@	85c
Cabbage		50c
Carrots, per sack		75c
Cauliflower, per doz		50c
String Beans, lb	2@	4c
Lima Beans, lb	3@	5c
Summer Squash, per box	75c@	1.00
Okra, per box	1.25@	1.50
Eggplant, per box	60@	85c
Green Peppers, per box	60c@	1.00

POTATOES.

Dealers in the river districts are putting quantities into storage, and the firmness caused by the speculative demand is increased by sales for shipment. River stock is accordingly considerably higher, and Salinas potatoes have also advanced, though Oregon stock is quiet at former figures. Sweet potatoes are moving well locally at former values.

River Whites	$ 1.00@	1.25
Sweet Potatoes, per ctl	$ 1.65@	1.85
Salinas Burbanks	1.65@	1.75
Oregon Burbanks	1.40@	1.50

Dairy Produce.

POULTRY.

Chicken prices are unchanged. While local stock is in moderate supply, arrivals of Eastern stock are larger than last week. Inferior stock continues to drag, though desirable offerings find a ready market—broilers, small fryers, and large hens being most in demand. A few cases of dressed turkeys have arrived, and the best of them sold well, though many should have been fattened. Prices on live turkeys are lower, but the outlook for good dressed stock is very favorable.

Large Broilers	$ 3.50@	4.50
Small Broilers	3.00@	3.25
Fryers	5.00@	6.00
Hens, extra	8.00@	9.00
Hens, large	5.00@	6.00
Small Hens	4.00@	4.50
Old Roosters	4.00@	4.50
Young Roosters	6.00@	7.00
Young Roosters, full grown	8.00@	9.00
Squabs	2.00@	3.00
Geese, per pair	2.00@	2.50
Ducks	4.00@	7.00
Turkeys, live, per lb	22@	24c
do dressed	27@	30c

BUTTER.

Aside from extras, prices have stood without change for the last week, and the top grade shows little fluctuation. The general range of prices, however, is higher than before, and the market is firm all around, few receivers having anything to spare above their own requirements.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	34½	34½	34	34	34	34
Prime Firsts	31	31	31	31	31	31
Firsts	30	30	30	30	30	30
Seconds	24	24	24	24	24	24
No. 1 Packing stock	22	22	22	22	22	22
East Ladles Extras	22½	22½	22½	22½	22½	22½
Storage Extras	27	27	27	27	27	27

EGGS.

Fresh Eastern stock has been dropped from the list, but the movement of local storage eggs is increasing with the advance of fresh stock, and this grade is quoted higher. Selected pullets have also advanced, and while extras are a little lower than a week ago, the general feeling is firm, arrivals being light.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	52	51½	51½	52	52	52½
Firsts	45	45	45	45	45	45
Seconds	28	28	28	28	28	28
Selected Pullets	40	40	40	42	42	43
Storage Extras	27	27	27	27	27	27

CHEESE.

All lines of local stock are firm, and fancy new flats are higher, with light supplies. Monterey cheese is also scarce, and with about the usual local demand prices are much better than for some time past.

Fancy California Flats, per lb	15½c
Storage	14 c
Firsts	14 c
New Young Americas, fancy	15½c
Monterey or Jack Cheese	15@16c

Deciduous Fruits.

FRESH FRUITS.

Supplies of summer fruits in general are diminishing, but the quality of most offerings is poor, and prices accordingly tend downward. Watermelons are still in fairly large supply, but are easy, without much demand, while nutmeg melons are lower. Strawberries are also lower. Former arrivals of cranberries are about cleaned up, and a new lot of the red variety is selling at a sharp advance. Apples are quiet. The shipping demand has been disappointing, but the surplus is going into storage and holders show no disposition to shade prices. Peaches are practically out of the market. There are a few late plums, but the prices obtained are not very attractive. Bartlett pears are cleaned up, but Winter Nellis are bringing good returns. Figs are higher, with light arrivals. Isabella grapes are higher, but other lines show little change, supplies being ample and in general of very ordinary quality.

Watermelons, per doz	$ 1.25@	2.00
Nutmegs, per box	50@	85c
Raspberries, chest	5.00@	9.00
Strawberries, chest	3.50@	4.50
Huckleberries, lb.	8@	10c
Cranberries, per bbl	10.00@	11.00
Apples—		
Fancy, box	1.00@	1.35
Choce	60@	75c
Plums, crate	50@	75c
Figs, box	1.00@	1.25
Pears, Winter Nellis, box	1.25@	1.50
Other varieties	60c@	1.25
Quinces, box	75c@	1.00
Grapes—		
Muscat, crate	60@	75c
Isabella	75c@	1.25
Seedless	75@	1.00
Other arieties	40@	65c
Pomegranates, small box	35@	50c

Dried Fruits.

The local packers are still giving most of their attention to the shipment of goods on former orders, and are buying little except to fill in a slight shortage in some lines. The only varieties in which they show much interest are prunes and peaches, the latter having found a little more demand in outside markets of late. Prunes are said to be pretty well cleaned up, and the appearing quotations are offered freely for all desirable stock, as there is a good demand for all that can be had. Apples are quiet and rather easy, as the output of the driers will probably be considerably above the early estimates. The situation in apricots remains about as before, except that at present quotations foreign buyers are taking some interest. Few growers are selling, however, as the light crop of this year is expected to clean up at much better figures than are now offered. Raisins are dull and weak The Eastern trade has about covered its holiday requirements, and is buying on a very small scale at present, and local packers are making little effort to increase their holdings. Growers, however, show no disposition to accept anything below the present quotations, and a good many are still holding out in anticipation of an advance. The New York Journal of Commerce says:

"Buyers in this part of the country and New York jobbers in particular, manifest little interest in offerings of staple commodities in the line of dried fruits from the Coast. Most of them have already protected their holiday trade requirements in seeded raisins by the liberal purchase of carry-over stock a couple of months ago, and are now receiving deliveries on these contracts. The new goods offered at concessionary prices in some quarters do not seem to appeal to them, for the reason that it is now too late to get purchases forward in time to meet holiday trade requirements.

"The market for California prunes is somewhat irregular, prices varying as to seller and assortments, but it is asserted by prominent brokers that a decidedly stronger tone has developed in the larger sizes, and it is questioned whether it would be possible to buy on an f. o. b. four-size Coast bulk basis straight 30s at less than 8c or 40s below 7¼c.

"Apricots are easier on the Coast and f. o. b. prices are said to be reaching a point where exporters are being attracted, but the Eastern trade seems to want none of that fruit at present. Neither is any particular interest manifested in peaches. The market for the latter, however, remains firm, as packers argue that because of the small purchases so far made by the Eastern distributers a good many peaches will be needed in this part of the country sooner or later.

Evap. Apples, 1911, per lb	7½@	8½c
Apricots	12	@12½c
Figs, new crop		4 c
Peaches, new crop	9	@ 9½c
Prunes, 4-size basis	5¾@	6¼c
Pears, new crop	8	@ 9 c
Raisins—		
Loose Muscatels, in sweatbox	3¼@	3¾c
Thompson's Seedless	6	@ 6¼c
Seedless Sultanas	4½@	5 c

Citrus Fruits.

The citrus season for 1911-1912 opened this week, and while no new crop oranges are being sent from the southern end of the State, yet both oranges and lemons in small quantities from last season's crop are being shipped East daily. It is stated that all the lemons held in cold storage during the summer have been shipped and only those now on the trees remain to be sent forward.

Prices at the Eastern auctions for good fruit remain about as before, and at New York, Monday, Oct. 30, averaged from $3.40 to $6.75 for oranges, and from $4.15 to $5.40 per box for lemons.

Shipments of the new crop of oranges from the northern part of the State commenced last week. At this time the prospects for a heavy crop are good in all parts of the State.

Shipments of oranges from Florida have commenced, though the amount being forwarded is only about 10% of that of last year at this time, and some of the fruit is arriving at fruit centers in poor condition.

Several of the early navel orange districts have been shipping fruit to San Francisco in the last few days. So far, however, the arrivals have appeared rather immature, and find only a limited demand, the prices being considerably below those obtained for valencias. Larger arrivals are expected next week, though it

may be some time before there is any great demand locally. Some new grapefruit has also come in and sells somewhat lower than the old crop. Lemons and limes are unchanged.

Oranges—Navels	$ 3.50@ 4.00
Valencias, choice to fancy	$ 4.00@ 4.50
Grapefruit	3.75@ 4.50
Limes	4.50@ 5.00
Lemons	2.00@ 6.00

Nuts, Honey, Hops, Etc.

NUTS.

Almonds are moving off slowly but steadily at about the Association figures, and the holiday demand is beginning to be felt in the jobbing trade. Walnuts are pretty well out of the hands of growers, and are finding a good distributive demand.

Almonds, 1911 crop—	
Nonpareils	18½c
I X L	17¼c
Ne Plus Ultra	16½c
Drakes	14½c
Languedoc	14½c
Hardshells	8 @ 8½c
Walnuts, 1911 crop:	
Softshell, No. 1	14 c
Hardshell, No. 1	13½c
No. 2	11 c
Budded	16½c

HONEY.

The greater part of the crop has by this time been shipped. The local trade is featureless, off grades being neglected, though white and water white are in fair demand.

Comb, white	13 @15 c
Extracted, water white	8 @ 9 c
Amber	7 @ 7½c
Off grades	5 @ 6 c

BEESWAX.

There is no feature to the market, sales being limited and prices unchanged.

The market continues quiet at unchanged quotations.

Light	28 @30 c
Dark	23 @26 c

HOPS.

A further advance in prices is noted, a number of sales having been closed at top quotations, while there has been quite a heavy movement around 40c. A good many growers have turned down offers of long contracts.

1911 crop	35 @41 c

Live Stock.

Quotations show very little change. Cattle and sheep are steady, with supplies about balancing the demand. There is more business in hogs than for some time past, the present large arrivals finding a fairly good market at about the range quoted.

Gross weight:	
Steers: No. 1	5½@ 6 c
No. 2	5 @ 5¼c
Cows and Heifers: No. 1	4½@ 4¾c
No. 2	4 @ 4¼c
Bulls and Stags	2 @ 3 c
Calves: Light	6½@ 6¾c
Medium	6 @ 6¼c
Hogs: Grain-fed, heavy	6⅝c
150 to 250 lbs	6¾c
100 to 150 lbs	6¾c
Small prime wethers	3¾@ 4 c
Large prime wethers	3¾@ 4 c
Ewes	3¼@ 3½c
Lambs	4½@ 5 c

DRESSED MEATS.

Steers	9 @ 9½c
Cows	8 @ 8½c
Heifers	8 @ 8½c
Veal, large	9½@10½c
Mutton: Wethers	8 @ 9 c
Ewes	7½@ 8 c
Lambs	9½@10½c
Hogs, dressed	10 @11 c

WOOL.

So far comparatively little of the fall clip has been disposed of, and values are largely nominal. Buyers have shown little interest in the market for some time, and few growers are willing to accept the prices offered.

Spring Clip—	
Choice Southern, Year's sta-	
Northern, year's staple	14 @16 c
ple	10 @12½c
7 months	8 @11 c
Lambs, spring	8 @10 c
Fall Clip	5 @10 c

HIDES.

Values are pretty firmly held at the quotations which have prevailed for some time past, but the local movement is moderate.

Heavy Steers, over 56 lbs.	11½c
Medium	11 c
Light Steers, under 48 lbs.	10½c
Heavy Cows, over 50 lbs.	10½c
Light Cows, 30 to 50 lbs.	9½c
Kip	11½c
Veal	16 c
Calf	16 c
Dry—	
Dry Hides	17½@18½c
Dry Bulls	15½c
Dry Kip, 10 to 15	18 @18½c
Dry Veal, 5 to 10	19½c
Dry Calf, 7 down	23 @23½c
Sheep Skins—	
Long Wools	$ 0.85@ 1.25
Medium Wool, 6 to 9 mos.	50@ 75c
Short Wool, 3 to 6 mos.	30@ 50c
Lambs	35@ 50c

HORSES.

The amount of buying interest in the local market is steadily increasing, and recent arrivals, which have included both large, heavy stock and lighter wagon and delivery horses, have been readily disposed of to drayage and livery firms. In fact, the demand at the moment appears to exceed the supply of most classes of stock adapted to city use. Prices show an upward tendency, and as values in the outside markets are now pretty close to those in the city, a general advance is anticipated.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	210@250
Chunks, 1350 to 1500 lbs	175@225
Wagon Horses, 1250 to 1350 lbs.	120@175
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	110@125
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

Deciduous Fruit Shipments.

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, October 27, as reported by the California Fruit Distributors:

Pears—7 cars. Movement of this fruit is nearly concluded, but there will be a few cars yet to go. So few, however, that they will cut little or no figure in the season's total.

Grapes—562 cars. Tokays are nearing their finish. Should it not rain, there will be considerable shipments of them to go forward during the next week, after which time there will be very few left. Cornichons are making their appearance in increasing quantities, and the shipment of Emperors is well under way. These two varieties will constitute the bulk of the movement during the remainder of the season, which will probably last for another thirty days, if weather permits.

Total shipments to Oct. 31, 11,580 cars; total shipments to same date 1910, 11,552 cars.

Comparative statement of shipments to October 21, 1911:

	1910.	1911.
Cherries	250½	216
Apricots	289¾	214
Peaches	2,517¼	2,027
Plums	1,552½	1,366
Pears	2,356	2,294
Grapes	4,210½	4,782
Sundry	16	14
Total	11,193	10,915

PUBLISHER'S DEPARTMENT.

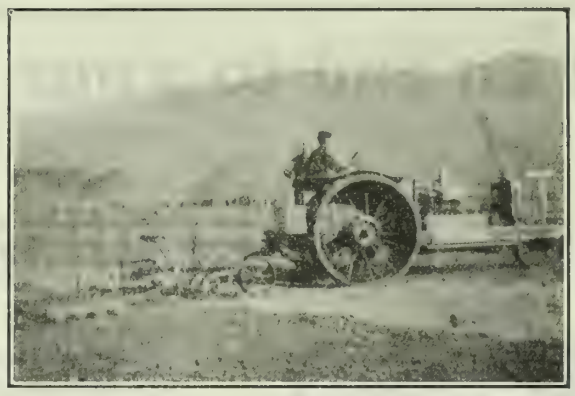
Attention is called to the full-page advertisement in this issue of the Killefer Mfg. Co. of Los Angeles. This firm has been doing business for more than a decade and has constantly been increasing its production, which is the best possible evidence of the merit of the goods and good business dealings of the firm.

Have you been reading the announcements of the C. L. Best Tractor Co. in the PACIFIC RURAL PRESS? If you expect to invest in one of these money-making machines, it will pay you to read their advertisements carefully. Have you read our book list, which appears in another column? We handle these farm books more as a matter of accommodation to our readers than for the profit made in their sale. We believe the list embraces one or more books that should be in the home of every farmer.

OF INTEREST TO HORSEMEN.—Do you turn your horses out for the winter? If so, we want to call your attention to a very important matter. Horses which have been used steadily at work, either on the farm or road, have quite likely had some strains whereby lameness or enlargements have been caused. Or perhaps new life is needed to be infused into their legs. Gombault's Caustic Balsam applied as per directions, just as you are turning the horse out, will be of great benefit; and this is the time when it can be used very successfully. One great advantage in using this remedy is that after it is applied it needs no care or attention, but does its work well and at a time when the horse is having a rest. Of course it can be used with equal success while horses are in the stable, but many people in turning their horses out would use Caustic Balsam if they were reminded of it, and this article is given as a reminder.

The Irrigation District Association of California after a convention at Modesto, October 27, called to consider the question of irrigation bonds, appealed to Governor Johnson to have the bonds of irrigation districts placed upon the same basis as municipal bonds as security in banks. The action was taken as a result of the refusal of the State Superintendent of Banks to permit this to be done. The meeting was attended by 600 owners of irrigated land and others interested in the subject.

A test artesian well is being sunk on the Parker Whitney ranch in Placer county. The well is already down more than 1000 feet.



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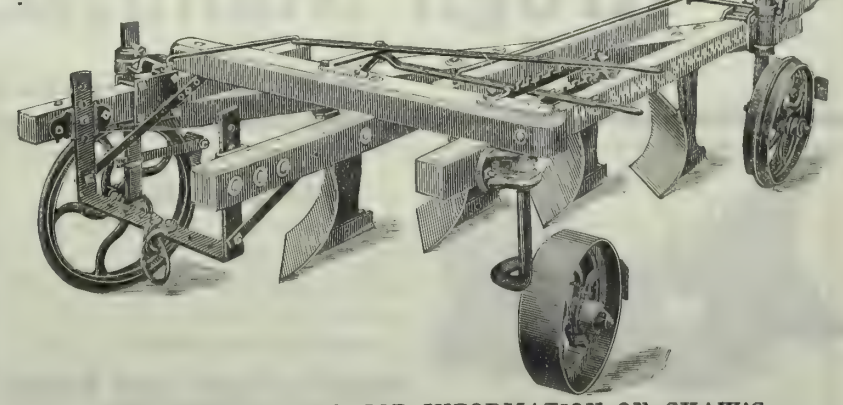
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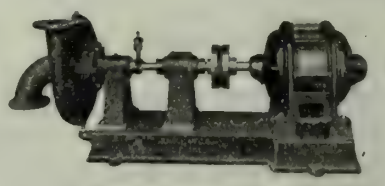
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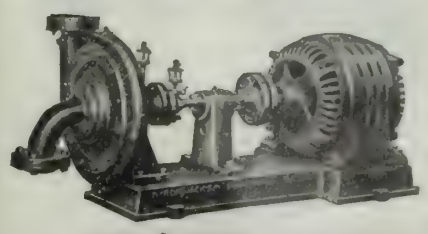
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THE PACIFIC RURAL PRESS

Vol. LXXXII. No. 20. SAN FRANCISCO, SATURDAY, NOVEMBER 11, 1911. Forty-first Year.

Where California Peaches Go.

Written for the PACIFIC RURAL PRESS by D. J. WHITNEY.

Extremely heavy peach planting has been going on in this State during the last few years, and shows little signs of abating greatly yet. It is a question whether all these peaches can be disposed of profitably with the others that will be set out soon, or whether, as appears to be the case with some varieties of table grapes, it is going to be a problem to come out even in putting the fruit on the market. It seems, however, as if there is no immediate danger of overproduction if the grower cares well for his trees.

One of the first economic principles of fruit growing in California is to raise things that cannot be produced profitably in other parts of the country, or for some other reason have to meet no serious competition from elsewhere. Peaches can probably be raised upon more land in this State than any other fruit. They are also grown largely in many places in the East, from Michigan to Georgia and from Maryland to Utah. If it were necessary to compete with these peaches, after paying the freight charges across the continent, extensive peach growing would be almost out of the question here.

The Eastern peach, however, is a different fruit from that of California. The summer rains and more humid climates cause other varieties to be grown, and even the same varieties differ here and there. The Eastern peach is a fine fruit for fresh eating, but it cannot be dried profitably, and for canning purposes it is inferior to our freestones, which in turn are greatly inferior to our clings. The Eastern peaches will also not keep or ship across the Atlantic like those grown here.

The competition with fresh fruit has not made the shipment of peaches unprofitable, although making a great difference in price in various years, as can be seen by the prices obtained this year for peaches, owing to the almost total failure of the Georgia and other Eastern crops. The number of carloads of peaches sent East has been during the past few years as follows: 1907, 699 cars; 1908, 1980; 1909, 2599; 1910, 2518, and 1911, 2027, exceeding, as a rule, all other deciduous fruits except grapes and apples, although pears run a close second.

The price per ton of peaches for fresh shipping runs from $15 to $40. A good large crop should be from seven to ten tons.

The large amount of peaches grown for shipment to the East does not at all mean that fresh shipment is the most important way of disposing of the crop, as the canning and drying industries are extremely important also. For instance, with a small crop for this purpose this year, the dried peach output will amount to 12,000 tons or so, which would make about 60,000 tons fresh, or over twice the amount shipped out of the State. With a full crop of the amount that could be produced on bearing trees, 30,000 tons could easily be dried. The amount only last year was nearly 25,000 tons, and the year before, 12,000 tons. A few years ago 20,000 tons would be a full crop.



Typical Aspect of an Acceptable California Cling Peach.

The prices for dried peaches in October in recent years was, in 1907, 10 to 13 cents, the output being only 11,250 tons; in 1908, 4½ to 5 cents; in 1909, 4½ to 4¾ cents; 1910, 5½ to 6½ cents, and this year, 9 to 10 cents. The lowest price during all this time was 2½ to 3½ cents in January and February, 1909, which is about the danger line of profitable production. The usual price of dried peaches from 1908 to 1910 was about 4 and 5 cents. The higher prices ruled only when the crop was short, like in 1907, or this year.

Since the packers paid 9 and 10 cents this year, when there was no

(*Continued on Page 390.*)

Pacific Rural Press

Issued Every Week at 420 Market Street, San Francisco.

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FRANK HONEYWELL - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Nov. 7, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.04	2.09	4.80	64	44
Red Bluff	00	1.47	2.95	84	50
Sacramento	00	.18	1.72	76	46
San Francisco	00	.28	1.91	76	50
San Jose	00	.80	1.48	78	40
Fresno	00	.10	1.08	78	40
Independence	00	.70	1.04	72	34
San Luis Obispo	00	.14	2.03	82	42
Los Angeles	00	1.39	.97	84	52
San Diego	00	.50	.66	70	52

The Week.

The weather continues delightful from all points of view but the agricultural. About all the use the agriculturist can make of it is to sell land, and fortunately that keeps him out of other mischief. There is penty of chance in this line, too, for our correspondence indicates that there were never so many going about seeking what they can purchase; surely the "home-seekers'" cut rates have brought in many buyers. They are buying into a forehanded State, for Controller Nye's figures showing the value of property in and indebtedness of each county of the State for the year 1911 place the total value of all property in the State at $2,599,916,690. The funded debt of all counties is placed at $27,059,655; the floating debt with estimated interest, $1,276,186 and the total county indebtedness is placed at $28,335,841. Therefore it appears that California is worth ten times as much as she owes—which will do to rejoice over until the clouds come and give us something to get richer with. It is also interesting to note that overland deciduous fruit shipments have gone beyond last year's, in spite of the halting beginning of the season's trade, and that the total will probably be above 12,000 carloads, for the fine weather favors the pushing forward of a lot more grapes. And citrus fruits are much more to the fore, there being a grand total of 46,394 carloads to November 1, against 33,099 last year. In view of such demonstrations of where the State's wealth comes from it is rather humiliating to think that legal things are so mixed up that irrigation bonds, which make for the extension of producing power, are not acceptable as security for State funds. It puts California in the position of refusing to trust herself, while capitalists everywhere are seeking California lands for investment and for improvement. Fortunately the special session of the legislature, which will begin this month, will have a chance to brush the cobwebs off the statutes and make the State self-respecting.

Distribution of California Fruit.

A pretty long memory is sometimes a very enjoyable thing. We can remember the time when a man prominent in the Eastern fruit shipping trade solemnly assured a meeting of growers that, in his opinion, New York city would never take any more California fruits than could be reshipped in small lots from Chicago; where, by the way, he had a fruit shop. We are reminded of the fact by reading a descriptive article in Harper's Weekly on the way California fruits are handled in New York. Among other things it says: "During July, August and September from 60 to 75 cars, each averaging 750 or more boxes of fruit, are sold daily. The work is so strenuous that often five or six auctioneers, working at different times, are necessary to complete the task. Fruit that is purchased early in the sale is often in the hands of the consumer before the sale is concluded." That is surely going some in the fruit line. California does vastly more business with New York than with Chicago. It is notable how short sighted some people were twenty-five years ago. In fact, it is less than a decade ago when other people proclaimed overdoing in fruit planting. How unwise they were is shown by this year's prices and the rush which planters are making for nursery stock. If you want trees don't be all winter getting your orders in.

What of Wheat?

The California wheat crop year before last was really only worth about one-seventh as much as good wheat years brought forty years ago; instead of filling the sea with wheat ships as our fathers did, we are buying bread from other States, and besides the reduced acreage we are getting less wheat per acre. Really, wheat is in a sad state, and we are unable to say a word when a South American calls out at the national capital: "Argentina already has become a serious competitor of the United States in the production of wheat, and sooner or later will leave this country in second place. The United States cannot compete with us, and Argentine wheat now finds its way into all the important European markets. Those who have studied the subject of grain raising in the Western Hemisphere will admit that eventually Canada will outstrip both the United States and Argentina in wheat production." Thus the South American throws both his country and ours into the pit together, which is certainly a self-denying thing for him to do, and we might perhaps do worse than to nestle down quietly beside. But then that Canada; ah well, what of that? We find it in our heart to worship Canada in spite of the bat she gave us between the eyes at our last advances. But listen: what is Canada to be? English? How can you tell? During the last ten years Canada has received nearly 2,000,000 immigrants, of whom approximately 750,000 were from the United Kingdom and 700,000 from the United States. Up to the close of the fiscal year just ended, March 30, 1911, the total was 1,714,326 for the decade. Since then nearly 200,000 more have arrived, divided about equally between American and British immigrants. All right, Britannia; we race you for Canada, and we have hundreds of miles to go while you are going thousands. Then what country will lead the world in wheat? Answer in ten years.

But the English are stayers all right when it comes to wheat. We have just read that the oldest wheat stack in the world may be seen in a farmyard at Aisby, South Lincolnshire. It was harvested 32 years ago, and the owner made a vow that he would not sell the grain until he got a certain price which he has never been able to obtain. Outside the stack is black with age, but inside the straw and heads of the grain are as bright as any wheat. A test recently made shows the grain to be in fine condition and good for an indefinite period.

Barley Is Better.

In cereals we are buying food for ourselves and growing food for our stock—which is an old practice of California farmers; they never have done much thinking about growing stuff on their own land for their own kitchens, and just now they are largely pulling home supplies over the telephone wires just like city people do. It is poor farming policy, and it costs a lot more money, but we are not preaching from that text today. But besides the barley which we grow for our stock we are selling much for good money this year, and are likely to do it next year, too. Crop figures show that our barley is coming near to being worth three times as much as our wheat crop, will be largely surpassed next year, if we get any decent amount of rain, for 2-cent barley beats a gold mine. Do not be misled into the notion that we are growing less barley because less barley is going by water. During the first four months of the current harvest season the total shipments by sea from San Francisco were 1,561,131 ctls., against 2,141,672 for the corresponding time in 1910 and 1,007,013 ctls. in 1909. The explanation of this is that since the reciprocity reverse in Canada, barley has been going by rail to the great brewing centers in the Mississippi valley. This is rather expensive, but California barley seems to be good enough to stand it and leave a lot of money for the growers, as this autumn's figures show. But keep on growing barley and wait for the Panama canal. This water route will keep us in the game no matter how much good barley they grow in the northern end of the mid-continent region. We shall have a stream of barley from the San Francisco and San Diego harbors, for the Imperial valley will strike the sea at the latter point, which will go up the Missippi river in flotillas and give St. Louis another bump on Milwaukee. How we are getting into the world nowadays!

Stockmen's Co-operation.

Would it not be interesting if the less intensive agriculture should lead the rest in the very intensive effort to promote the producer's interest in the sale of his products. The recognized principle is getting together and it has always been supposed that men on foot could get closer together than men on horseback: in other words that small producers on limited acreages could most easily get back to back in the fight against aggression of crop-eaters. But it is moving very slowly in that way, and perhaps mounted men can arrive sooner after all. It looks as though the cavalry might carry the field with a dash while the infantry is trying to get into line. If you doubt it, read this: "Plans for the organization of the Texas Cattle Raisers' Sales Directing Agency, with a capital of $3,000,000, were approved at the meeting of the executive committee of the Cattle Raisers' Association of Texas. The purpose of this agency is to assist the producer in securing better prices for his cattle, sheep, hogs and calves and to instruct him regarding the better markets of the Nation. Money will be loaned by this agency also on chattel mortgages with live stock as security. One of the chief purposes of this agency is to teach the cattlemen the lesson of co-operation. It is not done to hurt the commission firms, but on the other hand will benefit them. The buyers are well organized: why should not the producers stand by each other in regulating the selling price of their live stock? We must market our stock with methodical procedure instead of closing out eyes and selling blindly. Men will be placed at the head of the agency who are skilled in business practices and who know the live stock industry from beginning to end. We will have but a few men, but you may rest assured that they will be capable."

This is surely the whole philosophy and methods of effective co-operation in a nutshell. It involves all that has been prayed for and dreamed about and which so many specialty producers have tried to attain but have fallen short. Will the Texas cattlemen accomplish what the California cattlemen have resolved upon and stopped there? Wait and see.

Supremacy of American Women.

We have written thus far from a sense of duty: we turn now to the joy of it. It is to take heart that the ballot will have to go a long way before it can obscure the attractiveness of women from a masculine point of view, simply because our women are so queenly in their feminine quality. Personally we do not believe that the ballot will ever do it, but some there are who fear that voting will make women less womanly. Take courage then, timid ones, from the public declaration of Dr. Wilhelm Bode, curator of the Kaiser Frederich Museum in Berlin and a personal friend of Emperor William, who is visiting the United States for the first time in eighteen years and making comparisons. "American women," said Dr. Bode, "dress better and are more attractive than the women of Paris. Your women, in the struggle for style and richness of apparel have not forgotten natural grace and refinement. The women of Paris go to extremes in dress and instead of achieving beauty the result is hideous. Here you keep more to moderation, the 'golden mean' that must be a component part of all true beauty." Of course Dr. Bode was apparently very shallow to talk of women's dress rather than of women's minds, and the question may arise, what right has a man who is a curator of mummies to give an opinion, with the air of an expert, about such an everlastingly modern affair as a woman, voting or otherwise. But we are not disposed to carp; we admire Dr. Bode because of his admiration of the American women and his reference to the feminine shadow is but a coy expression of his tribute to the substance.

Queries and Replies.

Too Little Rather Than Too Much Water.

To the Editor: I am the owner of a prune orchard, now about eighteen years old, situated on the bottom lands of Russian river near Hopland. I acquired this a short time ago. Looking through the orchard last week, I found a number of the trees had died. A well bored in the orchard strikes water at about fifteen feet. I find no apparent reason for the death of these trees unless it is that the tap roots reach this body of water and are injuriously affected thereby. Do you think that is the cause of the death of the trees, or should I look for some other reason therefor? Also, would it be advisable to plant another prune tree in place of the dead ones? Some of my neighbors contend that it is all right to do so, and others hold the contrary. If reaching the body of water underlying the land is the cause of the destruction of the trees and has taken the present trees eighteen years to reach this, this then would be the limit upon the productiveness of the orchard. If it is not advisable to plant a prune tree in place of the dead ones, what other tree would you suggest? Would it be advisable to plant a Bartlett pear?—Orchardist, Santa Rosa.

We do not believe that water at fifteen feet depth could possibly kill a prune tree. It is more likely that owing to spotted condition of the soil, gravel should occur in different places, and with gravel three or four feet below the surface a tree might actually die although there was plenty of water at a depth of fifteen feet. In other words, there is more danger that the trees died from lack of water than from an oversupply of it, and it is quite likely also that you could pump and irrigate to advantage large trees which did not seem to be up to the standard of the whole place, as manifested by lack of bearing, smallness of leaves, which would be apt to turn yellow early in the season. There is objection to replanting prune trees in places of those which have failed, if good large holes are made, all roots removed so far as practicable, some fresh soil brought in to put around the roots of the new trees, and the surface application of stable manure after planting in order that the contents might be leached into the soil by the rains and give the tree something good to grow upon. Usually, replanting of new trees in old orchards is difficult in practice because of the foraging disposition of the older roots. By a little extra care in fertilizing and irrigation, the youngster can usually be brought to shape to fight for its own living afterward.

The pear will often accept a position which other fruit trees have declined, especially where there may have been shallow soil over hardpan and accumulation of water during the rainy season, but scattered pear trees would not be desirable in an orchard of other fruits except as it may be a last resort to make something grow. We are quite sure that parts, at least, of your land need irrigation, even though other parts may get along without it in your district of heavy rainfall.

Possibly Too Much Water.

To the Editor: I have some fruit trees in my back yard. I do not understand much how to trim them and at what time of the year. My trees are four years old and are as follows: Crawford peach, black fig, loquat, Red June apple, a large-sized apricot, red and blue plums. Last year they had plenty of blossoms, but all I got on them was one apricot. I always watered them twice a week in summer. When I trimmed them last they had just started to bud. I cut about two feet off of the new branches, but did not know if I was doing right, and as I did not get any fruit I must have done wrong. Do you think so?—Amateur, Los Angeles.

You are probably watering your trees more than necessary, probably stimulating their growth too much, and this, while a tree is young, is apt to postpone its fruit bearing. Cutting back as you proposed ought not to have interfered with the bearing of the tree, except that reducing the wood during the dormant season is another stimulant to excessive wood growth and may have had some effect also in delaying the bearing; but when trees are overstimulated by excessive irrigation it is necessary to cut back in order to secure strength in the branches. We would advise that you give the soil a good soaking about once a month, unless you are situated in a sandy or gravelly soil, in which more frequent applications may be necessary.

Speltz and Sugar Beets.

To the Editor: I have heard of a Russian grain called "Speltz" or "Emmer". Do you think I could raise it successfully here, and, if so, what is the very best time of year to sow same for the best crop obtainable? Can it be sown in the fall, say November? Would springtime be a better time to sow it on soil that is very soft in winter? I am also looking into the question of sugar beets for some of my land. Are they suited to this soil and is there any factory in this vicinity? Is there any simple process of making sugar from beets so that I could make my own sugar at home from my own beets while sugar is so very expensive to buy?—W. H. H., Fulton.

If your land yields good crops of wheat or barley or oats, you have litte to expect from spetz or emmer. This is a grain generally considered inferior to those just mentioned and advocated for conditions under which the better-known grains do not do well. It is hardy against drought and frost, particularly the latter, and is therefore chiefly grown in the extreme north of Europe. The best way to convince yourself as to whether it is of any use to you is to try a little. The result of that experience would be far more useful to you than any theoretical opinion which might be given.

There is no sugar factory nearer to you than the Sacramento valley. Probably the nearest will be the new factory which is now proposed for Yolo county—the Alvarado factory being dismantled and moved to that point because of the possibility of getting larger satisfactory acreage of beets. There is no simple way of making beet sugar. It can only be economically done in factories costing hundreds of thousands of dollars.

Scattering Grass Seeds.

To the Editor: We live on the west side of Sonoma valley, and want to seed some of our fields with a good wild grass. We want to carry bags of it in our pockets to scatter when we ride. Timothy grass we should like, but this is not its habitat, is it? Can you suggest a grass or grasses that would do well here?—Reader, Glen Ellen.

There are really wild grasses worthy of multiplication, but no one known to us makes a business of collecting the seed for sale, so that such seeds are not available for such purpose as you describe. Of the introduced grasses, those which are most likely to catch from early scattered seed are Australian and Italian rye grasses, orchard grass, wild oat grass and red top. You can get seed of all these from dealers in any quantity which you desire at from 15 to 30 cents a pound, according to the variety, and make a mixture of equal parts of each grass, which you can carry and scatter as you propose. Some of them will catch somewhere, particularly in spots where the shade modifies summer heat and where seepage moisture reduces soil drought. You are right about timothy; it is good farther up the coast and in the mountain valleys, but not in your district.

Dry Sorghum Fodder.

To the Editor: I would like to ask, through the Rural Press, if Egyptian corn fodder is good for milk cows. I have been told it would dry up the milk. I have several acres and would like to feed it if it is not harmful.—Subscriber, Modesto.

Dry sorghum fodder is counted about the poorest roughage that one would think of haresting. It is much less valuable than Indian corn fodder. Egyptian corn is one of the non-saccharine sorghums which are valuable both for grain or for green feeding. We never heard of direct milk-drying effect, though such a result might be expected from feeding such innutritive material, which is also difficult of digestion. If fed for roughness it should be in connection with concentrated foods like bran or oil meal or with green alfalfa. No cow can give much milk when the feed is hardly nutritive enough to keep her alive.

Calla Luly Bulbs.

To the Editor: Are there any bulletins published on the culture of calla lily bulbs for market? Are they hard to eradicate from the ground? I mean to grow the bulbs to sell to the florist.—Amateur, Gilroy.

Calla roots are very easily grown and are very easily eradicated. They are, in fact, so easily grown that it is not desirable for you or for any cultivator to plant any considerable areas of them without knowing to what nurserymen or distributors you can sell the product. Unless an advanced contract is made, we would not think of either giving the land or the time to the undertaking.

What To Do For Peach Borers.

[Dudley Moulton, well known to our readers for his contributions to this journal and for his satisfactory work as Deputy State Horticultural Commissioner, has just published as Farmers' Bulletin No. 97 of the U. S. Department of Agriculture, the latest word on the peach root-borer (Sanninoidea opalescens). The publication goes into the fullest detail of the insect, entomologically and historically and is a credit to the writer and to California scientific research. Naturally the chief interest to the practical reader is what Mr. Moulton concludes as to the best way to fight the pest, and that we reproduce.—EDITOR.]

"Worming" and Applying Washes in the Santa Clara Valley.—The method of controlling the borer as practiced by orchardists in the Santa Clara valley is to "worm" the trees by hand during the winter or spring months and later apply a protective wash before the dirt is thrown back. Some orchardists, however, dig the borers out without giving any subsequent treatment. The digging out process is the most important and most effective. The earth is shoveled away from the crown of the tree, the dirt and old bark scalings are scraped off, and the worms are cut out by hand. An ordinary three-fourths inch wood chisel and a horseshoe knife are now conceded to be the best tools in use. A combined scraper, chisel, and rounded worming blade has been used extensively, but tools of this kind do not contain the fine quality of steel that is found in other knives and chisels and they soon become dull. The bark is often broken rather than cut when such tools are used, and this works serious injury to the tree. The curved worming blade is especially harmful, because it is forced into the burrow and great pieces of living as well as dead bark are broken off. The tool is convenient because it combines the scraper, chisel, and worming point, but its convenience cannot offset the better work of the ordinary chisel and knife.

There are two periods during the winter and the spring months when worming can be done to advantage. Worms are from half to full grown and can be easily seen during the winter. They are more or less dormant, and if cut out at this time the trees will be spared the later injury which would follow their feeding during the spring. It is also convenient to orchardists to dig for borers at this time because of a freedom from other work. Spring worming is also as effective as when this work is done during the fall. A protective wash should be applied after "worming" has been accomplished. Such a wash acts primarily as a repellent and keeps adult moths from placing their eggs on such treated trees. This wash should be applied during the months of May or early June. The wash also serves in a secondary way to render the labor of subsequent worming much more easy and rapid. The dirt and bark scalings fall from the washed tree more easily than from those unwashed, and the masses of frass, indicating the presence of borers, are also more easily discovered.

Formulas for Washes Used.—The following washes have been used extensively for controlling borers in the Santa Clara valley and elsewhere:

Formula No. 1.—The lime-crude oil mixture: Place about 50 pounds of rock lime in a barrel and slake with 10 or 15 gallons of warm water; while the lime is boiling, slowly pour in 6 or 8 gallons of heavy crude oil, and stir thoroughly. Add enough water to make the whole a heavy paste. The wash should be applied immediately with a heavy brush.

Formula No. 2.—The lime-sulphur-salt mixture: Place about 25 pounds of rock lime in a barrel and slake with warm water. Add 2 quarts of sulphur and 2 or 3 handfuls of salt while the lime is still boiling. This wash is heavy and is applied with a brush.

Formula No. 3.—Lime, coal tar, and whale-oil soap: Unslaked lime 50 pounds, coal tar 1½ gallons, whale-oil soap 12 pounds. Slake the lime in warm water and add the gas tar while the mixture is boiling; dissolve the soap separately in hot water and add this to the lime solution. Add enough water to make a heavy paste.

The Carbon Bisulphide Treatment.—Carbon bisulphide has been recommended extensively, but its use is now discouraged. Moisture conditions in the soil are so variable that no set rule to determine the amount of liquid which shall be used can be followed, and if the treatment should be preceded by a rain, or if the ground be especially damp, the gas-treated soil cannot be left around the tree without immediate injury. The carbon bisulphide method has been more or less successful when an orchardist has done his own work for several years and when he himself places the charge and recognizes the danger. Serious damage is most likely to follow if the remedy is applied by an inexperienced man. Another disadvantage of the carbon bisulphide treatment is that it does not remove the dead or decaying bark above after the cambium layers have been killed by the borers. Hand cutting is never practiced after this treatment, and the tree can never heal its wound as it does when the dead bark is cut away.

GETS NINETY PER CENT OF WALNUT BUDS.

Budding and grafting walnuts in the nursery is one of the most interesting of our horticultural operations because it is so difficult to get a high percentage of successes when working on young stock. Various propagators are improving their percentages and are inventing new ways which are very interesting to record. The newest method to be published, so far as we know, is a method of budding the walnut just published by E. J. Kraus in a circular of the Oregon Experiment station. The method of budding as outlined in the following paragraphs consists in the combination of the old principles adapted to new subjects and conditions. By this method, and the exercise of ordinary care, with good buds, and one year old seedlings, at least 70 to 90 per cent of the buds should take and form satisfactory trees.

Stocks.—Various stocks have been employed, and among these may be mentioned the English, the American Black, and the hybrid between the California Black and the English. The best of these under conditions such as are found at Corvallis, and on some of the hill soils of the Willamette Valley, is the California Black, and the least desirable is the English. The hybrid is very frequently used, but in some cases is not dependable, such stocks being very variable, some giving a good root system and others poor.

Buds Used.—Up to the present time, usually buds of the current year's growth have been employed in attempting to bud the walnut. This is unsatisfactory from several standpoints. In the first place, the bark on the current year's wood is exceedingly tender, and the outer layers are very apt to be rubbed off in handling. Second, the leaf stem is attached below the bud, and if this is removed before the bud is inserted a large scar is left, which is a source of oxidation and loss of moisture, both of which tend to prevent a satisfactory union. If this stalk is left on the bud it is very difficult to tie properly. This difficulty has been avoided somewhat in the past by cutting off the leaf several days before the buds were taken for budding, and the remaining leaf stalk soon shrivels and falls away.

In the method as outlined in this article, buds one year old are used. These will be found at the base of the current year's growth. Only those plump buds which have remained dormant are to be employed, although if material is scarce smaller buds may be used, but they do not break with the same ease that the larger buds do.

It is also possible to use buds from scion wood cut during the winter, or very early spring, when it is in a perfectly dormant condition. If such scions are placed in moist sand for a couple of weeks before the budding is done, the buds may be removed quite easily. We had very fair success using such buds the past year, and although the labor is somewhat increased in removing the buds from the stick, yet there are more large, plump buds available than if taken later in the season, when many of the desirable buds have broken into shoots.

(1) The Hinge Bud.—About one inch above the surface of the soil make a transverse incision about half an inch long, and a similar one about three-fourths of an inch above this. Connect the two with a longitudinal incision. This forms the completed "I" cut on the stock. It is very desirable to use extra care in making these cuts. The ideal condition is to merely penetrate the bark just to the wood, but not cut into it. The bud, which is rectangular and of exactly the same length as the distance between the two transverse cuts on the stock, is removed from the bud stick by first making two transverse cuts of the proper distance apart to give the correct length to the bud, and then connecting these by two longitudinal cuts about half an inch apart. The bud proper should be approximately in the center of this piece. The bud is then easily removed by gently inserting the back of the knife blade under one corner of the piece of bark, and prying up, when it will be found that it will readily part from the bud stick. No wood should be removed with the bud, and care should be taken when the bud proper is extra large to avoid pulling the soft wood or core out of it. It may be necessary in such a case to first loosen the bark containing the bud on one side up to the bud proper, then carefully cut this soft core with a knife, and the remainder of the bud piece may be easily removed. As soon as the bud is removed from the bud stick it should be immediately inserted into the stock. This is easily accomplished by first carefully turning back the upper corners of the "I"-shaped cut, slightly prying them away from the wood, then inserting the base of the bud into the opening, pushing it down until the top and bottom of the bud are flush with the transverse cuts on the stock, and the bud lies smoothly and snugly against the latter. By making the bud force its own passage under the bark of the stock after this manner, there is much less exposure to the air than if the sides of the cut are first turned back and the bud then laid in place. The bud is now ready for tying and waxing as explained below.

(2) The Flute Bud.—In this method of budding it is best to first shape the bud and then cut the stock to fit it. The bud, which is rectangular, about three-fourths of an inch long, and five-eighths of an inch wide, is made and removed from the bud stick exactly as in the preceding. A similar piece of bark is removed from the stock and the scion bud is then put in its place, taking care to see that the sides of the bud fit up snugly all around.

The T and inverted T buds proved unsatisfactory in our work.

Wrapping and Waxing.—In either case, after the bud is well in place on the stock the two are wrapped snugly with raffia. Special care should be exercised in the wrapping to see that the bud is pressed firmly against the wood of the stock, especially at the center where the bud proper is located. Much of the success of the operation depends on proper wrapping. In many cases there is a prominent elevation where the leaf stalk has become detached, and unless care is used in pressing this down firmly in the trying it will draw away and no union will result. When properly tied wrap the entire bud with waxed cloth to keep out moisture and air, and wax all over with some good wax. The following is recommended:

Rosin, 5 pounds; beeswax, 1 pound; finely pulverized wood charcoal, ½ pound; raw linseed oil, 1 gill.

First melt the beeswax and rosin, add the charcoal, stirring constantly, and then add the oil. Mould into cakes by pouring into greased pans. When desiring to use, break off a few lumps, melt and apply in a liquid state with a brush or swab.

A more rapid method of making the bud airtight is the following: After tying with raffia tear a piece of soft paper (newspaper is good) about 1½ by 2 inches, then holding this in place over the bud, thoroughly wax over the whole and in addition about one-half to three-fourths of the way around the stock. The paper prevents the wax from getting into the bud, but even should this happens it would cause little trouble, as the buds in starting will break through a light covering of wax. During warm weather it is a good plan after waxing to tie a piece of paper or paper

sack split down the side over the bud to protect it from the sun. If the trees stand closely in the rows, and have sufficient foliage to shade the trunks, this will not be necessary. In about ten days after waxing, the bud will have sufficiently united with the stock so that the wax and paper may be removed, and about a week later the raffia should be cut and removed. Care should be exercised, however, in the last regard, in that, if the stock is growing very rapidly the raffia is apt to girdle it. In such a case the raffia should be cut sooner, or if the bud is not sufficiently united, retie more loosely.

Starting the Bud into Growth.—If the budding has been in June or earlier and the buds are to be started into growth the same year, the trees should be broken back at the time the raffia is removed—about fifteen days after the budding. Cut into the stock about 1½ to 2 inches above the bud, allowing the top to remain attached at one side by a small piece of wood or bark. These tops should then be broken over and laid overlapping each other in the row, thus providing shade to the buds and aiding in the carrying off of excess sap and preventing to a considerable extent an excessive sprouting from the root. In about two weeks the scion bud will have started into active growth. The top of the stock should then be removed entirely, close to the bud. In sections subject to high winds, the young shoots should be staked. See that all buds and shoots from the stock are taken off, as they are a material drain on the reserve food supply in the stock.

If the budding has been done late in the season, so that the trees cannot be headed back before August 1, such heading back had best be deferred until the following spring, just about the time that growth starts. There is some danger of the buds being killed during the winter, or injured by excessive wet weather. It is therefore preferable in such cases to put the buds somewhat higher on the stock than when the trees are to be headed back in June or July. Trees coming from stock headed back about the middle of June to the first week in July will make from 14 to 20 inches growth the same season, and usually mature thoroughly, so that there is no danger of killing back during the winter. Such young trees could be put on the market the winter following the budding. Trees from stock that has been headed back in the spring will make a straight growth of 5 to 7 feet during the season.

CURING AND MOVING THE WALNUT CROP.

Written for the PACIFIC RURAL PRESS
By H. W. KRUCKEBERG.

It is pleasant to note that the present crop of walnuts is finding a healthy market in the East, the quality this year, in many instances, being superior to the best imported that are now a feature of the New York markets. Only last week three carloads left Anaheim for New York on brokers' orders, which were extra fancy soft-shells, of large size and well filled with white meat. In the walnut belt of Orange county the crop is bleached with a 5% salt solution, namely, 5 lbs. of salt to 100 lbs. of water. The salt is decomposed by electricity, which releases the chlorine. The nuts are dipped into this solution by means of a revolving wheel which issues with them from the bath and delivers them into an enclosed receptacle to prevent the fumes escaping. From this the nuts are carried to trays to dry, after which they are sacked ready for shipment. It is claimed that this revolving wheel dipping method is original with the enterprise and ingenuity of Orange county growers; it is not patented. It is also interesting to see how markets may be extended. According to J. Huber, of the wholesale house of Rivers Brothers, in Los Angeles, "much of the stock that goes East is in the form of 'meats'—that is, the kernel without the shell. The meats find a ready market in Chicago and other cities, where they receive a coating of sugar and reappear later in the candy stores."

A consular report referring to thick and thin skinned figs says the thickness of the skins is not affected by the curing or the packing, but depends entirely upon the water supply; the less water, the thicker the skin. About 80% of the fig trees are entirely dependent upon the rainfall for water supply, the last rains being generally early in May.

Slanders on California Oranges.

To the Editor: I quote the following from the Daily Record, of October 12, Columbia, S. C.:

"The officers of the Florida Citrus Fruit Exchange have talked a great deal in the past of the popularity of the California orange and the great work of the California Exchange, in marketing 55 to 60% of the California crop. It is well known by everyone connected with the fruit business that California not only ships more green and immature oranges than Florida, but ships oranges which contain less juice and are inferior in eating qualities to the average Florida orange in August. Furthermore, it is a well known fact that California shippers artificially color oranges early in the season, at shipping points. This is something which is very rarely done in Florida."

Will you kindly advise me what the real situation is in regard to the shipping of unripe oranges from this State, and let me know if this statement is correct regarding the shippers' practice? ENQUIRER.

San Francisco.

[We are not able to give you definite statement in answer to your inquiry concerning the shipment of unripe oranges from California. It is a matter which only those in the trade can answer definitely. Two things, however, are perfectly sure: first, that the orange in California does attain satisfactory sugar contents and is suitable for food before the color of the skin is fully developed. Second, it is true that the skin color is in some cases developed by treatment before shipping, but this is also a commercial matter which those on the inside of the trade only can specifically measure and define. It is particularly true and vexatious that the orange growers of the Gulf States and other receivers in northern cities are making strenuous efforts at the present time to conceal their own ill deeds by showering slanders upon California orange growers. The statement that shipping unripe oranges is rarely done in Florida does not agree with statements in their own journals. Evidently the practice has been frequent, or why should the Florida legislature pass a law against it? The practice is now being vigorously combatted by the Florida Citrus Exchange, which is organized on the model of our California Fruit Growers' Exchange. Why, then, should the organized growers fight a pernicious practice if it did not exist? As to the relative qualities of Florida and California fruit, the Florida claims of superiority are not demonstrated. Opposing claims which are not substantiated is idle. The wolf-calls of the South are not calculated to win credence.—EDITOR.]

CALIFORNIA NAVEL ORANGES UNRIVALED.

We have often contended that California-grown navel oranges have nothing to fear from trees of the same variety grown under tropical conditions. There is something in our arid semi-tropical climate which determines quality and character different from that attainable under humid tropical or semi-tropical influences. The latest testimony to that fact is found in an interview with Dr. E. R. Kellogg, who is visiting friends in Redlands. Dr. Kellogg owns a 50-acre orange grove on the Isle of Pines, Cuba, where he passes a part of each year. In reply to a reporter's query as to the possibility of Cuba becoming a competitor of southern California in the production of citrus fruits, Dr. Kellogg said:

"You need have no fear of Cuba, or any part of the world competing with southern California as a producer of the navel orange. We have tried the navel orange. It will never color in Cuba. While the skin is green and unattractive, the flavor is fairly good. But no place in the world grows such fine oranges as the southern California navel. It is without a rival. We have learned this by sad experience, and we are budding our groves over to grapefruit. No other known region can grow such grapefruit as we are producing on the Isle of Pines. I have grown ten boxes to the tree from trees six years old, the boxes being such as you pack your California fruit in, and the quality is superb. Our 36s have a skin like satin, brilliant yellow in color, and not over an eighth of an inch thick. The juice completely fills the fruit, so it is very heavy. The skin feels like a kid glove."

AN ORANGE LAUNDRY.

Washing oranges has to be done under certain conditions in California, and those who practice it will be interested in a reference to Florida laundry methods as described by L. B. Skinner in a recent address before the Florida Horticultural Society:

Washing.—When the fruit comes to the packing-house, in most localities of the State, whe have to prepare to have it washed. I visited Mr. Temple's house when it was in operation, and was very greatly impressed with the soaking-tank. I watched Mr. Temple's sales gradually getting better and better, and I decided to go up to Winter Park and see if I could find out the reason why. I went into his packing-house. Maybe some of you know that we had a frost last winter. Of course, very few places in the State were affected by this frost, but still we had a frost. Some of us knew that we had some light fruit, and we did our best to eliminate it. We would instruct our men to cull out the light fruit, and they would judge of the weight of oranges until finally from fatigue they could not tell a heavy orange from a light one, and we would find a good orange with the bad and a bad one with the good. The men tried to help us out, but it is simply an impossibility not to make mistakes. But at Mr. Temple's place, he was able to cull every light orange out of his pack. When the oranges were put up at market, the buyers knew that they were getting heavy fruit when they paid for heavy fruit.

The light fruit were eliminated in the soaking-tank. The process is very interesting. A man stands by the tank with a long ladle, and if an orange is floating a little too high, he spoons it right out. If an orange was floating, but a light touch with the ladle would send it down, and it came up slowly, it was all right, but if it came up like a cork it was ladled out.

We should select a washer that does the work thoroughly and carefully; that is the main thing. We simply have to wash out fruit and we have to do it carefully and thoroughly if we are going to please the trade. The washer in Mr. Temple's house certainly cleans the fruit and the results have shown that no injury has been done to the fruit apparently.

There are some washers that will wash grapefruit, some that will wash tangerines. Each grower has to settle the question for himself as to which washer he will use, and I think by choosing one which does the work according to his own satisfaction, the question is solved.

Dryers.—After the fruit comes fro mthe washer and before it goes to the sizer, it has to be dried. You are all familiar with the methods of Mr. Temple's work. He runs the fruit into the rack overhead and exhausts the air, forces it in and draws it out; there are so many thousand cubic feet of air passed through there per minute. Anything as elaborate as his process is not within the reach of all of us. In my house we have installed a dryer that has been working very successfully for two or three years. It is not a very large dryer, and we are unable to run through over 300 boxes a day. This dryer is about 30 feet long. The fruit comes into one side on to a conveyor, which moves down very slowly; then it comes back to the brusher and sizer. During the time the fruit is passing, which occupies 20 minutes, there is a blast of air going over it. It is just the natural air taken from up near the roof of the house. This air is blown in there by a strong blower, and there is a continuous stream of air going in and coming out all the time. In damp weather we use a fire and blow the heated air in and over the fruit.

WHERE CALIFORNIA PEACHES GO.

(Continued From Page 385.)

very great scarcity, there appears to be no good reason, with proper handling of the crop, why the price should go below 4 cents, where it was when the crop was very large in 1908 and 1909. As stated before, there is no competition from the East in dried peaches, or any other dried fruit, for that matter, and the Pacific Coast has almost a monopoly of that product.

A few years ago the possibility of the prohibition of selling sulphured fruit promised to take all the profits from this branch of the industry. Since this danger has practically passed, there appears to be no reason why planting should not continue.

The premier peach for drying is the Muir, which dries heavier and makes a better product than any other variety, as well as bearing well and regularly. The Lovell and Elbertas are also planted with the Muirs, as they ripen at different times and make harvesting more convenient. These ship better than the Muirs, and are to be desired for this reason, although drying lighter. For price, a packer states that the Muirs will be worth to the grower about ½ cent a pound more than other varieties when the fruit is 4½ and 5 cents. The Elberta is more of a shipping peach than the others, but can also be dried profitably and is an exceptionally heavy and regular bearer.

These varieties, and other freestones, are sold to the canners to some extent, permitting the grower to have all three ways of disposing of his fruit: shipping, canning, and drying. All are far below the clings for canning, but the fact that they can be sold this way, even at a less price, makes the growers like them. Only about half as many freestones are canned as clings and the prices for them for this purpose are usually $5 to $10 per ton less.

The cling peaches are the kinds that are ideal for canning, and are absolutely without competition from the East. They cannot, however, be dried to advantage, making a poorer quality of fruit and being expensive to handle. As a shipper, they are also inferior to the freestones, and if they have to be sold in any way than to the canner, there is little profit in growing them. The quality of the canned clings, however, and the usual good prices received for them justify their production. As a rule the planting to clings is greater in the Sacramento valley, in Butte and neighboring counties than in the San Joaquin, where freestones are much more the favorite in proportion to the total amount of each put out.

Aside from being close to the lead in fresh shipments and drying, running behind prunes for the latter purpose, and a little better than apricots, the peach is the greatest canning fruit produced in the State. Even the freestones are better than the Eastern product, as about 25% of our canned freestones will sell as "extras" while the best of the Eastern products sell as "standards" and inferior grades. The canners, however, have to compete against the East with the handicap of heavy freight rates, higher wages, and more expensive material, for these lower grades, so that the State is at a disadvantage in raising freestones for the canner.

The Easterners, however, cannot raise a cling like those of California, and the California clings have this field to themselves. The amount canned last year was 1,233,200 cases of 12 cans of 1½ and 3 lbs. each of clings, and 163,425 gallon cases; and of freestones, 553,000 cans of the smaller and 195,825 of the gallon tins. This year, with a smaller crop, the output will be less.

According to one of the leading canning companies there is little immediate danger of overproduction, although with a large crop on all of the bearing acreage, the production would be nearly as great as the canners would care to handle without cutting the price a good deal.

The amount sold can, however, be greatly increased if the price is cut and still give the grower fair returns. For instance, it is the desire of this company to market a certain fancy brand of clings, so that they can be retailed at 25 cents. It has been noticed that whenever the price has to be raised to 30 cents, the sales are cut 40%. If overproduction would make the price 20 cents, a correspondingly great increase in consumption would be expected by the company, which states that they could still pay sufficient for the fresh fruit to justify its production.

The canners desire, most of all, cling peaches that will not come in during August, just when they are rushed with other fruit, and, for this purpose, Tuscans and Phillips are the varieties they recommend under present conditions and the kind that are most planted. If the season is good and there is too much work at the canneries during August, about $5 more per ton is given for these than for the mid-season varieties.

The price for freestones this year was from $30 to $40 per ton in the lug box, varying with variety and locality, while clings brought $5 and $10 above these figures. These prices were due partly to a small crop here and partly to the failure of the Eastern crops. Last year, with a good crop everywhere, freestones in most places brought only about $17.50. In good years and on good trees, six to ten tons of fruit can be secured per acre and at a cost of $20 to $25 per acre for care.

State Horticultural Commissioner A. J. Cook has announced that the Fortieth California State Fruit Growers' Convention is to be held at Santa Rosa December 19 to 21. Special efforts are being made to secure an interesting and profitable program.



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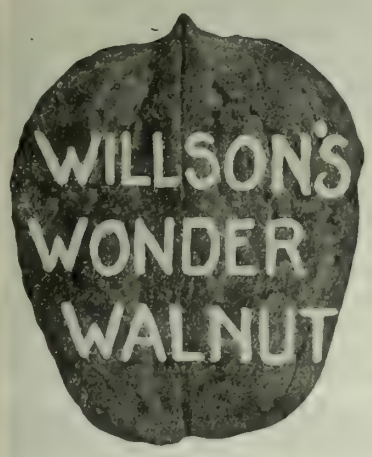
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SKIMMING THE WEST FOR POTASH.

Juost how the general government can find out, with a few men in a few weeks, more about the occurrence of potash in the West than all the State geologists, chemists, universities, and experiment stations have found out in a half century, we do not know—and it does not matter if we don't.

A VERY HIGH FLIER.—At least two Washington departments have scientific aviators out scanning the horizon for potash, and they seem to be doing wonders. It is telegraphed this week from Washington that rich potash deposits, said to contain more than enough of this substance to supply the needs of the United States, have been located in the West by scientists of the Department of Agriculture, according to Secretary Wilson. This discovery, the Secretary declares, will mean a saving of $12,000,000 a year to this country, as heretofore the United States has been spending about that sum annually in buying its potash from Germany. Secretary Wilson would not state exactly where the deposits are situated.

A MORE MODERATE EFFORT.—An investigation into possible sources of potash salts in the United States is being made this year by the U. S. Geological Survey under an appropriation by Congress of $20,000 for the current year.

One of the possible sources from which potash may be derived is in association with saline deposits left by the drying up of large bodies of salty waters, such as are known to have existed at one time in many of the now desert areas of southwest Oregon, Nevada, southeast California, in Utah, and elsewhere. It is hoped that by testing these saline deposits, some may be found sufficiently rich in potash to have a commercial value, and that there may even be located some large and important deposits.

As a part of this work the Survey will soon fit up a temporary laboratory at Fallon, Nevada, for the purpose of testing samples of salines from the Great Basin or desert areas.

Samples of such alkaline salts will be tested at this laboratory free of charge if a definite statement of the locality from which they were obtained be sent with the samples. The location should be given by section, township, and range, if possible, otherwise by distance and direction from the nearest postoffice or settlement. Samples should be addressed to Hoyt S. Gale, U. S. Geological Survey, Fallon, Nev. Upon receipt of a request, small sample sacks for sending the material by mail will be forwarded from the above address.

If so requested at the time that a sample is submitted for test, the accompanying information concerning the locality of the deposit will be treated as confidential; and the evidence thus obtained is not to be used for the purpose of making land withdrawals.

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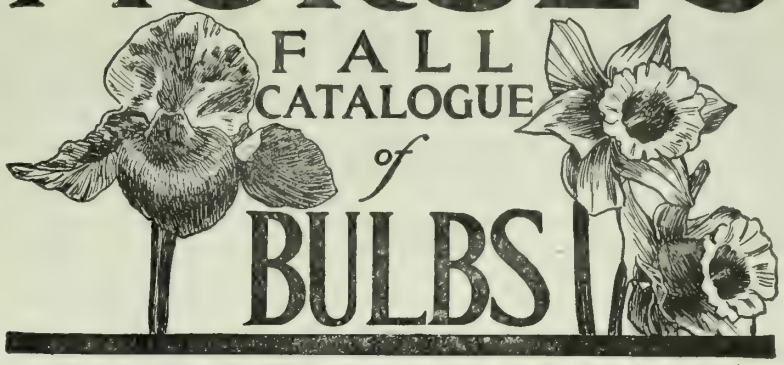
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Easter Lilies (Postage additional, 25c doz.)	$1.50 doz.
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Freesias, white (Postpaid price)	15c doz.
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Is an efficient, economical and unique marketing agency—maintained by 14 companies.

It will be to your interest, Mr. Fruit Grower, to get into cordial co-operation with this successful organization.

Correspondence invited.

F. B. McKEVITT, Manager.

California Fruit Distributors

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REX REX REX

As the leaves fall from your trees with the first rains, it will be the best time to do your first spraying with

REX

the famous fruit tree protector used in every part of the U. S. and Canada, especially on deciduous trees. Accept no imitation, but use the standard article that has been tried and found not wanting.

REX has become the household word with the orchardmen from San Diego to Vancouver.

REX has made for California Thousands of Dollars in better fruit.

Ask your dealer or write for particulars to

CALIFORNIA REX SPRAY COMPANY

BENICIA, CALIFORNIA

THE ACAMPO NURSERY

We grow all kinds of high grade deciduous fruit trees, leading varieties of **Peach, Plum, Prune, Cherry, Almond** and **Apricot**.

Write us for special prices.

WILDER & FERGUSON, Acampo, California

Tree Planting in Siskiyou County.

To a person interested in tree planting, the question naturally arises, Which is the best time of the year to plant trees? To be successful in planting and growing trees, a person must take into consideration the character and condition of the soil and also the climatic conditions of the particular locality where the trees are being planted. In central and southern California the tree roots are growing throughout the entire year, while in our climate of Siskiyou county the tree roots are dormant during the winter season. For this reason, fall planting may be a grand success in central and southern California, and yet not be such a success in the climate of our county. I have planted trees in the fall and spring and find the spring planting most successful.

There are many details that enter into a full discussion of this subject.

When trees are removed from the nursery a great many of the roots are injured and destroyed. This naturally retards the growth of a tree for the first year. When the tree is set in the damp, cold ground in the early part of winter the roots are in a dormant condition and have been injured to a great extent on removing from the nursery. Should the winter prove to be wet and cold, the tree-roots would begin to decay and rot before spring, and the ground would be packed around them. Under those conditions the tree would put forth only a sickly growth. Where the ground is packed it is impossible for the larger roots on a tree to send out the thread-like rootlets that furnish the nourishment for the growth of the tree. Where trees have been set out the first year the ground should be loose and moist around the roots when the growing season comes, then the tree will put forth a vigorous growth.

Trees should not be removed from the nursery until the season for planting comes. Every time a tree is handled it receives just so much injury. When the season for planting comes, the tree should be immediately planted in the orchard. As many of the roots on a tree should be saved as possible.

Some orchardists, on planting trees, prune the roots back. This is a poor policy, as the fine roots are the only source through which the trees gets its nutriment. The large roots do not send out the white thread-like rootlets as do the smaller ones. Nurserymen recommend to a great extent the pruning of tree roots, yet they will tell you that a three-year-old tree will not do as well when set out in an orchard as the one and two-year-old trees on account of the injury to the tree roots.

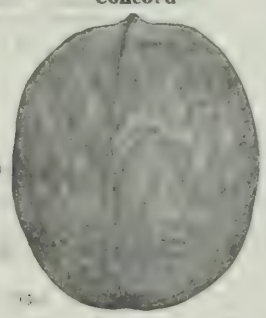
If a person gardening is careful in seting out cabbage and tomato plants, these plants may be set out even in the hottest part of the day and never even wilt. Cabbage or tomatoes transplanted without injury to the thread-like roots are from a week to ten days earlier in the season. These same conditions exist in regard to tree planting. Fall planting of trees will prove very unsuccessful where water will lie on the ground through the following season.

I find by actual practice that tree planting in the spring is more successful than in the fall. Trees should be set in place in the orchard as soon after they are removed from the nursery as circumstances will permit. It is advisable to preserve as much of the roots on a tree as possible. The root system furnishes the nourishment for a tree and where the root system is lacking, the growth of a tree cannot be vigorous.

Jos. F. Wetzel,
Horticultural Commissioner and State Quarantine Guardian for Siskiyou County.

The best blight resisting, well tested walnuts: heavy bearers: bloom late: mature early: grafted trees only.

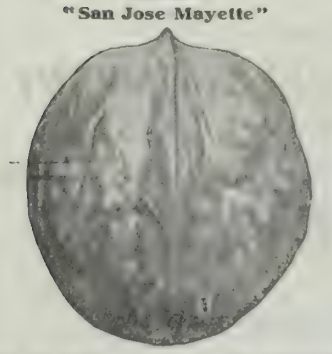
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Send for catalogue and special circulars on New Fruits, Pedigreed Prunes, Eucalyptus, Etc.

LEONARD COATES NURSERY CO., INC.,
Morganhill, Santa Clara Co., Cal.

EUROPEAN RAISINS AND BARREL GRAPES IN SCANT SUPPLY.

Vice-Consul J. W. Byrne, Valencia, Spain, reports under date of August 14 as follows:

The promise of an abundant raisin crop which appeared to be implied in timely spring rains, luxuriant growth of vines, and an exceptionally fine show of blossoms, has not been fulfilled. The damp weather that followed the copious rains of May interfered with the setting of the fruit in low-lying localities, while black rot and other cryptogamic growths contributed subsequently to reduce the anticipated harvest. Finally, the great continuous heat wave which has maintained temperatures all through July and part of August 85 to 95° F. in the shade has also inflicted considerable damage to Moscatel grapes, especially in exposed sections of the fruit zone.

Estimates of the raisin crop, which averaged about 25,000 tons up to the last week of July, now that the first grapes have been harvested on light soils and early vines, have fallen to 20,000 tons, against 19,000 harvested last year, 24,500 tons in 1909, and 16,200 tons in 1908.

Opening prices have not yet been fixed at Denia, but it is generally anticipated that they will not be less than $4.50 per hundredweight of 112 pounds placed in packing stores in bulk and ungraded. This would give the following equivalent quotations per hundredweight for raisins of standard brands classified, packed in half boxes, and delivered f. o. b. Denia or Valencia: Fine off stalk, $5; finest off stalk, $5.35; fine selected, $6.14; finest selected, $6.56; layers, 4 crown, $6.32; finest layers, 6 crowns, $6.75.

Freights for New York or Boston either by direct ships or transshipment at Liverpool will probably be 25 to 30 shillings $6.08 to $7.30) per ton. Stocks held at London at the beginning of August were only 223 tons of Denia raisins and at the other important consuming centers of Europe they are practically cleared.

Reports up to date from the other raisin zones of the Mediterranean anticipate crops below the average, but in every case more abundant than those of last season. Estimates of the total Greek currant crop average about 142,000 tons and Sultana raisins 38,000 tons. Malaga, however, is credited with an excellent crop, both in quality and production, the yield being expected to reach 1,300,000 boxes of 22 pounds each, or about 300,000 boxes in excess of recent average crops.

Barrel Grapes.—Exports of fresh Moscatel and other table grapes from this region to British markets continue to decline slowly and now seldom exceed 25,000 barrels of 28 pounds net annually. The cause is attributed in part to the greater abundance and variety of other summer fruits competing with grapes for public favor and partly to the fact that Almeria grapes have been so advanced in season by selection and careful cultivation that they now clash with Denia Moscatels on English markets. Of the 25,000 barrels shipped from Denia this season, about 10,000 contained Valensi grapes, a dark-red fruit, the product mostly of trained vines, with larger bunches and berries and a looser formation than those of the Moscatel, which does not resist the sea voyage so well as the Valensi.

LILLY'S SEEDS



These 3 Vegetables for 10 Cents

This is not a bargain, but an introductory offer to get you interested in Lilly's Seeds, and to prove to you their quality and reliability.

LILLY'S "DELICIOUS" LETTUCE. A variety introduced by us, very early with fine, hard, medium sized heads, rich yellow heart, with a delicious buttery flavor.

LILLY'S "EARLIEST OF ALL" RADISH. A very small round bright red radish with white, crisp flesh of a delicious mild flavor. An excellent variety for cold frame.

LILLY'S "NEW WHITE QUEEN" ONION. A very early small round variety of fine, crisp flesh with deliciously mild flavor. A great favorite for the home garden, easily grown and matured.

The above three varieties are all regular 10 cent packages. We offer the three for 10 cents **to introduce.** Send money order or stamps.

Catalogue Ready for Mailing, Free.

Send for a copy of Lilly's Annual Seed Book, 126 pages, fully illustrated, with cultural directions.

Lilly's Seeds are the Standard of the West. They have given satisfaction to farmers for over a decade. They are particularly adapted to the climatic and soil conditions of the West. Our seeds are tested by us before being offered for sale. We have an expert seed tester, a government graduate.

THE CHAS. H. LILLY COMPANY
Seattle, Wash.

GOOD CITRUS TREES

Expert grown, large, clean stock, up to size now, for 1912 spring delivery. None better anywhere. Our buds are selected with greatest care from best individual fruiting trees and positively guaranteed true to name.

250,000 Seed Bed Stock

Sour, Sweet or Pomelo—the **McMillan grown** kind—large clean plants from selected seed—the kind it pays to plant. Inspection and correspondence invited. Closest nursery to Los Angeles. Alhambra car.

McMILLAN CITRUS NURSERIES
Growers of Citrus Trees exclusively
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CITRUS TREES
OF
THE HIGHEST GRADE
In development of root, stalk and branch.

Send for catalogue, and be convinced that our stock is the best that can be grown.

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MISSION STREET AND LOS ROBLES AVE., SOUTH PASADENA

PEAR BLIGHT

WE HAVE DEMONSTRATED THAT WE CAN CURE THIS DISEASE

ROOT BLIGHT

WRITE FOR OUR CIRCULAR No. 5

PEAR-BLIGHT REMEDY COMPANY
112 MARKET ST., SAN FRANCISCO

Nevada Agricultural Notes.

To the Editor: The word "Nevada" brings to the mind of the average person mines and mining, but one traveling through the State finds many rich agricultural lands that have been under cultivation since the early sixties, and through the aid of the government and private projects much good land is being brought under water, and that means under cultivation in most places.

AROUND RENO.—In this district one finds everything raised in other States except citrus fruits. There is some deciduous fruit raised but owing to the late frosts this year most of this crop was lost. The live stock and dairy business are the chief industries, although large quantities of alfalfa, timothy, clover and grains are raised for the market. Many are going into trucking and some are raising onions and potatoes on a large scale, one farmer having told the writer he had harvested as high as 18 tons to the acre.

THE CARSON VALLEY.—From Reno one can go into the Carson valley, which is 35 miles long and in places 15 miles wide. Here you find Carson City, the State capital; also Genoa, the oldest town in the State and county seat of Douglas county. Gardnerville, the principal town in Douglas county, lies about 7 miles from Genoa, and Minden, a new rival of Gardnerville, about a mile from Gardnerville, Minden being the terminus of the Virginia & Carson railway.

In the vicinity surrounding Minden and Gardnerville there are 24,000 tons of hay raised annually, of which about 10,000 tons are shipped out. Dairying is the principal business and the Minden Butter Mfg. Co. of Minden and the Farmers' Co-operative Creamery near Gardnerville are turning out 2300 lb. of fine butter per day. Grains are grown quite extensively and there is a model flour mill at Minden which buys this product.

By changing from alfalfa to grain every few years the farmers here harvest big crops in most places, grain going 3 tons to the acre in some instances. Water is plentiful and a good many of the foothill farmers are installing water-power electric plants, which they find very useful in the dairies, and also use the power to reclaim the more arid lands by pumping water. The furrow system of distribution is mostly used here, and they find it more satisfactory than the check system.

The second crop of alfalfa was damaged 25% this year by cut worms, and as yet they have not found any means of getting rid of them except by plowing up the field, but most farmers think they will not bother another year.

The largest land owners and stock raisers in the valley are the Danberg Land Company, who are putting much valuable land under water and selling it to small farmers. This company has just bought 20,000 sheep to fatten on their ranch this year.

Some trouble has been experienced this year among the cattle by a disease called by one veterinarian the tubercular anthrax caused by impurities in the low swampy land, which he claims can be overcome by vaccinating, as has been done in the Carson sink district.

There are at present no alfalfa feed mills in this district, but several are contemplating the erection of one in the near future.

J. C. LOOMIS.

Gardnerville.

THE VALLEY OF THE CALIFORNIA NILE.

Written for the PACIFIC RURAL PRESS
By H. W. KRUCKEBERG.

In more respects than one the exploitation of the Imperial valley is full of surprises, as well as here and there a disappointment. All crops have not always proved remunerative, due often to bad marketing conditions, and at times also to failure in production. We are not, however, going into a discouraging disquisition on the pessimistic phrases of this new region, but rather to an optimistic record of what is doing in the promotion and development of cotton growing. From all that can be learned, it seems now quite well established that the cotton industry there has passed the experimental period, and has become a fixed agricultural product. The people who came to the valley from the cotton belt of the South, and hence are more or less familiar with the needs of the plant, have certainly been "doing things," even though many of them had never seen an irrigation ditch until their advent in California. In an average year the results have been half a bale to the acre, but this season there are cases of over a bale to the same area of ground. Another gratifying surprise is the volunteer crop—wholly unknown in Texas—yielding in some instances a bale to the acre. The percentage of lint from seed cotton is also astonishing, the yield in the South being 3½%, while on some of the Imperial valley lands it runs as high as 25 and 30%. In verification of this, the following data is given: Morris Anderson, seed cotton, 4760 lbs.; lint, 1725 lbs. G. W. Stevens, seed cotton, 1670 lbs.; lint, 610 lbs. J. A. Parton, seed cotton, 1490 lbs.; lint, 554 lbs. These figures are taken from the ginner's records. The fall weather has favored the crop and its harvesting. Freedom from rain and heavy dews has made picking expeditious, which has also been enhanced by adequate labor. Indeed, it is said that pickers are earning good wages. In the face of these facts, it is no wonder that King Cotton has found new territory to conquer, and that the crop bids fair to become a leader in that region. At the same time there is also a healthy advance in dairying and live stock, and its attendent crops of grain growing and alfalfa culture.

QUALITY
IN
FUMIGATION CYANIDE
IS THE IMPORTANT CONSIDERATION

The best authorities unanimously agree that for the effectual generation of Hydrocyanic acid gas a Cyanide should not contain in excess of 1 per cent of Chloride of Sodium (common salt). A higher percentage of this ingredient materially reduces the available amount of gas by the process of decomposition.

It is well worth your while to verify this statement, and when in doubt as to the Sodium Chloride content of a Cyanide, have a reputable chemist furnish you an analysis. It may prove a good investment.

The Roessler & Hasslacher Chemical Co.'s Special Fumigating Cyanide of Potassium 98-99 per cent and Cyanide of Sodium 128-130 per cent is manufactured expressly for fumigating. Contains no excess of chloride of sodium. It generates quickly. Reliable, Efficient, Economical.

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KIRKMAN NURSERIES
TREES THAT GROW AND BEAR TRUE TO NAME

WHOLESALE GROWERS OF FIRST-CLASS NURSERY STOCK.

A fine lot of Peach, Plum, Pear, Apple, Apricot, Fig, and other deciduous fruit and shade trees.

Also a million rooted grape vines; a few thousand nice Orange and Lemon trees, and a lot of No. 1 Eucalyptus.

Shipments made from main nursery at Fresno, or from branch at Sacramento (corner 15th and K Sts.).

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WM. T. KIRKMAN, Jr. Proprietor,
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CHUL WHEAT
This new hard milling wheat leads all in yield per acre; is quick in maturing; large gluten content; late harvesting, without waste.
CHOICE RECLAIMED SEED
For samples and prices address D. W. LEWIS, Corcoran, Cal.
A few carloads of fancy white Sonora.

Now is the Time to Apply
MOCOCO
SUPERPHOSPHATE
CHEAPEST FERTILIZER ON THE MARKET
For Sale by
The Mountain Copper Company, Ltd.
150 Pine St., San Francisco
Two Grain Drills for sale—cheap.

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HIGH GRADE NURSERY STOCK
A full and complete line of **the leading varieties of Citrus, Deciduous Fruit and Ornamental Trees, Vines, Shrubs, Roses, Decorative Plants, Eucalyptus and Palms. Catalog Mailed Free.**
"The best is none too good and in nearly every case proves the cheapest.
A trial will convince you.
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Will accept future contracts on Citrus Stock. also Apricots.
H. K. Snow, Jr., Prop. OXNARD, CAL.

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GROUND SQUIRRELS, GOPHERS, also BORERS, ROOT APHIS, etc., on Fruit Trees
CARBON BISULPHIDE
Is the only effective remedy.
For sale by dealers and manufacturers
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SPHAGNUM MOSS For Sale
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VILLA ANNA NURSERY
John Zuur, Prop.
FRUIT AND ORNAMENTAL TREES
Spineless Cactus a specialty. Send for circular.
Santa Rosa, Cal.

AGRICULTURAL REVIEW.

With the Fruit Men.

In the 12 months ending October 31, 1911, 46,399 cars of California oranges and lemons were shipped from the State. Of these, 36,821 cars of oranges and 7646 cars of lemons were shipped from south of the Tehachapi, 2198 cars of oranges and 127 of lemons were shipped from Tulare county, and 489 cars of oranges from Butte county. The total was 5807 cars greater than the season of 1908-09. which up to that time was the record year. The returns for navels were about 5 cents a box less than in 1910, mixed varieties 2 cents a box less, and valencias 17 cents greater. Prices were very uniform the whole season.

The first shipment of citrus fruit from Fairoaks, Sacramento county, this year was of pomelos, which were sent to Manila, through the Fruit Growers' Exchange.

In the Tulare district the oranges are reported to be of better average quality than usual, with few culls and a very small amount of damage through the thrips.

The house of the Butte County Citrus Association opened with 25 packers at work on Monday.

An effort is to be made to have the $1 freight rate on lemons to Salt Lake City reduced by the Interstate Commerce Commission.

Citrus growers of Tulare county recently gathered to listen to a lecture by R. H. Wilkinson, of the California Fruit Growers' Exchange, on "Marketing Fruits."

Six hundred acres of citrus land in the Moreno valley, Riverside county, has been sold to the Atlas Realty Co., of Los Angeles, which will improve and subdivide it for sale.

It is stated that the Santa Fe is intending to run branch lines into the citrus belt of Tulare county.

The prune crop of Clarke county, Washington, amounted to 150 cars this season.

The combination of late season and the order against shipping immature oranges will make shipments from the south nearly two weeks late this year.

Commissioner A. G. Schulz of Tulare county is beginning active work against the red spider, which has been found near Porterville.

Picking olives for pickling purposes has begun in Butte and neighboring counties. Picking for oil will not begin for nearly a month there. It is stated that an active demand for olive land has been noted since picking began.

A number of Corning, Tehama county, olive growers have organized an Olive Growers' Association, claiming that they are receiving from $25 to $40 less per ton for their fruit than is given in other places. Such action as will remedy this will be taken.

The Co-operative Fruit Association of Riverside has been incorporated and officers elected. The Association will pack and ship the fruit of members on a co-operative basis.

The newly organized Placer County Farmers' Union, formed to ship fruits on a co-operative basis, has 1000 cars under contract for next season. The officers are: H. W. Beck, president; John Balmer, vice-president, and B. B. Balmer, secretary-treasurer.

Seventy thousand boxes of Watsonville apples have been put into cold storage at Sacramento for spring sale. Within a few days 24,000 more will be stored there in the same way.

Apple growers of Arcata are contemplating the organization of an apple growers' association for Humboldt county.

That the breaking of contracts for dried fruit is not confined to packers, is indicated in a suit by Rosenberg Brothers against a grower and drier of San Jose for the non-delivery of prunes contracted for in May for 4½ cents per pound.

The H. E. Losse packing-house at San Jose was burned November 3, with 600 tons of dried prunes and a large amount of dried peaches and apricots.

The Selma cannery of Libby, McNeil & Libby closed November 2, after an extremely long run.

At the last meeting of the San Jose Grange the following prices for fruit were given as ruling: Prunes, 6-cent basis; Salway peaches, 7 cents; Muirs, 8½ cents; Crawfords, 8 cents. The apricot market was said to be dull.

One of the leading commission firms of Seattle was recently fined for selling decayed peaches to a grocer.

Heavy planting of fruit trees is being arranged for this season near Hollister, apricots and prunes being the favorite fruits.

R. H. Wilkerson of San Fernando has been doing some work in subsoiling with dynamite in his lemon orchard.

Raisin and Grape Notes.

A circular has been issued by James R. Baker & Co., of Chicago, urging their clients to buy raisins at this time, as they expect a big rise in prices soon.

The opening prices of Emperors from the central San Joaquin was considerably below that of last year.

The formation of an arbitration committee to decide upon the quality of raisins when the market and contract prices differ is being agitated to settle disputes between grower and packer when one or the other wishes to avoid the contract.

Reports from the East are to the effect that several packers are still bearing the market by quoting from 4½ to 5½ cents on raisins, or about 3¼ cents in the sweatbox. The inability of the packers to get all of their goods now on hand away before the holidays is said to be a strong reason for the low prices now existing.

The Helm raisin crop, one of the largest in the raisin district, was recently sold to the Phoenix Packing Company.

The last shipment of table grapes from the Bidwell-Blowers Company of Woodland to the East was made November 3. The total shipments of grapes from Woodland was much below that of 1910.

G. R. Pinkham of the Independent packing house of Lindsay, Tulare county, is having Emperor grapes picked directly into the boxes in which they are shipped. The new crate and the saving in labor is thought to be a decided success. About 15 cars of grapes will go out.

Vines on hardpan that was broken by blasting near Clovis, Fresno county, have given excellent crops this year, making the blasting of certain kinds of hardpan a decided success.

With the close of the raisin season many Japanese are leaving for the citrus districts.

General Agriculture.

T. A. Griffin of Merced shipped his second carload of black-eye beans to El Paso, Texas, last week. The car contained 40,000 pounds, or 500 sacks. The beans were all grown in the vicinity of Merced.

From the first picking on 4½ acres of the Victor Rottman ranch in Imperial county six bales of cotton were ginned, with other picking to come. Newly planted cotton on the ranch will run about half a bale per acre and second-year cotton about a bale and a third.

Colorado is said to be importing potatoes from the middle West for the first

FRUIT GROWING—
A COLD FROST

If you are not protected with



Bolton Orchard Heaters

20 and 26 Cents Each

We Pay the Freight

The Largest Lemon Grove in the world is protected from Frost by Bolton Orchard Heaters.

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SEND FOR OUR FULL CROP PROPOSITION. MAILED FREE

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Simplicity—Economy—Efficiency



Not in competition with other engines.
In a field to itself.

WHY?

What's a goose-quill got to argue about with a fountain pen, only that it one day "wuz all there wuz." Now, it's different. Look closely at the cut and note the absence of cams, yokes, gears, batteries and other complicated parts to get out of order. Unbelievable? Will an engine run on kerosene or distillate, for less than any other engine on the market, forward or backward, and at less expense, and without batteries and so simple that a boy can operate it?

We don't ask you to buy an engine from this advertisement or from any correspondence or representations that we may make.

We want you to see our engine in operation, let the engine show for itself and when anyone "just chirps" engine in your hearing, we want to have you tell them about the engine YOU SAW, and we leave it to you as to the engine you buy.

THE SIMPLE OIL ENGINE COMPANY

412 PACIFIC BLDG., SAN FRANCISCO, CAL. 114 EAST 8TH ST., LOS ANGELES, CAL.

THE BEST IN THE WORLD; HAS NO EQUAL

The Original R. I. Knapp Side-Hill Plow

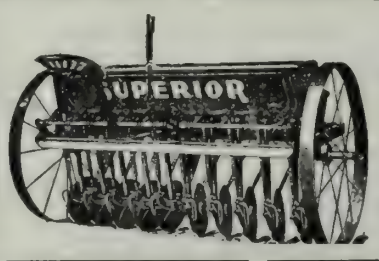
Orchard and Vineyard Plow received first premium at State Fair.



If you cannot get our plow send us the name of your dealer and we will see that you are supplied. Has given entire satisfaction for over thirty years. Equally as good for valley as hill sides. We manufacture five sizes—from one-horse orchard and vineyard plow, to the strongest grading plow.

H. G. KNAPP & SON, San Jose, California

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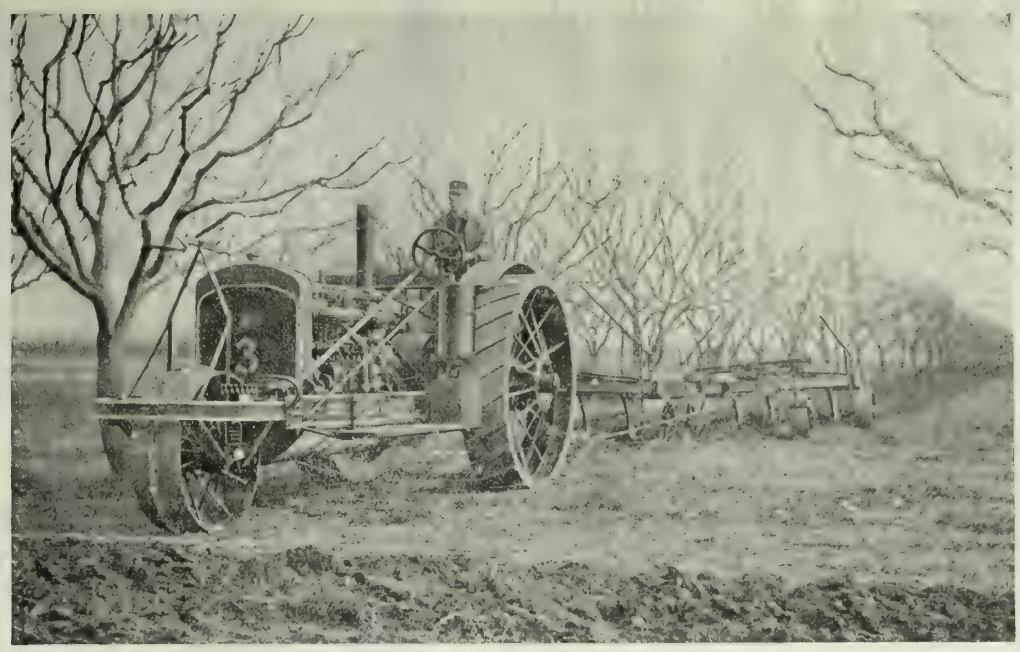
Superior Grain Drills

Plain and Fertilizing

The best equipped drill offered today. Sold by us for years. Let us tell you about it or ask your dealer to order one.

THE H. C SHAW CO., Stockton, Cal.

Best Tractor Engine Made Anywhere. First Premium at Fresno County Fair.



Two First Premiums and Cash Prize at the State Fair, 1911.

This Cut Represents

C. L. Best 25 H.P. Gas Tractor

Plowing 100 inches wide, 6 inches deep, and within 8 inches of the trees

in orchard of E. B. and A. L. Stone Company—conclusive proof of the practicability of our gas tractors for farm and orchard work. Our catalogue tells you why a C. L. B. Gas Tractor is better and cheaper than horse power. Sent free for the asking.

C. L. Best Gas Traction Co., Elmhurst, Oakland, Cal.

Represented by W. L. CLEVELAND CO., Los Angeles, Cal.

time in several years, and prices are up to $2 per hundred. It will be noted that these high prices were prophesied in the PACIFIC RURAL PRESS while San Francisco quotations were down to 85 cents and $1.05.

On the Spalding ranch near Willows, Glenn county, 1000 acres are being put out to alfalfa this year.

On the Harbour ranch near Glenn a sweet potato vine bore six potatoes weighing 25 pounds.

According to Horticultural Commissioner Bloomer of Sacramento county, potatoes from Nevada have been shipped in this year that are affected with the eel worm. Last year similar potatoes were returned to their shipping point.

Berlin Cecil of Davis is subsoiling on his place to 10 and 11 inches. The work is being done with a tractor pulling three six-disk plows cutting 18 feet wide.

An offer of 45 cents a pound for hops was refused last week by H. L. Hall of Santa Rosa. An offer of 25 cents for next year's hops is reported to another grower.

San Francisco seedsmen are signing up land in Imperial county for horse bean growing, the weevil doing too much damage in most other places.

Marked success with experiments in cereal growing has been achieved at the University Farm at Davis this year, the production of grains being greatly increased.

The Sacramento Valley Sugar Company will have a large acreage planted to sugar beets along the line of the new Colusa & Hamilton railroad next year. The factory at Hamilton City will close in about ten days.

Big shipments of alfalfa seed are being made to Sutter county this year owing to the great increase in acreage that is being set out.

Cotton growers, representing 3778 acres of land, organized a permanent association for handling and marketing their crops at a meeting in El Centro last Saturday. This Saturday another meeting will be held to advance the organization and to sign up more members.

Seven hundred cars of potatoes will be shipped from Yerington, Nevada, this year. The honey crop will be large, though alfalfa is below normal.

An inventory taken at the U. S. Plant Introduction Station at Chico recently showed that 20,000 plants or packages of seeds of wheat, corn, cactus, figs and pistachio nuts have been distributed this year.

Miscellaneous.

Horticultural Commissioner C. R. McBride of Solano county has discovered a small infestation of Russian thistle on Putah creek two miles east of Winters. Steps will be taken to eradicate it.

E. O. Essig, late horticultural commissioner for Ventura county, has been appointed secretary of the State Horticultural Commission. Fred Maskew has been appointed quarantine officer of southern California.

The Brush Gray Company has purchased the I. Rosenberg ranch of 600 acres in Capay valley for subdivision purposes.

A Pearse cotton gin is being built at Dixie, Imperial county, by the West Side Town Company.

The West Side Irrigation District is being formed in Imperial county and a high line canal from which 8000 acres may be irrigated is being surveyed.

The prize of $5 for the best poultry device originated by a member of the Santa Clara Valley Poultry Association has been awarded to Messrs. Louis and McKean of Berryessa road.

The close of the first irrigating season of the new government reclamation project at Orland shows that 2550 acres were irrigated. The season was very successful for those using the water and a great increase in the acreage is expected next year.

Over 2000 pounds of bluestone will be purchased this fall by the Kerman, Fresno county, Fruit Growers' Association for the use of members.

The enrollment in agricultural classes in the Hanford, Kings county, high school amounts to 45 students this year.

Reclamation of marsh lands near Suisun is progressing so rapidly that but little unreclaimed land will be left if the present rate keeps up much longer.

The University of California Farm Demonstration Train will leave Davis for a 10 days trip through the northern part of the State November 13.

The Geological Survey is to begin a study of the effects of forest destruction on the run-off of rain water this year. Experiments will be made in the Waterman and Devil's canyon in San Bernardino county on land that was burned off this summer.

The Blythe cotton gin in the Palo Verde valley has been completed.

The pumping plant of Edward Gould, near Lindsay, has been completed. The well is 290 feet deep, with the water level at 160 feet. The water will be used to irrigate an orange orchard.

The Natomas Consolidated is arranging to put 12,000 acres, situated along the Bear river, on the market next spring.

The riparian rights suit of Sarah E. Lovelace against the Tulare West Side Company, which has been hanging fire for seven years is now being tried. The results of the case will affect the water rights of the settlers in the lower Kings river region.

Owing to the late ripening of southern California oranges and the new regulations regarding shipping unripe fruit, the Eastern trade is relying on the northern citrus districts to supply fruit for the holidays. Southern shipments will go out in quantity soon after the first of the year.

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Tuberculosis Testing by the Owner.

Written for the PACIFIC RURAL PRESS
By J. D. WHITNEY.

The problem of tubeculosis among cows is a perennial one among dairymen, and usually one which is very disagreeable to consider. The presence of the disease may be brought to his notice through the condition of the cows themselves or by officials or city societies trying to run affairs in the country, the result being unwelcome in either case. One possible solution of the problem of handling the disease would be the application of the tuberculin test by the owner, leaving the dairyman to rely solely on his own actions and judgment and permitting him to take what steps he saw fit with his cows.

That tuberculosis does much injury there can be no doubt, a statement of the economics of the case being given in the PACIFIC RURAL PRESS of September 16. Some cows are made unfit to give milk or to sell for beef and are a total loss; others may be weakened so that their milk will not pay for feed and care, the milk may spread the disease among hogs or even give it to human beings, and the diseased cows are likely to communicate it to the healthy animals. Altogether, the loss is extremely large and comes solely from the pockets of the owner.

AVOID OUTSIDE INTERFERENCE.—One great objection to the tuberculin test at present is that it is usually forced upon the dairyman, and made by a person who has nothing to lose, while he himself may stand considerable loss. Anyone would naturally feel displeased at such a state of affairs. By doing one's own testing, however, a person can see for himself just the condition of the animals and dispose of them in a way that will bring him the most profit, and at the same time the expense will be very little in comparison with what it would be if a veterinarian were employed, or the test forced upon him.

That the dairyman might often find it profitable to do his own testing is clear from the instance spoken of by Dr. C. M. Haring, in the article above mentioned, of a Portuguese dairyman who used the test to keep track of the condition of all his cows, selling tubercular ones for beef before there was any danger of their being rejected in the slaughter house.

Selling slightly diseased cows is perfectly permissible, provided the meat is unaffected, while badly diseased cows will be rejected and prove a total loss.

Any dairyman should be able to do this and save money at it, although most would probably soon decide that it would be more profitable to weed out all tubercular cows at once and for good, and save future trouble entirely.

NECESSARY APPARATUS.—The initial cost of a tuberculin outfit is only about $6, and the tubeculin can be purchased for 15 cents a dose. The test need be applied only twice a year at first, and once a year after that, provided reacting cows are removed at once. If they are not removed the test should be made oftener. Complete instructions for making it are contained in Bulletin 199 of the Agricultural Experiment Station of the University of California at Berkeley, although it is well to see it made by an expert before applying it one's self.

The apparatus consists of a syringe to inject the tuberculin, the tuberculin itself, one or more thermometers, some vaseline or lard, and ordinary green paint for marking the cows, although any means of identification of the animals will suffice.

The cows are first marked so that their identity will be established throughout the test. Their temperatures are then taken morning and evening to find out what temperature is normal for them. This is necessary, since the normal temperature for one cow may vary from 101 to 103° F., and a normal temperature for one cow may mean a fever for another. The temperatures must be taken when the cows are in a perfectly normal condition and not excited nor suffering from any injury or disease that will cause fever.

APPLYING THE TEST.—The tuberculin is injected through the loose skin of the neck and the temperature taken again at various times from the 8th to the 16th hour after the injection. A rise in temperature of 1½ degrees or more indicates tuberculosis, while no rise means that she has not, and the amount of fever shows approximately the extent of the disease. With a doubtful cow the test has to be repeated after six weeks or so, as it will not work properly if made sooner than this.

The thermometer is inserted in the rectum of the cow, and the vaseline is used to make the insertion easy. The carbolic acid is used to disinfect the thermometer and syringe each time they are used.

The benefits to the dairyman in making his own tests are these: He can be satisfied regarding the condition of his cows, know exactly what to expect in case of official inspection, and dispose of his tubercular cows as he pleases before the inspection is made; he can make the test when most convenient, the cost will be but little, and he can clean up his whole herd whenever he sees fit.

There is little doubt but that tuberculin testing will sometime be made compulsory and tubercular cows destroyed, and the man that gets his cows in shape before this comes will be the man that profits most and suffers least from it.

LIVE STOCK NOTES.

The Occidental Cattle Co. has been incorporated at San Jose for the purpose of carrying on the business of stock raising on 12,000 acres near Madrone. The company has bought out J. R. Hebron.

The drinking of goat's milk was recommended last week by Dr. A. M. Abbott of the Boston W. C. T. U. as a cure for the habit of drinking something stronger.

A shipment of twenty registered stallions from Kentucky left San Francisco for Melbourne this week. One of the animals was valued at $25,000, and the others were also sold at good prices.

Dr. Francis C. Law, veterinarian for San Diego county, has filed a complaint against a Mission valley rancher for disregarding the Texas fever quarantine. Most of the cattlemen are doing good work in eradicating the tick that is the cause of the disease. Dr. Law has also found hogcholera near Del Mar.

A number of Livermore valley ranchers who have been accustomed to having bands of sheep through the winter have been selling them off and are without this class of stock.

Several stockmen of King City, Monterey county, have left for Utah to purchase more beef cattle for their ranges.



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Fifty Dollars for a Colt.

To the Editor: In a conversation with one of the prominent horse buyers of the State recently, the question was asked as to what was the greatest failing in raising horses and mules in the State today, and the answer was: "Not enough care of the colts in fall and winter." As a matter of fact, this could be extended a number of months before fall, although this is one of the critical times in a colt's life, when $50 can be easily lost or gained and at very little trouble or expense. It is simply a matter of giving a little barley, alfalfa meal, or other nourishing feed to help him along until the grass is rich and high in the spring and he is sufficiently hardy to take advantage of it.

To begin with, too little care is taken of the brood mare in seeing that she has sufficient food for prospective foal. The owner oftentimes seems to think that she can get along with the same amount of food that is given to an animal that is not used for breeding. The giving of a little extra grain is exceptionally necessary during the few months just before foaling. Mares are also unable to produce as good foals as they should in the spring when put out on dry pastures this time of the year without extra feed. The extra feed should be given until the colt is weaned, for the sake of both animals.

For the colts out in pasture in the fall the amount of grain that is required is very small, as they can pick up enough food to keep them and the grain will just be needed to put them in the best of condition, and take the place of the milk they have been accustomed to, as it is the lack of the nourishing, easily digested milk that hurts them.

Two things will be accomplished by this that will have a great affect upon the price when the animal is mature. In the first place it will add at least 100 pounds to his final weight, if the pasture is no better than is needed for mature horses, and in the second place it will give him the "quality" that a stunted animal could never have. The extra hundred pounds on a draft animal should be worth about $50 and the better quality something more. This applies to both horses and mules. A little grain feeding will also make the animal more gentle and easier to handle.

By spring the colts become hardy, they can digest the grass well without assistance from concentrates, and the grass itself is in such condition that no further assistance need be given them in the way of feed. When fall comes around again they can look after themselves as well as grown horses on decent pasture, so that the effect of the first fall and winter's feed endures to maturity. It is this lack of care that is said to account for the small size of the northern horses, rather than any fault of mares or stallions or climate, but the same lack of care is also seen in young horses on farms where barley is plentiful and feeding facilities good, but the colts in pasture see none of it.

Any concentrated food is good, and with the high price of barley this year it is probable that the cheapest thing to feed would be alfalfa meal in most places. Less grain or meal, of course, is necessary when hay is fed, and hay alone should help some, although not as satisfactory as when richer and more easily digested food is given, too.

D. J. W.



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DAIRY NOTES.

A number of dairymen from Crows Landing have purchased land in the Kern delta and will move there with their herds as soon as arrangements for so doing can be completed.

The B. & F. Ranch of Baldwin Park, near Covina, will receive two cars of thoroughbred Jerseys from Wisconsin shortly, the cattle being on the way. A fancy Jersey bull from the same place is being shipped by expresse.

Triplet calves were born recently to a Holstein cow on the Golden State Dairy near Fresno. The calves are well and will be kept to maturity.

The receipts of butter through the San Francisco Dairy Produce Exchange for October, 1911, was 1,691,700 pounds, against 722,600 pounds for the year before. In spite of these heavy receipts the prices during the last two weeks of the month were higher than during the corresponding period in 1910. This is due largely to shipments to Portland and the Northwest. The receipts for the week ending November 2 were 437,700 pounds, against 322,500 pounds for the week before, which was less than at any time since the middle of March. Storage butter and eggs have both been well reduced lately. Receipts of eggs for October were 662,300 dozen, against 621,580 in October, 1910.

Concerted action toward having tubercular cows removed from their herds is being made by dairymen of Patterson, Stanislaus county, who are petitioning the State Veterinarian to send an official down to test their cows, according to the offer recently made by Dr. Charles Keane to help eliminate the disease. A committee was appointed to find what dairymen will have their cows tested, and nearly 40 dairymen responded.

A new creamery is being started at Thermal, Riverside county. Charles Bull of Imperial will be the manager, and a number of Imperial cows are being shipped there to furnish cream for it.

The California Holstein-Fresian Association, which was organized during the State Fair, is increasing its membership rapidly, a campaign having been recently started for that purpose.

The J. S. LaRue dairy near Wheatland, Yuba county, has been sold to Messrs. Schriber & Durrer, who will operate a creamery on it.

J. Williams of Concord, Contra Costa county, has purchased a herd of registered Red Polled cattle from Chehalis, Washington, and Napa.

F. E. Heath, supplying milk to the bay cities, will add 300 cows to his herd near Pleasanton, Alameda county. He has renewed his lease on the Davis ranch at that place.

Considerable newspaper comment has been caused in San Joaquin county through the stopping of milk shipments from a dairy near Holt. Cream from the dairy was sent to a creamery and found to be much above that from ordinary dairies. The dairy was also inspected by F. W. Andreasen of the State Dairy Bureau and by a veterinarian from the State Veterinarian's office and found to be in good condition. The reason for stopping the shipment of milk to San Francisco was due to the fact that one or two conditions existed that were not permitted by city rules, though perfectly allowable for cream production.

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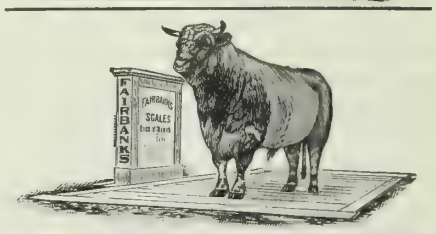


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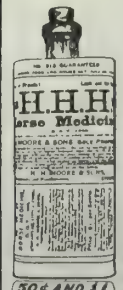
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IT DOES THE WORK.

Creamery Reports Required by Law.

Reports from all dairies or creameries at which butter, cheese or other dairy produce is manufactured are required to be filed with the State Dairy Bureau at San Francisco before November 1. The reports are to show the amount of butter or other dairy produce manufactured during the year ending September 30, 1911. The number of cows on dairies are also to be reported.

The words of the law are: "Every person, firm or corporation operating any dairy where more than four cows are milked, and every creamery, cheese factory, receiving station, skimming station, ice cream or ice milk manufacturer shall on or before the first day of November each year * * * transmit to the Secretary of the State Dairy Bureau a full and accurate report of the amount of butter, cheese or other dairy products, manufactured or produced during the year ending September 30th, and the dairies shall report the number of cows milked during said year." Blanks are provided by the Bureau for all such reports, and these should be sent for at once by all dairy or creamerymen who have not yet received them.

From the reports thus received are prepared the statistics of the amount of butter, cheese, condensed milk and other dairy products produced in the State. Usually several months elapse before the complete figures are secured, but this year a large percentage of the reports were in before the middle of October, and the fact that the law now requires these reports to be made is expected by Mr. F. W. Andreasen, secretary of the Bureau, to make it possible to give accurate data upon dairy production much earlier than ever before.

The number of dairy cows in the State on September 30, 1910, was reported to be 398,595, and the amount of butter produced during the year ending that date, 45,989,141 pounds. With the vast increase in dairying and improved facilities for obtaining accurate information this year, both of these figures are expected to be much larger than ever before. In the coming report, statistics regarding cheese and condensed milk production, which heretofore were partly estimated, are expected to be based on complete and accurate information.

HOG TROUBLE NEEDING DIAGNOSIS.

To the Editor: Since last November my hogs here at Merced have had a bad cough. At first I thought it was a cold, but as it is found in herds adjacent to mine, I am writing for your advice as to what ails them, also what I had better do for them. So far I havn't lost any from this disease, but I think it holds them back. STOCKMAN.

Merced.

ANSWER BY DR. C. A. PYLE, SAN FRANCISCO VETERINARY COLLEGE.

With such meager details it is hard to state what troubles these hogs. It is not usually practical to treat hogs except in a general way by providing good clean quarters and feed and giving them plenty of room. Charcoal and salt with a little dissolved copperas poured over should be in a trough all of the time.

If the hogs continue unthrifty, the local veterinarian, by killing and examining one of the weakest pigs, might quickly determine the trouble.

HOG HYGIENE.

In the line of Dr. Pyle's suggestion of good care and cleanliness the following from Dr. R. A. Craig of the Indiana Experiment Station is of interest. Although the disease may not be hog cholera the sanitary suggestions are good all the same.

When an outbreak of hog cholera occurs on a farm, the herd should be quarantined and all possible precautions taken against the spread of the infection in the neighborhood. The separation of the herd into small bunches of about a dozen animals is sometimes practiced. This is not advisable, as the work of caring for the animals is greatly increased and the infection scattered over a wide area, proportionately increasing the opportunity for infecting neighboring farms.

If the houses and yards are well arranged and can be cleaned and disinfected, it is not advisable to move the animals, but if the quarters are old and more or less tumbled down, and the yards littered with corn cobs, manure piles, straw stacks, etc., it is advisable to provide better quarters. Such yards should be well drained. During the warm months of the year, plenty of range and protection from the sun and rain are necessary. A recently mowed meadow or a blue grass pasture, and a low shed open on all sides and amply large for the herd to lie under, give the animals a clean range and comfortable, cool quarters. Roomy, dry, well ventilated sleeping quarters and yards that have good surface drainage are best when the weather is cool and wet.

In most outbreaks it is advisable to separate the sick from the well hogs. Early in the outbreak and in the subacute form this is practical.

A very light ration consisting of a thin slop of shorts or other ground feed should be fed. Powdered copper sulphate may be given in the feed and drinking water. For convenience of mixing with the feed, eight ounces of the powdered drug may be dissolved in one gallon of warm water and one pint of the solution added to each 10 gallons of slop and water fed. This method of feeding should be used as soon as symptoms of disease are noticed and continued for a time after recovery. The entire herd should be dieted and made to clean up their feed quickly. Water and slop should not be left in the troughs for the hogs to wallow in, and the troughs should be disinfected and turned bottom side up as soon as the hogs have finished feeding and drinking.

A disinfectant should be sprayed or sprinkled about the feed troughs, floors, sleeping quarters, etc., daily.

The care and treatment of the herd require work and close attention to details on the part of the attendant.

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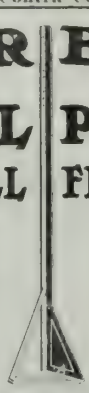
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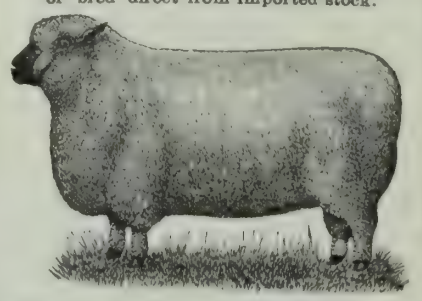
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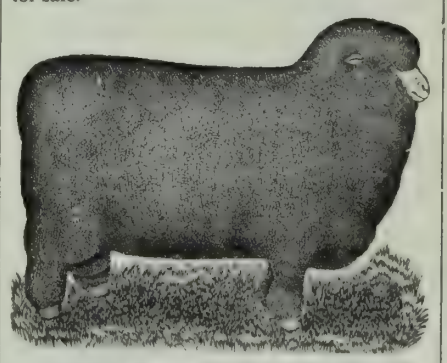
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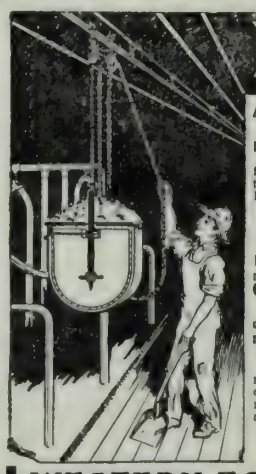
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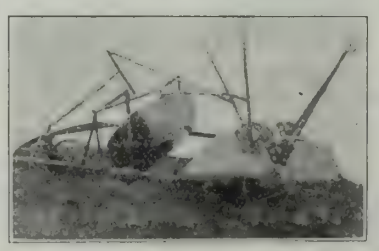
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A Northern View of Southern Hogs.

Professor J. H. Shepard, of South Dakota Experiment Station, is a swine teacher and a swine grower, and believes he has as good hogs as walk, for he says: "You must remember that I am a teacher and am preaching the doctrine of good blood vs. scrubs all the time, both by precept and example. It is to laugh, to think of me preaching one thing and practicing another. As I often tell visitors who are admiring my herd, show me better blood if you can. I will buy it." Which is pretty good philosophy for a teacher or for anyone else.

But the thing which chiefly attracted our attention in Prof. Shepard's swine-talk was the tribute which he, on the northern border, pays to the advantages of swine growing in a balmier climate and what he says to the Progressive Farmer of Arizona fits just as well to California. It is this:

"1. How do you raise hogs on alfalfa? In the first place, I have alfalfa pasture for all my hogs. Alfalfa comes early in the spring and it grows till late in the fall. During the summer months I feed small rations of grain, such as oats and barley. In this way I keep the nutritive ratio about 1 to 6. I do not use any corn to speak of for my brood sows. If shortage of other grains compel its use once in a while, I use a little oil meal. But with alfalfa it is usually not necessary.

Alfalfa has a ntritive ratio of about 1 to 4. So alone it is slightly high in protein, but as a matter of fact, alfalfa alone is a better feed than corn alone, which has a nutritive ratio of 1 to 10. A ratio of about 1 to 6 is the proper one for this latitude. But down with you a narrower ratio, say 1 to 5, might be better. You do not have to fortify against way below zero weather.

"In the winter I use hay cut fine as a constant ingredient of my rations. I can then use oats or barley and make an ideal ration. In the winter I try to raise the rations up to about 1 to 7. But with you who have no winter, all this extra trouble would not be ncessary. You can have pasture all the year round, and instead of fortifying your animals against the bitter cold, you would have our hot summer conditions, where only shade and plenty of water are the requisites. I verily believe that no place on earth could produce pork cheaper than you can. The latest experiments in the Northern States show that alfalfa is worth about $53 per acre when fed to pigs. That, mind you, with our small yields. What would it be worth with your large yields? Get out your pencil, Mr. Editor, and do a little figuring for yourself. I have demonstrated that alfalfa is worth as much as bran. Bran is worth $25 per ton. Figure on that a little. How many tons can you raise? What income per acre? Can you beat it any other way?

"2. Are your hogs prolific? I find that year by year my brood sows are increasing the average number of pigs per sow. It is no uncommon thing for my mature sows to farrow from 12 to 17 pigs each. Of course, gilts never farrow so many, but this year my whole herd has averaged over 11 pigs per sow."

Prof. Shepard is talking about Duroc-Jerseys.

WHAT A MAN MADE FROM A $10 HOG.

Seven hundred dollars of profit from an investment of $10 in a sow and pigs three years ago is the record of a Palouse rancher living near Pullman. F. M. Slagle, president of Pullman Chamber of Commerce, makes the report.

The debit account is as follows: March 22, 1909, one sow and pigs, $10; June 10, one Duroc Jersey boar, $10; December 15, $15. From April 1 to December 1 the sow and pigs were allowed to run in a pasture of alfalfa, clover, and in a summer-fallow pasture containing straw-stacks. No debit is made for this item. Commencing with 1910, debit items are: January 12, ground wheat, $9; February 12, one Duroc Jersey boar, $18; March 10, ground wheat, $12.35; March 31, corn, $8.60; December 15, wheat, $41.10; March 31, 1911, wheat, $50. Total debit, $152.05.

The credit items are: September 11, 1909, 200 lbs. of dressed pork at 10c, $20; September 24, 1910, 15 pigs at 9 cents, $205.20; November 21, six hogs at 8½c, $131.75; January 31, 193 lbs. dressed pork at 10c, $19.30; March 25, 1000 lbs. dressed at 12½c, $125; March 25, 240 lbs. of lard at 15c, $36; March 31, three pig sows, $99; March 31, 21 shoats, $216. Total, $852.25. Prot in three years, $700.20.

HOW TO KNOCK GRAIN SMUT.

The Experiment Station at Pullman, Washington, has just issued a proclamation in favor of an anti-smut campaign among grain growers of its parish. It is stated that the loss to farmers of the wheat belt in Washington, Idaho, and Oregon from smut in the wheat crop of 1911 is estimated by the Chief Grain Inspector of Washington to amount to $7,000,000. This enormous loss has led to the organization of a definite "anti-smut campaign." The leaders in this movement recently met in convention at Pullman to discuss the situation and to plan for a systematic campaign of education, experimentation, and organization to eradicate this costly pest. As a result of their deliberations, the following conclusions were reached:

The increased prevalence of smut is due largely to the increase in acreage of fall-sown wheat, as fall-sown grain is more susceptible to the disease than spring-sown, but spring grain is not entirely free from the trouble.

Smut infection comes mostly from smutty seed, but weather and soil conditions influence the amount of infection, and there is a possibility of infection from smut in the ground if very smutty grain has been recently threshed nearby.

Solutions for treating seed wheat should be carefully made in certain definite proportions. Some wheat growers have been successful while using haphazard methods, but they are men whose long experience enables them to "guess" very accurately the strength of solutions used. Safety lies in exactly measured strengths.

The strength of vitriol solution is one pound of vitriol (copper sulphate or bluestone) to five gallons of water. Wheat should be soaked in this solution for not less than ten nor more than fifteen minutes. Some successful farmers have used as strong as one pound of vitriol to two and one-half gallons of water, soaking not more than ten minutes, without serious injury to the wheat. Too strong solution or too long soaking will kill the wheat.

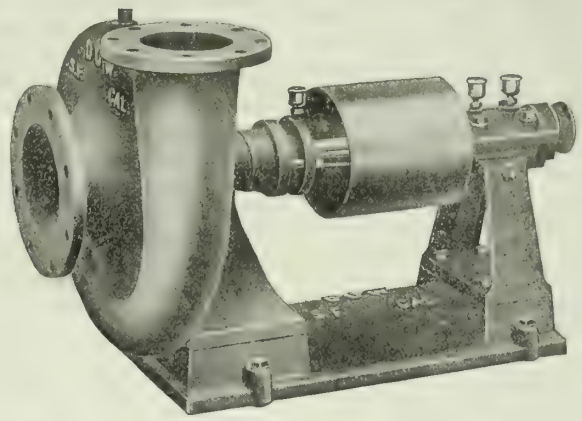
Formalin should be used one pound to 45 gallons water, the wheat thoroughly wetted by dipping or sprinkling, then covered with wet sacks for two hours, then either seeded at once or allowed to dry thoroughly.

Unbroken smut balls must be removed from seed wheat, as no method of treatment destroys the germs in these balls, and if later broken in the seed wheat they infect the grain.

Experiments by the Experiment Station and by practical farmers will be begun this fall, to determine what solutions are most efficient and what conditions must be guarded against.

Complete eradication of smut by the united effort of every wheat grower is the surest protection against the pest.

A bulletin of the California Fish and Game Commission states that gratifying results have followed the raising and distribution of wild turkeys from the Game Farm at Hayward, Alameda county. The turkeys are doing well on the farm, and birds liberated in the Sequoia National Park in Tulare county have been found to be increasing rapidly. The Mongolian and Ring-neck pheasants are also doing well, and distribution of them will be made this fall. The Commission has paid 271 bounties at $20 each for mountain lions killed during the year ending June 30, 1911.



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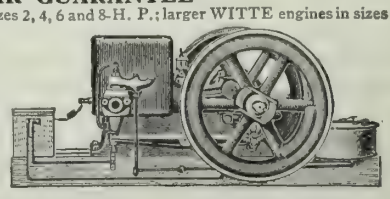
ONE CENT

AN HOURS WORK ONE CENT!

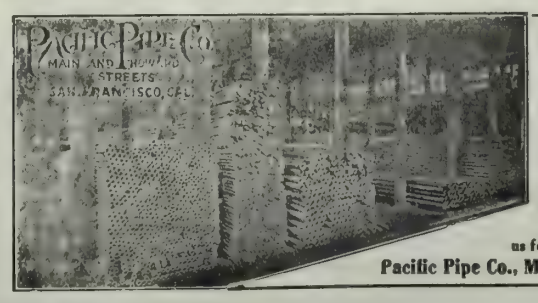
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Make Ready While the Sun Shines.

Written for the Pacific Rural Press
By M. Russell James

For a brief and golden period in autumn man, beast, and bird can live almost without effort. The weather is genial, the harvest is overflowing, and Nature invites her creatures to bask in her soft airs and feast on her bounties. In California this period is lengthened out into months where each day vies with its predecessor for perfection. Such agreeable conditions are apt to lull the poultry keeper into forgetfulness of the days ahead with their chill sou'easters and slow steady drip.

The leak in the roof is not mended; the windbreak is not set; the yard is not cleaned and drained. There comes a downpour, and presto, the erstwhile wholesome conditions are changed. The house is damp; the fowls are wet and chilled; the yard is a cesspool of slimy ground and filthy puddles. Then comes colds and roup, canker and chickenpox, and others of the train of ills which deplete the poultry yard and make poultry keeping a losing business.

Although the California poultryman has a long time in which to make ready for winter, he should not keep putting it off from day to day lest it find him just a day too late.

Look to the Poultry Houses.—In whatever you shelter your fowls, whether it is house, coop, or box, see to it that it keeps out rain and drafts and admits pure air a-plenty. The upper part of one side of the house or coop should always be open to the fresh air, and that side should be the one away from the prevailing winds and storms. In most sections of California that side is to the north or northeast, as our winter winds and rains are from the south and southeast and the chill trade-winds of spring and summer are from the west. If the poultry houses are already built open to the south or west, proper wind and rain breaks should be arranged to let down during stormy weather. A damp wind blowing steadily on the fowls at night, or when they are standing still, is almost certain to result in colds, and in some cases in a violent form of roup.

An excellent way to detect cracks in the roof or walls of poultry quarters is to go in when the sun is shining brightly and close the door, then the sunshine will outline every pin crack.

For the roofs of small houses or coops, common oilcloth such as is used for kitchen tables make a cheap and effective covering to exclude all dampness as well as water. This comes in 1¼-yard widths for from 20 to 25 cents a yard, and in quantities might be bought for even less. This can be quickly and easily put on, care being taken to spread it smoothly over the boards of the roof and tack it at the edges through a strip of heavy cotton cloth. Last year when the heavy rains came, the roof, thought to be rainproof, of a new house in one our breeding pens leaked like the proverbial riddle. As a makeshift the oilcloth was tacked over it, with the result that the house was kept perfectly dry and free from dampness through the rainy season of last year, and seems in good condition for this season.

Shelter Sheds.—The poultryman might increase the egg output and decrease the ills of the poultry yard by putting up a rough shed in each yard for shelter and scratching, where there is no roomy and dry scratching shed connected with the poultry house. This should face the south or east and may be made quite low. The ground should be well drained about it, so as to keep the earth floor dry, clean and mellow, that the fowls may roll and dust in the earth as well as scratch their grain out of the litter. After the fowls are gone to roost these sheds may be cleaned out, some clean litter put in, and dry grain scattered over it. Early in the raw or wet mornings the fowls will get busy in such sheds, singing, scratching, and manufacturing eggs instead of shivering about the gate waiting an hour or two for the poultryman to furnish a tardy breakfast.

Dusting and Scratching Material.—Such material is very necessary to the health and comfort of the fowls during the wet season, and it must be garnered in the dry season. Dry earth is one of the best absorbents and purifiers of unwholesome moisture. In wet weather the floors of the poultry quarters become foul with the dampness and droppings. By scraping out the latter and giving the floors a light dusting of lime, then sprinkling with dry earth, germs of disease, filth, and worms are destroyed and the house made sweet and wholesome. Again, in long spells of wet weather, where there is no opportunity for the fowls to dust, they become infested with body lice. The poultryman should be storing a sufficient supply of clean dry earth for these purposes.

The same with scratching material. To buy all such stuff is expensive, as even baled straw comes high in the winter. In most locations the poultryman can gather quantities of dry grasses, weeds, and leaves in the fall, and store them in grain sacks hung up in the barn or shed.

Clean Up the Yards.—Before the heavy rains come, clean up all the yards, raking off all trash and droppings, and sprinkle lime over the parts where the fowls stand most, afterward covering dry earth over the lime to protect the fowls' feet. The rain puddles out of which the birds persist in drinking will not be so harmful if free from the seepage of the trash and filth of a dirty yard. After the first rain wets the ground sufficiently, the small yards should be limed and spaded and the large ones plowed. This goes far toward purifying and renewing the soil. Then, too, at the first softening of the soil is the time to dig trenches to carry off water from the eaves of the houses and sheds in the poultry yards, to drain the yards, and to fill up holes in them, that standing water and puddles may be reduced to the minimum.

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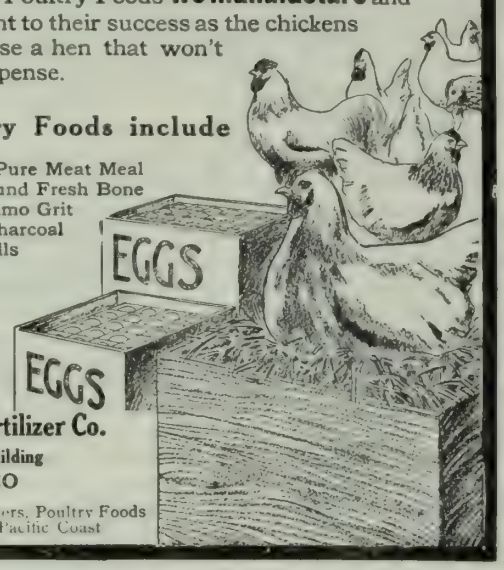
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Poultry Raising in California.

Written for the PACIFIC RURAL PRESS
By Mrs. S. SWAYSGOOD, Healdsburg, Cal.

Under this heading we will aim to give readers of the PACIFIC RURAL PRESS the best methods we know of successful poultry raising in California.

While there are some general principles in farming, stock and poultry raising that are applicable everywhere, each section of our great country requires different methods of applying these fundamental principles according to local and climatic conditions. With eighteen years of practical experience with poultry in California, we may possibly throw a little light on matters that are puzzling alike to the beginner and old poultrymen that meet with new conditions.

The poultry industry in California is yet in its infancy. Thousands of dollars are sent annually to other States for eggs and poultry that could be produced at home, thus insuring the consumer a fresher and more palatable product. We have a climate unsurpassed for the raising of poultry, and chicks can be successfully hatched every month in the year. Can the same be said of the States we send our money to? Emphatically, no! Most of them have from five to seven months of winter in which they cannot hatch a chick, and in many of them the old fowls suffer with frozen combs, and even legs at times. Yet these States with so many drawbacks ship eggs and poultry to us in this favored clime. The attitude of the general farmer and fruit grower in this State reminds me of the story told of the Irishman that happened to be following in the footsteps of an individual that had a hole in his pocket through which a five-dollar gold piece dropped occasionally. Pat, walking along, stooped to pick up the first one, but espying another not many feet away scornfully kicked it aside, saying, "Bejabers I'll wait till I get to the thick of them." Our farmers have been so taken up with agriculture and fruit growing that they have neglected poultry altogether. But the poultry industry is leaping forward by bounds. The same conditions exist all over the United States, and many that have scorned to notice the humble Biddy are now becoming interested. The question they are asking themselves is, "When is the time to start"? There is no time like the present, for the fall of the year is an ideal time to start with poultry in California. By starting now you have the winter months to study the ways and means for the hatching season. There is time to watch your fowls and learn their habits, to cure them of those that are not good and to encourage them in their good ones. The man or woman that thinks all they need to do is to buy some hens and put them in a fence and let the hens do the rest is going to get a jolt somewhere, but particularly in their pocket.

Buying the fowls is the first step, but it must be followed up with proper housing, proper feeding, cleanliness and sundry other details too numerous to mention.

Raising poultry is not a lazy man's job, whether he lives on the Atlantic or the Pacific coast. This is one of the general principles that apply to all localities east or west, north or south. Some places may call for a little more strenuous exercise than others, but I have yet to find a place where you can raise poultry successfully sitting on a fence or lying in a hammock.

But, time spent in watching your flock is not wasted by any means, and during the winter there is usually more spare time than others seasons' so that to start now is a really economic time to make the venture.

By the time hatching should commence you will have thought out what you want to do, by testing a few eggs under a hen you will know about how your eggs run in fertility, so that if anything is wrong there is time to set it right before the hatching season begins. And, best of all, your hens are at home, comfortably settled, and that means a great deal when the season opens. True, by buying later you may save a little feed, but, on the other hand, you have lost the fresh eggs you otherwise would have had and you have lost the opportunity to get acquainted with your flock. The hatching season is on and your hens are strange to the place, strange to you and consequently they will not do their best for a little while and you have to wait for eggs perhaps days before setting your incubator.

WHAT TO START WITH.—I have taken it for granted that you will start with grown hens or pullets ready to lay, because this is the proper season for grown fowls to be purchased.

Those that feel they want to start with eggs or chicks can cool their fever a little by waiting. My experience, however, is that once the chicken fever claims a victim he won't wait any longer than necessity compels him to. The other day I read of a man that could not wait for chicks to hatch in the ordinary way, but on the twelfth day he broke the shells, put the chicks in the oven, and he says "they are alive and healthy." While I don't line up with the doubting Thomases, he will sure have to "show me," as that seems a little too far-fetched for me to swallow.

And anyone that prefers to start with chicks or eggs will, if wise, be more willing to wait than this man was. February or March will be early enough to venture with eggs or chicks, especially if there has been no previous experience and the buildings are new. It is so easy to get a batch of chicks chilled, and once chilled they may almost as well be dead. The first five days of a chick's life is the most critical, but given ten days of good care without any setback and any chick that is worth raising ought to live.

WHAT KIND OR BREED IS BEST.—This is a question most editors and others are often confronted with, and it is a question no one can truthfully answer for another.

The reason is this, no matter what breed, how good or how profitable, if it does not appeal to a man he will not make a success with it. So in this matter of breed it is best to be governed, in a measure, by your own individual tastes. Buy nothing that you do not like, no matter how much another may like or praise it. There is only one thing that I would advise others not to buy, and that is mongrels. They take up just as much room, eat quite as much, if not more, than thoroughbreds, and, as a rule, give little in return. There is very little pleasure or prot in a mixed mongrel lot of chickens, they are the ones that get through or over fences, scratch up the neighbor's garden and play old nick all around.

When they lay an egg you have to hunt all over a ten-acre lot to find it, and the chances are when you find it Biddy will be on hand to dispute your right to it. Starting a poultry business with mongrels is on a par with returning to primitive ways of living and farming, it is a reverting backward, therefore it is bound to be unsatisfactory to all concerned.

The twentieth century poultry raiser must work with modern, progressive tools, his flock must be bred up to the present day needs and demands or his venture will spell failure. As a workman would not attempt to build an up-to-date palatial residence or hotel unless provided with the necessary material, so the progressive poultryman will not attempt to build up his business with the "close to nature kind of stock."

The hen under natural conditions lays as many eggs as she can conveniently cover, then, true to the laws of nature, she sets on them to reproduce her kind. But with high priced feed and land we must fight shy of that kind of a hen. What we need is the 200-egg type at least, and these are only found in the thoroughbreds that have been bred up with the desired end in view.

THE SOIL.—So much has been written about the soil needed for successful poultry culture that a few words will perhaps help solve the question. Any land that is good for any kind of farming, and much that is not, will be suitable for poultry. A light porous soil is the best, and if a little rolling, so much the better, because then a good heavy rain washes off all excrements that may have gathered. In California we have variety in soils as in other good things, and without exception they may all be used for poultry raising.

The general farmer or orchardist is in the very best position to run a little poultry plant for pleasure or profit. Yet, as a rule, these are the very men that neglect the poultry branch of farming, or if not neglected entirely, they keep a few scrubs that are entirely out of harmony with the rest of his stock, buildings, and general equipment.

There is no excuse for this except a lack of interest in the feathered tribe. Once get the farmer interested and he will be as keen after thoroughbred chickens as he is after the same quality in horses, cattle and sheep. Or as the orchardist is after the best in fruit. And the best is none too good for the man that produces. The old system of selling the best and keeping the poor gnarly fruit and vegetables for home consumption is getting played out. The man who feeds the world is just beginning to recognize his own worth and to demand a tithe of what is coming to him, and before many more moons a well stocked poultry yard filled with choice specimens of standard bred fowls will be a necessary part of every up-to-date farm.

Just now the city lot man is having his innings, and in many instances making money besides having healthful exercise and recreation. But very soon intensive poultry culture will wear another aspect and eventually the city lot will be forsaken for a wider range.

And here we come to another general principle that is world wide in example, and while we can, and do, set principles aside with seeming impunity, for a time, in the long run we pay the penalty and eventually submit to natural law.

Intensive poultry culture is an unnatural condition; that is, it is too far removed from natural conditions to prove successful for any length of time. New ground to chickens means new life, and this can only be found where the land can be turned over to the sun and air. Land where chickens are forced to stay on day after day soon becomes what is termed in chicken phraseology "sick land." The poultry give warning of this condition by losing the lustre from the feathers, pale comb and general listlessness. The man who is wise recognizes these warnings and removes his flock to new land where the sun has had a chance to store up its life giving qualities.

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The Home Circle.

"Push—Don't Knock."

Upon a door I saw a sign;
I cried, "A motto, and it's mine!"
A wiser thing I never saw—
No Median or Persian law
Should be more rigidly enforced
Than this. From verbiage divorced,
It's logic's firm as any rock—
"Push—don't knock."

'Twas simply meant to guide the hand
Of those who wished to sit or stand
Within the unassuming door,
This weight of sermonry that bore.
'Twas never meant to teach or preach,
But just to place in easy reach
The ear of him who dwelt in stock—
"Push—don't knock."

But what a guide for life was that—
Strong, philosophical, and pat;
How safe a chart for you and me
While cruising o'er life's restless sea;
Push, always push, with goal in view;
Don't knock—avoid the hammer crew;
This rule will save you many a shock—
"Push—don't knock."

When on that door I see the sign,
I say "Great motto, you are mine!"
No stronger sermon ever fell
From human lips; no sage could tell
The hothead youth more nearly how
To point always his vessel's prow;
There are no wiser words in stock—
"Push—don't knock."

—Baltimore American.

Cupid's Queer Ambassador.

"Estelle, I—I——"

"Yes, Jack."

"I shall look for you on the links tomorrow."

"Yes, Jack."

"Good night."

"Good night."

The girl moved out of the shadow of the big lilac bushes, where they had been sitting and, gliding across the moonlighted lawn, entered the house.

"I wonder if I shall ever find courage to ask her to be my wife?" grumbled the man aloud. "Every night for two weeks I have tried and every time I fail miserably. Why will a man be such an arrant coward when it comes to telling a woman he loves her?"

Jack Allerton, still growling at his own cowardice, walked down to the road and disappeared in the shadows. He was a handsome, athletic fellow, who had never known what physical fear meant, but he had courted Estelle Williams for a winter and two summers and, while he felt reasonably certain that his suit was not distasteful to her, he had been unable to screw up his courage to the point which would put his fate to the test.

As he had done innumerable nights before, he strolled down the road about half a mile and then returning took up a position opposite the Williams cottage in the shadows of the roadside bushes and waited for the light in her room to be extinguished.

"Jack Allerton, for a sane man, you make all kinds of a monkey of yourself," he said finally as the light that he was watching went out and he turned to depart again.

Suddenly he stopped short with a catch in his breath.

A dark form had passed quickly across the lawn and been swallowed up by the shadow of the house.

Allerton sprang to the low fence that surrounded the Williams grounds, and vaulting over, made his way stealthily toward the spot where the form had disappeared. The dining room window was open, and a man was clambering clumsily into the room.

For a moment Allerton hesitated, while he rapidly thought out a plan of action. The house must not be aroused lest Estelle be alarmed. Whatever was to be done must be done quickly and quietly.

Allerton's mind was soon made up. Gliding from shadow to shadow he reached the open window by which the man had entered the house. Crouching beneath it he slowly raised his head so that he could look into the room.

As his eyes became accustomed to the darkness he could dimly make out the form of a man moving stealthily around the room with outstretched arms, feeling along the walls. When he reached the door he passed into the hall and out of sight.

Was he going upstairs?

Allerton's heart was in his mouth.

Placing his hands on the window seat he drew himself up and jumped lightly into the room. It was now a game of hide and seek, and Allerton was "it." For a moment he listened. But the man apparently knew his business well. Not a sound broke the stillness of the night.

Again, he listened, but not a creaking board or stair gave him any hint of the direction the man had taken after leaving the dining room. Allerton stopped and thought again. What would he do, were he a burglar? The sleeping rooms first, for jewels and money, of course. The thought meant quick action. He, at least, had the advantage of a thorough knowledge of the house. He tiptoed to the foot of the stairs and taking one step up, stopped.

It could scarcely be called a sound, but to Allerton's straining ears it seemed as loud as the roar of Niagara. It was a gurgling sound like that made by liquid poured from a bottle, and it seemed to come from the direction of the butler's pantry at the end of the lower hall. Allerton retraced his steps and as he turned down the hall he paused and involuntarily crouched against the wall.

There was his man in plain view. The pantry door was wide open, and standing in a patch of moonlight that came through the window stood the burglar. In one hand he held a bottle of beer, and in the other something edible, at which he was contentedly munching.

While he stood out in sharply defined silhouette, Allerton was invisible to the burglar, and would be until he reached the streak of moonlight that penetrated just outside the pantry door. Moving silently along close to the wall he finally stepped quickly out in view.

With a smothered oath the man dropped the bottle with a crash and sprang at Allerton, who met his onslaught unflinchingly.

"You fool," whispered Allerton as he blocked the blow aimed at him and caught the man in a grasp of iron, "you'll rouse the house."

"What's your lay, anyway?" grumbled the man, as he ceased to struggle against his too powerful captor.

"First, I want you to be quiet; second, I want you to pick up your shoes, climb out of the window through which you came, and just as silently, and then make tracks out of town. I know your face, and if I see you around I'll have you arrested."

"And ain't you going to have me pinched now?"

"No, all I want you to do, is to get out of this house."

"I'm your man, boss. You're the right sort, you are. Most of you swell blokes is apt to be hard on a poor chap."

"All right, now march."

Still keeping a firm hold on the man's collar, Allerton swung him around facing the door, when both started back with a gasp of surprise.

A woman in a long white dressing gown stood facing them with a revolver in her hand pointed firmly at them.

The crash of the falling bottle had done the mischief.

"Estelle," said Jack softly.

"Jack," she gasped, as she recognized him, "thank God you are here."

"Two's company, three's a crowd. Don't you think I'd better be going, boss?" chuckled the burglar.

Giving the man's collar a vicious twist Allerton led him, followed by Estelle and her pistol, into the dining room, where he lighted the gas. The burglar picked up his shoes and seating himself on the window seat swung his feet out and prepared to jump when Allerton should release his hold.

"Say," he said, when he felt himself entirely free, "you're a couple of game uns. Don't you think you'd like to marry the young man, miss? He's been trying to ask you for a long time, but couldn't get up the grit. I heard him say so while I was lying low behind the bushes waiting to pull off the job he's spoiled. Youse have been good to me, and I'd like to see you happy. Take my word for it, he wants ye bad, Miss, but hasn't got the sand to tell it."

With a low chuckle of delight the burglar dodged a vicious upper cut that Allerton handed to him, and dropping quickly to the ground disappeared.

Allerton looked at the girl who had recovered from her fright.

"Estelle," he said falteringly.

"Yes, Jack."

"What the burglar said was true."

"Was it, Jack?"

"Will you—will you——"

"Yes, Jack, only I don't like being proposed to by a burglar."—Mildred Wyckoff.

George—Didn't you notice that I pressed your foot at the dinner tonight?

Mazie—Why, it wasn't my foot you pressed! O, George! I wondered why mamma was smiling so sweetly at the minister.

A Brief for Brevity.

A public speaker was once asked how much time he would need to prepare an address on a certain subject. He replied: "If I am to speak only half an hour, I shall need a week; if an hour, three days; if as long as I please, I am ready now." A message of thirty-five words, written by a woman in answer to a telegram, was reduced by an expert to one without loss of efficiency. Who doubts that the average man could put his written or spoken thoughts into fewer words than he uses—or that the average woman ought to?

Most modern writers use too many words and too long ones. A common offense is the superfluous "out" in watch out, win out, try out, etc. To read of a candidate being tried out suggests lard-rendering, or "something humorous, like death by boiling oil." In most cases, "up" need not follow open, back, fill, cover, etc. Forwards, backwards, towards, approve of, equally as, need pruning. Why use the longer "as though" for "as if," or "during" for "in"? Why say you are aggravated or provoked when you are merely vexed? Why anticipate what you expect, or expect what you simply think? Why commence, conclude, remit, settle, or donate, when you can much better begin, close, send, pay, and give? Why prefer lengthy to long, avocation to vocation, widow-woman to widow, or individual to person?

It might be supposed that the illiterate would find it easier to use short words, yet we hear from them such elongations as "attackted," "telegraphted," "preventative," "agriculturalist," and "casuality." It would seem that there is a form of mental laziness which prefers the long way around to the trouble of finding a short cut.

"Time is money," is a business maxim, and railway companies no longer name, but more simply number, their locomotives; and the old-time "gentleman's room" and "ladies' room" have given way

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to "men" and "women" in their stations. On the other hand, street-railways have displaced the eminently fit "driver" for the longer "motorman," a monstrosity which never should have been admitted to the language. Men who drive are drivers—why not?

The automobile has foisted on us that foolish word "chauffeur." Whoever first called an automobile driver a chauffeur committed a crime. At least, he might have unmasked his villainy and made him a stoker, which is a good English translation and shows its inaptness frankly. Needless words which apply for positions not vacant—and get them—are impudent parasites, drones in the hive. Foreign words of this class, which seek to supplant better ones already here, should be ruthlessly turned back, like pauper immigrants.—Frank M. Bicknell in Lippincott's.

Timely Recipes.

SWEET CHOW-CHOW.—Put in three quarts of vinegar, one gallon of cabbage, two quarts of green tomatoes, one pint of onions and one-fourth cup of green peppers. Chop fine and add a pound and a half of sugar, one tablespoon each of mustard and ginger, two tablespoonsfuls each of cloves and salt and three tablespoonfuls of cinnamon. Boil until the cabbage is tender and put away in glass jars.

BAKED SWEET POTATOES.—A delicious way to bake sweet potatoes is in the pan with a roast, preferably that of pork. Boil them until nearly done, skin them and cut in two, lengthwise, arrange them around the meat, and let them become brown and crisp in the pan-gravy. If they are baked, as is commonly done, like white potatoes, a delicious finishing touch is to squeeze each one until it cracks open from sheer fullness; tuck a generous piece of butter inside.

CABBAGE SALAD.—An old fashioned cabbage salad is made of one head of cabbage and one bunch of celery. Chop fine by running through a vegetable chopper, sprinkle with a teaspoonful of salt, and mix thoroughly. Into a double boiler put two tablespoonfuls of butter, and blend with it one tablespoonful of flour; then add a generous half cup of cider vinegar, a tablespoonful of sugar, a teaspoonful of ground mustard, the beaten yolk of two eggs and three tablespoonfuls of cream. Cook, stirring constantly until thick and smooth; add a dash of cayenne, pour over the vegetables and stand away to cool. Just before serving add a very little whipped cream.

QUINCE HONEY.—Here it is, proportions given first: one cup quince, two cups sugar. Wash quinces thoroughly, then put through the food grinder. Put fruit and water together and cook till thoroughly done. Add sugar and boil a little longer, or until it thickens up and will jell when cold. Don't cook too long after adding the sugar or it will be strong. The fruit may be peeled if you wish, but some think so doing detracts from the delicious flavor of the finished "honey."

TO SERVE CELERY.—Remove the thready outer covering from the stalks and then divide into long slender shreds about the size of a fork-tine. Place these pieces in water and they will curl nicely. This makes an exceedingly dainty way to serve celery.

End of the Line.

A gentleman slipped on the top steps of the subway in New York. As he went sliding down he saw that he would strike a lady who was walking down the steps. Not wishing to throw her forward, he caught her by the dress when he reached her, pulling her back on his lap and took her with him. When they reached the bottom of the steps, not being able to get up while the lady was on his lap, and she not appearing disposed to move, he said to her, "Madam, this is as far as I go."

Home-Made Candies.

CARAMELS.—Two and one-half cups of granulated sugar, two and two-thirds squares Baker's chocolate, two-thirds cup cream. Boil these ingredients in saucepan until they will harden in water; usually takes 20 minutes. As you take from the stove add one-third teaspoonful vanilla and one-third cup of sugar. Pour into a pan in a hurry. When cool, cut into spares.

ICE CREAM CANDY.—One coffee cup white sugar, one-half cup of water, one large spoonful of vinegar, two-thirds spoonful cream tartar. Boil 25 minutes without stirring, and flavor with vanilla. When almost cold, pull it by the stove and it will become white.

PEANUT CANDY.—Two cups granulated sugar; melt slowly until it becomes a syrup, stir occasionally at first and continually toward the last to prevent sugar from burning. After removing from the stove stir in one-third cup of chopped peanuts. Pour into buttered tin. When cool cut into squares.

PEPPERMINT WAFERS.—One cup granulated sugar, one-fourth cup of milk; boil without stirring four minutes; add three-fourths tablespoonful of flavoring. Stir briskly until it becomes creamy, and drop from a teaspoon quickly upon buttered paper.

COCOANUT CANDY.—Two cups powdered sugar, one cup water, one cup cocoanut. Boil sugar and water 13 minutes. Stir in cocoanut and beat until creamy.

November.

When November's night comes down
With a dark and sudden frown;
Like belated traveler chill
Hurrying over the towny hill—
Higher, higher
Heap the pine cones in a pyre!
Where's a warmer friend than fire?

Knowledge was but born tonight;
Wisdom's to be born tomorrow;
One more log—and banish sorrow,
One more branch—the world is bright,
Higher, higher
Crown with balsam boughs the pyre!
Where's an older friend than fire?

—Unknown.

Tomato Jelly Salad.

Stew a quart can of the fruit with a piece of mace and a bit of bay leaf, rub the pulp through a sieve and add an ounce of gelatine that has been soaked soft in cold water and dissolved in hot water. Fill a ring mold with it, and when it is firm turn the jelly out on a bed of lettuce leaves. Fill the center with broken nut meats and celery broken into small pieces and dressed with mayonnaise. Garnish with whole nut meats and olives. The jelly may be molded in individual forms and served on lettuce leaves with mayonnaise turned over it.

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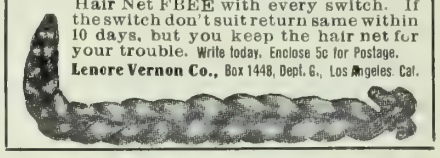
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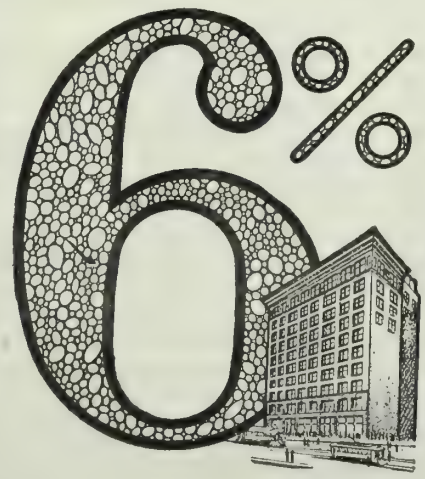
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REALTY SYNDICATE

1242 Broadway Oakland, Cal.

The Re-direction of Public Schools.

Written for the PACIFIC RURAL PRESS
By Prof. E. B. BABCOCK, University of California.

Events of great import, in connection with agriculture teaching in California, have been following on the heels of each other at such rapidity of late that the general public is hardly aware of what is taking place.

The Commonwealth Club, at its last regular monthly meeting, considered the needs of agriculture in California, and among the specific topics presented were the need of a soil and agricultural survey of the entire State, to be carried on through a period of several years; the need of instruction in the University of California in rural economics and agricultural engineering; of better facilities for research in plant physiology as related to agriculture, and for research and instruction in plant breeding; and, last, but not least important, the great need for instruction in agriculture in the public schools. In connection with a paper on this last topic, certain recommendations of the State Country Life Committee were strongly approved. These recommendations are given below.

At a rural educational conference held in connection with the Short Courses at the University Farm, Davis, on Saturday, October 14, 1911, the State Country Life Committee submitted the following statement and recommendations:

RECOMMENDATIONS OF THE COUNTRY LIFE COMMITTEE ON RURAL EDUCATION.—It is charged, both in this State and throughout the Nation, that rural schools fail to fulfill their best mission because they do not teach in terms of daily life of pupils, nor seek to interest and instruct in rural pursuits, nor impress the value and importance of country opportunities, nor inculcate country ideals. This charge holds true in greater or less degree throughout California today, in spite of the fact that there is a growing interest in rural affairs among those who are denied the privilege of participating in them. At the same time, a large proportion of the farmers of the State are not making much more than laborers' wages in actual profits, while consumers continue to pay high prices for most staple and perishable commodities. It is not claimed that these conditions can be completely remedied by giving particular attention to any one element in the problem. But it is now generally agreed that the only way to provide properly for the future welfare of the State and Nation in these matters is to redirect the work of the public schools to the end that proper instruction in agriculture be given. It is with this end in view that the committee proposes the following measures:

ELEMENTARY SCHOOLS.

I. Immediate recognition of nature-study and agriculture by County Boards of Education in three ways, as follows:

(a) During the years 1912 and 1913, adoption in all agricultural counties of a well organized course in nature-study and agriculture for all grades below the high school; the work of the grammar grades to be closely correlated with the leading agricultural industries of the region and vocational in nature.

(b) The provision of county or district supervisors of nature-study and agriculture, who are to be paid by setting aside a certain percentage of the income of each school district. Until a new State law makes it possible, these supervisors cannot be paid by counties out of unapportioned funds. They must be employed by agreement among the trustees of the several school districts interested.

(c) Provision for proper presentation of agriculture to teachers' institutes and county trustee conventions.

II. Increased attention to be paid to the preparation of teachers and supervisors of nature-study and agriculture by the State normal schools and the University of California.

III. Legislation covering the following points:

(a) Provision of a fund for the payment of a bonus to every grammar-school teacher who, during the year 1913 or any succeeding year, shall, in the judgment of the proper supervising officers, successfully teach vocational agriculture.

(b) Beginning in 1914, candidates for the county teacher's certificate to take examinations in nature-study and agriculture.

(c) Provide for the division, not later than 1914, of all counties into districts for the supervision of vocational education, including agriculture, in the grammar grades. These districts should contain not more than fifty schools, preferably less.

HIGH SCHOOLS.

I. Provision for State aid to any free high school establishing a department of agriculture, home economics, and farm mechanics, with courses extending over one or more years, $250 to be given toward the salary of the first special teacher employed for one of these subjects and $150 toward the salary of each additional special teacher employed.

II. Provision for State aid to any county high school establishing a department of agriculture, home economics, and farm mechanics, with courses extending over two or more years, $500 to be given toward the salary of the first special teacher employed for one of these subjects and $300 toward the salary of each additional special teacher employed.

III. Provision of $10.00 per school per annum for the visitation, by a member of the Division of Agricultural Education of the College of Agriculture, of each school establishing and conducting a department of agriculture, home economics, and farm mechanics, for which State aid is asked, providing that a report on each school is filed by said visitor with the State Superintendent of Public Instruction.

The above recommendations were adopted as a whole by the conference. They furnish a definite basis on which to work out future legislation that will put California abreast of the other progressive States that have forged ahead in the teaching of vocational studies.

BROADER WORK FOR RURAL SCHOOLS.—During the course of the discussion at the Davis conference, President Allison Ware of the Chico Normal School offered a series of resolutions, all of which were adopted by the conference as being the sentiment of the meeting except the one which provided for the appointment by a non-partisan board of all county superintendents. This was lost, and it is probably just as well that it was, inasmuch as the new constitutional amendment, that provides for county home rule, indirectly provides such appointments in those counties where the majority prefer that method. The resolutions of Mr. Ware that were adopted follow:

I. That rural schools need redirection toward greater service of rural life, not merely through the establishment of school agriculture, but through the shaping of the whole curriculum until every part of it contributes directly to the life needs of the people.

II. That the rural school be made, as far as possible, the center for the social and intellectual interests of all people of the countryside.

III. That this conference recommend legislation governing the following points:

(a) The reorganization of country-school administration, to the end that there be provided a non-partisan appointment of sufficient expert deputy county superintendents, adequately to supervise and redirect rural education.

(b) Beginning in 1914, candidates for county teacher's certificates should take examinations in nature-study and agriculture.

(c) To provide for the appointment of deputy State superintendent, or of deputy State superintendents of public instruction to supervise and inspect the high schools of California.

IV. To provide just and adequate State support of schools teaching agriculture, industrial arts, and domestic economy.

MOVABLE SCHOOLS AND COUNTY DEMONSTRATORS.—At the fourth quarterly meeting of the Sonoma County Pomona Grange No. 1, Patrons of Industry, held at Santa Rosa on October 18, the following resolutions were presented and later adopted:

"It is incumbent upon the State of California to provide for the improvement of its agriculture in the following ways:

"1. Make adequate provisions for agricultural extension, including:

"(a) Establishment of movable schools for adults at which systematic instruction in soils and crops can be provided.

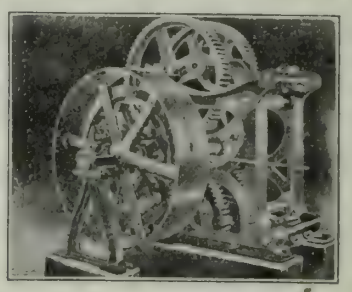
"(b) Establishment of a demonstration farm in every agricultural county, to be managed by a member of the extension staff of the College of Agriculture, who shall live in the county and be available for extension work of all kinds within the county.

"Provide adequately for the introduction of agriculture, home economics, and farm mechanics into the public schools, as suggested in the recommendations of the State Country Life Committee to the Rural Education Conference at Davis on October 14, 1911."

The steps above noted should lead to better things in education, because vocational training properly incorporated in the public-school system will certainly strengthen and supplement general education. It should lead to better things agriculturally, because it has been fully demonstrated that education is the most effective means for improving our agriculture.

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The Book of Alfalfa, by Coburn	$2.00
Feeds and Feeding, Henry	2.25
Farm Development, Hays	2.00
Soiling Crops and the Silo, Shaw	1.50
Swine Husbandry, Coburn	1.50
Studies in Horse Breeding, Carlson	2.00
Greenhouse Management, Taft	1.50
Mushroom Culture, Falconer	1.00
The Study of Corn, Shoesmith	.50
Plant Life on the Farm, Masters	1.00
The Hop, Myrick	1.50
The Book of Wheat, Dodlinger	1.50
Meadows and Pastures, Wing	1.50
Trees of California, Jepson	2.50
Asparagus Culture, Hexamer	.50
New Onion Culture, Greiner	.50
American Cattle Doctor, Dadd	1.00
Home Pork Making, Fulton	.50

Send remittances to
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420 Market St., San Francisco.

Migratory Bee-Keeping in California.

By FRANK H. FRANCE in "Gleanings."

In order to develop one's education in the methods of bee-keeping it is necessary to become fully acquainted with the ways of manipulation in different sections of the country. Having a good practical and working education of the northern ways of bee-keeping, I decided to plan a season's work in southern California, in the region of Ventura, for some of the most extensive bee-keepers on the Western coast are found there.

It was in January, about the 22d, that I began my work in preparing bees, hives and fixtures for moving apiaries from the coast to the sage belt in the mountains. In making this preparation, all of the little details about the hives and moving appliances must not be overlooked. The bottoms of all hives are stapled or nailed on solid, and the frames, if of the California style, are clamped so that there is no play whatever. The clamp is made of frame material, the top of which is the same thickness as that of the bottom-bar, of the common Langstroth frame, and the spurs about the same thickness as the side bar, width ⅞ inch. All hives not having this extra moving-clamp space above the frames are clamped in the same way, only the clamp has a tin top-bar. The frames are held from moving in this way, and there is no fear of breaking combs from jamming together or of killing any bees. All clamps should be removed immediately after the bees are moved, or they will be glued in so tight that it would be impossible to remove them without breaking.

Colonies moved single story, and not too strong, have an entrance screen only. This screen can be used one season after another. Many bee-keepers use just plain wire cloth tacked over the entrance; but this plan of a screen on a frame means less labor. This screen frame is fastened by one nail in the center of the top and one at each end. This holds it bee-tight, and gives proper ventilation. For strong colonies the entrance is nailed tight with a cleat, and the whole top is screened. This top screen is also made on a frame of inch stuff, and 1½ inches deep, with a cleat ⅝ inch at each end to hold the cover up from the screen. The cover is then nailed on by two nails on either side.

Now the hives are ready for loading on the rack made especially for hauling bees. Many bee-keepers also use a plain hay-rack with good easy springs, while some use a plain flat wagon-bed with springs. The manner of loading and binding hives on this rack and small wagons holds each hive in its proper place, with no slipping or jumping around. About 150 colonies, single story, on this rack make a load; but if only supers, some 300 are loaded.

All moving is generally done at night to save the worry of the bees from heat and light. Many bee-keepers in Imperial Valley use ice in moving in that climate. All this first moving is done about the middle of March. If the bees are moved by car they are loaded the same way, only more space is allowed between the rows for ventilation, though preserving compact form, so as to have no breakdowns in switching. A common well-made cattle-car is best suited for this purpose. For hauling small loads of colonies from one yard to another, a light spring wagon is used. With proper care in loading and binding, 26 one-story colonies make a nice load.

The main honey-flow of this mountainous section runs from the first part of April until about the first of July, and comes mostly from the sages. About the middle of March the black sage (button sage) makes its first appearance, and blossoms more and more as the season advances. Like most honey plants, its first flowers do not yield any amount of nectar, hence no flow for a week or two. The little buttons are made up of flower-buds, and the little white-lipped blossoms commence to come out on the outer edge of the bunch of buds. The plant is then in continual bloom until each button is flowered out. After the season is over, the buttons and leaves turn dark, from which I think it derives its name.

About the first of May, the next and most important honey-plant to come into bloom is the purple sage. This plant is almost like the black sage, only the flowering buttons are larger and the flowers of a purple hue. While there are many other minor honey-plants of some importance, such as the wild alfalfa, sunflower, white sage, and wild buckwheat, none can equal the purple sage, which produces the celebrated water-white honey. This clear honey, when taken out at its proper age, has one quality above all other honeys—that of remaining liquid in any climate.

The first of July many bee-men of this section move again from this mountainous country back to the coast or bean-fields. This great Santa Clara Valley produces more lima beans than any other section in the world; hence if the season turns good it pays to move into good locations near these fields. The bean-bloom begins about the middle of July, and continues for some weeks, giving a white nectar.

In comparing the crops, etc., of California with the East, it is interesting to note that Westerners estimate in tons and carloads, and sell to the commission man generally. The flow and quality are very good when they have a good year; but it comes only about once in four or five years, so that the good sections of the East will balance up by having something of a showing every year. Good locations are hard to get, and the sages are being cut and burned, making room for more cultivation, so that in the near future California is destined to lose its high rank among the first of the honey States [unless it comes up on alfalfa and other field crops and fruit blooms, as seems likely.—EDITOR.]

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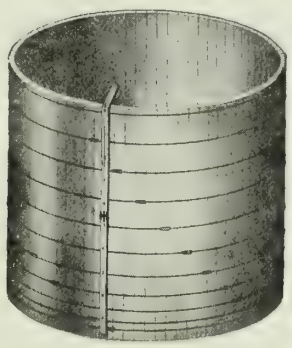
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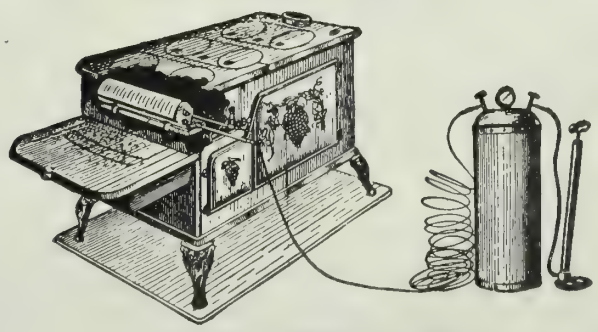
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THE MARKETS.

San Francisco, Nov. 8, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

There has been a little fluctuation in the Northern market this week, and a slightly easier feeling is noted locally, though there has been no quotable change. Trading here remains quiet, with moderate supplies.

California Club	$1.50	@1.55
Sonora	Nominal	
White Australian	1.65	@1.70
Northern Club	1.50	@1.55
Northern Bluestem	1.70	@1.75
Northern Red	1.65	@1.70

BARLEY.

No further change is noted in prices, but the market retains all its former firmness, and the May option is quoted aboe $2. Brewing grain is especially strong, though there is an urgent demand for all grades, trading being limited on account of small offerings.

Brewing and Shipping	$1.90	@1.95
Choice Feed, per ctl	1.80	@1.90
Common Feed	1.80	@1.85

OATS.

Northern prices have been advanced sharply, and the local market remains extremely firm at the former range. All descriptions are in strong demand, both here and in the North, and supplies are rapidly decreasing.

Red Feed		$1.85
Gray	1.75	@1.80
White	1.75	@1.80
Black	1.75	@2.00
Red Seed	1.95	@2.10

CORN.

All grades are firmly held as last quoted. Supplies are light, and a fair demand is noted in the country, where there is some movement of California corn.

Cal. Small Yellow	$1.85	@1.95
Eastern Yellow		1.85
Eastern White		1.90

RYE.

Desirable offerings are steady at the last quotations, cheaper lines being neglected. There is no great demand, although more business is noted than for some time past.

Rye, per ctl	$1.75	@1.85

BEANS.

The market continues in fairly good shape, with more steadiness in regard to values than for several months past. New crop stock continues to arrive in large quantities, and shipments to other markets are of satisfactory volume for this time of year, the demand being sufficient to cause an advance in some lines. Pinks remain weak, though without any further decline, while red kidneys are higher, and small whites have also been marked up a little. Limas are firm, and prices are beginning to advance again. The bulk of the crop is now in strong hands, and the consuming demand at the prices recently quoted has been decidedly encouraging.

Bayos, per ctl	$3.75	@3.85
Blackeyes	3.75	@4.00
Cranberry Beans	4.00	@4.15
Garvanzos	3.00	@3.50
Horse Beans	2.75	@3.25
Small Whites	4.00	@4.15
Large Whites	3.95	@4.05
Limas	5.30	@5.40
Pea		4.25
Pink	3.40	@3.50
Red Kidneys	5.00	@5.10

SEEDS.

The demand is gradually increasing, though hardly as active as usual at this season, owing to lack of early rain. Prices show no quotable change, and in some lines are practically nominal.

Alfalfa	17	@18½c
Broomcorn Seed, per ton		$28.00
Brown Mustard, per lb		5½c
Canary		4½c
Hemp		4½c
Millet	3	@ 3½c
Timothy	Nominal	
Yellow Mustard		5¾c

FLOUR.

The export demand is hardly as active as for some time past, but the regular local trade is in good shape, prices being firmly maintained.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.80	@5.00

Hay and Feedstuffs.

HAY.

Arrivals have hardly been as heavy the past week as for the week previous, although more hay than usual is coming in for this time of year. The bulk of the arrivals, however, consists of alfalfa, and grain hay continues rather scarce. Continued dry weather has facilitated the curing of an extra crop of alfalfa in some places, and this description of hay is accordingly quite plentiful, though the demand is fair and prices are well maintained. While the general trade is quiet, all arrivals of grain hay find a market at full quotations, and there is considerable demand at some country points. The report of stocks on hand has not yet appeared, but is due in a few days, and is expected to show a much lighter supply than last year. If so, dealers look for an advance in prices very shortly.

Choice Wheat	$18.00@20.00
Good Wheat Hay	13.00@17.50
Other Grade Wheat	10.00@12.50
Wheat and Oats	10.00@17.00
Tame Oats	10.00@16.50
Wild Oats	8.00@13.00
Alfalfa	8.00@11.50
Stock Hay	6.00@ 7.50
Straw, per bale	35@ 70c

FEEDSTUFFS.

Oil-cake meal is nominal, as there is none here at present. Other lines stand as before, and practically everything is firm, with an active demand. Alfalfa meal is plentiful, but is finding a fair market, and prices are well maintained.

Alfalfa Meal, per ton	$18.00@19.00
Bran, per ton	29.00@30.00
Oil-cake Meal	Nominal
Cocoanut Cake or Meal	25.50@26.50
Cracked Corn	39.00@40.00
Middlings	34.00@36.00
Rolled Barley	39.00@40.00
Rolled Oats	38.00@39.00
Shorts	32.00@33.00

Garden Truck.

VEGETABLES.

Onions are quoted a little lower, but supplies are well concentrated, and the market is quite firm at present figures. There is a rather easy feeling in some lines of garden truck, as the summer vegetable season has been unduly prolonged, and the market is filled with odds and ends which are mostly unattractive and slow of sale. Cucumbers are much lower, while okra is about out of the market. Summer squash and eggplant drag at former prices, while the best offerings of string and lima beans are a little higher. Cabbage and cauliflower are plentiful and easy, and there are still plenty of tomatoes coming in. Green peppers from southern California are higher.

Onions: Yellow, ctl	$ 1.00	@ 1.10
Garlic, per lb	3	@ 4c
Tomatoes, per box	25	@ 50c
Cucumbers, per box	50	@ 75c
Cabbage	40	@ 50c
Carrots, per sack		75c
Cauliflower, per doz	40	@ 50c
String Beans, lb	2	@ 5c
Lima Beans, lb	2½	@ 3½c
Summer Squash, per box	75c	@ 1.00
Eggplant, per box	60	@ 85c
Green Peppers, per box	75c	@ 1.00

POTATOES.

Potatoes continue active, with a lively shipping demand and considerable buying in a speculative way. Stocks are pretty well concentrated by this time, however, and prices have advanced on both river and Salinas Burbanks. Oregon stock is steady at former figures, and sweet potatoes are a little lower.

River Whites	$ 1.25	@ 1.35
Sweet Potatoes, per ctl	1.65	@ 1.75
Salinas Burbanks	1.65	@ 1.85
Oregon Burbanks	1.40	@ 1.50

Dairy Produce.

POULTRY.

There is little feature to the chicken market this week, prices standing as before. The market is in fair shape, as little local stock is coming in, though Eastern arrivals have been quite large. Arrivals of dressed turkeys are gradually increasing, and while large young stock still brings good prices, general offerings are easier. Live turkeys receive little attention, and prices are lower.

Large Broilers	$ 3.50	@ 4.50
Small Broilers	3.00	@ 3.25
Fryers	5.00	@ 6.00
Hens, extra	8.00	@ 9.00
Hens, large	5.00	@ 6.00
Small Hens	4.00	@ 4.50
Old Roosters	4.00	@ 4.50
Young Roosters	6.00	@ 7.00
Young Roosters, full grown	8.00	@ 9.00
Squabs	2.00	@ 3.00
Geese, per pair	2.00	@ 2.50
Ducks	4.00	@ 7.00
Turkeys, live, per lb	21	@ 24c
do dressed	25	@ 30c

BUTTER.

There is little outside demand at present, and while supplies are not excessive, prices have been easing off for the last week, the better grades dropping 3c, although storage stock is still moving freely at the former quotation. There is still a feeling of easiness in the local market

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed
Extras	33	33	33	32	32	31
Prime Firsts	31	31	31	31	31	28
Firsts	30	30	28	28	28	27
Seconds	24	24	24	24	24	24
No. 1 Packing stock	22	22	22	22	22	22
East Ladles Extras	22½	22½	22½	22½	22½	22½
Storage Extras	27	27	27	27	27	27

EGGS.

While production is said to be decreasing, arrivals in this market are larger than last week, and prices have fallen off a little. The decline is confined to extras and selected pullets, other lines being steady as last quoted. Storage stock is in steady demand.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	53½	52½	51½	52	50	50
Firsts	45	45	45	45	45	45
Seconds	28	28	28	28	28	28
Selected Pullets	43	42	42	41½	41	41½
Storage Extras	27	27	27	27	27	27

CHEESE.

Supplies of local cheese are coming forward slowly, and with about the usual demand, prices are firmly maintained, storage flats being quoted a little higher. Monterey cheese is kept well cleaned up most of the time, and, as little is arriving, prices are firmly held at the recent advance.

Fancy California Flats, per lb	15½c
Storage	14½c
Firsts	14 c
New Young Americas, fancy	15½c
Monterey or Jack Cheese	15@16c

Deciduous Fruits.

FRESH FRUITS.

Both watermelons and nutmegs have practically disappeared from the market during the last few days, but otherwise the list shows little change, though several lines will probably be dropped within a few weeks. There are still a few plums in the market, but they receive little attention and are offered at low prices. Figs are considerably higher, as arrivals are small and there is quite a lively demand. Strawberries and huckleberries are higher, but receive little attention. Former arrivals of cranberries are well cleaned up, and the last lot to come in is held at a sharp advance, as the Eastern market is said to be controlled by speculative interests. Table grapes are still coming in freely, and, while there is a fairly active demand, prices on most lines tend downward. Quite a lot of grapes have been put in storage. Apples are quiet, though a better shipping demand is expected, and prices have been advanced on fancy Spitzenbergs. Pears are also higher, with diminishing supplies, while quinces are lower.

Raspberries, chest	5.00	@ 9.00
Strawberries, chest	3.50	@ 5.00
Huckleberries, lb	10	@ 12½
Cranberries, per bbl	12.00	@12.50
Apples—		
Fancy, box	1.00	@ 1.50
Choice	60	@ 75c
Plums, crate	50	@ 60c
Figs, box	1.25	@ 1.50
Pears, Winter Nellis, box	1.25	@ 1.75
Other varieties	75c	@ 1.25
Quinces, box	65	@ 90c
Grapes—		
Muscat, box	90c	@ 1.00
Isabella, crate	1.00	@ 1.25
Seedless	75	@ 90c
Other varieties	40	@ 65c
Pomegranates, small box	35	@ 50c

Dried Fruits.

While it is now rather late to get new orders filled before the holidays, a renewed demand is noted for most lines of fruits, and the packers are taking more interest than for several weeks past. The amount of stock taken on around the country, however, is comparatively small, as offerings are light, and as a rule are held higher than packers are willing to pay at present. Packing operations are progressing rapidly, and heavy shipments have been made both to Europe and the East. The increasing inquiry, which is largely from foreign buyers, has strengthened the general situation somewhat, and there is a fair outlook for better prices on apricots and peaches. Prunes are still in strong demand, and there is now very little desirable stock offered by growers, but prices seem to be about as high as can be obtained. Raisins are dull and weak, though packers differ considerably in their views in this line. Prices for loose muscatels in sweatboxes have again been reduced, and there is considerable shading of prices in the East. The seedless varieties, however, are scarce and strong. The New York Journal of Commerce says:

"As it is hardly possible to get anything forward that is bought now for shipment from the coast in time for the early holiday trade, there are very few f. o. b. orders for seeded raisins being put up to the Coast at present. Buyers are pretty well protected on such requirements by contracts placed early, but it is feared that on account of the lateness and slow drying of the crop, little of the new goods will get here in time for the Thangskiving trade. However, it is believed that there will be a sufficiency of 1910 raisins bought for September and October shipment freshly seeded. Seedless raisins are sparingly offered for shipment from California, and at comparatiely high prices. It would appear from advices now coming from California that packers of prunes have little more stock to offer and that the crops in growers' hands have been practically all absorbed for packing purposes. However, there is little inquiry from this end at present for forward shipments. Where quotations are made, the sellers are demanding stiff premiums on the larger sizes and hold the medium counts strong on at least a 6½c f. o. b. four-size bulk basis. Very few 30s are to be had from any source, and then only in general assortments, the percentage being regulated by the packer. An 8c f. o. b. bag basis seems to be the best that can be done on that size. The concessionary spirit manifested by packers of apricots has been met by some buyers, domestic and export, with larger orders, but the market, according to most brokers, is still far from active. Peaches are steady, but the market remains quiet so far as business with distributers in this part of the country is concerned."

Evap. Apples, 1911, per lb	7½	@ 8½c
Apricots	12	@12½c
Figs, new crop		4 c
Peaches, new crop	9	@ 9½c
Prunes, 4-size basis	5¾	@ 6½c
Pears, new crop	8	@ 9 c
Raisins—		
Loose Muscatels, in sweatbox	3	@ 3¾c
Thompson's Seedless	6	@ 6¼c
Seedless Sultanas	4½	@ 5 c

Citrus Fruits.

Valencia oranges are still holding the center of the stage in the Eastern auctions, as practically no new-crop navels have ben sent East from the State this season. From reports, the navel orange crop south of the Tehachapi is fully two weeks later than usual, but there are some valencias yet to go out which are filling Eastern demands. The lemons in storage have all been cleaned up and the market is in good shape to take all that are being offered. From all reports up to this time, the various citrus producing centers expect to harvest as large a crop the coming year as they did for the one just closed.

At the Eastern auctions prices are good and the demand strong enough to absorb all offerings. At New York on Monday, Nov. 6, nine cars of valencias were sold at prices ranging from $2.30 to $7. The highest price was paid for Chapman's Old Mission, fancy. The average of the sales was around $4.50 per box. Lemons sold for $5.55 a box.

At Cleveland the same day, lemons averaged $3.45 to $5.00. Florida oranges brought $3.50 per box.

At Philadelphia valencias sold for $2.95 up to $4.35. Florida oranges sold from $1.65 to $2.50. Lemons brought $3.40 to $4.40. Boston averaged a little higher, running from $3.30 to $5.05, and lemons from $3.55 to $4.75.

About 12 cars of oranges and 10 of lemons are being shipped from southern California daily.

Supplies of new-crop navel oranges and grapefruit at San Francisco are gradually accumulating, but so far most of the arrivals are too green to attract much

attention among buyers, and prices are rather low. Valencia oranges, however, are firmly held, and find about the usual demand in the local trade. Limes and lemons are unchanged.

Oranges: Navels	$ 3.25@ 3.50
Valencias, choice to fancy	$ 4.00@ 4.50
Grapefruit	3.50@ 4.00
Limes	4.50@ 5.00
Lemons	2.00@ 6.00

Nuts, Honey, Hops, Etc.

NUTS.

Association prices are steadily held on both walnuts and almonds, and the former are well cleaned up. There are still a good many almonds in first hands, but with an urgent demand in other markets, they are gradually moving off.

Almonds, 1911 crop—	
Nonpareils	18½c
I X L	17¼c
Ne Plus Ultra	16½c
Drakes	14½c
Languedoc	14½c
Hardshells	8 @ 8½c
Walnuts, 1911 crop:	
Softshell, No. 1	14 c
Hardshell, No. 1	13½c
No. 2	11 c
Budded	16½c

HONEY.

The California crop is pretty well cleaned up, and considerable Nevada honey has been shipped to Europe. Local prices are steady as last quoted, and the better grades of both comb and extracted are in good demand.

Comb, white	13 @15 c
Extracted, water white	8 @ 9 c
Amber	7 @ 7½c
Off grades	5 @ 6 c

BEESWAX.

Offerings are a little larger than they have been for some time past, but there is no general demand, and prices remain as formerly quoted.

The market continues quiet at unchanged quotations.

Light	28 @30 c
Dark	23 @26 c

HOPS.

The market continues active all along the Coast, though by this time there is little left in growers' hands. Prices continue to advance, with numerous sales at 42½c and some options at 45c, the latter figure being generally asked by growers. The European shortage is becoming more apparent, and brewers all over the country are endeavoring to cover their requirements.

1911 crop	39 @45 c

Live Stock.

All prices stand as last quoted, and the market shows little feature at present. Hogs continue to arrive freely, but prices are steady, as packers are buying more freely than for several months past.

Gross weight:	
Steers: No. 1	5½@ 6 c
No. 2	5 @ 5¼c
Cows and Heifers: No. 1	4½@ 4¾c
No. 2	4 @ 4¼c
Bulls and Stags	2 @ 3 c
Calves: Light	6½@ 6¾c
Medium	6 @ 6¼c
Hogs: Grain-fed, heavy	6¾c
150 to 250 lbs	6¾c
100 to 150 lbs	6¾c
Small prime wethers	3¾@ 4 c
Large prime wethers	3¾@ 4 c
Ewes	3¼@ 3½c
Lambs	4½@ 5 c

DRESSED MEATS.

Steers	9 @ 9½c
Cows	8 @ 8½c
Heifers	8 @ 8½c
Veal, large	9½@10½c
Mutton: Wethers	8 @ 9 c
Ewes	7½@ 8 c
Lambs	9½@10½c
Hogs, dressed	10 @11 c

WOOL.

All lines of California wool are still neglected, the locay buyers appearing to take no interest in country offerings. Prices are accordingly little better than nominal.

Spring Clip—	
Choice Southern, Year's sta-	
Northern, year's staple	14 @16 c
ple	10 @12½c
7 months	8 @11 c
Lambs, spring	8 @10 c
Fall Clip	5 @10 c

HIDES.

There is an active demand in the East at present, and the local market is quite firm, all good offerings finding a ready sale at the previous quotations.

Heavy Steers, over 56 lbs	11½c
Medium	11 c
Light Steers, under 48 lbs.	10½c
Heavy Cows, over 50 lbs.	10½c
Light Cows, 30 to 50 lbs.	9½c
Kip	11½c
Veal	16 c
Calf	16 c
Dry—	
Dry Hides	17½@18½c
Dry Bulls	15½c
Dry Kip, 10 to 15	18 @18½c
Dry Veal, 5 to 10	19½c
Dry Calf, 7 down	23 @23½c
Sheep Skins—	
Long Wools	$ 0.85@ 1.25
Medium Wool, 6 to 9 mos.	50@ 75c
Short Wool, 3 to 6 mos.	30@ 50c
Lambs	35@ 50c

HORSES.

Quite a lot of Kentucky thoroughbreds have just been shipped to Australia. The number of horses offered in the local market is comparatively small at present, owing to the high prices asked through the country, though an upward tendency is noted in the local market. The situation in heavy draft stock is unchanged, offerings being scarce and readily sold at full quotations. One of the most interesting features of the market is the strong demand for desirable farm mares, $125 being about the bottom price for this class of stock. Heavy mares with good bone conformation are especially strong bringing a marked advance over ordinary stock.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	200@225
Wagon Horses, 1250 to 1350 lbs.	125@175
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	125@200
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

Deciduous Fruit Shipments.

Sacramento, Cal., Nov. 4, 1911.

The following gives number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, Nov. 3, 1911, as reported by the California Fruit Distributors:

Pears—5 cars. Limited shipments of the fall and winter varieties are still going forward and will not be completed for another week or ten days, but the volume will necessarily be very small.

Grapes—474 cars. Shipment this week shows a falling off of nearly 100 cars from the previous week. There will undoubtedly be an even greater decline during the next seven days. The Tokay movement is nearing its conclusion, but there will be full cars of this variety available in a somewhat limited way during the coming week. The principal volume of shipments will be Emperors and the last of the Cornichons. There is a liberal movement of the former variety from the Fresno district at the present time, and the fruit is of the usual good quality to be expected from that section.

Total shipments to date, 11,971; total shipments to same date 1910, 11,707.

PUBLISHER'S DEPARTMENT.

The first time the writer passed through the Santa Clara valley, several years ago, he fell in love with its climate, its broad expanse of fertile soil, and the wonderful producing capacity of its great number of orchards. Not till last week, however, were we in the section around Mountain View and Sunnyvale long enough to get out into the orchards to see what was actually doing there. On this trip we had the advantage of being carried over the district by F. C. Willson, the owner of the Encinal Nurseries at Sunnyvale, and as he has lived there since before Sunnyvale was, we got information straight and first hand. This northern portion of the Santa Clara valley was set out to orchards later than the central and southern parts, so that the prune, peach, apricot, cherry, and walnut trees are now in their prime, being mostly from eight to fourteen years old. Here the orchards are from five to sixty acres in extent, valued at from $400 to $1000 per acre, and the net returns from fruit usually averages better than $100 per acre per year. In going about, Mr. Willson took pride in showing us the fine orchards of the district, including his four places, which rank with the best in the valley. Then, too, we had the interesting experience of going through his nursery of walnut trees, and picking some of his Wonder Walnuts from two-year-old grafts. There is no mistake about these trees being early bearers and keeping continuously at it, and the size of the nuts, thinness of shell, and flavor are all that is claimed for them. When we get our ranch, which we trust will be in the Santa Clara valley, we will plant some walnut trees, and "Willson's Wonder" will be prominent among the varieties.

A note from Henry Wheatley, owner of the Salvador Stock Farm at Napa, who is now in England, states that he was very successful in buying Shire stallions this seaon. They are weighty, good-boned horses, with action and good colors. These horses will arrive at Napa about December 1, where they will be offered for sale.

Your soil gave you splendid crops this season, and probably has done so for many seasons past. It may be that you ought to put something back to replace the plant food required to mature these crops. If so, look up the fertilizer ads. in this issue of the PACIFIC RURAL PRESS before buying. You will find announcements from the Pacific Guano & Fertilizer Co., California Fertilizer Works, the Mountain Copper Co., the Nitrate Agencies Co., and the Prest-O-Lite Co.

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CONTENTS BY CHAPTER HEADINGS:

The Climate of California and its Local Modifications.
Why the California Climate Specially Favors Fruits.
The Fruit Soils of California.
The Wild Fruits of California.
California Mission Fruits.
Introduction of Improved Fruit Varieties.
Clearing Land for Fruit.
The Nursery
Budding and Grafting.
Preparation for Planting
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Pruning Orchard Trees and Thinning Fruit.
Cultivation.
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The Apple
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The Date.
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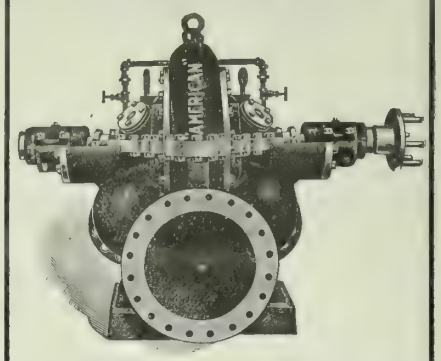
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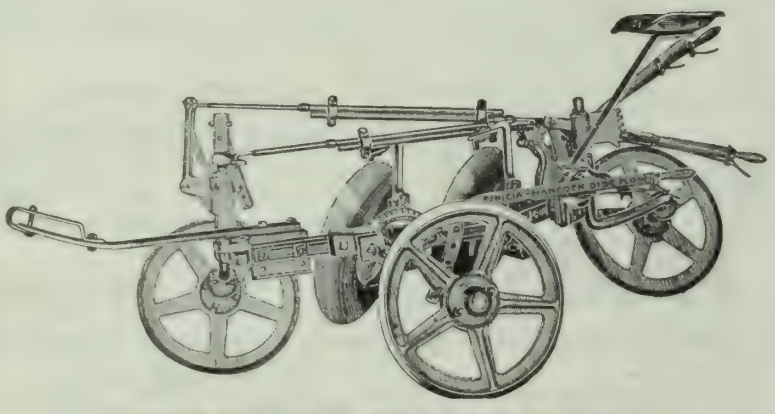
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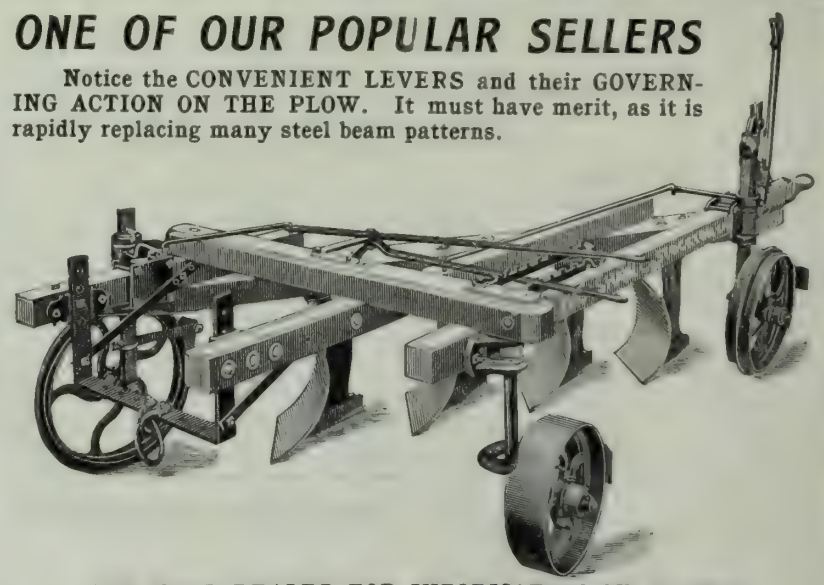
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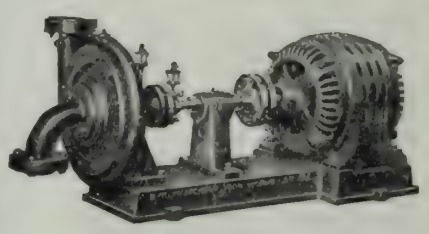
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THE PACIFIC RURAL PRESS

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CALIFORNIA STATE

A Suggestion of Thanksgiving.

Several centuries ago when the forefathers of some of us wished to show their thankfulness for the good things bestowed upon them, they selected the turkey as the most appropriate bird to offer up for the occasion, one that would best induce the state of mind that they intended to display. The anniversary of this festive period is fast approaching, and the turkey is again being drawn out from his eleven months' seclusion to make an American holiday.

Turkeys can be found on the market, both alive and in cold storage at all times of the year, but not until the Thanksgiving period are they sold in large quantity. The turkeys for the San Francisco market come from our own State and from Texas and the Middle West. For Thanksgiving, however, this State and eastern Oregon supply practically all that are used, as the Eastern fowls are not in as good condition as they become later.

The California turkeys are raised on the wide ranges of the great valley in large droves. Just before Thanksgiving they are driven in toward the shipping points and either killed and dressed or crated alive to the towns where they are sold. While growing they pick up most of their food, but several weeks before shipping are fed heavily with grain.

The vanguard of the fowls arrives soon after the first of November, but the real Thanksgiving turkeys do not come in until the Monday preceding the holiday. The number arriving then does not greatly influence the price. Tuesday is the big turkey day, and a shortage then makes prices soar and an apparent surplus causes them to fall; then on Wednes-

(*Continued on Page 423.*)



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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Nov. 14, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	1.48	3.57	5.87	60	32
Red Bluff	08	1.55	3.57	70	30
Sacramento	T	.20	2.10	68	44
San Francisco	.46	.77	2.33	62	44
San Jose	.14	.94	1.76	66	30
Fresno	.25	.26	1.31	74	34
Independence	.10	.80	1.20	70	22
San Luis Obispo	.46	.60	2.28	68	38
Los Angeles	.10	1.49	1.28	70	48
San Diego	.02	.52	.83	66	50

The Week.

In the passionate pursuit of phenomena which is our pleasurable proclivity, we are at this moment very busy trying to run a locomotive upon the tail of a flying blizzard. As soon as we learned by wireless that one of these meteorological monsters had escaped from the chill chastenesses of Canada and entered the United States we ordered the Overland Limited out of the garage, swung ourselves upon the observation platform and flew from the sunlit valleys and foothills of California up to the snows of the mountains and out upon the sage-plains of Nevada. But we do not find even the tail of the blizzard here, though the sage of the valleys is powdered with the diamond dust shaken from its caudal plumes, and along the crests of the distant mountains one can see scudding streamers indicating that perhaps beyond them the phenomenon is disporting itself, lashing the air into snow-laden whorls which whirl their burden upon the flanks and shoulders of the cloud-piercing uplifts. But even here the temperature recalls the wintry joys of our childhood. How the cold nips our leathery cheeks to see if they retain aught of the tenderness of youth. How everything creaks and squeaks as stress comes upon it. How eloquent of winter are the roadside people bundled and muffled to their eyes and spouting steam like geysers as they pass along. Gee! it is the genuine thing: it is the trail of the blizzard, but not the tail thereof. Shall we find that beyond?

Aside from the chase of the big game, our interest lies chiefly in what its passing will do for the Pacific Coast. For it is unusual to have such an Arctic dash so early in the season. Seattle reports the lowest temperature at this date since records began, twenty years ago. What will be the effect upon the large and costly fruit plantings in those northern valleys, which have become famous for free investments, if the trees have not had time to assume dormancy through a period of gradual approaches to winter? It will be interesting to watch for reports from northern growers on this point. As for California, protected on the north and east by the high mountain rim of the Sierra Nevada, no blizzard of Canadian birth can do more than cast showers and white frosts over the great natural barrier.

Shall Late Oranges Be Early?

But though all are chasing this blizzard far beyond State lines and going farther, our reflections are still of California affairs. Evidently this year the old question as to whether California shall supply the holiday trade with late or early oranges, is coming up more sharply than ever. The East seems to be obsessed with a fear of green oranges. We cannot understand why a race of men which has for generations survived the pinch of green apples in its youthful bowels should now fear and quake and turn pale at the sight of an orange with a tinge of verdancy on its cover. But thus it is, and popular tremor has gone so far that the governors of twenty States—governors who always thrist for reputations resting upon the basis of beneficence—have proclaimed against unripe oranges as though they were bundles of paris green. Oh, the dear people—can they no longer be trusted to do a single thing for themselves?

But we are not defending the marketing of green oranges. It is not at all necessary that California should do it, and in fact has never done it to any extent, and then only when districts naturally late desired to swipe some of the business properly belonging to other districts naturally early. It is an unholy desire and will fade away. It is perfectly rational and possible for California, from her differently-conditioned citrus districts to market ripe oranges every month in the year. There is only a little interval which is not now fully covered, and that is the month of November. For November, then, shall we send valencias from the latest districts or earlier navels from the early districts? So far the acceptability of an earlier variety than the navel has not been fully demonstrated. The Parson Brownlow, which Florida banks on for early fruit, has nothing of the finish and fineness of the navel or the valencia, and we have nothing to gain from trying to grow oranges of the Florida type: it is far more rational to watch for variations in our own type, which is now being systematically done in this State, and whatever we need in the way of ripening season will come out of it. This year, when Florida has knocked herself out by her agitation of the green orange matter, so that a northern consumer dare not bite the skin of one of her fruits, California is doing her best to citrate the Easterners with perfectly ripe valencias held over from last year's growth until her perfectly sweet new navels reach the Eastern markets.

We are willing to grant that the Florida orange reformers are proceeding conscientiously in support of a principle, but we do not know how much the principle is worth, and we do not know how bad the infraction of it may be in Florida. We do know, however, that the exterior color of an orange in California is, by itself alone, no surety of the quality of the contents of the fruit. Color in oranges with us is a very freaky thing. It may develop late, after the pulp of the fruit is perfect, and thus give us an early orange which does not exteriorly properly announce its maturity. It may return to an orange which has once yellowed perfectly, and then become, in a way, a sign of post-maturity. The expert grower and handler of our fruit knows the difference between a green orange and a green-ripe orange and a ripe-green orange, but the distant consumer or the political health-defender does not know or does not care to know. Florida has made a mistake in painting a bad orange green: red and yellow are more generally recognized as danger signals.

More Farmers in the Legislature.

We quite agree with the contention which the honored veteran, John Tuohy, made at the last meeting of Tulare Grange, that it would be a public advantage if there were more farmers in the legislature. He cited many examples of legislation where he believed the farmers would have been benefited more if the legislators were men who understood conditions. There can be no question on this point, but it also occurs to us that it would be not only for the farmers' benefit, but for the public benefit if "the legislators were men who understood conditions." Our observation is that there is no lack of disposition among conscientious legislators nowadays to advance agriculture and to help those engaged therein to increase their products and even to secure a greater share of the value thereof which properly belongs to them. But it is undoubtedly true that few of such well-intending law-makers really understand agricultural conditions well enough to legislate therefor. Some popular ideas of what is good for agriculture are clearly projected without such understanding, and though it does appear that there is less disposition to discriminate against farmers than formerly, there is legislation which is unintentionally but seriously against them. Some of the labor legislation, for example, which may be justified and wholesome for the laboring classes securing it, should not be extended over farming employers until the effect of it is more fully worked out by experience with those laboring classes. The employers' liability enactments seem to us clearly of that class. Here all at once, the employing farmer is put in the same liability class with the manufacturing employer who can easily provide a sinking fund to pay for casualties to his working force by adding it to the cost of his product, and the consumer has to pay a slightly increased price because the manufacturer fixes his price upon what he sells. The farmer does no such thing and cannot do it under present conditions. He has to take whatever price the buyer will pay, and his only hope of increase lies in the disposition of buyers to fight and gamble. How then can he provide against losing his crop, or perhaps his whole ranch, because some one who asks him for a chance to work hurts or kills himself. And yet such laws went through flying, probably because there were not enough farmers around to assert their condition and point of view.

But some one may answer our objection by saying that the farmer must protect himself by insurance. Even so; but that only distributes the burden and everlastingly taxes all farmers for the cost of a higher risk than occurs on farms, probably, and builds up accident insurance profits to some such colossal incubus on the public as the older lines of insurance have become. Still the farmer cannot get the cost of insurance back, as other employers do, because he does not fix the selling price of his product.

Again, it may be said the State must do the insuring at cost in the different occupations separately figured. That would be better, because the farmer would lose less money, but whatever it is he would lose it just the same. The whole thing is new and raw and never should have been spread over agriculture until years of experience had been tried upon other employing classes who can easily shift the burden of it to the public by attaching it to the selling prices. This wrong has been done to agriculture by those who did not understand conditions. We need more legislators who do understand them.

A Cranberry Combination.

And then when a farmer does undertake to fix the price of his product the whole people, and the government thereof jumps on him. It is just

telegraphed from Chicago that complaints made to District Attorney James H. Wilkerson that a corner existed in the cranberry market brought to light recently the fact that it is possible for producers to control the market. Henry J. Cox, weather forecaster in Chicago, who has made an exhaustive study of the industry, declared that the berries can be sold at $5 a barrel and the grower make a good profit. The price in Chicago now is $10.50 a barrel. This is an increase of $4.50 over the price of a year ago. Evidence was presented to the district attorney that the crop now ready in three States is absolutely controlled by a New York central organization.

Such is the story as it comes to us. We do not quite see what business a government weather-sharp has to be trying to push cranberry growers to the wall when they are trying to fix a price on the fruit—which is exactly what the dealers do as soon as they get the stuff in their possession. The growers are apparently only trying to get what belongs to them out of what the consumer has to pay in any case, and yet the weather service and the district attorney and all the other yelpers in the pack which the dealers control, get out on the trail to the marshes and try to bite the poor wet-footed cranberry grower because he is trying to get money enough to buy better shoes. This gander needs a little sauce, Maria!

Talking Through Our Hat.

In view of the alacrity with which our women are embracing their right of suffrage, and in view of their surprising registration in some parts of the State, which may give them not only the balance of power, as anticipated, but all the power there is in sight, we conceive it to be our patriotic duty to address ourselves, not consecutively, of course, for we have other weighty responsibilities, but occasionally, as space may be available, and yet persistently, serially and seriously, to determine, occupy and, as it were, to impale ourselves devotedly upon the woman's point of view. We are aware that a few sentences like the foregoing would make the fame aand, in these mercenary times, the fortune of any essayist who could swing them in quantity—but we are not impelled to the writing by such unworthy motives. In this quest of the woman's point of view we concluded first that it would be idle to contemplate it from a distance. The one who knows mountains is not the plainsman, but the man who climbs the mountains and lives among the summits. Therefore, think we, nothing would come from meditation upon the loftiness of women, but something might be attained from an honest effort to surmount one of her highest aspirations—to live her life and think her thoughts upon that pinnacle. Manifestly the topmost thing about a woman is her hat, and the attainment of it is merely a matter of money. With the sacrifice which is characteristic of scientific investigators, we exchanged the savings of weeks of hard labor for a hat. We have bought hats which were higher and hats which were broader, but we never gave so much money for a hat before. From that moment we began to feel the thrills of a woman—thrills of doubt as to whether it would look so well at home as in the shop; thrills of despondency lest it should not be becoming; thrills of triumph, because we find nothing so conspicuously fine in the public places to which we have thus far come; thrills of appreciative joy over the intrinsic beauty of it. Oh, it is a love of a hat; it has all the curves of comic sections and a few more. It has a furry covering soft as the down upon the inside ear of a cat and a blackness which makes midnight look like the dawn of light. And then it cost so much; this must be the distinctly feminine element, because it is so unmanly. A man does not pay half as much to cover his head as his feet, and he grows them large so he can have the chance to wrap a whole side of leather around them and enjoy the cost thereof. A man wants something he can see; therefore he adorns his feet and puts any kind of a cheap lid on his head, because he cannot see it. A woman wants something other people can see, and so she makes her hat as large as a man's foot and joys to pay the price thereof. And, after all, is not the woman's point of view more rational? Should not the ruling, creative brain be adorned in a way befitting its lofty function rather than the foot, which is chiefly made for kicking. We are taught by our own experience that the woman's exaltation of her hat is both reasonable and delightful and makes for the uplifting of mankind.

Queries and Replies.

Ways With Linnets.

To the Editor: Will you kindly inform me as to the most effective method at least cost for the destruction of the California linnet? Last year we had a big crop of almonds; this year we did not have any; a total loss. And this loss was caused very largely by linnets. Last winter they could be seen in enormous quantities daily at work in our orchards eating off the buds. Please tell me the best way to destroy this pest.—Grower, Fairmont.

Of all the methods of driving away injurious birds, nothing has proved so effective as the use of an ordinary shotgun with light charge of powder and birdshot. There are, of course, more birds driven away than are killed. The latest thing is an automatic arrangement for firing cartridges at intervals which can be hung in the trees. This, we believe, may soon be within reach of California, and it is claimed to be effective in Europe. Fifteen or twenty years ago the shotgun method was employed in your district by one of the pioneer almond growers and was pronounced by him the best thing he could do, after trying poisoned grain, water, etc. An automatically fired gun ought to keep the birds moving.

Keeping Pumpkins.

To the Editor: Kindly give me information as to the best way of storing pumpkins, under ordinary farm conditions, in a climate such as we have here in northern California. I have no facilities for cold storage.—C. H., Santa Rosa.

All you have to do in this climate to keep pumpkins is to keep them out of reach of the stock. They do not need storage of any kind, but will keep in good condition during the late autumn and winter months in any open air place where they may be convenient for feeding purposes. But in parts of California where there is hard ground freezing, protection of squashes must be given, but even this can be afforded by covering with boards or straw or any other material available. We have no need for root cellars or cold storage, for our winter temperatures are neither high nor low enough to hurt them.

Squashes Dislike Hardship.

To the Editor: Can you enlighten me on what caused these squashes, of which I send you sample, to be so hard and woody? They were grown without irrigation.—Grower, Redlands.

The fact that your squashes were grown without irrigation under conditions which were too dry for them may be the reason why they are inferior in quality. If not this, then it may be that the variety itself is not of good quality or the specimen from which the seed was taken may have been inferior. A squash in order to be tender and acceptable needs rich feeding and plenty of drink. Otherwise, it is apt to resent ill treatment by very undesirable growth.

Almonds and Walnuts.

To the Editor: Please give me data, if available, on soil adapted to almond and English walnut. I am about to engage in the raising of these northeast of Marysville and am anxious to know if soil in that locality is adapted for purpose mentioned.—Beginner, Sacramento.

The almond succeeds best in a light deep soil, because it is very deep rooting and will succeed with rather less moisture than the walnut. The soil for the walnut should also be deep, but as a rule rather more heavy and retentive, because the walnut cannot resist drouth as well as the almond does. In both cases, however, the soil should be well drained, and there should not be standing water too near the surface. The success of these nuts is, however, conditioned quite as much upon the absence of spring frosts as upon the soil character. The conditions of soil, moisture and temperatures best suiting these nuts are all important and must be considered.

Jersey Kale.

To the Editor: Please inform me how to plant Jersey or cow kale.—Beginner, Willows.

Jersey kale can be planted by thin scattering of seeds in rows two and a half feet apart so as to admit of cultivation, or the plants can be grown just as cabbage plants are and set out two and a half or three feet apart, the squares to admit of cultivation both ways. The plant needs a good deal more space than an ordinary cabbage, for it makes a tall free growth, and space must be had for the growth of the plant and for going into the patch for stripping off leaves and cultivation. The plant can be started now or later in the rainy season as the land comes into good condition. It is a winter grower in California valleys.

Horse Beans.

To the Editor: Please tell me how to grow horse beans.—Enquirer, San Francisco.

The horse bean plant has been grown in California for many years and its cultivation is generally understood. It is hardy enough against frost for winter growth in places where frosts are not very severe, and is usually planted in rows two and a half feet apart, sufficiently distant for cultivation, the plants standing a few inches apart in the row. This is regulated, of course, by dropping the seed at a distance of five or six inches in the drill. The plant has been chiefly grown in Alameda and Santa Clara counties, although recently it has been successfully grown farther down the coast, also in the interior valleys.

Alfalfa Sowing.

To the Editor: I would like to have your opinion as to the time for planting alfalfa in the Patterson Colony, San Joaquin valley. If I do not get my alfalfa sowed until the first of December, would you suggest waiting until spring? I would also like to know when to plant Egyptian corn here, and do you think soy beans would grow in this soil, and where could a person get the seeds?—A. P., Patterson.

We would not advise you to sow alfalfa in your part of the State as late as December 1. We certainly should wait until the land comes into condition and the temperature rises in February or March, depending upon the character of the season. Egyptian corn and all the other sorghums must be planted after frost danger is over, probably in May. The behavior of soy beans you can only determine by an experiment. The seeds can be had from our advertising seed dealers.

The Care of a Peach Orchard.

Written for the PACIFIC RURAL PRESS
By D. J. WHITNEY.

No fruit trees have been more in demand during the last four or five years than peaches, and, according to the latest available figures, there were more peach trees in the State, bearing and non-bearing, than any other deciduous fruit.

The territory in the State in which peach trees will thrive and be profitable is also very extensive, although the great interior valley is the place where they do best, and, in this valley, in no county in the last few years, has planting been done much more extensively than in Stanislaus. For instance, in the last published assessor's reports, the bearing peach trees amounted to 50,140 and the non-bearing to 398,510.

An orchard in this district that is typical of the best is one of 35 acres belonging to W. A. Harter of Ceres. The orchard, unfortunately, is not typical of all. If it were, a description of methods used would be valueless, except in an Eastern publication, perhaps, to boost the State.

The orchard is still comparatively young, the first trees being put out in 1901 and not coming into good bearing until five years later, as it is the owner's opinion that the trees had better be making wood than fruit up to that time. Since they have been bearing, however, the returns per acre have never been less than $90 per year and have ranged from that up to $200 and better. The cost of caring for the trees has been $20 a year, so that the profit is something that is worth while. The land is a light loam, and when the first trees were set out, the water-level was 30 feet down. Since that time, through irrigation elsewhere, it has risen to within 5 feet of the surface. The orchard itself is not irrigated.

Pruning the Peach.—Aside from the proper cultivation of the ground, which is understood by every orchardist, Mr. Harter considers pruning one of the most important as well as one of the most neglected and illy done parts of peach production. As far as the shape of the tree is concerned, it is headed very low and the branches kept so short that the picking can be done from the ground, not a ladder being needed on the ranch in harvesting time. Sufficient bearing wood is obtained by making the branches spread out as much as possible, rather than permitting them to grow vertically. To get the proper shape, of course, the grower has to know his business, and this means study and observation; but even if the owner never prunes a twig, Mr. Harter states that it is essential to understand the business thoroughly so as to direct the men who are hired to shape up the trees.

To keep the tree low it is necessary to cut the branches back every four or five years. This, however, gives the tree a rest and does good from that standpoint. A part of the orchard is cut back thus every year and the crop as a whole not destroyed at any one year.

After the tree is shaped up right, pruning for fruit is the next thing in order. It is a common thing to keep all the bearing wood at the end of the branches. In the Ceres orchard it is evenly distributed over the whole length of the branch, and as a result the trees bear as heavily as others twice their size and it is the exception rather than rule when a prop is used, even in years of the heaviest crops, while in some other orchards with the fruit all on the end of the branches, props are thick and trees breaking anyway.

As a result of the benefits from this style of pruning, is given an experience when a new pruner went over an acre of trees, leaving the only bearing wood on the end of the branches. It took two years to get the trees in proper shape again and the crop the first year was about one-fifth of that of the rest of the orchard.

The present pruners have been employed for several years and know just what is wanted. The cost of pruning is generally close to $4 per acre. The pruning is, of course, done soon after the leaves have fallen and before any new growth has started.

Spraying the Peach.—Next in point of time is spraying. The orchard is gone over twice, first with the bordeaux mixture in the fall, from October to December for the blight, and again in the spring as growth is starting, for the curl leaf. The fall spraying is done as soon as possible after the pruning, and whenever pruning has been delayed it is recommended to spray before this. The cost of spraying on the ranch has been $1.50 per acre for labor and material. A power outfit has been found cheaper and more effective than a hand outfit.

Next to the proper pruning as a means for getting a good crop, and perhaps as important as it for this purpose, is thinning, this to prevent overbearing and to insure that the peaches will be of good size and quality. The fruits are thinned to three and five inches apart. The cost varies greatly, according to the size of the crop. The heavier the crop the more necessary is the thinning, both on account of the quality of the fruit suffering badly when the trees are overloaded and because the competition is more severe when fruit is plentiful. Some orchards in the county this year bore so heavily without thinning that the trees broke down; the peaches were little but pit and skin, and instead of the owner making good money, he made little or nothing, while from the Harter orchard the peaches brought $35 and $40 per ton, loose, according to variety, the trees bearing about seven tons to the acre.

The cost of picking averages $5 and $6 per acre in years of good crops. On account of all picking being done from the ground, the work is less expensive than with larger trees where props are in the way and ladders have to be moved around. Picking is done by the day. The cost of cultivation is about $5 per acre, the total cost of looking after the place being, as stated in the beginning, $20 per acre. The only fertilizer used thus far is stable manure.

In spite of the variation in the size of the crop throughout the State in different years, through weather conditions, there has never been a crop failure on the place, the smallest crop yet harvested being two tons to the acre.

Freestones rather than clings are the choice in the vicinity as in most other parts of the San Joaquin. The few clings go to the canner, the Muirs are nearly all dried, while the Albertas are largely shipped, drying being done only when prices are low for fresh fruit. Mr. Harter sells his peaches in bulk to the shipper, preferring to get certain returns rather than to take the chance of loss by shipping on commission. A common combination of varieties are Muirs, Albertas, and Lovells.

In disposing of a part of the crop, Mr. Harter has proved that care and judgment on the part of the orchardist in packing and handling pays. Some fruit is always found to be too ripe to ship and this is sold locally. It is customary to most places to consider such fruit as culls, put them in a lug box or other receptacle and take what the retailer will give. The fruit from the Harter orchard is carefully packed in as attractive a style as possible and commands from 10 to 20 cents a box more than other fruit brought into town, and the market is never overstocked with it. The extra price is due fundamentally to the extra quality of the fruit, and secondarily to the fact that it is put up in pleasing fashion.

The soil for peaches in Stanislaus county is a light sandy loam. The trees are set 20 feet apart, although Mr. Harter states that the next time he would probably make it 22 feet. As stated in the beginning, the trees are not permitted to bear until five years old. For the first couple of years, however, blackeye beans are planted between the rows and pay interest, taxes, and profits on the land. Non-leguminous crops have been found to be too hard on the soil while the trees are growing.

The only trouble that has been met with in this system of caring for a peach orchard has been through the rise of the water-level in the soil, as trees with their roots adjusted for 30 feet have been killed by sour sap, although trees planted after the water had reached its present level have not been injured.

THE KNEPPER APPLE.

To the Editor: I am sending you by express a small box of apples. It is a seedling grown near San Martin, in this county, which I have noted for several years, and the owner tells me for several years it has borne regular and heavy crops. It is a chance seedling growing in a chicken yard and has had no particular care. The apple seems to me to be very worthy of propagating, and for several reasons. It is bright colored in appearance, somewhat similar to the bellflower, but rounder in shape and clearer in skin. It also is an excellent cooking apple and—which is its chief value—a late keeper. It occurs to me that it would be of value in the Watsonville apple district, as there is no doubt that the apples which will always take the lead there are those of a light color like the Newtown Pippin, Bellflower, White Winter Pearmain, and others. I do not remark this in any way to disparage the great product of Watsonville, as the recent show has demonstrated the wonderful adaptability of the Watsonville climate and soil to apple growing. However, there are certain varieties, and they are mainly of the high colored apples, which succeed best at a higher elevation, and away from the fogs and moisture of the ocean. The name suggested for it is "Knepper," so named from the owner.

Morganhill. LEONARD COATES.

[The apple is certainly very promising, and the specimens appear to us to justify Mr. Coates' anticipations of value.—EDITOR.]

ALMONDS AND ROOT-KNOTS.

To the Editor: Are peach roots suitable for almond trees as far as its productiveness and long life are concerned? Peach roots are adapted to our soil, but I heard some one say that almonds would not live long when on peach roots.

Will the IXL and Nonpareil almonds pollenate each other sufficiently if they are planted in alternate rows, or would you advise me to plant some other variety in addition?

Last fall I dug up some one-year-old prune trees to transplant and found that about one-fourth of them had root-knot. When the trees were planted they looked clean and were of good nursery stock. I was surprised to find so much root-knot. I have since dug down and found healthy-looking two and three-year-old trees with a good deal of root-knot on the stem and roots. Would you dig out an otherwise healthy young tree if it did have some root-knot on one side?

Jelly. GROWER.

[Peaches will grow satisfactorily on almond roots and will be long lived if the soil conditions favor the almond roots. The IXL and Nonpareil are not satisfactory pollinators for each other, as a rule. It would be better to associate with the Nonpareil either Drake's Seedling or Texas Prolific. The IXL is a good grower, but is often a shy bearing tree.

Root knots on fruit trees are caused by bacteria which are communicable to the tree from infected soil, or may be carried from one tree to another in the process of cultivation. The most satisfactory treatment consists in throwing back the soil and removing the knots with a hatchet or chisel. The wound is then soaked with Bordeaux mixture and allowed to dry well before replacing the soil. Knots occurring near the root crown, or on the larger roots near to their attachment to the trunk of the tree, should be removed, because as they enlarge they destroy the connection between the roots and the tree and seriously interfere with its growth. It is not worth while to pursue the knots on the outer roots at a great distance from the tree, because they may grow for years without injury to the tree; in fact, bearing apricot trees which have been satisfactorily bearing for twenty years or more have been removed and the roots found to be quite badly affected with knots, although their presence was not indicated by the thrift of the tree. But wherever young trees fail to grow satisfactorily and the knots are found to have seriously dwarfed the young tree it is often better to dig it up and plant a new one. But if the tree has the lead of the knot it can be kept ahead by removing the knot as described.—EDITOR.]

Grading and Pricing Prunes.

To the Editor: Will you kindly enlighten the undersigned in regard to the grading in price of prunes? For instance, if the base price is, say, 5¾ cents, what size does this refer to, and how is the price for other sizes calculated? Also, what is the meaning of the phrase "four-size basis"?

Los Altos, Cal. R. W. L.

Prunes, after being sold to the packer, are graded into different sizes according to the number required to make a pound, and paid for on that basis. The four regular sizes are 60-70s, 70-80s, 80-90s, and 90-100s, which means that from 60 to 70 prunes are required to make a pound, and so on. The basis price is for prunes that weigh 80 to the pound.

When the basis price is 5¾ cents, 80-90s are worth ¼ cent less than this amount, or 5½ cents. The next smaller size, 90-100s, are worth ½ cent less, or 5 cents, while prunes under this size are little but skin and pit and bring much less to the grower. For each next larger size there is a difference of ½ cent in favor of the grower, so that on the 5¾-cent basis 70-80s are worth 6 cents, and 60-70s 6½ cents. This advance continues for the larger sizes, 30-40s, 40-50s, etc., but these quite often command a premium besides, which is fixed according to the supplies available and the demand for the various sizes. The sizes for which no premium or penalty are generally fixed are those from 60 to 100, four sizes, so that this basis of making contracts and sales is called the "four-size basis."

The advantage that results in having this method of selling prunes can be seen by the fact that on a 5¾-cent basis the smallest of the four sizes will bring but 5 cents a pound, while 30-40s would bring, without any premium, 8½ cents, and with 1 cent premium, 9½ cents. This size has this season brought as high as 10 and 11 cents a pound.

It may be noted here that no prunes are actually sold at just the basis price, as they are worth either less or more than this as they are smaller or larger than 80 to the pound. No matter what the basis price is, there is a difference of one-half cent between each size and the sizes nearest to it.

NORTH BAY FLATS AND FRUITS.

To the Editor: Can you tell me what kind of fruit and nut trees to plant on some land on the north shore of San Pablo Bay, 2½ miles from San Rafael? I have read of some kind of clover which supplies nitrogen to soil—would it be advisable to plant it first? The growth of grass and flowers is very scant. SUBURBAN.

San Francisco.

[If your place is on flat land adjacent to the northern shore of San Pablo Bay, it would probably be unsuited for fruit of any kind. The soil on the flat is apt to be too heavy, too cold and wet for fruit trees. If, however, it is elevated and more loamy, it is possible that you could get satisfactory results with apples, pears and plums (including prunes), and though that is not a location which one would select for commercial fruit growing, you might get products satisfactory for home use.

The pecan has been quite fully tried in all situations about the bay of San Francisco and is not satisfactory. The trees grow well enough, but they do not bear satisfactorily. The best results with pecans are being obtained on the river lands of the interior, where the temperature changes are more sharp, although the nut is in experimental standing even there—for there is no commercial production of pecans in California, in spite of the efforts which have been made for the establishment of it for many years.

Any kind of clover supplies nitrogen to the soil. Common burr clover is most likely to succeed with the winter growth. If your land is a little up from the bottom, alfalfa would give good summer returns, especially if irrigated, and the plowing-in of any kind of clover is of advantage to the soil, not only for the nitrogen which it contains, but for the decay of the organic matter which makes the soil richer in plant food, better drained, and more easily cultivated.—EDITOR.]

SECURING LATE EMPERORS.

Our friend Mr. Charles H. Chambers of the Fresno Nursery, in a recent conversation, recommended a new method for keeping Emperor grapes until Christmas in good shipping condition and at little expense. The idea is to protect the grapes from rain and frost by covering the vine with some material like the leaves of the fan palm, which can be easily obtained in large quantities in the districts where these grapes are grown.

Emperor grapes will hang on to the vine in good condition until the first of the year unless frost or rain spoils them. By covering each vine with a couple of palm leaves sufficient light and air is admitted to keep the grapes in first-class condition and still be free from injury through dampness except in case of a driving rain. The covering protects from frost by keeping in the heat from the earth and breaking the currents of cold air from above.

The fact that such shelter will keep the grapes in first-class condition can be seen where the vines grow up over the porches of houses and those bunches that grow under the eaves are in good shape long after those exposed to the weather have spoiled. The cost of putting over the leaves is comparatively little. Canvas or other cover might be more effective, but the cost would be greater.

The present method of keeping grapes until the holiday season is by packing them in redwood sawdust, which is vastly more expensive than the system suggested would be. This system could, of course, be used on Tokays or other good keeping grapes as well as with Emperors.

WALNUTS AND OTHERS.

To the Editor: Kindly give me such information as you may have about the cultivation of English walnuts and other nut-bearing trees. What amount of freezing and drouth can they stand? Under what conditions is irrigation necessary? Can they be profitably raised in Siskiyou county. F. P. B.

Benicia.

[The walnut tree will endure considerable frost—in fact, hard freezing, providing it comes when the tree is dormant, because they are successfully grown in some parts of the Eastern States, though not to a large extent; but the walnut tree is subject to injury from lighter frosts, providing they follow temperatures which have induced activity in the tree. On the Pacific Coast the walnut is successfully grown as far north as the State of Washington, but even in California there are elevations where frosts are likely to occur when the tree is active, and these may be destructive to its profit, although they may not injure the tree. You are not safe in planting walnuts to any extent except in places where you can find trees bearing satisfactorily. Planting elsewhere is, of course, an enterprising experimental thing to do, but very risky as a line of investment. Irrigation is required if the annual rainfall, coupled with the retentiveness of the soil and good cultivation, do not give moisture enough to carry the tree well into the autumn, maintaining activity in the leaves some little time after the fruit is gathered.—EDITOR.]

WALNUTS AND ALFALFA.

W. A. Boscow, of Orland, has a scheme for growing walnuts in his alfalfa field, beginning with black walnuts, and gives this outline in the Register: After gathering the nuts, knock off the hull and then plant them in a box with holes in the bottom for drainage. Then put in four or five inches of sandy loam. Plant the nuts small end down; then a layer of loam, then a layer of walnuts, wetting each layer. Put the box near the well or under the eaves of the barn, so they will get plenty of water.

The trouble in planting the nut in the ground is that they will dry out and do not get the moisture to sprout the nut. Black walnuts have a very long tap root, so it is better to plant the sprouted nut where you want the tree to grow, then you can bud or graft to the English walnut. Plant the nut as soon as it is well sprouted—February or March.

I intend to plant on my checks in my alfalfa field. The long roots of the walnut will take care of themselves. Put a stake with the nuts, so in mowing the alfalfa you will not cut your tree. In a few years you can have a nice walnut orchard by grafting in the English walnut and grow alfalfa at the same time.

AUSTRALIAN NAVELS, OR WHAT?

To the Editor: Five years ago, before coming to Californit, we purchased land and had 40 acres of it planted to Navel oranges. The following year we moved here and have had the care of the orchard since then. When the trees were three years old we had about 80 packed boxes; last year 65, and this year there will scarcely be 100 packed boxes. Other orchards of the same age produce so much more heavily that we have been much puzzled to know the cause of our failure. A few days ago an expert went through our orchard quite carefully. He claims that the majority of our trees are Australian navels and says that they are not even worth re-budding. If all this is true our plight is rather a bad one, and there may be a lawsuit, as the trees were guaranteed to be true Washington navels. How can we know definitely what kind of trees we have? Are the Australian navels so good for nothing that they are not fit to be budded? TENDERFOOT.

Tulare county.

[You need the advice of a thoroughly well informed expert to examine the situation. Even if your trees should be Australian navels, they would be quite capable of re-budding if they were well grown and vigorous. Perhaps the expert you mention found them otherwise and advised you that they were not desirable for budding. If such is really the case, it will be very difficult for you to recover anything, for it would be so easy for the defendent to show that the trees were in an unsuitable soil or were not properly cared for, or else the growth would certainly be strong enough for re-budding.—EDITOR.]

SOILS AND ORANGES.

To the Editor: In looking over this district with a view to buying an orange orchard, or land for same, I find this entire district underlaid with hardpan at various depths, from one to six feet down, and of various thicknesses. This hardpan is more or less porous and seeps up water to some extent, but is too hard for roots to penetrate. It is represented to me that if this hardpan is down from four to five feet it does not interfere with the growth of the orange tree or its producing. Kindly give me your opinion. Your book, "California Fruits," recommends "deep sandy loam." Well, they have the sandy loam all right with this strip of hardpan, but is four or five feet of the loam enough. INTENDING PLANTER.

Tulare county.

[We can say briefly that we consider four or five feet of good soil over a hardpan, which was somewhat porous, likely to be satisfactory for orange planting. There has been trouble in your district from hardpan too near the surface and from the occurrence of a hardpan too rich in lime, which has resulted in yellow leaf and other manifestations of unthrift in the tree. Discussion of this subject is given on page 434 of the fifth edition of our book on "California Fruits," where we especially commend a good depth of "strong, free loam." This does not mean necessarily deep sandy loam, for the orange likes rather a heavier soil, while a deep sandy loam is preferred by some other fruits. If you keep the moisture supply regular and right and feed the plant with fertilizers, as may be required, we consider the soil which you mention of sufficient depth—if it is otherwise satisfactory.—EDITOR.]

Census of California Field Crops.

In the Pacific Rural Press of July 1 last, there was given an outline of the farms of California, acreages, values, expenditures, and ownership, as ascertained by the United States Census of 1910. We now have a summary of the kinds, amounts and values of field crops grown upon these farms, as issued by Census Director Durand. It is based on tables prepared under the direction of Dr. Le Grand Powers, chief statistician for agriculture in the Bureau of the Census, from the reports of the census enumerators. The figures are preliminary and subject to slight revision later, when a few other farms whose returns, now incomplete, will be included in the final tables. It is not expected that these additions will materially modify the amounts or rates given in the present statement.

The leading crops of the State for 1909, ranked in the order of valuation, were:

Hay and forage, $42,187,000.
Barley, $17,185,000.
Wheat, $6,324,000.
Dry edible beans, $6,293,000.
Potatoes, $4,879,000.
Oats, $2,637,000.
Hops, $1,731,000.
Corn, $1,077,000.

Increase in Hay and Forage.—For the decade ending 1909, hay and forage showed an increase of 293,710 acres, or 13.1%. Starting with 758,024 acres in 1879, hay and forage rose to 1,431,574 acres in 1889, to 2,239,601 in 1899, and finally to 2,533,311 in 1909. Hence, during the 30-year period, hay and forage has increased more than two and one-third times. The aggregate yield in 1909 was 4,327,130 tons; the average yield per acre, 1.7 tons; the average value per acre, $16.65.

Barley Increases.—During the last ten years barley increased 165,511 acres, or 16.1%. From 586,350 acres in 1879, barley rose to 815,995 by 1899, to 1,029,647 by 1899, and again to 1,195,158 by 1909. Hence, during the last 30 years barley has more than doubled. The total yield in 1909 was 26,441,954 bushels; the average yield per acre, 22 bushels; the average value per acre, $14.40.

Startling Decrease in Wheat.—In the decade between 1899 and 1909 wheat decreased 2,205,188 acres, or 82.2%. From 1879, when 1,832,429 acres were harvested, wheat rose in 1889 to 2,840,807, but fell in 1899 to 2,683,405, and again in 1909 to 478,217. The aggregate yield in 1909 was 6,203,206 bushels; the average yield per acre, 13 bushels; the average value per acre, $13.20.

How Beans Have Multiplied.—From 45,861 acres in 1899, dry edible beans rose to 157,825 in 1909, an increase of 111,964 acres, or 244.1%. Previous to 1899 no acreage for dry edible beans was reported. The total production in 1909 was 3,323,608 bushels; the average yield per acre, 21 bushels; the average value per acre, $39.85.

Advance in Potatoes.—From 1899 to 1909 potatoes increased 25,590 acres, or 60.8%. From 38,178 acres in 1889, potatoes rose by 1899 to 42,098, and again by 1909 to 67,688. The total yield in 1909 was 9,824,005 bushels; the average yield per acre, 145 bushels; the average value per acre, $72.10.

Gain in Oats.—In the decade ending 1909, oats increased 38,424 acres, or 25%. Starting with 49,947 acres in 1879, oats rose to 57,596 in 1889, to 153,734 in 1899, and finally to 192,158 in 1909. The aggregate yield in 1909 was 4,143,688 bushels; the average yield per acre, 22 bushels; the average value per acre, $13.70.

Advance in Hops.—Hops, during the decade from 1899 to 1909, increased 1501 acres, or 21.8%. From 1119 acres in 1879 hops advanced to 3974 by 1889, to 6890 by 1899, and to 8391 by 1909. The total yield in 1909 was 11,994,953 pounds; the average yield per acre, 1430 pounds; the average value per acre, $206.30.

Slight Decrease in Corn.—Corn showed a decrease for the decade ending 1909 of 1995 acres, or 3.7%. From 1879, when 71,781 acres were harvested, corn dropped to 70,303 in 1889, to 53,930 in 1899, and to 51,935 in 1909, a constant and consistent decrease. The total yield in 1909 was 1,273,901 bushels; the average yield per acre, 25 bushels; the average value per acre, $20.75.

Crop Comparisons.—The cereals had an acreage of 1,970,402 acres in 1909, as compared to 4,004,254 in 1899, a decrease of 2,033,762 acres, or 50.8%. Wheat showed the largest decrease, exceeding that of the total cereals. Among the cereals barley stood first, comprising about three-fifths of their total acreage and total value. Wheat ranked second, having an acreage and value slightly more than one-third as great as barley. Oats stood third. The average value per acre of the cereals in 1909 was $14.25, less by $2.40 than that of hay and forage, and about one-fifth that of potatoes. Corn showed the highest average value per acre; rye the lowest. Of the hay and forage crops, "grains cut green" ranked first, constituting about three-fifths of the total acreage and total value of the entire hay and forage crop. Alfalfa ranked second, having an acreage and value, respectively, more than one-fourth and one-half as great as "grains cut green." "Wild, salt, or prairie grasses" stood third, with "other tame or cultivated grasses" fourth. There were a number of miscellaneous crops, and the most of them were well above the more usual crops in value per acre.

The Tabular Summary.—The accompanying table presents the statistics of the leading crops and of certain minor crops for the year 1909.

Tabular Summary of California Field Crops.

Crop:	Farms reporting.	Acres harvested.	Amount, bushels.	Value.
Corn	5,728	51,935	1,273,901	$ 1,077,411
Oats	2,477	192,158	4,143,688	2,637,047
Wheat, total	3,710	478,217	6,203,206	6,323,983
Emmer and spelt	19	840	19,795	13,758
Barley	7,597	1,195,158	25,441,954	17,184,508
Buckwheat	26	849	14,681	11,509
Rye	193	7,027	70,683	65,846
Kaffir corn and milo maize	2,521	44,308	938,049	725,704
Flaxseed	8	240	1,882	3,224
Alfalfa seed	347	.....	23,791	200,823
Clover seed	10	.....	310	2,823
Timothy seed	4	.....	357	1,065
Other tame grass seed	5	.....	1,077	1,323
Mustard seed	66	.....	3,168,270	100,731
Dry edible beans	3,050	157,825	3,323,608 lbs.	6,292,955
Dry peas	262	2,959	57,468 bu.	101,016
Peanuts	42	99	2,991	2,889
Timothy alone	370	13,725	20,001	185,579
Timothy and clover mixed	958	46,661	73,183	629,575
Clover alone	703	8,519	20,380	213,289
Alfalfa	19,904	484,098	1,636,707	3,088,530
Millets	101	1,142	2,688	27,483
Other cultivated grasses	2,274	90,414	119,415	1,253,428
Wild, salt, or prairie grasses	3,679	253,127	281,033	2,028,494
Hay (grains cut green)	39,397	1,604,745	2,019,526	24,156,727
Coarse forage	2,175	25,868	60,611	438,095
Root forage	1,021	4,012	90,586	206,015
Potatoes	12,533	61,688	9,824,005 bu.	4,879,449
Sweet potatoes and yams	1,133	5,111	572,814	355,624
Tobacco	12	4	4,502 lbs.	579
Cotton	18	324	183 bales	11,744
Hops	273	8,391	11,994,953 lbs.	1,731,110
Hemp	2	300	600,000	39,000
Broom corn	24	1,023	614,250	32,509
Grand total of above enumerations				$74,023,845

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"Along our Finger lakes in New York we are even competing with the almost tropical State of California. Here we grew French prunes at a profit that would astonish the best prune growers in the olden State; and the farmer of Missouri or Illinois, where such a thing as a French prune is considered a semi-tropical product, would be just as surprised at our success.

"Yet the Western products are more sought. Oregon apples sell for more than oranges. Western corn and wheat control the market. It seems strange, but the reason is evident. Our Western competitors have realized the value of advertising their products and communities. They use good taste and judgment in placing their stuff on the market.

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THE COUNTRY BEAUTIFUL.

Written for PACIFIC RURAL PRESS
By H. W. KRUCKEBERG.

Los Angeles county has earned the gratitude of all people living in the country by being the first in the State to create a County Board of Forestry with an appropriation of $25,000 for the ensuing year, $19,000 of which is to be expended in the maintenance and planting of suitable trees along the main traveled roads of the country. This was made possible under the new law passed by the late legislature for the creation of County Forestry Commissions, whose specific duties are to "have exclusive power over and jurisdiction to decide upon the variety, kind and character of trees, hedges and shrubs that shall be planted upon said roads, highways, grounds and property; and to determine all questions respecting the pruning, cutting and removal of any trees, hedges and shrubs now growing and to grow thereon, and the necessity therefor, and the extent of and the manner in which said work shall be done." Thus it will be seen that it is a movement looking to the country beautiful—an effort for out-of-door adornment that must appeal strongly to the fruit grower and farmer, and withal one that should enlist his hearty support. The success of the venture in Los Angeles county is assured in the appointment of Ernest Braunton for county forester, backed by a commission of unusual strength by reason of practical knowledge of its subject. The RURAL PRESS hopes to see other communities emulate the example of Los Angeles county.

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Some Mistakes in the Management of Reclaimed Salt Marsh Land.

Written for the PACIFIC RURAL PRESS
By C. A. BODWELL, Jr.

(Continued from page 369 of the issue of November 4.)

It cannot be assumed that underground water supplies are always constant or inexhaustible. It is not always in constant quantity from year to year, nor is it so from month to month during a summer. This is demonstrated in localities where deep-bored wells are thickly located.

The flow late in the summer is less than in the earlier months, and pumping may necessarily be resorted to. There is also a stronger flow shown after seasons of heavy rainfall in the water-shed supplying such wells. However, the augmented supply may be delayed in becoming evident, or until the increased amount slowly seeps through the underground porus strata to the lowlands, where the wells are located. In general, it may be safely assumed that each well in a neighbodhood, whether flowing naturally or under pump, affects in a certain degree all other wells in the same region, which are supplied from common sources. The supplies in different levels or strata are of probably wide area and not in narrowly confined channels as frequently supposed. Wells in the lowest parts of a district may be assumed to be the most advantageously located if taking water from the same strata that do wells on higher ground. This is conditioned on there being no obstructions to subterranean flow, such as clay ledges between higher and lower parts of common strata.

Hence it would seem to be an affair worth while to investigate the possibilities of fresh-water supplies, where good reasoning might suggest the likelihood of their existence.

The value of a sufficient quantity to irrigate, say, 100 acres, would in all reasonable probability make that 100 acres worth 500 acres of the same quality of land without water. There are people known to have lived and died in poverty on top of unmined treasure, which some keener mind saw and developed. If in any of these situations there could be developed, say, 100 acre-feet of water to apply to the 100 acres of land, it would mean the making of a valuable property.

It is natural in undertaking a new industry to be guided by and make use of methods adapted to previous experience. Therefore, in applying water to these lands in the limited way in which it may at present be done, the methods used on uplands have been followed. The simplest or best-known manner of conveying water for irrigation is, of course, in ditches. This has been tried here, but, due to the porosity of the reclaimed marsh, which porosity is in the system of subsurface cracks, water will not carry for any practical distance. Puddling would have to be resorted to, but the ditch drying, between times of irrigations, would crack and the puddling would have to be repeated the next time water was turned into it. This is, of course, out of the question with any idea of profit. Small wooden flumes are seen also, but a system along this line will never be applicable on a scale of any size, in a profitable way. However, a few acres have been handled in this manner with fairly satisfactory results. The proper method to apply will be along lines of some pipe system so generally used in the southern part of the State. It is applicable to almost any crop.

Photograph Fig. 1 will illustrate how beneficial fresh water may be to these salt lands. It is a view of a fresh-water pond created by an artesian well, which had been flowing probably eight months, in unleveed salt marsh. It, of course, does not show any profitable cultivated crop, but merely a growth of fresh-water grass and tules. It demonstrates how very soon the salt is washed out sufficiently for the fresh grass to start. A feature of lack of drainage is also shown which will be referred to later.

Of all the mistakes in the management of these lands, those in regard to drainage seem to cover the causes of more failures than any other one subject, or possibly all other subjects combined. Drainage is the all-important and too frequently neglected feature in the handling of all

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lands. Even in high lands, though its necessity may be understood and acknowledged as so important, it is a matter of common knowledge that it is neglected. The assumption seems to be that the natural drainage due to the porosity of the soil and the slopes of the country will care for surplus water without artificial aid. In cases it does. In fact, in most cases it will, but poor crops are more often due to the neglect to supply proper drainage than one unacquainted with the subject would imagine.

Drainage in the marsh lands is, of course, an accepted condition as a part of their reclamation and absolutely to be provided. Therefore efforts in its provision are better than in uplands, but



Fig. 1. Fresh Water Pond on Reclaimed Salt Marsh.

even here also it is lacking in proper execution. It may be neglected in the initial reclamation as well as after the land is in use.

Drainage of marsh lands cannot of course be theoretically below the plane of the lower of the low waters, by the sole use of a gravity system and automatic gates. This would mean something like 6 feet below the average marsh surface. However, after the land is reclaimed and put under cultivation this surface subsides from 12 to 18 inches below its former level. It is due to the drying out and consequent shrinkage of the top layers of the soil. A rather peculiar condition is that this soil once



Fig. 2. Cracks in Subsoil Serving Good Drainage Purposes.

dried out will not again take up the amount of water which it originally held. Thus we have a remaining theoretical drainage depth of, say, 4 feet 6 inches. But, due to neglect of ditches and gates, this is reduced in instances to as little as 12 to 18 inches. When long-continued storms happen in conjunction with high tides, water saturates the land to the surface, and, as this occurs at the time of the year when crops are young and tender, they die.

Drainage naturally commences with the ditching of the land after the levees are built. If levees are built with material taken from an inside ditch alongside of the levee, this excavation also serves as a drain. It may be supplemented by others cut through the land. Furthermore, the network of meandering sloughs of varying size existing in the marsh, remain as drainage channels, though the smaller ones become filled in the act of cultivating the land. They are of necessity filled, because their meanderings are so many and tortuous that it would be impractical to follow the banks with cultivating and harvesting tools. In fact, there are not enough of them filled. It is believed that in the end it would be a paying principle to fill all small soughs and construct drainage ditches, both large and small, in such a way that the land would be divided into pieces of rectangular shape, rather than into such irregular ones as are now in comparatively general evidence.

The small drains of this land are provided by Nature in the drying-out process subsequent to the leveeing and shutting out of the tide. This drying is the reason of the occurrence of a network of cracks extending throughout a reclaimed area. They may be from ½ inch to 1 foot in width and extend down as far as moist soil or the depth of drainage. Photograph Fig. 2 shows these cracks in the side of an excavation made in cultivated land. Of course, due to continued cultivation, the tops have been covered or bridged over, leaving them open below. Thus there is provided a complete system of drainage without any effort on the owner's part. It costs nothing, and is immeasurably better than any artificial system which could be put in use.

One of the mistakes, and the most serious in the cultivation of marsh, has been to either prevent the forming of these cracks or to destroy them subsequent to their formation by careless methods of working the land. There have been instances where an owner or manager, thinking to make the first breaking of the land easier, has closed the gates and held water inside of the leveed area to within a few inches of the surface. This would be done with the idea of keeping the surface moist which would be more easily plowed. As expected, the plowing was easier, for two reasons. The ground being moist, was turned over with less trouble, and also, because cracking had not occurred, teams were able to walk without danger of stepping into a crack and breaking or straining legs or receiving other injuries. This latter is the great bugbear of breaking dried and cracked salt marsh. Therefore, these two difficulties were very successfully overcome. However, they led to others of another nature and of greater damage to the property. The plowed surface, which was then pulverized (it is usually done with an implement consisting of two cylindrical frames on which are mounted spirally arranged cutters), acted as a mulch. It was analogous to cultivation as carried out in any land, in that it prevented evaporation. The land, thus retaining its moisture, would not crack, even after the gates were opened and the retained water let out. As the soil under the peat crust is impervious to moisture, there would therefore be no drainage below the peat and no way for the salty moisture to reach the artificially constructed main drains and ditches. When a crop was planted, the water due to rainfall, which should have leached down through the soil, dissolving and carrying the salts contained therein away with it to the sluice-gates, remained on top with those salts in solution. The consequence was the crop died.

In the cultivation of land and the handling of crops in California, mechanical appliances have been largely used because of size of fields and other climatic conditions favored them. Probably such devices have been brought to greater perfection and economy of use in this State than any other country. Their success on uplands has prompted their use on reclaimed lands, particularly those on the delta of the San Joaquin and Sacramento rivers. Here, however, the softness of the land has necessitated very wide wheels on the engine used, and their appearance is more like immense rolling cylinders than a tractor. But they were successful, and their success naturally prompted their use for plowing reclaimed salt lands. They have in instances been used for this purpose. However, the river lands are either a fine black loam or a peat, and also fine silt or sand. This is naturally porous and the weight of an engine traveling over it will not compress it to any density that surface water cannot filter down through. This feature was overlooked in applying these same types of engines to use on salt lands. Here the weight of the machines used for successive years compressed the cracked salt land to an extent that the cracks were closed together and drainage destroyed. Thus the same end came about that resulted by cultivating the land before drying and cracking had taken place. The same reason was also the cause of the loss of the land for profitable agricultural use.

The foregoing, however, does not necessarily imply that properly designed tractors may not be used on reclaimed salt marsh. Neither does it mean that the drainage of the land where drainage has been destroyed may not be artificially restored.

Referring again to photograph No. 1: in this pond of fresh water is an illustration of the lack of drainage furnished by natural marsh land which is neither dried out nor cracked. The well supply is not a particularly strong flow, yet water accumulates. If the land had become dry and cracked, it would have been impossible to have made a pond such as this without expensive puddling. No doubt it fully illustrates the necessity of the system of cracks as a drainage medium.

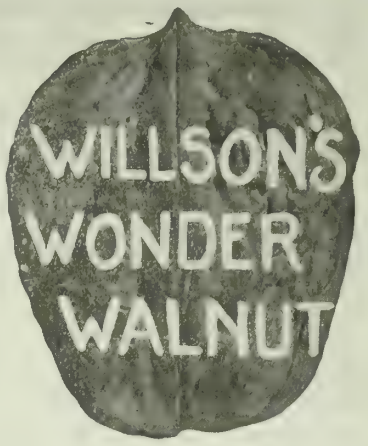
(To Be Continued.)

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AGRICULTURAL REVIEW.

With the Fruit Men.

The Santiago Orange Growers' Association shipped in the year ending October 31, 1911, 247,815 boxes of fruit, with an average f. o. b. price of $1.893.

The Pacific Fruit Exchange and the Pioneer Fruit Co. were each incorporated recently. The companies are to pack, ship and market fresh fruits. The Pioneer will also raise fruit.

Mendocino is to hold an apple show from November 23 to 25. The fruit exhibited will be largely grown on the coast of the counties north of the bay.

The Richland Walnut Association house closed November 11, having shipped the largest crop in its history.

The horticultural commissioner of Siskiyou county recently condemned and confiscated a large shipment of young trees from Oregon, having found them infected with several serious diseases.

G. A. Goerschler of Willows, Glenn county, is to plant a five-acre tract to oranges this season as a test plot.

E. Harold Powell and A. F. Call have gone to Washington to work on the lemon rate case before the Commerce Court.

At the meeting of the Placer County Fruit Growers and Shippers, November 6, J. W. Jeffrey, ex-State Horticultural Commissioner, was chosen to work on the organization of a protective league of deciduous fruit growers of the State.

A. G. Schultz, horticultural commissioner of Tulare county, in his annual report to the supervisors states that he and his inspectors examined and passed upon 195,000 citrus trees and 425,000 citrus seed-bed stock during the last year, and 210,000 deciduous trees. Eucalyptus trees planted during the year numbered 2,625,500. Control work in the county is said to be in a very satisfactory condition. The crops for 1911 were as follows, according to the best estimates: Peaches, 50% of normal; prunes, 50%; apricots, 5%; figs, 100%; raisin grapes, 75%; table grapes, 40%; wine grapes, 65 per cent.

Horticultural Commissioner C. W. Beers of Santa Barbara county reports that the fumigation work carried on during October has been highly satisfactory, as eggs and insects of the red, yellow and black scale have been killed by the poison. Walnuts made the large crop previously expected and selection of varieties for propagation have been made. The weed control work proved to be very effective from an examination of the Santa Maria and Lompoc sections. A little scabby potato has developed owing to the seed not being treated or selected properly.

E. O. Essig, secretary of the State Horticultural Commission, and G. E. Merrill, deputy, have been inspecting orange trees in Marysville. Some mealy bugs and yellow scale were found.

Horticultural Commissioner A. R. Gallaway of Sonoma county reports that the crop of prunes has proved to be very large and of good quality; grapes, as estimated, did not make a full crop. Inspection of nursery stock, growing and coming in, shows a steady decrease in the pests previously found.

Horticultural Commissioner Earle Mills, of Butte county, reports to the supervisors that extremely heavy planting of almonds, peaches, olives, prunes and pears will be made this fall and spring. Olives and oranges will both make large crops.

The contest between the Armsby company and the California Fruit Growers' Exchange is reported to have been decided in favor of the Exchange, as the name was applied by the company to prunes and dried fruits, rather than to citrus fruits, which the Exchange handles.

From the Anaheim Walnut Association 475 tons of walnuts were received and shipped this year.

Prices for olives, both for picking and oil, are reported from different parts of the State. It is stated that $120 has been received from pickling olives in the south and $55 for oil.

Officers of the Bureau of Chemistry are in Los Angeles to arrange for the establishment of a laboratory to study citrus by-products.

Indpendent citrus growers of Redlands have appeared before the board of supervisors of the county to charge that the Redlands Fruit Growers' Fumigation Association is charging higher prices to them than to members to make them join the organization.

C. C. Moore, of the Bureau of Chemistry, has been visiting packing-houses of Butte county to examine the condition of oranges being shipped.

The walnut crop of Santa Barbara county that is being handled through the Walnut Growers' Association will bring close to $250,000 this year.

A bulletin has just been issued by the Department of Agriculture on the fig moth. The insect is not yet found in this State.

The recent frosts are reported to have done some damage to olives and oranges in the Butte county citrus belt. The total loss was not great.

A. B. Miller has purchased 363 acres of bare citrus land in the North Rialto-Fontana district, San Bernardino county, which will be planted to valencias, lemons and grape fruit next spring. Several bearing groves have also been purchased in the same vicinity by Mr. Miller.

Manager F. B. McKevitt of the California Fruit Distributors stated recently that the close of the deciduous fruit season shows it to have been the banner shipping year. On a basis of twelve tons per car, which was last year's minimum, shipments in 1911 have exceeded 1910 by 700 thirteen-ton cars. The total shipments this season will exceed 13,800 cars, making a new record.

Raisin and Grape Notes.

The recent showers in the Sacramento and San Joaquin valleys are said to have done almost no damage to table and wine grapes.

Heavy receipts of grapes in wineries of the valley have caused the price to fall somewhat recently. West & Son are said to have reduced their price to $8 for black and $6 for Tokays.

The German wine grapes which have been harvested are stated to have made a good crop.

The quality of many of the Tokays sent out recently is said to be responsible for poor prices in the markets, while Emperors have been in good condition and are selling well.

J. R. Pinkham of Lindsay is having his Emperor grapes picked and shipped in the same crate and states that good results have come from the system.

At the Lodi wineries last week 1541 tons of grapes were crushed in one day.

The Merchants' Association of Fresno has strongly endorsed the California Raisin Exchange, and recommended the raising of $10,000 from merchants and growers as soon as possible to get it into operation. The advance in the Exchange recently has been rapid.

The demand for raisins from Canada for holiday trade is reported from New York to be very strong.

A. Sorensen, president of the California Farmers' Union, in a published statement claims that packers are deliberately en-

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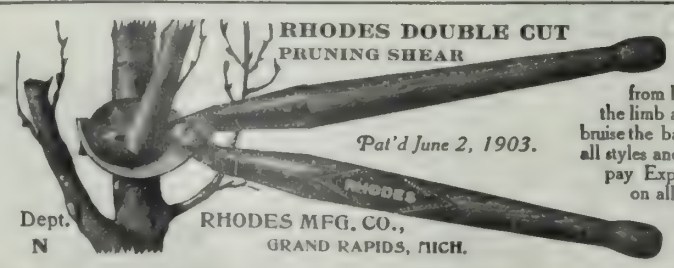
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3 REASONS
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Also a good stock of Cherries, Plums, Peaches, and other Fruit Trees; Palms, Roses, and other Ornamental Stock.

Send for Price List.

PLEASANT VIEW NURSERY
A. F. SCHEIDECKER, Sebastopol, Cal.

deavoring to bear the raisin market and are quoting prices for December delivery on a 3-cent sweatbox price.

General Agriculture.

The crop reporting board of the Department of Agriculture reports the yield of potatoes this year to be 80.6 bushels per acre, against 94.4 last year for the country at large. Apples are 62.4% of a full crop, against 43.5 for 1910, and 29.4 for the 10-year average.

The San Francisco Hay Association announces that on November 1 the total supply of hay in storage amounted to but 161,750 tons, against 280,170 tons in 1910. These figures include practically all of the hay centers of northern California.

The sewage farm of Fresno, from which the crop of 1911 has been harvested, earned about $9000 this year. About 100 acres more of alfalfa are to be put in before next spring.

Horticultural Commissioner J. F. Wetzel of Siskiyou county has been collecting fine samples of vegetables grown in tule land in the county, which it had been claimed was valueless for most agricultural purposes.

The Anaheim Sugar Factory closed October 29, having turned out 35,000 bags of sugar. An average of 480 tons of beets were handled per day.

Contracts of 20 cents per pound have been made on 1912 hops in Washington. The Durst hops of Wheatland, Cal., are said to have sold at 40 cents.

For the first time a carload of potatoes was shipped last week from Klamath Falls, Oregon. The potatoes were sent to Sacramento.

About 100,000 sacks of Egyptian corn is said to have been harvested from the Huron sink this year, bringing $27 and $27.50 per ton.

Cantaloupe growers of Imperial county recently met supply houses in Los Angeles to order crates and other shipping supplies for the coming season in one large lot.

Fine crops of beans have been secured off low tule land in Colusa county this fall.

F. E. Brown, of Perris, Riverside county, has contracted to the American Beet Sugar Co. for 1912 for 1000 acres of beets. He had only 15 acres this year as a sample patch.

The D. W. Hobson Co., which recently purchased a large amount of land in Sutter, Yolo and Colusa counties, has deeded the property to the Alameda Farms Co., said to be a part of the Alameda Sugar Co.

The $1000 cup offered for the best bale of short-staple cotton grown in the United States has been awarded at the American Land & Irrigation Exposition at New York to the American Nile Cotton Co. of Imperial county. The cotton was grown between El Centro and Brawley.

Steps have been taken for the immediate incorporation of the Imperial Cotton Growers' Exchange, of which nearly all of the cotton growers of the valley will be members. The purpose of the Exchange is the co-operative marketing of the cotton crop.

Signing up of the acreage for cantaloupe growing in Imperial county has been completed and arrangements for the distribution of the crop are being made. A little over 5000 acres will be planted. The distributors claim that 5000 acres is about all that can be sold profitably.

The bulletin of the International Institute of Agriculture shows that the harvest area of wheat for 1911 is 103.3% of that of 1910; rye, 102%; barley, 99.2%; oats, 99.9%, and maize, 88.4% (production, not acreage). The production of wheat is 100.3%; rye, 96.4%; barley, 99.4%; oats, 90.7%, counting the production for last season at 100%.

Miscellaneous.

A big joint meeting of the Covina Fruit Exchange and the Covina Valley Farmers' Club has been called for November 25. The marketing of oranges will be the main subject to be discussed.

The U. S. Department of Agriculture and the University of California are working together to map out all the irrigable agricultural areas in the State. The work has now begun.

The Coalinga Chamber of Commerce is directing a campaign for the development of an irrigation project in the southwest part of Fresno county.

The 12,000-acre A. E. Crum ranch of Butte county is to be subdivided and put on the market within a short time by the Oakland capitalists who recently purchased it.

The State Grange Committee on the Panama-Pacific Exposition will have headquarters in the city for the use of Grange members and has assessed each member in the State 25 cents for this purpose.

Seventeen acres of solid concrete to insure the safety of the Lisbon reclamation district in Yolo county below Sacramento has just been completed. The concrete is in a strip 2½ miles long.

The daily press is responsible for the information that a poultryman of Mountain View has bred a number of chickens with plumage that is red, white, and blue. The new breed of chickens has been named the "Patriot."

The Lutheran colonization party recently moving onto a tract near Red Bluff, has filed on 8000 inches of the flood waters of Little Antelope creek.

A new artesian well near Germantown, Glenn county, has been struck on the C. F. Cutting place at 300 feet.

The U. S. Department of Agriculture has issued a bulletin on the Eucalyptus trees of California.

A petition has been presented to the supervisors of Kings county asking that a new reclamation project be formed near the Wilber district on the south shore of Tulare lake. Another petition has been filed with the supervisors of Yolo county asking for the formation of a district comprising about 1241 acres west of the Sacramento river and south of the county road between Woodland and Elkhorn.

J. B. Neff, in charge of the farmers' Institutes in southern California, has announced that institutes will be held from December 11 to 18 in the following places in the order named: Bloomington, Highland, Redlands, and Beaumont. Institutes will also be held in Banning and Coachella.

ALFALFA SEED

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We have just closed a contract to handle all of the alfalfa seed grown from the best ranches in the Honey Lake region, Lassen County. This district grows the best and hardiest alfalfa in California. The seed is entirely free from dodder, has a very high germination test, and is in every way a superior seed for intending alfalfa planters.

We must move this large quantity of seed within sixty days, as we must get it out of that district before the heavy snows blockade the roads. For early orders and for quantities of 5 tons or more we will make special inducements to planters. Write us at once for sample, prices and shipping data.

If you expect to seed a patch of ground to alfalfa this season, we want to hear from you. Small and large orders will receive careful attention. Write us without delay.

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Parties contemplating the planting of citrus groves this coming spring will do well to send for our prices soon, as there will evidently a a shortage of strictly first class stock. Write today for particulars, or, better still, pay us a visit so that we may be able to show you just what we have.

Our finely illustrated booklet, "Citrus Fruits," covering the industry from the seed to the market, mailed to any address on receipt of 25c in stamps.

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Standards of Desirability in French Merinos.

Californians are taking increased interest in the larger types of Merino sheep, and our breeders are giving close attention to the production of pure-bred stock which shall give California good standing in these lines. What constitutes desirability in these classes of sheep should be fully discussed by those interested. As a contribution to that end we give a few paragraphs prepared by Roscoe Wood, the well known ovigrapher for the Shepherd's Journal, and we would like to hear from our readers what they think of his points:

Importance of Form.—To our mind there seems to be two facts which stand out as more important than all else, viz.: the Rambouillet is for both wool and mutton and it is a Merino sheep. Ever keep these in mind and we doubt if you ever get far from the right way in your breeding. Mutton is the end of all sheep, so the Rambouillet breeder cannot afford to overlook nor disregard that factor in his breeding. He must ever look to a good strong shoulder, back and loin, with a full heart girt and a good hind leg, discarding the narrow chested sharp shouldered, cat-hammed sheep that run all to legs. A broad masculine head ornamented with a heavy set of horns, a wide chest, a strong, straight, well-covered fore leg, a straight broad back that does not break in the middle, a good square rump and a straight hind leg, these combined assure you well as to the mutton side of your Rambouillet.

Size Not Measured by Legs.—And in this connection we wish to warn against the fad of some for great size, and thinking size means long legs. We have seen Rambouillets on legs long enough for a yearling steer, and, wondrous to relate, have seen men who called themselves sheepmen say that was the type of sheep they wanted. Size is all right, in its place and proper proportion, but it is absolutely valueless unless there is something else with it. We have seen breeders who disregarded everything else for the sake of a big, long-legged sheep; but the day is fast passing when a sheep is required to have long legs in order to jump sage brush or snowbanks. Rather is required a medium-sized, shapely sheep that matures in good time and bears a good fleece of wool. For the extremely large animal that holds the other necessary qualities in proper proportion is the exception.

How Far to Follow Size.—And after all, what is gained by extreme size? If you want to raise a sheep as big as a steer, raise the steer and call it beef; but if you want to raise sheep, be content with the size of a sheep and see how well formed you can grow him, how much good wool you can make him produce at the same time, and how quickly you can do it. There is plenty of room for improvement and ample chance for you to give play to all your abilities in breeding and improving the sheep and stay within legitimate lines without trying to raise elephants or giraffes that bear wool. Tne butcher does not want the long-legged sheep nor the big sheep, nor the ill-shaped sheep. That type of sheep seldom or never grows the most desirable fleece. There is no good market for him, then why any breeder of Rambouillets should be carried away with the idea of great size to the expense of everything else we fail to understand.

Wrinkles and Oil.—Content with a medium-sized Rambouillet, although ever seeking to improve his form and maintain a stroong, vigorous constitution, there is another extreme that likewise is to be avoided. That is the idea of a wrinkly, excessively oily fleeced Rambouillet. Some breeders, influenced by the demand from certain quarters, are seeking more wrinkles and more oil in the fleece, and they are almost invariably doing it at the expense of form and mutton characteristics. It is not our idea that the Rambouillet is intended for an exclusive wool sheep. There is a well established and highly improved breed that supplies that want, the American or Vermont Merino, or as present breeders of that breed of sheep prefer to style them, A and B Merinos. If you want to breed that style of sheep do not waste your time breeding Rambouillets in that direction.

There is much to be desired in the fleece of many Rambouillets, especially in the matter of oil, and in many of staple but body wrinkles and excessive density may go far and cause objections more serious than they remedy. We can hear some saying, "You cannot secure too much oil nor too dense fleece on a Rambouillet." Very true, so long as you keep the wrinkles off his body; and that is the important part.

But extremes in either direction are to be avoided. The Rambouillet should combine the maximum of both wool and mutton that can be secured in one sheep, and careful attention given to both factors. It is no mean task to produce a sheep that bears a good fleece and at the same time supplies a neat, profitable carcass of edible mutton; and then add to these the necessity for adaptability to various conditions of climate and soil and methods of handling, and we wonder that a sheep has been produced that comes as near filling the requirements as does the present Rambouillet. And these very requirements demand the avoidance of extremes in breeding.

BUILDING A MILK HOUSE.

To the Editor: I would appreciate your advising me where I can obtain information regarding the building of a milk-house, concrete preferred, to comply with the new State dairy law.

San Francisco. C. G. K.

The State dairy law says little concerning the construction or equipment of the milk-house. It says that the house, or room, shall be properly screened to exclude flies and insects, and is to be used for the purpose of cooling, mixing, canning, and keeping the milk. The milk-room shall not be used for any other purpose than milk handling and storing, and must be 100 feet or more distant from hogpen, horse stable, cesspool, or similar accumulation of filth, and must be over 50 feet from cow stalls or places where milking is done.

In regard to the size of the milk-room and equipment, nothing is said provided it is large enough for the milk to be handled conveniently. Concrete milk-houses, however, had best have smooth-finished floors and walls. The interior of the milk-house is also to be whitewashed once in two years or oftener.

Further information can be obtained from F. W. Andreasen, Secretary of the State Dairy Bureau, at 16 California St., San Francisco.

If milk from the dairy is to go to the city, the requirements will be more severe than provided in the State law, and all information needed can be obtained from the San Francisco Board of Health, or from the city to which the milk is to be sent. D. J. W.



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Milch Goats in California.

We have had many articles on the subject, showing the interest in milch goats and what different Californians have done in the way of securing good goats for milk and handling them properly. Another account in this line has just been written for the Shepherd's Journal by S. L. Roberts of San Diego. He writes:

Our people in California are fast awakening to the fact that good milch goats are profitable. In New Mexico, Arizona, and Nevada the goat most in evidence is the wool goat, the Angora. In California there are a few herds in the northern part of the State, and I am informed that wherever the Angora is skillfully handled the woolly caprine handsomely repays the keeper. But in central and southern California it is the Swiss and Anglo-Nubian milch goats that are fast claiming public attention.

If I could reach the eyes of the suburban dwellers by the thousands and tell them how much less trouble it is to keep one or two milch goats instead of a cow, and convince them of the superiority of goat milk to the cow's milk, I should be pleased indeed, and would consider I had performed a humanitarian act.

GOATS AND COWS.—Every family has to have milk. If bought of the dairyman, here in this State, it costs the family from $1.50 to $3 or more a month, according to the quantity purchased, and the milk is not always of the best. If a cow be kept, the feed cost amounts to about an average of $12 a month. This makes it necessary to sell the greater portion of the milk with which to pay for keeping the cow. If the man of the family be a busy one, he can't afford to deliver to customers, nor could his wife. Where there are children old enough to deliver, it puts an unusual tax upon them, for they must attend school; besides, the weather is not always suitable for them to do so. Whereas the goat can be fed at hardly no cost at all, comparatively, as one can be maintained from the garden, largely, and most cottagers on the outskirts of town have gardens. Nor is this all: The milk of the goat is well-nigh perfect, both as to ease of digestion and purity. The fat globules of goat's milk being so very minute makes it easily broken up by the digestive juices, insomuch that the stomach of the invalid and the tiniest infant can appropriate it and thrive upon it when cow's milk could not be tolerated, nor condensed milk be digested and assimilated.

Goat breeders all agree that eight milch goats can be fed and thrive upon the feed necessary to be given one cow, if one expects good results.

MILK AND MILKING.—"How much milk does the goat give?" is the first question put to the goatherd. That depends, just as it does with the cow. The breed and the feed, as well as care given the animal, must be reckoned with. The very best of milkers yield from three to four quarts per day. Goat authorities claim even more of a yield in some instances than four quarts. They name the Saanen, Toggenburg, and Anglo-Nubian as being the best breeds of milch goats. Anyhow, they are the breeds talked about and sought after out here in California.

"Are goats hard to milk?" is another question. No, they are not.

"How long a period of lactation is given for the goat?" is often asked.

The pure-bred animal should be in milk from seven to eleven months; grades from five to nine months, say. These periods will vary, of course, according to care given.

"How much is a good milch goat worth?" More than the owner can get for her, unless the buyer be "up on goats." If he is, he will pay from $40 to $100 for a good one. "What! Why, that is the price of a cow." I know it. What if it is? Let me put a question: Is the goat not worth more than a cow to the man suburban? Figure for yourself, and then you'll know for yourself. I have given you the tip, now get out your pencil and tab.

"How about butter?" Well, if you have enough milk—say from two to four head—you can make butter and also cheese. The cheese, butter, and milk of the goat are all white. "Do they have a goaty flavor?" Not if fed right and handled in a sanitary manner. "Do you like these products?" Very much, indeed. I like them so much I never expect to be without them again, and if you were in my place neither would you ever be without "a goat or two."

HOW SHOULD FRESH COWS BE MILKED?

W. C. Looney of Corvallis, Oregon, does not agree with the current advice that fresh cows be milked dry. He believes it is bad for the udder. His claim is as follows:

I have run a dairy all my life and have never lost a teat on a cow since I was told the right way. I heard this when I was a boy, and I have tried it out and so have others, and know that I am right.

Nature never meant a calf to suck a cow before it is born, so leave your cow alone until the calf comes. If the calf is left with the cow, do not touch the cow before 24 hours, and do not milk her dry before 36 hours. Now I will tell you why. Milk is made as you milk. You milk a cow dry and the blood vessels of the udder are soft and flabby from non-use, as the milk that is in the bag has been a week in being made. There is undoubtedly a rush of blood to the bag to make milk for that imaginary calf (no new calf ever sucked a cow dry) and the result is congestion and a sore and inflamed udder which you have to knead and rub to reduce, if you can. Now, if you start the flow gently as a calf would, and milk a small amount at a time, there will be no great rush of blood to make the bag sore, the blood vessels will be toughened gradually, and there will be no congestion. You can use your milk sooner and your cows will do better.

I have two fresh cows in this week that never even had fever in their bags. They had two months rest; one gave 35 pounds net of milk, and she is a small fifteen-sixteenths Jersey cow. Every man who tries this way of doing swears by it.

I know that it is a hard thing to keep your hands off a cow whose udder looks full of milk, but give this a trial and you will never have a case of milk fever. I have had the handling of hundreds of fresh cows and never have had milk fever.

To stop a cow from losing her milk, take a wide rubber band and snap around the teat—not tight enough to stop the blood, but enough to shut most of the milk off so as to take the weight of the milk off of the circular muscle of the milk duct. The muscle will strengthen when the strain is relieved, so you will not need the rubber but a few weeks. This is simple and not a costly remedy.

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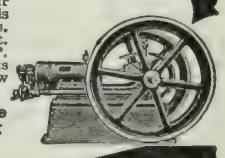
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LIVE STOCK NOTES.

The numerous deaths of deer in Trinity county this year are said to have resulted from the bladder worm, which was brought into the county by sheep. A number of cattle are also reported to have contracted the disease.

From April, 1910, to November 1, 1911, the county clerk of Kings county paid out $1306 as bounties for 653 coyote scalps. The bounties were offered on request of sheep owners.

The supervisors of San Mateo county have passed an ordinance preventing the keeping of more than 25 pigs in a pen that is within 500 feet of a public highway. The ordinance was caused by conditions near the San Francisco line, where hogs that live on waste food from the city are present in great numbers.

Livestock Inspector George Gordon of Kings county is to apply the anti-hog cholera serum to a number of hogs in a herd where the disease has broken out, to demonstrate to hog raisers what results can be expected from its use. Vaccination for anthrax has been used in a number of cases in the county recently to prevent further injury from this trouble. In several instances ranchers have been found who did not properly dispose of animals dying from anthrax, and they have been forced to burn them. A hunt for dairies previously overlooked resulted in the discovery of a number where sanitary conditions were extremely bad. Several more cases of rabies among dogs have recently been found in the county.

A number of cases of glanders have been found in Hilmar colony, Merced colony, by Dr. W. W. Thomas, county veterinarian. All of the cases were traced to a single horse which came from San Jose.

On petition of the sheepmen of the county who have sustained serious losses lately from coyotes, the bounty on these animals has been raised by the supervisors of Solano county from $10 to $20.

The lip and leg disease of sheep has been doing damage in the flocks of Indiana. Farmers around Indiana have also been losing many hogs through cholera.

The date of the International Livestock Exposition has been fixed for December 2 to 9. The show will be held at the Union Stockyards of Chicago.

DAIRY NOTES

Charles Lucas, a cattleman from the Hawaiian Islands, has been purchasing a large number of grade and thoroughbred Holsteins along the west side of the San Joaquin valley for shipment to the islands. The animals left on the Lurline last week, 130 animals, including cows, mules and horses, being on board.

Dr. F. H. McNair, milk inspector of Berkeley, has completed the inspection of all dairies supplying milk to that city, and reports that the places are showing a decided improvement since the inspections started.

A large party of Swiss dairymen recently arrived at El Centro from Europe, having come as a result of account given by their relatives now engaged in dairying in Imperial county. Several other parties are now on their way.

Ten cows in the lower part of the West side have recently been bitten by rapid dogs and have had to be killed. The heads of twelve dogs from that district were recently examined at Berkeley and the animals found to have been suffering from rabies.

Dr. Harold Gross, of Butler valley, Humboldt county, has received several more blooded Jerseys recently to add to his herd, which already contains some of the finest dairy animals of the county.

A number of young dairymen have arrived from Mondovi, Wis., with two carloads of fancy stock to begin dairying near Willows, Glenn county. The dairy will include 230 acres of the Young ranch, purchased by the new owners this spring. Another consignment of cattle from Wisconsin will arrive the latter part of the month.

The output of the co-operative creamery at Bieber, Lassen county, will be increased by about 75% during the coming year, according to arrangements now being completed. The creamery turns out about 10,000 lbs. of cheese per month, which is marketed in Redding and Sacramento.

Special features of the California Creamery Operators' Association convention, which will be held in San Luis Obispo November 24 and 25, will be a milking contest and butter-scoring contest.

George G. Smith, of the Goshen district, Tulare county, has added six head of thoroughbred Holsteins costing $250 each to his herd.

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Clearwater, Minn., Oct. 14, 1911. Had been using a No. 2 disk machine but find a No. 4 Tubular turns no harder though skimming twice as fast. Get more cream, of equal test, from same weight of milk with the Tubular. I. G. Humphries.

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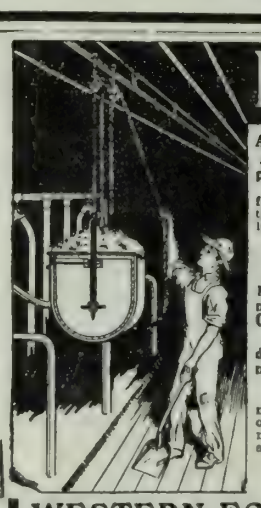
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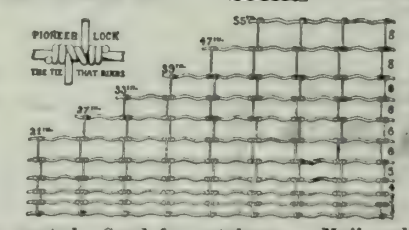
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The Fresno Scraper



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FRESNO AGRICULTURAL WORKS,
FRESNO, CALIFORNIA.

A SUGGESTION OF THANKSGIVING.

(Continued From Page 409.)

day, when all that are to come are on hand, the market reaches the condition that the supply and demand really justify.

The delicate flavor the the turkey depends greatly upon the condition of the bird when killed. Other birds can be killed almost any time in the year without finding much difference in the flesh. Turkeys are at their best only for about six weeks out of the fifty-two, and this is soon after the winter's cold comes on and the birds begin to lay on fat to meet it. Unfortunately the fine six weeks generally begin after Thanksgiving rather than before it, so that the Christmas turkey is superior to his relative who dies before him. The finest turkeys are, of course, hatched in the spring, and the big prize gobblers are veterans of several years whose long life improves their appearance and does the opposite to their edible qualities.

It is a peculiar thing that while Thanksgiving is the approved date for turkeys to be offered up, more of them are sold at Christmas. From 350 to 400 cars of turkeys come to San Francisco and the other bay cities before Thanksgiving, while for Christmas 500 cars is the normal supply. A large amount of the latter come from Texas and the Middle West, where the birds are in fine condition at that time. They are then fine for cold storage purposes, so that turkeys not sold on arrival can be frozen and will be much better eating in the spring than fowls killed then.

The supply of turkeys is reported to be good this year, and with good times the consumer should get enough turkey and the producer enough cash. Prices are expected to be up to normal, 20-23 cents live weight and 27 cents dressed, wholesale, although they may vary greatly according to the way the supplies come in. The best prices will come by making a normal distribution, rather than sending in too large or too small numbers at either Thanksgiving or Christmas.

CLASSIFIED ADVERTISEMENTS.

Rate, 1½c. per word. No order for less than 25c. per week. If you have anything to sell, or want anything, use these columns.

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FOR SALE—Are you looking for a home? Make your home in Shasta county on the beautifully wooden banks of Sacramento river; choice sediment land under irrigating ditch, sold in colony lots for $100 per acre on easy terms; creamery and the town of Anderson on the main Southern Pacific line within one mile. Write for booklet. Shasta Land Company, Anderson, Cal.

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FREE—20% in fresh package seeds, to introduce our goods, on all orders amounting to $2 and not over $5. Prices: Apples, 12½c; Pears, 30c; Roses, 30c; first-grade trees, No. 1 roses. We pay the freight. MEDFORD NURESRY CO., Medford, Ore.

MISSION OLIVE TREES in any quantities, guaranteed true to stock, for delivery in fall of 1912. Address MILLS & JORDAN, 410 14th St., Oakland Cal.

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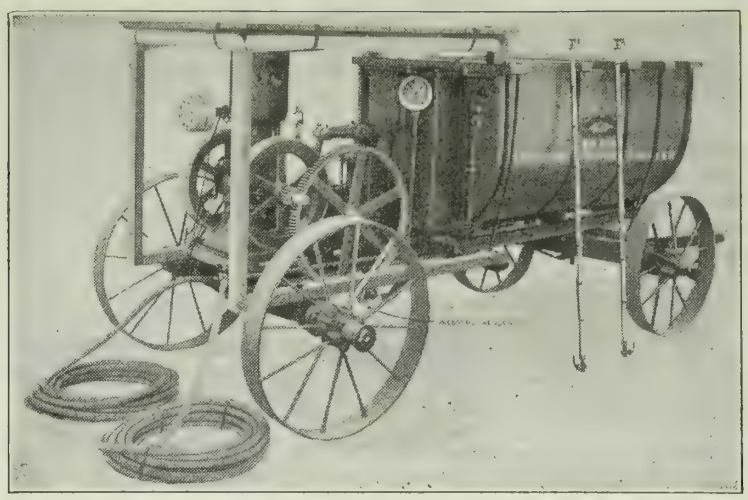
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OAKLAND POULTRY SHOW.

The coming poultry and pigeon show, to be held in Oakland November 21 to 27, at 1250 Webster street, under the auspices of the Alameda County Poultry Association and the California Pigeon Club, promises many new varieties for the visitor. From present indications the Orpingtons will lead, closely followed by the Rhode Island Reds, and a larger number than ever before of birds will be on exhibition at this show. Harry H. Collier of Tacoma, R. J. Venn of Fresno, and L. N. Cobbledick of Oakland will be the judges in the poultry department.

An association is to be formed in Riverside to arrange for future county fairs.



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"GIANT"—"CHALLENGE"—"PONY"

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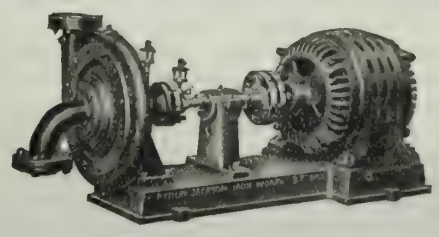
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your land by means of Electric driven centrifugal pumps.

They are absolutely noiseless, and have neither rods, valves, nor gears to get out of order.

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Cleaning Up.

Written for the PACIFIC RURAL PRESS
By MRS. SUSAN SWAYSGOOD,
Healdsburg, Cal.

There are two or three times in a year when the poultryman should clean up, and now before the winter rains commence is the best time of all.

If you have any kind of a house with a tight roof, that is vacant, clean it up and convert it for the time into a storehouse. Put up a shelf or two that will hold all the little drinking vessels and feed boxes used for the little chicks. Such things should be washed and scalded before putting away. Clean up the brooders and spray with some disinfectant, then expose to the sun for a few days before storing away. One of the best and eastiest ways to prepare disinfectant is, one ounce of Pearsan's creolin to one gallon of water, hot or cold, then spray every nook and crevice.

When you have the brooders in, if you use lamps, don't fail to give them a share of the cleaning. All kerosene lamp burners should be boiled in saleratus water at least once a month. Just use an old can of any kind and put in a tablespoonful of saleratus to a pint of water, throw in your burners and boil ten minutes, then dry with a soft rag. This keeps them bright and new; no explosive lamps when they are treated in this way.

There is not anything fowls relish better than fresh sand; so if your chickens are yarded for winter, haul in a load of good coarse sand and dump in your storehouse. Keep a shallow box in a dry sheltered place for the hens to pick at during the dull rainy days.

As the moulting season draws to a close, rake up the feathers, and if you have land that needs fertilizer spread them over it before the rain. After raking up the yards, look to the shelters and runs where the hens congregate and spray with some good disinfectant. Foul smells lie on the ground, but ascend upward and the fowls breathe them in—a fact which does not tend to make them any healthier. Chickens soon lose strength and vitality when compelled to crowd in nasty, ill-smelling places for shelter from a storm; but the wide-awake poultryman will see to it that his flock has a comfortable shelter in which to run. As a disinfectant for runs, shelters, etc., there is nothing better than the sulphuric-acid spray. To make it, get 16 ounces sulphuric acid (50% solution) and six gallons of water. Put the water into a wooden tub, bucket or keg, anything that is wooden, and pour the sulphuric acid into the water, being careful not to splash any on the flesh or clothing, because if you do it will surely leave a hole in the clothes and a burn on the flesh.

Nest boxes are another source of vexation if neglected. The best thing I have found for them is to paint them inside with distillate then keep fresh clean straw over deep enough so that the eggs will not come in contact with the oil. Some people say it does not hurt the egg anyway, but I know it does, because I have tried it.

There is not anything so satisfactory as trying out anything you are in doubt about, especially when it concerns some article you are going to put on the market for food. Distillate is a good, cheap article to fight poultry vermin with, but it must be kept clear of the eggs or they will have a very disagreeable taste.

FIGHTING MITES.—When mites attack a house there is no time to play, for it sometimes means death to the hens. The best thing for this pest is the kerosene emulsion spray with 5% carbolic acid in it. To make it, shave a bar of laundry soap (the kind with resin in it is the best), and boil in one gallon of water. When all soap is dissolved and while still hot, pour in one gallon of coal-oil, gradually whipping the mixture as you would beat anything up—a few switches from a prune tree makes a good beater. When cold it should be of the consistency of cream. When ready to use, it can be diluted with fifteen gallons of water and add a four-ounce bottle of carbolic crystals. For mites it is best to get out early in the morning as soon as the fowls vacate the house, and apply the emulsion to every crack and crevice. Repeat once or twice if necessary; you will not get all the first time. And don't forget that this is excellent weather for breeding lice and mites. Immunity from pests means constant vigilance. Keep the houses and runs clean, provide the hens with some good soft soil by digging up a little corner of their yard and throwing an occasional bucket of water into it, and there need be no loss or injury from lice or mites.

A short time ago I visited a large poultry plant that had not hatched any chicks since April. Naturally one would have looked to find everything put away spick and span ready for the next hatching season, but such was not the case. The brooders were just as the chicks had left them, incubators with broken eggshells on the trays and in the nursery, drawers, etc., and the nastiest kind of a smell pervading the room where they were run. The proprietor said they would have more time soon to look after such things, when they would be put in order. But in my opinion the germs that are now present in out-of-the-way places in the incubators will never be gotten rid of. The heat that is conductive to growth and life in the egg will also furnish the same conditions for the germs.

Now, why may not this little neglect to clean up in proper time be the cause of so much loss in incubator chicks? By proper time is meant the time when the hatch comes off, No incubator should be left dirty, not even a day after the chicks are taken away from it. The trap can and should be scalded, and the walls inside, overhead, and every part washed with some good disinfectant. The wick should be removed from the lamp and the burner boiled, oil poured out of the bowl and after the burner is dry screwed into place and the lamp put away for future use. It should never be put inside the incubator, or it is iable to cause trouble at hatching time.

Even those who do not hatch with incubators will be surprised at the many little things they can pick up and store away. Nest boxes that the hens have set in can be made to serve several years by being cleaned up and put under cover.

DISEASE BREEDERS.—Another thing that needs attention is the feed troughs. Wherever moist mash is fed in wooden troughs, boxes, etc., there is always danger from neglect. One roupy chicken feeding at a wooden trough can cause no end of mischief for the poultryman who neglects to scald out his feed-troughs. The germs get in the cracks and points of the box or trough, and every time the poultry feed out of that trough, some or all of them eat those germs; though not all the germs are going to make trouble at first, they will eventually if not destroyed. There is but one remedy for such things when the parasite gets into them, and that is to turn every wooden feed trough or box the fowls have used, disinfect and turn over the ground, and give all the fowls a good physic, after which clean up by spading the ground, if possible, and if not, by spraying it with sulphuric-acid spray.

CLIMATIC CHANGES.—This lovely weather ought not to be accused of any wrong-

POULTRY.

INCUBATOR CHICKS—White Leghorns and White Plymouth Rock in quantities. Black Minorcas, Brown Leghorns, Buff Leghorns in reasonable quantities. Arrangements for deliveries can now be made. Send for booklet of prices. Mahajo Farm, P. O. Box 597 Sacramento, Cal.

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CRYSTAL WHITE ORPINGTONS (Kellerstrass Strain) carefully selected for breeding. Cockerels or pullets from $5 to $25 each. A $10 cockerel and two $5 pullets make a good pen. Address J. A. Filcher, Sacramento, Cal.

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FAMOUS BREEDER of White Plymouth Rocks. Eggs, Utility and Show Stock for sale; 75 choice cockerels now ready; Also White Crested Black Polish. Mrs D. A. Robertson, R. 3, Box 16, 511 Willow St., San Jose.

SCHELLVILLE HATCHERY — Thoroughbred White Leghorn Chicks hatched to order from heavy winter layers—the kind that pay. No dead or weak chicks charged for. Order early. Sonoma, Cal.

DAY-OLD CHICKS—Barred Rocks and White Leghorn chicks, good laying strains; order early for fall delivery and avoid delay. Fairmount Hatchery, Box 29 B, R. F. D., Santa Cruz, California.

A SHORT CUT TO SUCCESS—Olson's White Leghorns. Day-old chicks or hatching eggs. They are money-makers for you. Prices low. O. A. Olsen, Sunnyvale, Cal.

OAKLAND POULTRY YARDS, 149D, California St., San Francisco.—Est. 40 years Standard bred poultry. White Orpingtons R. I. Reds, Brd. Rocks, White Leghorns

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IF INTERESTED IN INCUBATORS or how to feed, write for our free Catalog PETALUMA INCUBATOR CO., Petaluma California.

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Proven winter layers; 600 hens selected by Hogan system, in breeding yards.

Chicks, $10 per 100.

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MAGNIFICENT COCKERELS nearly always on hand. My utility yards are noted for their vigorous stock. My prize pens consist of celebrated winners at Wisconsin, Utah, Stockton, Petaluma, Santa Cruz, Oakland, etc. Circular forwarded on application.

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Plant of most modern equipment; 6000 laying hens (Standard Bred S. C. White Leghorns); all raised and kept under most sanitary conditions.

FOR SALE

Surplus stock after filling our laying houses.

1000 May and June hatched pullets from $8 to $10 per dozen.

300 Excellent Breeding Cockerels, $12 per dozen and up.

Orders booked for hatching eggs and baby chicks; correspondence solicited. Visitors welcome.

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OF THE BEST TYPE CAN BE FOUND IN MY YARDS.

My foundation stock came direct from Bell of Engand, the world-famous Orpington breeder.

I have the largest flock of Black Orpingtons on the Coast.

The best testimonial to the merit of my birds can be found in my winnings at San Jose October 4th to 17th, 1911, where I took 1st and 2nd cock, 1st cockerel, 1st, 2nd and 3d pullets and the American Poultry Association Medal for best cockerel in the show.

In White Wyandottes, I have quality just as good.

With seven Wyandotte entries at San Jose I won 1st cock, 1st and 2nd hen, 1st and 2nd cockerel, 1st and 2nd pullet.

Stock and eggs for sale.

I also breed utility Pigeons, Homers, Carneaux, and Polish Lunx.

My foundation stock in all three breeds was imported.

Youngsters and guaranteed mated pairs for sale.

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Sale of Wild Turkeys.

We have the authority of the State Board of Control to sell a limited number of **adult Wild Turkeys** from the **State Game Farm.**

Breeders desiring to improve the **vitality, Strain,** and **flavor** of their domestic stock can during the sale obtain Gobblers for $15.00 each and hens at $10.00 each, or one gobbler and three hens for $40.00

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Croley's High Protein Meat Scrap has **no superior.** Your hens need it—need it badly to produce good results. Why not try it? Every sack guaranteed pure and sweet.

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Even if you don't want one for four to six months, you can save 25% by buying now. A special offer for cash, and to make room. 50 Egg size only. Send for Catalog and particulars. Big bargain. Strong guarantee.

WEST COAST SEED HOUSE
111, 113, 115 Winston St.,
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Send for Price List of Imported Dutch Bulbs.

LARGEST PLANT ON PACIFIC COAST. WE HAVE THE BEST

INDIAN RUNNER DUCKS

WHITE ORPINGTONS.

Surplus stock of Runners sold out. Eggs for hatching only.

ROSE MONT POULTRY PLANT, P. O. Box 226, Napa, Cal.

doing, but the warm days and cool nights of fall weather are conducive to colds in poultry. A cold, if neglected, soon turns to roup, so, as an ounce of prevention is better than a pound of cure, the watchful poultryman will aim to prevent his fowls getting cold. First see that there are no cracks or knot-holes in the houses; very often a cold can be traced to some defect of that kind—a bird sleeping with its head opposite a crack through which comes a draft. In such a case put a batten over it. A shingle will fix a knot-hole in short order.

THE PICKET FENCE.—It is gratifying to notice that the old picket fence is rapidly disappearing. As a breeder of trouble its equal will be hard to find; poison oak and other pests to human kind had their happy hunting grounds close to the picket fence. As a breeder of colds and roup in poultry it could easily win first place. Biddy liked to stretch herself out in the sun on the east side of an old picket fence in the early morning; what did she care if a breeze was blowing from the west; there she would be sunning herself until a fit of sneezing came on, and in a day or two she would have a lovely swollen eye. What is more, not one poultryman out of twenty ever dreamed that the old fence was the cause of swollen eyes and running nostrils, but it certainly was.

Fifteen years ago I paid the penalty of using a picket fence, on one side of my place. Over 200 beautiful Brown Leghorns had colds, some very bad ones, also their eyes were swollen and they did look a sorry lot; but happily by catching them in time and moving them away from the fence, they were all saved. The one lesson was sufficient; I never tried to economize in fences again.

But in case the chickens do get a cold in spite of all prevention, as sometimes they will, it is a good plan to give the whole flock a little physic. Do this by putting a little coal-oil in the mash feed. No drugs, no expense, no doping, but mix a little mash feed with warm water in which put say half a pint of coal-oil to 100 fowls, or rather to the mash feed for that number, and feed it warm at night.

At one time coal-oil was very highly recommended to be given in the drinking water, but fowls will go without water before drinking what they do not like, but in the feed it is more disguised and they don't seem to mind it. But with careful attention to the sleeping apartments and shelters, where they flock to get away from a storm or cold wind, will be about all the medicine good healthy fowls need. Cleanliness is the great remedy for chicken troubles.

Overcrowding nearly always causes trouble and should be avoided for this reason, also because chickens that are overcrowded never attain the normal size; they are always more or less stunted and ragged looking, hence it does not pay to raise more than you can house and care for properly.

If poultry are to be kept profitably they must have the same intelligent care that you would give to other stock. Very few farmers would think of leaving their horses or cows in filthy houses and neglect to clean them out perhaps for weeks, yet these same men often do this very thing with their poultry and then cry out there is not anything in chickens. And any intelligent poultryman will agree with them that there is not anything but disappointment in slipshod poultry raising. But change the methods, put a little mental and an extra allowance of physical exercise into the care of them, and you will be surprised to see how quickly they will respond and hand you out the nickel egg for your pay.

POINTS ABOUT THE COMMERCIAL EGG.

Written for the PACIFIC RURAL PRESS
By M. RUSSELL JAMES.

The egg production of the United States has risen since 1880 from 457,000,000 dozen to more than 2,000,000,000 dozen.

In the winter of 1890-91, when there was no cold-storage, fresh-gathered eggs were selling in New York at wholesale for 26½c per dozen. Last winter cold-storage eggs were selling in New York for 24c a dozen. More than 6,000,000 cases of eggs go into cold storage every year in the United States.

Experts of the Department of Agriculture are on the trail of the hen. Owing to the lack of proper training in the early education of the hen, as to where and when to lay eggs, an education for which the farmer is responsible; and owing to the carelessness of the farmer and his wife in the proper handling of their poultry products, it is contended that $45,000,000 worth of eggs are lost each year. This is said to be 15% of the annual egg crop, which is given at $300,000,000. This loss, represented by the improper handling of eggs on the farm and in the country store, is in the main a preventable one. It is borne directly both by the producer and the consumer. By preventing this loss it is possible for the farmer to realize a greater profit and for the consumer to be reasonably certain of purchasing eggs of good quality as well as keeping down the cost.

According to the Department experts, there is a young gold mine for the American farmer, no matter how small his farm may be, if he will devote some time to his egg and poultry business. He should keep clean houses and runs for his chickens; keep their nests clean; prevent his hens laying in out-of-the-way places, and should market his eggs at least twice a week. He should sell them, not by numbers, but according to quality. Again, he should never store his eggs in a damp place, especially a country cellar. He should sell for cash, and, most important of all, increase his number of hens and make them work along scientific lines in their egg laying.

POULTRY SHOW AT STOCKTON.

Biggest and best held in the west—that is, the second annual Poultry and Pigeon Show pulled off at Stockton last week. Over 2000 birds of finest feather flocked together from all sections of the Coast to the big tent at Hunter Street Square because there wasn't a hall in town big enough to hold them.

Stockton has won sudden fame as a poultry center. We are told that in the East it is now "Petaluma and Stockton" when California poultry interests are spoken of, and Petaluma will have to look to her laurels or this order will soon be reversed.

A word of praise is due to the very efficient management of the show and especially to Secretary McCoy and Superintendent French, to whom its success was largely due. Exhibitors, judges, and patrons alike were unanimous in their approval of the businesslike way in which everything was conducted. An especially pleasing feature was the promptness with which the prizes were announced and awarded.

The great American hen was most numerously represented by the Single Comb Rhode Island Reds, some 133 of this tribe answering to roll call. The prize for best male bird in the show was carried off by one of this number.

The highest class was found among the Orpingtons, the special prizes offered by the Orpington Club serving to bring out the best of this breed in the State. A buff Orpington was declared the best female in the show.

The old reliable Single Comb White Leghorns, as well as their buff and brown sisters, made up an important and interesting part of the show, while all the other leading varieties, too numerous to mention, were shown in large numbers, and for the most part in excellent class.

The pigeon show was especially large and interesting, most of the four or five hundred varieties in the catalogue being represented. Ducks, geese, peafowl, etc., lent variety to the sights and sounds within the big tent. Of the turkeys it will suffice to say that there was a large number, and they included Ed. Hart's big Bronzes, the turkeys that made San Joaquin county famous.

The attendance throughout the week was good and the show well deserved it.

BABY CHICKS

from Hicks' Jubilee Hatchery have no superior in California. Will sell in small or large lots. Capacity 12,000. W. Leghorns, B. Rocks, R. I. Reds, B. Orpingtons. Send for price-list.

W. J. HICKS,
R. 2, Box 154, Petaluma, Cal.



Egg City Hatchery

Orders booked for spring delivery of baby chicks. Our specialties are Rhode Island Reds and S. C. White Leghorns.

W. L. SALES,
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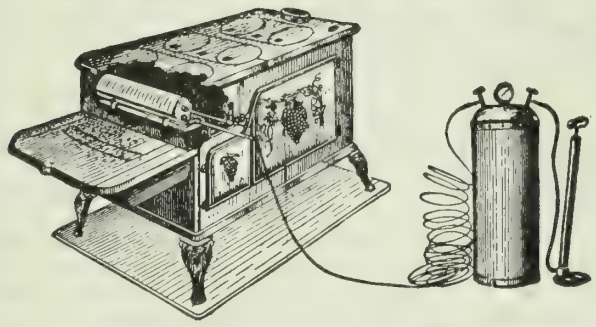


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The Home Circle.

Thanksgiving Anticipations.

Of course, we'll have a turkey,
A great big husky feller,
'N' vegtabule of every kind—
Pertaters, white and yeller;
Turnips, 'n' squash, 'n' onions, too—
Um! Um! 'N' celery,
'N' stuffin', that's the best of all,
Fixed up with savory;

'N' pies! Well, I'm prepared to say
All other kinds is fakes
Alongside o' pumpkin ones,
An' mince, my mother makes!
Besides, they's apple turnovers
To cap the hull array,
An' I can have two slabs of each,
'Cause it's Thanksgiving Day!

But after eatin' fruit 'n' nuts
'N' candy with the rest,
I bet I'll feel like letting out
The buttons on my vest!
'N' walkin' 'round the block is good
For appetites like mine;
Then afterward I'll feel like "more"—
Gee! ain't Thanksgiving fine!

—Mazie V. Caruthers.

Thanksgiving.

For life and health, for home and friends,
For all Thy bounteous mercy sends,
For strength to work, and work to do,
For pleasures, and for trials, too,
A grateful heart to Thee I bring,
My Father, and my Lord and King.

That Thou hast kept me through this year,
And filled my heart with memories dear,
That still Thy presence I can feel,
And trust in Thee for woe or weal,
A joyous song of thanks I raise
Of love and gratitude and praise.

—Olive K. Pitman.

Thanksgiving Day.

Very shortly now we will celebrate the great American Thanksgiving holiday, and perhaps we cannot do better than to print an article from Mrs. E. E. Pettis, which covers a very important feature of the day—

THANKSGIVING DINNER.

"Doesn't it make your mouth water just to speak the words! We may have the same bill of fare on any other day, but it never tastes quite as good as when it appears on the Thanksgiving table! This is especially true when the real thanksgiving spirit pervades the home, when a goodly number of one's relatives are present, and the old-fashioned dishes and other treasured heirlooms are brought out to help make the day distinctive.

"As a rule, Thanksgiving dinner means hard work for some one; but if it be properly planned, and a large part of it prepared beforehand, as it should be, and if every one is allowed to help, as every properly constituted person wants to do, then the work really becomes play.

"The trouble with too many housekeepers is that they lose the spirit of the occasion in their struggle for display. There should be a special act of Congress defining the limits of the bill of fare suited to a Thanksgiving dinner! We should remember how, and when, and for what reason, the holiday was born. The progenitors of this day did not have oysters on the half shell, and soup, and Frenchified flummididdles; then why should we break our hearts, as well as our backs, and ruin our stomachs, in an effort to get what is as superfluous to the occasion as it would be to wear a diamond necklace in the laundry!

"Let us have just one course topped off with pie. Roast turkey, cranberry sauce, mashed potatoes, either baked squash or mashed turnips, creamed onions, bread, butter, and pickles. Coffee may be served with this course, or with the pie, as the majority of the diners prefer. Mince pie and pumpkin pie, with cheese, complete a meal that is good enough for anyone. And you won't want any supper! Just provide a good old-fashioned fruitcake, and plenty of apples, and let every one help himself. Have a pile of paper napkins handy, and don't worry for fear some one may go home hungry. If you have walnuts or hazlenuts and popcorn for the young people in the evening, well and good; if you haven't, give them the materials for home-made candy, and they will do the rest. Every one will have a good time, and you'll be glad you decided to celebrate Thanskgiving Day."

TABLE DECORATIONS.

Do you trim your table for the Thanksgiving dinner? If not, do so this year, just to see how much nicer food tastes when eaten off a pretty table. And it will look so much more festive that your dinner may really be quite simple and yet satisfy those members of the family who are sensible enough to insist upon the observance of holidays.

Pumpkin colors should dominate in the Thanksgiving decorations. Of course, your centerpiece will be half of a pumpkin scooped out to form a dish.

When the dinner is to be served in the evening, or the dining-room is to be darkened for the occasion, yellow tissue paper shades for the candlesticks, or for the lamp, in case there are not candlesticks, will help out wonderfully.

If you are to have baked squash for dinner, bake it in the shell; then scrape it out, season it, and return it to the hot shell. Utilize your skill in paper-flower making, and dress up the squash shell to look like a huge chrysanthemum. It is ever so pretty when so dressed. Even if you do not make the squash into a paper flower, try baking and serving it in the hot shell. It keeps hot much longer than when served in an ordinary vegetable dish.

FOR THE PARTY.

There is no better form of entertainment at Thanksgiving than an old-fashioned candy-pull and nut party such as was popular with our forefathers and foremothers a century ago.

If possible, there ought to be an open fireplace for the work and for the fun of the evening; but candy may be cooked quite as well if more prosaically on a modern kitchen range and nuts for fortune telling can be made to burn upon a hot stove-plate.

There should be two kettles, one for the local nut candy, and one for the molasses taffy, which is proper for a candy pull. If not sufficiently cooked, it will not pull. If cooked too much, it hardens on the dish and is spoiled for genuine taffy.

Then the pulling, which is the event of the evening. The young folks choose partners, a boy and a girl together, and there should be much rivalry as to who will do the work best, and make the prettiest batch of candy.

Telling fortunes with nuts is as old as primitive man. The ordinary method is to take two nuts—hickory or shell-bark by choice—and, naming one for an unmarried woman, the other for an unmarried man, place them side by side upon the smooth hearth in front of a hot fire and watch the result of the heat upon them. If the nuts burn steadily together until consumed, the omen is that of a happy marriage for the two people whose names they bear. If, on the contrary, the effect of the fire is to drive the nuts apart, the love affair will never amount to anything.

In setting your Thanksgiving dinner table, always think of the comfort of your guests. Sweep and dust your dining-room right after breakfast and air it well, so that it may not be "stuffy." Look out for the temperature of the room, and see that no guest will be placed in a draft. Don't let the centerpiece or the lamps or the candles, provided you serve the dinner at night, be so high as to obstruct the vision.

Jennie's Baby.

"You will take the baby home with you, Will?"

"Yes, I guess I will have to," he said with a sigh. "There is no other place to take her. John's folks are all scattered away off and none of them are able to take her at best. I'll have to take her."

His boyhood's friend looked at him in perfect astonishment.

"You've changed mightily, Will," he said, slowly. "I never thought that you'd begrudge a home to your only sister's baby. And you are mighty near a rich man, they tell me, and have but one child to inherit it."

"It's not that, Tom," he said, lifting his hand in protest. "You needn't think that of me. God knows that I'd divide all that I had with Jennie or with the baby. It is the baby I am thinking of. You have never visited at my house or you would understand. Tom, I married the finest woman that ever lived, but she is so almighty clean that she makes life miserable for everybody that knows her. She sets more store by her spotless floors and speckless windows than she does by the things it takes to make what I call a home. Now that little girl will almost drive her wild. You can see by the way she scatters things around that she is not orderly. Almira can't stand a bit of litter about the house, and she will take all of these playthings from the child and teach her to sit up in a chair—stiff, starched and speechless. She will educate all those cute ways, those pretty prattlings out of her."

He took the child in his arms and caressed her gently.

"I have come once a year regularly to see John and Jennie, and I can say truthfully that those visits are milestones along the back way. Jennie always had things upset. She never had a bit of management about her, and you generally had to move things before you could sit down. The doorsteps were usually full of the children's playhouses, and Jennie was too busy to dress and wash them up more than once a day, so you had to wait till the little faces were sponged for a kiss. But Jennie was the sweetest woman that ever lived. Through joy and sorrow she was always bright and optimistic. Her husband and her children were her idols. Almira had no patience with her at all, because she was not up to her standard as a housekeeper, and Jennie thought Almira was narrow. So there it was. Of late years they haven't seen each other. We moved to Malden and they stayed on the farm."

He stroked the baby's tangled curls for a moment.

"I don't want you to think that Almira is hard-hearted or stingy, for a better woman never lived. She is just frantic about dirt and disorder. One thing I think gave it such a hold on her was that we were married five years before we had the boy and she didn't have a thing to do but clean house from morning till night. I was the happiest man in Malden when the boy was born, for I could not see how a person could raise children and still have things so clean that you were afraid to sit on the chairs or walk on the floors. I thought that Almira and the baby and I would have jolly times like they had at Jennie's with the babies, but I figured wrong, for John was born in his mother's image. I never saw him dirty in my life. Almira kept him spotless and he liked it. Even now, when he comes home from the office (he is my partner, you know), he begins to dust himself before he comes in the yard. Almira never nags at me, but it is trying to have her follow after me with the carpet sweeper or dust cloth. She has such a patient look that I feel like a tramp.

"But when the telegram came saying that John was dying of pneumonia and that Jennie was very low, Almira hurried my things together and told me to stay till Jennie was better and to bring

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her home with me. She and the baby would have a home with us, Almira said. I saw the tears rolling down her cheeks as she packed those flowers in a box, but—" he sighen pathetically—"I know Almira and I know that it would never have done. When I got there Jennie revived enough to put the baby in my arms and she was gone."

The baby had fallen asleep. He looked at her and the tears rolled down his cheeks.

"I can't understand the ways of the Lord, Tim," he said, sorrowfully. "Twenty years ago John and Jennie were married and they had five children inside of ten years. They were just like stairsteps—all chubby and healthy and noisy. Then they began to go. One with diphtheria. Two with spinal meningitis. Two with scarlet fever. It was nine years ago that they buried the last two together. Three years ago this baby came and now they are taken and the baby is left alone." He sighed wearily. "The Lord has a reason for everything," he said, gazing sadly down at the chubby baby face, "but I wish that the little thing had never been born into this vale of tears. John Holman is here from Malden. He came out this morning, and I am going to send Nellie to Almira by him. I cannot leave till everything is settled up and the farm disposed of." He rose and tiptoed softly to the bed and laid his burden down. She turned and groped restlessly, murmured "Mama" and settled down quietly.

The two men stole from the room and passed outside in the crisp evening air. Heavy odors of disinfectants and the sickly-sweet smell of flowers came from the half-lowered windows of the parlor. The heavy folds of crepe swung slowly in the breeze.

Days lengthened into weeks before Mr. Clayton could return home. His wife had written a few words in her crisp, characteristic way to let him know that Nellie had arrived, but they were neither of them much given to correspondence, and the wife had not answered her husband's brief note of reply. He wrote that he would probably not be home until the first of the following month, but he was able to start home a week sooner. He strode up the trim walk to the house and around to the sitting-room. On the doorstep lay a dilapidated doll. He picked it up and slipped it in his pocket stealthily. Poor, little Nellie—she was evidently not acclimated yet. A scream of childish laughter startled him. He opened the door hastily and stepped inside. He almost shouted his astonishment at the tableau before him. John, his prim, sedate John, was crawling about the room on hands and knees with Nellie seated on his back, urging him on with sweet, childish imperialism. But when he saw his wife sitting in the midst of a jumble of toys, dressing a doll baby and laughing as he had never before seen her, he was paralyzed. He was in the act of stealthily pinching his arm to see if he was awake when his wife, attracted by the cold air from the open door, looked up.

"Why, here's Will!" she cried, springing to her feet and scattering the scraps all over the floor. There was an inflection in her voice that made his heart leap as in the old days when Almira was his sweetheart and the only girl in the world.

John rose to his feet and shifted the baby to his shoulder in unabashed ease.

"Isn't she a darling!" cried his wife, squeezing one chubby knee in a rapturous manner. "I don't see how we ever did without her."

"She had me going the day after she came," asserted John, skipping across the floor, while Nellie screamed with laughter.

"I nearly killed her," said his wife tearfully, "bathing her so much. She is a dreadfully untidy little darling."

"She had croup," added John, "and we thought we were going to lose her."

Mrs. Clayton clasped a dimpled hand. "And its hateful Auntie is never going to torture it any more with washing and dressing it three times a day," she said, kissing the plump fingers again and again.

"She certainly rules this camp," declared the hitherto immaculate John, unheeding the hopelessly wrinkled knees of his trousers and his ruffled hair as he alternated bites out of a big, red apple with imperious Nellie.

"Who could help loving her?" asked the wife, softly. "She has Jennie's sweet disposition and her father's sturdy independence."

Mr. Clayton swallowed the lump in his throat. "Thank you, dear," he said, not striving to withhold his tears.

"I have Emma Jones in to help me with the work," continued his wife, "so that I can give all my time to Nellie. You know that you have often wished that I could find a good girl, and—and—I have always been too particular. Now I am playing lady!"

She turned to him suddenly, with a catch in her smooth tones.

"I have been a silly, narrow-minded woman," she said, brokenly, "and my life has been a failure. Jennie has sent me this baby, just as she used to send me flowers from her garden, to show me how beautiful life was outside of my spotless home. She has given me the grandest gift"—she threw her arms around her husband's neck, convulsively. "I don't deserve it. I don't deserve it," she sobbed wildly.

Nellie leaned forward from John's shoulder with a troubled face.

"I love 'oo a bushel," she declared, earnestly, "and I want my Noo 'Ear's dinner."

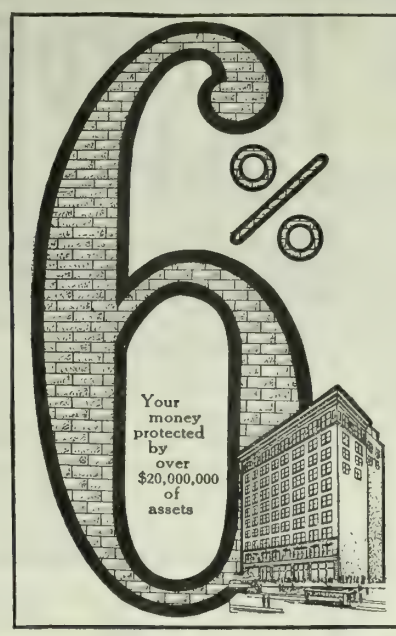
John's voice was a little unsteady, but he tossed her aloft and said:

"Now you are talking business. Nellie has been looking forward to her New Year's dinner for a week; that is, ever since she got over the effects of the dinner she ate Christmas Day. She knows that she has turned over a great big leaf for this family."

And Mr. Clayton passed his arm around his wife's waist and drew her closely to him, closer than she had ever been in all the years of their married life.

"It is our New Year, Mira," he said, with a quaver in his voice, using the pet name he had almost forgotten. "Thank God for Jennie's baby."—Exchange.

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STATE COMMISSIONER OF HORTICULTURE AND STAFF.

Written for the PACIFIC RURAL PRESS.

Dr. A. J. Cook, the recently appointed State Commissioner of Horticulture, is now well established in his office at the State Capitol, with a full corps of competent assistants. Dr. Cook is a progressive in every sense of the word, and is keenly alive to the needs of the great State work and believes in running his office on a thoroughly up-to-date business basis. He is utterly averse to removing any good person, as experience counts for much. In choosing his assistants, he demands only two things: first, fitness and ability to work; and second, loyalty to all phases of the service. While the doctor lays great stress on scientific education, he is equally desirous to procure practical men who have made good in the work of the Commission in the past, and, above all, he believes in giving every man a fair chance to make good. For these reasons, very few changes have been made in the personnel of the office, there being but two removals in the entire force of the old regime.

The following men have been chosen by Dr. Cook to assist him in carrying out his plans for the State work:

G. E. Merrill, of the U. S. Department of Agriculture at San Jose, has been chosen to fill the new position of chief deputy. Mr. Merrill is a graduate of the Agricultural Department of Dartmouth College and went to Cornell University for graduate work. He has been connected with the Bureau of Entomology under Dr. L. O. Howard, and was recently associated with Dudley Moulton in the thrips work investigation in California. He comes with the highest recommendations from both Dr. Howard and Mr. Moulton and will do most efficient work in the deciduous fruit orchards of central and northern California.

E. K. Carnes the able superintendent of the State Insectary, has been retained to continue his good work for the orchardists of the State. He is too well known to need any further introduction to California pomologists.

O. E. Bremner, former secretary and at present chief deputy quarantine officer, will be valued assistant where experience counts for so much.

E. O. Essig is a new man, and is secretary of the State Commission. Mr. Essig was for two years Horticultural Commissioner of Ventura county, and while there performed phenomenal service. He has the highest commendation from the late Commissioner, J. W. Jeffrey.

Frederick Maskew, former assistant superintendent of the State Insectary, succeeds Stephen Strong as deputy quarantine officer and has charge of the quarantine work in the South. Mr. Maskew is one of the most valuable men on the Commission and particularly fitted for the work delegated to him. His office is in the Equitable Savings Bank Building, Los Angeles. He will have the direct supervision over the ports of San Pedro and San Diego and will also patrol the Mexican border.

E. J. Newcomer, a recent graduate of Stanford University, and one whom Dr. Kellogg recommends most highly as his "best student", has been given the position of assistant superintendent of the State Insectary.

George Compere, whose acquaintance with Oriental conditions and the imperative need of strict quarantine, retains his former position in the quarantine division at San Francisco.

B. B. Whitney, inspector at the San Francisco office, a very competent man for his work, is also a member of the new corps under Dr. Cook.

Miss Bird also retains her old position as clerk of the Sacramento office, a position which she has very ably filled for several years.

E. J. Branigan continues as field deputy in the insectary division. As a conscientious field man he is rarely excelled.

C. H. Vary, who for a number of years has been most competent as county horticultural inspector, has been chosen to assist Mr. Maskew, and will have charge of the port at San Pedro.

A. S. Hoyt succeeds Robert Jeffrey at the port of San Diego. Mr. Hoyt is a college man thoroughly trained in entomology and has served as inspector under Commissioner Essig for the past three years. The Commissioner says "he is absolutely dependable."

Sacramento, Nov. 7, 1911.

THE BOOSTER IN COUNTRY LIFE.

Written for the PACIFIC RURAL PRESS
By H. W. KRUCKEBERG.

Ontario is a delightful town situated about forty miles east of Los Angeles in San Bernardino county, whose basic industry is the growing of citrus fruits, and whose bid for fame rests in the possession of a magnificent avenue some fourteen miles long, planted to four rows of shade trees, all of which have attained size and age to make it impressive. The entire life and industry of the community is horticultural, affording a splendid object lesson in high ideals and a healthy civic pride among a rural people, as compared to the sordid and congested conditions of large cities. That fellowship and unity of action does not depend on living in tenements or rows of town houses, was evidenced during a recent "get together" celebration participated in by some 2000 soil tillers in this same town of Ontario, the object of which was to "mix and get acquainted." Fruit growers were in attendance from a radius of forty miles, with the slogan to boost, not only Ontario, but first your home town, then your neighboring town, then your county, then your section of the State, and finally California as a whole. The event occupied two days, October 24 and 25, and in its sphere of action certainly accomplished a commendable object. The incident is here referred to, because it is a spoke in the evolution of the movement aiming to make country life more attractive by relieving it of some of its monotony and irksomeness. Man is a social animal, and anything that will lift him away from himself and give a broader view of life, should be encouraged. These celebrations have in a number of towns become a social feature of annual recurrence in southern California. We believe they should be encouraged in other portions of the State.

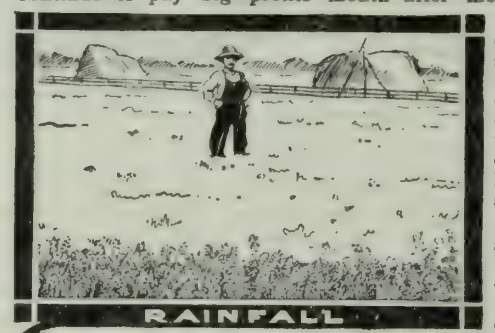
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The Bureau is a center where the best ways of doing things on the farm, and data relating to its development are collected and distributed free to everyone interested in agriculture. Every available source of information will be used in answering questions on all farm subjects. If the questions are sent to the I H C Service Bureau, Chicago, they will receive prompt attention.

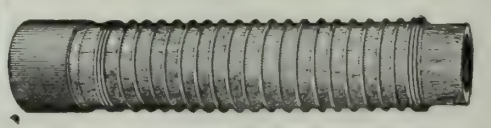


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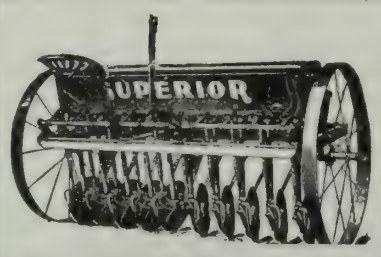
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HOGS AND SHEEP IN THE FIG ORCHARD.

In the line of diversified farming in which live stock can play a ruling part, a very interesting story is told by the Fresno Herald about the Kelsey fig orchard at Merced Falls.

The Kelsey orchard is located at Merced Falls, in the lower foothills of the Sierras, on a wide, high river bottom. This orchard consists of something over a hundred acres of black mission figs and has been a wonderful producer. Some years the yield has greatly exceeded 200 tons of marketable dried figs. At an average price of $70 per ton, the income is considerable.

This orchard has a history. When John C. Fremont was mining on the old Mariposa grant, Erastus Kelsey, father of the present owner, got some fig cuttings from the old mission and planted them in the rich bottom. They flourished apace and grew to an immense size. Farming was a rather uncertain business in those days, and after several unlucky ventures the elder Kelsey left the farm to its present owner, so heavily mortgaged that the banks did not dare to foreclose. The son and present owner, Horace G. Kelsey, a graduate of the College of Agriculture at Berkeley, struggled along for years trying first one plan and then another to pay off the indebtedness, and did nothing more than to keep up his interest. A number of the old fig trees were bearing immense crops, and he determined to save the crop and market it. He received good prices and was astonished at the results.

From ten of the giant fig trees he gathered a crop of figs that when dried weighed over 14,000 pounds. He sold the crop that year for 5 cents per pound, or an average of over $70 per tree from ten trees—a total of a little over $700. There are plenty of witnesses to corroborate this story, and the Chamber of Commerce of Merced will vouch for the veracity of the witnesses.

This experience set Mr. Kelsey to thinking. Said he to himself, "If I can get so much money from a few trees, why shouldn't I have more?" So he started a fig nursery and as rapidly as possible he planted an orchard covering something over 100 acres, and waited for years for his crop.

WHERE THE PIGS CAME IN.—His neighbors called it "Kelsey's folly" and he was more or less of a laughing stock for the neighborhood on account of it. Meantime he went heavily into alfalfa, and that was another sign of his insanity, according to his neighbors. But he raised a lot of hogs on his alfalfa, turned them into his fig orchard to eat the waste figs, and onto the stubble fields to pick up the waste grain, and thus raised enough hogs, at little or no expense, to pay the expense of running the orchard.

Gradually the production went up until something over $15,000 was the gross income from fruit and enough from hogs to make the income from figs almost net.

THE SHEEP TAKE A HAND AT THE GAME.—After reaching the high-water mark, the fig tonnage began to lessen, year by year, until it reached 100 tons. Mr. Kelsey was satisfied that fertilizer was needed. But how to fertilize a hundred-acre orchard without tremendous expense was no small problem. His alfalfa fields had grown very productive, and he studied out a plan for turning his hay into manure and still get the pay for the hay.

HANDLING THE SHEEP.—He built racks all through his orchard and turned a big band of sheep in it, and fed them there for months on all the alfalfa hay they would eat.

After plowing the ground deeply and giving thorough spring and summer cultivation, he harvested a crop of over 200 tons. In other words, he doubled his crop in one year by feeding the sheep in the orchard.

Sheep will not eat the bark of old trees when they have plenty of good feed. Fig trees are not attractive to them. Vines are never harmed by sheep when feed is plentiful. [Remember what is said about hogs and sheep being well fed. We have seen figs de-barked as high as they could reach standing on their hind legs, by hungry hogs.—EDITOR.]

So here is the plan. In an old orchard or vineyard, put in the sheep as soon as the crop is off, and feed them there; scatter hay on the ground if racks are inconvenient, and keep them there till wet weather comes.

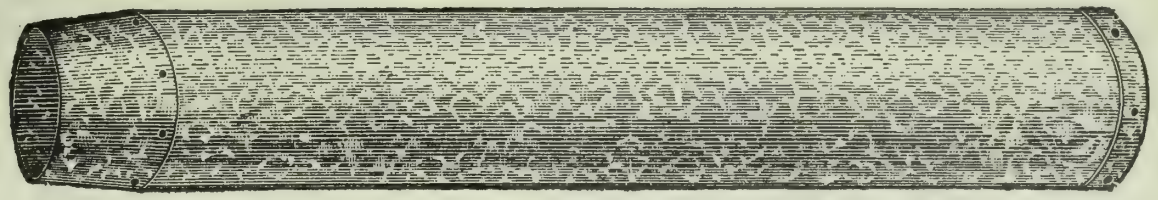
The winter rains will take the manure deep into the soil and the gains of the sheep will, if well handled, pay the cost of the hay.

Doubling the yield of an orchard in one year by fertilizing is a feat not to be sneezed at, and it is certainly worthy of very careful investigation when it can be done for practically nothing.

The squirrel campaign in lower Alameda county will be brought to a close at once, due to the coming of winter. Work will be renewed next summer.

Six hundred acres of land just outside the limits of the town of Orland are to be added to the Orland reclamation project.

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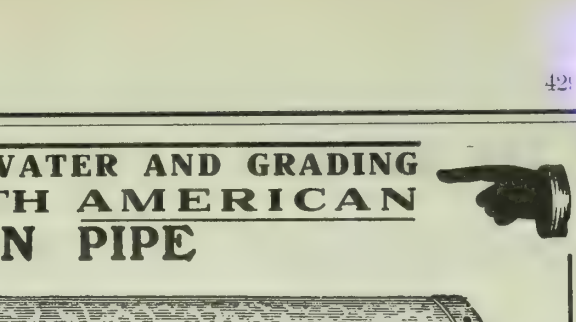
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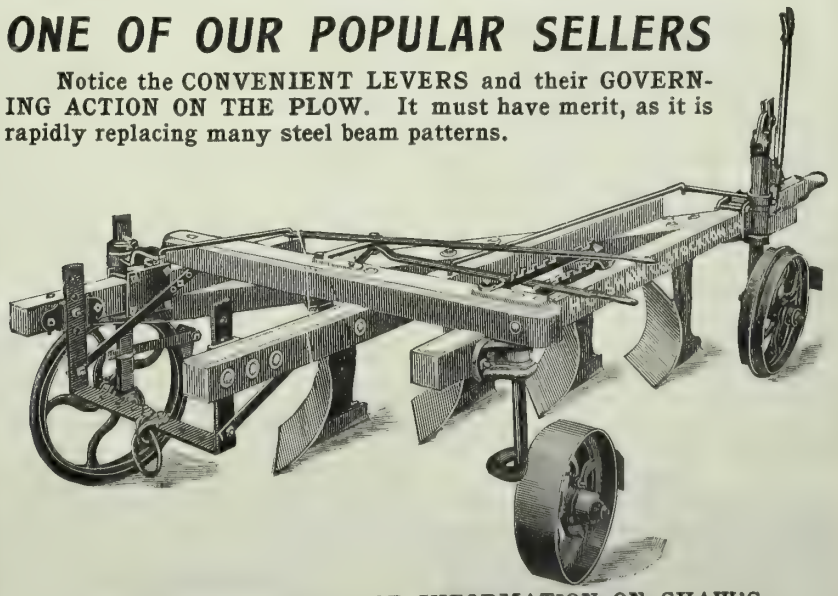
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THE MARKETS.

San Francisco, Nov. 15, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Local trading is still confined to narrow limits, though considerable wheat is coming down from the North. Prices here are steadily maintained.

California Club	$1.50	@1.55
Sonora	Nominal	
White Australian	1.65	@1.70
Northern Club	1.50	@1.55
Northern Bluestem	1.70	@1.75
Northern Red	1.65	@1.70

BARLEY.

A further advance is recorded this week, the best brewing grain being held at $2, though feed does not move readily at the top quotation. The movement is hardly as active as it was, as supplies are closely cleaned up in most parts of the country, though there is still quite a lively demand.

Brewing and Shipping	$1.97½	@2.00
Choice Feed, per ctl	1.90	@1.95
Common Feed	1.80	@1.85

OATS.

No further advance is noted in prices, though the market remains very firm. While there is a strong demand, both for feed and seed, the market is not especially active, owing to the fact that local supplies are about exhausted. Some stock is coming in from the North, but Northern prices are also high.

Red Feed		$1.85
Gray	1.75	@1.80
White	1.75	@1.80
Black	1.75	@2.00
Red Seed	1.95	@2.10

CORN.

The market is firm, with some indication of an upward tendency, though prices remain as before. Little corn is offered locally, and the demand is of no great importance.

Cal. Small Yellow	$1.85	@1.95
Eastern Yellow		1.85
Eastern White		1.90

RYE.

All desirable offerings are held steadily as before, but there is little trading, as the requirements of this market are limited.

Rye, per ctl	$1.75	@1.85

BEANS.

The market shows some improvement all around, with several advances in price. The only exception is pinks, which are weak at a sharp decline, with prospects of considerable further reduction. Arrivals continue large, and the demand for shipment, though not unusually active, is very fair on most lines. Large and small whites are extremely firm, with another slight advance in both varieties, and limas, with a greatly improved demand and supplies concentrated in strong hands, are strong at an advance over the last quotation. Red kidneys are also quoted a little higher, and there is an upward tendency in blackeyes, though the figures are unchanged. Bayos, which have been easy for some time, are getting into better shape.

Bayos, per ctl	$3.75	@3.85
Blackeyes	3.75	@4.00
Cranberry Beans	4.00	@4.15
Garvanzos	3.00	@3.50
Horse Beans	2.75	@3.25
Small Whites	4.10	@4.15
Large Whites	4.00	@4.10
Limas	5.40	@5.50
Pea		4.25
Pink	3.10	@3.20
Red Kidneys	5.10	@5.25

SEEDS.

Alfalfa is easier, as there is considerable stock on the market and the demand so far has been limited. A good movement is expected, however, from now on. Other lines show little change, the demand being still rather light for this time of year.

Alfalfa	17	@18 c
Broomcorn Seed, per ton		$28.00
Brown Mustard, per lb		5½c
Canary		4½c
Hemp		4½c
Millet	3	@ 3½c
Timothy	Nominal	
Yellow Mustard		5¾c

FLOUR.

The local trade is rather quiet at present, though there is still a very fair shipping movement to Mexico and Central America.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.80	@5.00

Hay and Feedstuffs.

HAY.

The report of the Hay Association shows a shortage of about 120,000 tons as compared with last year, and all indications point to a still greater scarcity as the season advances, owing to the lack of green feed and the large amount of hay being consumed at country points which are not large producers of hay. The local market has so far shown little response to the condition reported, as most local consumers are fairly well supplied, though there is a little more demand than for several weeks past, and full prices are readily obtained. Arrivals have increased somewhat, but consist mostly of alfalfa, which is being rushed to market in large quantities.

Choice Wheat	$18.00@20.00
Good Wheat Hay	13.00@17.50
Other Grade Wheat	10.00@12.50
Wheat and Oats	10.00@17.00
Tame Oats	10.00@16.50
Wild Oats	8.00@13.00
Alfalfa	8.00@11.50
Stock Hay	6.00@ 7.50
Straw, per bale	35@ 70c

FEEDSTUFFS.

Bran is still in strong demand here, but liberal arrivals from the North, where prices are lower, has caused a decline in this market. Rolled barley and oats are very strong, but not quotably higher. Other descriptions remain firm as last quoted.

Alfalfa Meal, per ton	$18.00@19.00
Bran, per ton	28.00@29.00
Oil-cake Meal	Nominal
Cocoanut Cake or Meal	25.50@26.50
Cracked Corn	39.00@40.00
Middlings	34.00@36.00
Rolled Barley	39.00@40.00
Rolled Oats	38.00@39.00
Shorts	32.00@33.00

Garden Truck.

VEGETABLES.

Some of the stock now coming in is of unattractive appearance, owing to the rain and frost of the last week, but as supplies in several lines are rapidly diminishing, even ordinary offerings find a fairly good market, and nearly everything except the local winter vegetables, such as cabbage and cauliflower, is higher. Few good tomatoes are coming in, and prices have been sharply advanced on both tomatoes and cucumbers, as well as string and lima beans. Summer squash is a little higher, with little offering, and Southern bell peppers and eggplant are selling by the pound at high prices, local stock receiving little attention. The high prices and lack of attractive offerings has caused some decrease in demand during the last few days.

Onions: Yellow, ctl	$ 1.00@	1.10
Garlic, per lb	3@	4c
Tomatoes, per box	50c@	1.00
Cucumbers, per box	75c@	1.00
Cabbage		50c
Carrots, per sack	50@	75c
Cauliflower, per doz		50c
String Beans, lb	4@	6c
Lima Beans, lb	4@	5c
Summer Squash, per box	1.00@	1.25
Eggplant, per lb	3½@	4½c
Bell Peppers, per lb	4@	5c

POTATOES.

Offerings of river stock have suddenly increased, and prices have dropped back a little, though Salinas potatoes are steady and Oregon stock shows a slight advance. Shipments from Oregon are increasing. The best sweet potatoes are a little higher.

River Whites	$ 1.10@	1.25
Sweet Potatoes, per ctl	1.65@	1.85
Salinas Burbanks	1.65@	1.85
Oregon Burbanks	1.45@	1.55

Dairy Produce.

POULTRY.

Supplies of both local and Eastern chickens are moderate at present, and prices in general are well maintained, extra hens being higher. Inferior stock, as usual, receives little attention. Receipts of dressed turkeys are larger, but prices are firm for good large young birds. Some of the larger interests predict a lower price than last year, but fancy stock always commands a premium, while dealers urge growers not to ship anything that is not in good condition.

Large Broilers	$ 3.50@	4.50
Small Broilers	3.00@	3.25
Fryers	5.00@	6.00
Hens, extra	8.00@	10.00
Hens, large	5.00@	6.00
Small Hens	4.00@	4.50
Old Roosters	4.00@	4.50
Young Roosters	6.00@	7.00
Young Roosters, full grown	8.00@	9.00
Squabs	2.00@	3.00
Geese, per pair	2.00@	2.50
Ducks	4.00@	8.00
Turkeys, live, per lb	22@	24c
do dressed	25@	29c

BUTTER.

Packing stock and Eastern ladle packed butter are no longer quoted on the Exchange. Prices in general are a little lower than last week on fresh stock, although storage butter is unchanged and finds considerable demand. Strictly extra butter is scarce and in demand, but the proportion of low-grade stock received is increasing.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed
Extras	31½	31	31½	31½	31	31½
Prime Firsts	28	28	28	28	28	28
Firsts	27	27	27	27	27	27
Seconds	24	24	24	24	24	24
No. 1 Packing stock	22	22	22	—	—	—
East Ladles Extras	22½	22½		-	—	—
Storage Extras	27	27	27	27	27	27

EGGS.

The lower grades show no change whatever, though extras are doing a little better than at the close of last week and are firm at the present figure. Production is said to be the lightest of the season, though arrivals are about sufficient for local needs.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	49	49½	50	51	51	51
Firsts	45	45	45	45	45	45
Seconds	28	28	28	28	28	28
Selected Pullets	41½	41½	42	43	43	43
Storage Extras	27	27	27	27	27	27

CHEESE.

Storage stock is easy, but all lines of fresh cheese snows increasing firmness, with diminishing supplies. Fancy flats are especially strong, showing an advance of 1½c. Monterey cheese is also advancing.

Fancy California Flats, per lb	17 c
Storage	14½c
Firsts	14½c
New Young Americas, fancy	15½c
Monterey or Jack Cheese	16 c

Deciduous Fruits.

FRESH FRUITS.

Trading in fresh deciduous fruits is steadily diminishing, as supplies are decreasing all the time. All the lines formerly quoted, however, are still offered, and most lines are fairly firm. Grapes are the principal feature, as offerings are still quite large. The frost a few days ago, it is believed, will practically put an end to the crop. The best offering of Seedless and Muscats are held at higher prices, but offerings consist largely of unattractive goods which are hard to move at quotations. Figs are scarce and higher, and will soon be out of the market. Raspberries are hardly worth quoting, but a few are still offered, and the best of them sell as high as $11. Strawberries are higher, and cranberries are closely held at an advance. Apples and pears are quiet and unchanged. A few late plums are still in the market, but find little demand.

Strawberries, chest	5.00@	7.00
Huckleberries, lb.	10@	12½
Cranberries, per bbl	13.00@	13.50
Apples—		
Fancy, box	1.00@	1.50
Choice	60@	75c
	50@	60c
Plums, crate	1.00@	1.25
Figs, box	1.25@	1.75
Pears, Winter Nellis, box	75c@	1.25
Other varieties	65@	90c
Quinces, box		
Grapes—		
Muscat, box	1.00@	1.25
Isabella, crate	1.00@	1.25
Seedless	85c@	1.00
Other varieties	40@	65c
Pomegranates, small box	35@	50c

Dried Fruits.

Local packers report quite an active movement in all lines, with more interest among outside buyers than usual at this season. It is accordingly predicted that everything except raisins will be closely cleaned up. The movement in raisins is a little better than for some time past, but there is still a heavy tonnage in the hands of growers, and packers are taking only moderate interest. They apparently have no difficulty in getting all they need at quoted prices, though a good many are held at a higher level. The strength of prunes is still a leading feature of the market, and with most offerings taken out of first hands higher prices are quoted in the hope of bringing out the remainder. Calimyrna figs are quoted at 6c by some packers, though prices on all lines of figs are little more than nominal, as the crop is practically cleaned up. The inquiry for peaches and apricots is moderate, but supplies also are light. Packers, however, still refuse to pay the prices which ruled at the opening, and a good many small lots will doubtless be held over into next year.

The New York Journal of Commerce says: "Very little business is being done in California prunes at present, but from all accounts packers are not trying to force business on the comparatively small stock remaining on the Coast, and f. o. b. prices are held firmly up to 6½c for the four sizes, with premiums of a quarter of a cent on 50s, a cent on 40s, and at least a cent and a half on 30s wherever any of this size can be obtained. On the spot conditions are unsettled and the tone easy. Stocks are arriving quite freely, and as consumption is curtailed by the high prices prevailing, the lack of demand causes uneasiness in some quarters, and goods are being pressed from these at a concession from previous quotations. Such buyers as appear are conservative and take comparatively small lots.

"There is next to nothing doing in dried peaches on the spot or for forward shipment. However, according to Coast advices, the crop is practically out of growers' hands, and the stocks held by packers are for the most part concentrated. Apricots remain dull, with prices unchanged but somewhat nominal.

"California muscatel raisins are still inactive. For Coast seeded stock, however, the market is fairly steady, with 6½c the general f. o. b. quotation on fancy in 16-oz. cartons, though in some brands 6¼c can be done. Private advices from Fresno state that the supply still controlled by growers is not large and is diminishing. Packers were reported to be buying everything they could secure at 3@3½c sweatbox."

Evap. Apples, 1911, per lb	7½@	8¼c
Apricots	12	@12½c
Figs, new crop		4 c
Calimyrna figs		6 c
Peaches, new crop	9	@ 9½c
Pdunes, 4-size basis	6	@ 6½c
Pears, new crop	8	@ 9 c
Raisins—		
Loose Muscatels, in sweatbox	3	@ 3¾c
Thompson's Seedless	6	@ 6¼c
Seedless Sultanas	4½@	5 c

Citrus Fruits.

More cars of lemons than oranges have been going out of California since the new season began, November 1. Most of the oranges being shipped are late valencias, as the new crop is late this year and there will be practically none on the Eastern Thanksgiving market. Florida growers expect to realize good prices on their early oranges, as they will have practically no opposition. Lemons are a little lower in price.

At New York on Monday, November 13, six cars of valencias sold at good prices. These figures were for: Fancy, $7.00; choice, $5.55; standard, $4.65. Lemons averaged from $2.75 up to $5 per box.

At Cincinnati the same day no California oranges were offered, but lemons brought from $3.65 to $4.75 per box. Florida Bright oranges sold for $2.30 to $2.70; Russets brought $1.85 to $2.30.

At Philadelphia the same day, prices were lower on account of poor stock offered. Valencias averaged from $2.80 to $3.35. Lemons sold for $2.25 to $4.20.

The scarcity of deciduous goods is causing more interest in citrus fruits, though the bulk of arrivals of new navel oranges are too green to find a very ready market. New navels are arriving quite freely, and some tangerines are also coming in, prices for both being comparatively low. Very few of the navels will bring the top quotation. Valencias, however, continue in fair demand at former prices. New crop grapefruit is arriving liberally, but will hardly bring the former quotation. Lemons and limes are unchanged.

Oranges: Navels	$ 2.50@	3.25
Valencias, choice to fancy	$ 4.00@	4.50
Tangerines	1.25@	1.50
Grapefruit	3.00@	4.00
Limes	4.50@	5.00
Lemons	2.00@	6.00

Nuts, Honey, Hops, Etc.

NUTS.

Conflicting reports have been received concerning the walnut situation, and the movement has apparently been somewhat interrupted, though shipments so far have been of very satisfactory volume, and no doubt is expressed that the crop will be well cleaned up. Almonds are moving off slowly but steadily at full prices.

Almonds, 1911 crop—	
Nonpareils	18½c
I X L	17¼c
Ne Plus Ultra	16½c
Drakes	14½c
Languedoc	14½c
Hardshells	8 @ 8½c
Walnuts, 1911 crop:	
Softshell, No. 1	14 c
Hardshell, No. 1	13½c
No. 2	11 c
Budded	16½c

HONEY.

There is still a fair shipping movement from the Coast States, though no great quantity remains in first hands in California. The local market is quiet and unchanged.

Comb, white	13 @15 c
Extracted, water white	8 @ 9 c
Amber	7 @ 7½c
Off grades	5 @ 6 c

BEESWAX.

This market remains quiet and featureless, both demand and supply being light.

The market continues quiet at unchanged quotations.

Light	28 @30 c
Dark	23 @26 c

HOPS.

The California crop is about cleaned up, and little trading has been done this week, though some sales have been made at full prices. The demand continues strong, and considerable business has been done in Oregon at about the prices quoted.

1911 crop	41 @45 c

Live Stock.

Arrivals of hogs have increased somewhat, being larger than local packers were ready to handle, and prices are accordingly a little lower on both live and dressed stock. Otherwise there is no change in either conditions or prices.

Gross weight:	
Steers: No. 1	5½@ 6 c
No. 2	5 @ 5¼c
Cows and Heifers: No. 1	4½@ 4¾c
No. 2	4 @ 4¼c
Bulls and Stags	2 @ 3 c
Calves: Light	6½@ 6¾c
Medium	6 @ 6¼c
Hogs: Grain-fed, heavy	6¼c
150 to 250 lbs	6½c
100 to 150 lbs	6½c
Small prime wethers	3¾@ 4 c
Large prime wethers	3¾@ 4 c
Ewes	3¼@ 3½c
Lambs	4½@ 5 c

DRESSED MEATS.

Steers	9 @ 9½c
Cows	8 @ 8½c
Heifers	8 @ 8½c
Veal, large	9½@10½c
Mutton: Wethers	8 @ 9 c
Ewes	7½@ 8 c
Lambs	9½@10½c
Hogs, dressed	10 @10½c

WOOL.

Buyers are taking scarcely any interest whatever, reporting no demand for California wool in consuming markets. A few scattered sales of fall wool are reported within the quoted range, some good Northern clips bringing 7½ to 10c.

Spring Clip—	
Choice Southern, Year's sta-	
Northern, year's staple	14 @16 c
ple	10 @12½c
7 months	8 @11 c
Lambs, spring	8 @10 c
Fall Clip	5 @10 c

HIDES.

The market remains firm at the old quotations, with a steady demand in the East, though the local movement is rather quiet.

Heavy Steers, over 56 lbs.	11½c
Medium	11 c
Light Steers, under 48 lbs.	10½c
Heavy Cows, over 50 lbs.	10½c
Light Cows, 30 to 50 lbs.	9½c
Kip	11½c
Veal	16 c
Calf	16 c
Dry—	
Dry Hides	17½@18½c
Dry Bulls	15½c
Dry Kip, 10 to 15	18 @18½c
Dry Veal, 5 to 10	19½c
Dry Calf, 7 down	23 @23½c
Sheep Skins—	
Long Wools	$ 0.85@ 1.25
Medium Wool, 6 to 9 mos.	50@ 75c
Short Wool, 3 to 6 mos.	30@ 50c
Lambs	35@ 50c

HORSES.

The continued demand and high prices for heavy stock bring out comparatively few offerings, and the business of the past week has been rather uninteresting. There is a much better demand here than for some time past for wagon and delivery horses of medium weight, and even light stock receives more interest. Increasing activity is expected from now on, as larger offerings are expected, with a better proportion of the class of horses desired.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	200@225
Wagon Horses, 1250 to 1350 lbs.	125@175
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	125@200
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

Deciduous Fruit Shipments.

Sacramento, Cal., Nov. 11, 1911.

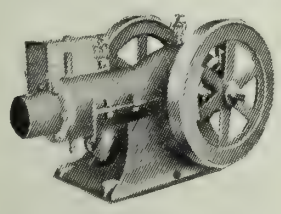
The following gives the number of cars of deciduous fruit shipped from all points in California for the week ending Friday morning, November 10, 1911, as reported by California Fruit Distributors:

Pears—4 cars. Occasional cars of the later varieties are still going forward, and as it is now reported that there are perhaps half a dozen left in the State, this shipment may be expected to continue in a small way for perhaps a week longer.

Grapes—366 cars. The shipment of Tokays would have been almost entirely completed this week under normal conditions. Quite a heavy shower, which prevailed in most sections of the State where this variety is grown, on the 9th inst., will probably prevent any further offerings of this variety, and the movement may be said to be closed. There are plenty of Cornichons and Emperors still on the vines. These varieties wil be uninjured by the rain and, barring further adverse conditions, shipment will probably continue through the greater part of the month.

Total shipments to November 13, 12,258 cars; total shipments to same date 1910, 11,837 cars.

See This Engine in Operation



The Simple Oil Engine

(A BOY CAN RUN IT)

WHAT'S THE MATTER NOW?

Did your engine cough and spew and splutter and roll over like a dying calf this morning, and then "just quit right there"?

Did you "cuss it out" and in a "speak right out in meetin'" fashion, say all that you thought of it, and the man who made it, and the man who sold it and said it would, yea, guaranteed it would run? Forget it. Don't be penitent and worry about it if you did deliver yourself fully and freely in hundred thousand volt profanity.

When the commandment "thou shalt not swear" was written, the type of engine you have been trying to run was not contemplated, the incentive to swear was not considered; but now that we are carrying the gospel of the Simple Oil Engine to you and show you an engine which is fool proof, profanity proof and a joy forever, no longer is your "cussin'" excusable or pardonable, and we will cut the remembrance of such offenders as you out of our prayers in the future, having mentioned to you the name of our engine, which is all the name implies, and our address is,

THE SIMPLE OIL ENGINE CO.

412 Pacific Building
(After November 30th, 400 Seventh Street)
San Francisco, Cal.

114 East 8th Street, Los Angeles, Cal.

Catalogue and Prices on request.

The Engine is being demonstrated at 400 Seventh Street, San Francisco.



40 H.P. C. L. B. Tractor Pulling 100 Inches of Plows Up Hill.

C. L. B. Gas Tractors Never Balk

UP HILL OR DOWN, THEY ARE ALWAYS ON THE JOB

They are the best tractors made. Have three speeds forward and reverse, controlled by one lever. All steel gearing is absolutely protected from dirt and runs in oil, making the engines long-lived and easy to keep in condition. Sold under absolute guarantee.

SEND FOR CATALOGUE

C. L. BEST GAS TRACTION COMPANY

Elmhurst, Oakland, Cal.

Represented by W. L. CLEVELAND CO., Los Angeles, Cal.

PUBLISHER'S DEPARTMENT.

L. F. Scribner, of Pasadena, the berry specialist, sends us a sample marker for use in nurseries, seed rows, etc., which is a very cheap, simple and lasting device well adapted for the purpose. The marker is a piece of plate zinc, about four inches long and one inch wide, on which can be written with pencil. This marker has a nole punched in one end, through which a heavy wire is run and bent over; the rod is about a foot long and when stuck in the ground makes a lasting sign, which can be made very cheaply by anyone.

The Fresno Nursery Co., Inc., commence their season's advertising in this issue. This firm has grown to be one of the large, dependable nurseries of the Coast. F. H. Wilson, the originator of the firm, and Chas. A. Chambers, its secretary, are well known to the trade, and by the recent addition of Chas. B. Harkness, who will have charge of the nurseries and propagation work, the Fresno Nursery Co. will be in better shape than ever to handle their growing trade and keep up their slogan of "True to name nursery stock."

The Trumbull Seed Co. have a prominent advertisement in this issue in which they state that they have secured a large amount of unusually fine alfalfa seed, which they must turn in the next 60 days. To do this they will make special inducements for early orders and in large amounts, and it will pay every farmer who expects to plant this season to write to the Trumbull Seed Co. of San Francisco, the old established house.

Horticultural Commissioner Schell of Fresno reports to the supervisors of the county that 38 citrus trees have been found affected with the mealy bug. The trees are being defoliated and washed with an emulsion to kill the insects.

FORAGE ON LOW, MOIST LANDS.

To the Editor: I want to plant some rye grass and would like to get some information as to the right variety to plant. I should also like to know about the sowing of Alsike clover which I am told is one of the best stock feeds that is grown. I want to get some kind of grass that will grow on land that is too wet for alfalfa. FARMER.

Antioch.

[English rye grass, sometimes called Australian rye grass, and Italian rye grass are both satisfactory on lands which retain sufficient moisture in your part of the State. Alsike clover is also satisfactory in your region. It is, however, not so drought resistant as the English rye grass; it is also probably less resistant to overflow. The common Eastern red clover is pernaps the best plant we know of for light moist land subject to overflow, but Alsike will stand better on heavy, cold, wet land.—EDITOR.]

The Farmers' Institute held recently at Dos Palos brought out the fact that much of the alfalfa land on the West Side was acid and should be treated with gypsum or lime.

SAMSON WINDMILLS



Different than all others and better because of the double gears, big oil boxes, drop-forged wrist pin, removable bearings, center lift. No side strain, no noise. Big, heavy and powerful. 4, 6, 8, 10, 12, 14, 16, 18, 20 ft. diameters. Send for catalog. Also feed mills, pump jacks and gasoline engines.

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176 Samson Ave., Freeport, Ill.

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best for foundations, dairy floors, fruit dryer floors, etc., etc.

SANTA CRUZ LIME

best for bricklaying and plastering.

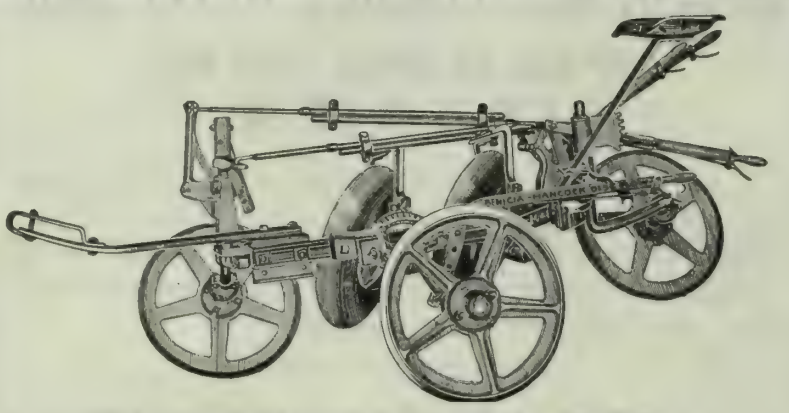
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best for spraying and whitewashing.

WRITE FOR INFORMATION AND PRICES ON ALL BUILDING MATERIAL.

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9 MAIN STREET, SAN FRANCISCO



The "BENICIA-HANCOCK"

BOSS OF THE FIELD
PRIDE OF THE FARMER

IF YOU HAVE A

Benicia-Hancock Disc Plow

it is not necessary to buy another plow

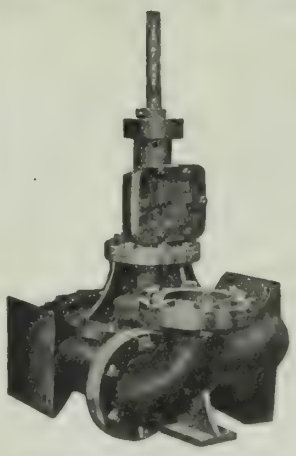
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We furnish special orchard attachments for these plows, and they are economical, too.

DO YOU OWN ONE? YOU SHOULD!

Sizes 1 to 5 disc. — Ask for circular "P"

BENICIA IRON WORKS, BENICIA, CAL.



KROGH PATENT WATER BALANCED VERTICAL PUMP

KROGH'S NEW VERTICAL PUMP

The Krogh New Water Balanced Vertical Pump contains many new and valuable improvements, same being fully explained in our Bulletin R-10, which will be mailed upon request.

We have a branch in Los Angeles at 206 N. Los Angeles Street.

The pump can be seen in operation at our place of business.

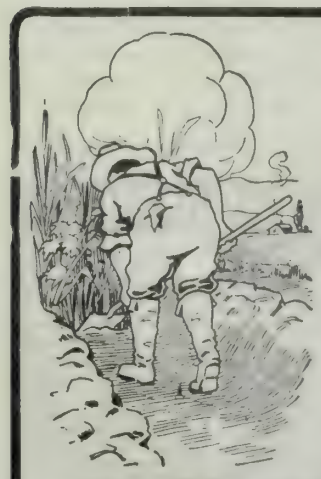
KROGH MANUFACTURING CO.,
149 Beale St., San Francisco.

25,000 TURKEYS WANTED

For the best results ship your Thanksgiving, Christmas and New Year dressed and live turkeys to us. We guarantee you extreme top market prices and immediate cash returns with full weights. Don't kill anything for Thanksgiving that is not choice and fat. Keep it and get it in good order for Christmas and New Year. We expect to sell fancy dressed turkeys for Thanksgiving as high as 30 cents per pound. Write us immediately how many we can expect from you.

Mark and consign all shipments direct to the Old and Reliable firm

W. C. PRICE & COMPANY
ESTABLISHED 1876
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A new, comfortably furnished, scrupulously conducted stopping place for farmers and families visiting San Francisco.

Every Modern Convenience
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CALIFORNIA STATE

THE PACIFIC RURAL PRESS

Vol. LXXXII. No. 22 SAN FRANCISCO, SATURDAY, NOVEMBER 25, 1911. Forty-first Year.

The Traction Engine on the Farm.

Written for the PACIFIC RURAL PRESS by D. J. WHITNEY.

California has long been one of the leading States in the use of tractors, and of recent years, with the adoption of oil and oil products as a fuel, they have been more in demand than ever and radical changes have been made in their character. Long before the automobile was invented the steam tractor was a fixture on many of the large ranches in this State and wood and coal was used for fuel. Now the steam tractors that are manufactured for Califoronia use are made to consume crude oil, while the gas engine furnishes the motive power for the others.

The steam tractor at first was a ponderous affair, though powerful, requiring at least a section of land before its use was justified and a still wider expanse before it could do its best work. All attempts to lessen the size and cost of the steam tractors have resulted in too great a loss of power, while the crew remained the same size as before. As a result these machines are manufactured with as great a horse-power as they had ten or fifteen years ago, and the smaller tractors are run with a different type of engine. In fact, one of the California manufacturing companies not long ago stopped manufacturing all steam tractors except the largest, that with 110-brake horse-power, since they found that that size could be operated much cheaper per acre than the smaller ones. For the smaller machines they use gas tractors.



A Small Gas Tractor Breaking Ground for Seeding.

Wood and coal are still used on old steam tractors, though the oil burners will replace them after they have outlived their usefulness. The lessened cost of using crude oil is seen on a California tractor as compared with the same kind of machine manufactured when wood and coal were the standard fuels. For coal the total expense, in tests that have been made, was $27 per day, wood $22 per day and oil $21.65. This tractor has a 70 horse-power pull at the drawbar.

The itemized cost of doing this work was as follows: Engineer, $5 per day; fireman, $2.50; man to drive water and fuel wagon, $1.50; two horses and wagon, $1; feed for horses, 50 cents; sharpening plows, $2; lubricating oil for engine, 50 cents, and wear and tear on outfit, $2. One and one-half tons of coal cost $12, two cords of wood $7 and 7 barrels of oil $6.65. The cost will, of course, have to be modified in different places.

The amount of land that can be plowed with such a machine averages, under ordinary working conditions, from 35 to 50 acres per day of ten hours, according to the nature of the soil, the skill of the engineer and other factors affecting results. Records have been made of 75 acres in five hours in an attempt to see what could be accomplished, and 7000 acres plowed during the year under actual ranch conditions, so the first named figures are not given as exceptional, but ordinary work. The cost of ordinary steam plowing (including harrowing) in California has been found by actual investigation to be about 85.3 cents per acre. This in-

(Continued on Page 463.)

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E. J. WICKSON - - - - - - - Editor
FRANK HONEYWELL - - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Nov. 21, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.55	4.12	7.31	60	40
Red Bluff	.04	1.59	4.37	78	38
Sacramento	.14	.34	2.77	68	40
San Francisco	.11	.88	3.09	68	50
San Jose	.04	.98	2.38	72	32
Fresno	00	.26	1.70	74	38
Independence	00	.80	1.57	66	22
San Luis Obispo	00	.60	2.85	82	38
Los Angeles	00	1.49	1.75	80	50
San Diego	00	.52	1.07	80	50

The Week.

Well, we ran onto the tail of that blizzard, all right. As we expected, the beast was disporting itself among the summits of the Rocky Mountains and was lashing its tail over the high plateau where the overland railway reaches its greatest altitude of 8010 feet above sea-level. We were awakened before the dawn by a roaring and shrieking louder than the rumble of the cars and shriller than the hissing of steam from the locomotive. As we rolled out of the berth and crept along toward the vestibule, the shivering porter, who was crouching among the curtains, hoarsely whispered: "Dat's it, boss; dar is dat blizzard."

"What makes you think so?" we asked, unconcernedly.

"Wha you grow up, jedge, dat you don't know a blizzard?" he asked.

We replied that we had grown up in California and had never seen a blizzard or a cyclone, because there were none out there.

"Dat's so, cunnel," he replied. "I come from Californy myself, and I wish I wuz back dar right now—h'ar dat win' blow: dat hard snow rattles like it would break in der winders; der 'mometer's fifteen below nuthin'."

"Oh, well," we said, "we'll soon get out of it. We like to hear it. Do you ever have any like that in the Sierra Nevada mountains?"

"No, no indeed, perfesser," he quickly explained; "no blizzard be fool enough to monkey 'round them mountains for fear 'twould fall over on t'other side. Any blizzard fall over into Californy ud think hitself in 'ell 't ud melt down so quick."

And thus it was we caught the blizzard and got a good word for California's freedom from them. As we passed along down the Rockies on the eastern side, the landscape showed signs of the flight of the monster, and everyone was talking of the reports of its fiercer work farther north, as the worst the new West had ever seen in November.

Apples as Breakfast Food.

After we had changed diners a couple of times we seemed to get out of range of the California casaba and had to hunt hard to find something juicy to start the day with. Thus it was in Iowa, where in desperation we wrote "two apples" first on our breakfast order. The colored brother took a good look at the paper and a sly glance at us, and then made a dash for the dining car director who was manicuring his digits in the distance. Presently the waiter returned and whispered low, so that other people might not be startled: "Yo' want dem apples baked, boss?"

"Oh, no," we answered pleasantly; "not baked—apples, just apples."

He was still puzzled apparently and then disappeared in the other direction, evidently to counsel with the cook. In a few minutes he appeared again and, sidling up to us, whispered again:

"Mebbe yo' like dem apples fried, boss."

"Not at all," we replied, still keeping our temper by a masterly effort, "we want a couple of apples, that is all."

He straightened up as one who had to face a frightful alternative, with no chance of escape, and shrieked:

"Yer don't want dem apples raw, duz yer?"

By this time our gentle temper snapped under the strain, and we cried out in turn: "RAW, of course; just climb out there in the snow and pull them off the trees; we want them RAW and COLD."

And we finally got them that way, and the shocked waiter stood alongside, open-mouthed and tremorous, as we started our cider mill in true Fletcheristic manner—lingering long over the cooling repast while the snow was swirling across the doubled glass of the windows, through which one could see, now and then, the ice-covered ponds and streams and six-foot icicles pendant from the track-side water tanks. Our worried brother did not regain composure until we began to pack down hot buckwheat cakes in true Eastern style upon the cooling, refreshing fresh fruit foundation which we had laid for them in our interior economy. Then he closed his mouth and winked his eye and went away to tell the cook that that "California crank wahn't mor'n half crazy nohow."

Out of the Blizzard Into the Sunshine.

But this isn't strictly an expedition into darkest Africa, so we turn away from the kind, patient and attentive raccoons (we use the full word as a token of respect) to whom the overland traveler is indebted for so much of the comfort of his journey. Through the windows of the flying train the kids in the villages and along the country roads pleased us most with their manifestations of delight in the new snow and ice which we so well remember as a joy of our own boyhood. Under the early winter sunshine they sped along the country roads with muffled ears and mittened hands, taking long slides on the frozen roadside ditches, exchanging snowball shots as they met or passed each other. Adult people were, however, very shy to the sight. Evidently the early dawn of winter had huddled them behind the kitchen stoves, for the automobiles, of which they are all reputably possessed, have perhaps banished the old joy of being first out with runners upon the first winter's snowfall. Even in going through Indiana, the population-center of the United States, where one might expect to see men at least as thick as fence-posts, we saw only two farmers at work in a five hours' run of the train, and they were mending a fence to keep stock away from a straw-stack, the comfort of which, it seemed to us, the animals should have enjoyed. There was, however, plenty of winter work to be done, after the shock of the first snow had passed. Thousands of acres of cornstalks still stood, in some cases holding ears still to be husked. We remember only one man who had hauled his stalks near to the corral for winter feeding—he was evidently the fore-handed man; the rural hope of the future—though possibly the others intend to feed the stalks as they stand. The greatest winter work which we saw laid out, all the way from Nebraska to Ohio, was in the line of drainage. The advance in the price of land has evidently induced community work to dispose of sulplus water to an extent never known before. Drainage canals, large as our main irrigation ditches, were seen traversing low lands everywhere, and scores, if not hundreds of drain tiles were distributed through the fields or corded up around the numerous tile factories ready for this winter's use. The distribution of ten and twelve inch tiles was in surprising amount, and evidently all small water runs which have wasted land for generations are to be drained and covered. The involved contribution to cropping seems to justify the investment, in view of the fact reported by the census, that in some of the central Western States land has tripled in value during the decade, and land long idle in local swamps will be brought into producing activity, and coon-hunting will cease to be a popular diversion.

Great Agricultural Assemblies.

But neither coons nor raccoons were the purpose of our flying trip eastward. In Columbus, Ohio, last week there was a greater assembling in the interest of agriculture than has ever occurred before in this country. Seven or more organizations of national scope followed each other thence to hold their formal annual conventions, and these, though quieter in action and less spectacular in environment, than the great "congresses" which are multiplying, they exert probably a wider and deeper influence upon the agriculture of the whole country. Professionally in promotion of this industry was the Association of American Agricultural Colleges and Experiment Stations which was in session three days; the Association of Farmers' Institute Workers; the Society for the Advancement of Agriculture; the Society of American Agronomists; the Society for Agricultural Teaching; the Society of Stock Feed-Control officials; the National Association of Seed-Testers, and a few more, probably, which we do not at the moment remember. All these are more or less directly connected with our State agricultural colleges and experiment stations, but in the subdivision and specialization of a vast work in instruction, research and experiment, many allied organizations are found desirable, and they are all active and effective.

Very friendly with all of the foregoing, but still very busy with its own progressive affairs, were the conventions of the Ohio State and the National Granges—the latter of which covered a full week with its transactions, in which California was well represented by Mr. Pettit of Santa Cruz county, who heads our State Grange.

All these organizations were working toward one central idea, viz.: the promotion of agriculture by more truth and the dissemination thereof—truth in science, truth in morals, truth in legislation and citizenship, all of which will bring the farmer nearer to his true position in public influence and in private reward for his contribution to public welfare. Even in the societies of those professionally engaged in agriculturaal education and research, there was much time given to the discussion of the best ways and means of bringing the great body of elevating truth in science and practice more widely into the possession of the whole people than there was to the work of the institutions within their own enclosures. For though the students in such institutions have increased tenfold or more within a decade, the opportunity to help those who never

have or never can attend these institutions has increased, perhaps a thousandfold. This is due to the change in the attitude of the farmers' minds as to the value of science in farming and to the fact that agricultural science has justified its name by its work and has accumulated treasures of real wisdom which will help all people to whom knowledge of it can be brought. It was not surprising, therefore, that advanced teachers and research people should talk less of their distinctive work than of the ways to make it more widely useful and that all lines of extension work, including the free use of agricultural instruction in our public schools, should have command of the chief efforts of the assemblies. We shall probably refer to details of such undertakings later as opportunity may arise.

The Progress of the Grange.

We speak at once of the Grange because of the progressive activity of this veteran organization of farmers and because it has "insurgents" in it, thus making it particularly interesting and fashionable. It is the fate of most national associations to have "inner circles" and to become somewhat impervious to outside influences and desires. This is not always a conservative influence, in a true sense, for the inner circle may have drifted far away from original purposes and methods. Whenever this circle becomes too impenetrable and self-willed, the introduction of something of explosive character becomes necessary, and that agency is now generally designated as insurgency. We do not know exactly, but we apprehend that the inner circle has been doing too much politics, not only for its own continued existence, but politics of a State and National kind. From our understanding of the matter, such as it is, we are glad that the California representative, Mr. Pettit, was classed neither as a "stand-patter" for the inner circle, nor as an "insurgent," but as a "middle of the roadster," which we take to mean that he desires to follow a straight way back to the fundamental principles upon which the order was organized, and that was to eschew politics of either a stand-pat or insurgent kind. This, of course, does not mean that members should not do politics for the Grange, but it does mean that they should not do the Grange for politics. If we are right in describing Mr. Pettit's position in that way, we believe that his work at Columbus will strengthen the order in this State. The old order needs a renewal of youth, and with that will come renewal of activity and influence. The figures at the Columbus meeting run that way. California reported three new Granges and one reorganized. In the whole country during the year ending October 1, 1911, 513 subordinate Granges were organized and reorganized in 29 States, a larger number than has been established in any year since 1876. The net gain in paid membership during the past year as shown by the treasurer's receipts has been 77,289, indicating a net gain in nearly every State. During the past 10 years the net gain in paid membership has been 305,745, an average yearly gain of 30,574 members.

Those Bad Florida Oranges.

Last week we mildly criticised Floridans for doing their citrus laundrying in public. We have to confess that we did not then know how serious the need of commercial cleansing is, and are disposed to concede now that the insurgents in the handling of Florida fruit are perhaps justified in their invocation of the aid of forty northern governors. What we saw on the fruit stands at Columbus convinces us that even dynamite may be needed to clear the situation. For we saw great piles of Florida oranges which were not larger than California walnuts in the hull, similar in color, but worse, for the green was overlaid with rust and smut. We really never saw anything so bad claiming to be designated as an orange. The culls from our packing houses, which hotel keepers in our citrus districts persist in putting on their tables, are glorious golden apples of Hesperides compared with the stuff which Eastern venders are crying out as Florida oranges. Of course it misrepresents the State and its fruit, and it never should be packed or sold to anybody. It hurts the whole citrus industry to have such stuff in the market. We believe the Florida reformers are all right in securing State laws and all other prohibitions against such a disgraceful product.

Queries and Replies.

Hardship on Dry Hills.

To the Editor: Would you expect that alfilaria (Erodium cicutarium) would grow well on the hills of Sonoma county? At this place we are surrounded with such, partially covered with shrubs. I want something that will be food for stock another year. I have heard of alfilaria and that it grows well without being irrigated.—Farmer, Burke.

Alfilaria is a good winter-growing forage plant in places where it accepts the situation. It is an annual and therefore does not make permanent pasturage except where it may re-seed itself. On the coming of the dry season it will speedily form seed and disappear. It is therefore of no summer use under the conditions which you describe, nor is it possible to secure any perennial grass which will be satisfactory on dry hillsides without irrigation. Improved winter pasturage can be secured by scattering seed of common rye at the beginning of the rainy season, or of burr clover, both of which are winter-growing plants. Pasturage is also capable of improvement by being careful not to overstock the land, so that the native annuals may be able to produce seed and provide for their own succession. The secret of successful pasturage on dry uplands is to improve the winter growth. It is too much to expect much of them for summer growth without irrigation unless some of Mr. Burbank's spineless cactus should render them more productive of forage.

Potato Scab.

To the Editor: Through ignorance I planted potatoes that had a good deal of scab on them. From what I have taken out of the ground for my own use I think most of my potatoes will have some scab. Will you please tell me if my next crop would be apt to have scab, provided I got good clean seed and planted in the same ground. My land is light sandy loam and the crop I now have in is the first the land has produced. I am very much of an amateur. I have just bought your book, "California Vegetables," which I think will help me.—Spud, Baldwin Park.

Concerning the potato scab it seems demonstrated that a treatment of the seed will practically insure against it, even in the same land which gave scabby tubers from untreated seed. One method is dipping the potatoes in a solution of corrosive sublimate. Dissolve one ounce in eight gallons of water and soak the seed potatoes in this solution for one and one-half hours before cutting. This treatment kills the scab spores which may be upon the exterior of the potatoes. More recently, however, to avoid the danger in handling such a rank poison as corrosive sublimate, formalin has been used, and one pint of commercial formalin, as it is bought in the stores, is diluted with thirty gallons of water, and potatoes are soaked in this for two hours. Thirty gallons of this dip ought to treat about fifty bushels of potatoes. We should get clean seed tubers, but we would dip it just the same.

Jerusalem Artichokes.

To the Editor: Kindly let us know when is the best time for planting Jerusalem artichokes and how many to plant to the acre.—Reader, San Francisco.

Jerusalem artichoke tubers are usually planted in the spring after the ground has become warm and the heavy frosts are over. The planting may be done in rows far enough apart for cultivation, the tubers being set about a foot apart in the row. This tuber grows like a potato, but is more delicate than a potato. It is inclined to decay when out of the ground, but will not start growth as early as the potato, and therefore it is not desirable to start it early in the winter. When the winters are cold and the ground apt to be very wet, spring planting is more satisfactory. Do not cut the tubers for seed as you would potatoes. We do not know how many pounds you might use in planting an acre. Plant a few pounds and find out later whether you want an acre or not. Most people do not.

The Trees Must Answer.

To the Editor: Will you kindly advise me of the probable effect on the future bearing of an orchard that has been affected the past two seasons by smelter fumes sufficiently to destroy the crop, but not kill the trees. The plums and pears are in the vicinity of Coram, where a smelter has been in operation until recently, but has now closed down.—Owner, San Francisco.

If the trees of which you speak have not been subjected to smelter fumes sufficiently to render them unthrifty, there is every reason to expect them to show improved growth and satisfactory bearing now that the agency of evil has been removed. If, however, they have been seriously injured in growth, although still living, the recuperative process would naturally be longer. It is often better to plant a new tree to replace on old one which is in bad condition, than to try and bring up the old one. You will, therefore, have to determine how far the injury has gone, and this can only be told by observation of the trees by somebody who is able to form a correct opinion of their present vegetative vigor, etc.

Under-Pruining of Orange Trees.

To the Editor: My Washington navels have a very heavy crop on the lower limbs, as is usual, I believe. These branches are so lown down that many of the oranges lie on the ground, and it takes a good deal of time to prop them up so that they will not touch the ground. Now, what I would like to inquire of you is, what would be the result of pruning off these low branches, after the fruit is off? Will the same amount of fruit be produced by the fruit growing on the limbs higher up? Or is it curtailing the next crop and perhaps subsequent ones to prune up from the ground? What experiments have you made in this line, and what is the result?—Amateur, Pasadena.

We should certainly raise the branches of the orange trees by removing the lowest branches or parts of branches which reach to the ground. A little later others will sag down and this underpruning will have to be continuous. It would be better to do this than to undertake any radical removal of the lower branches. The progressive removal as becomes necessary will not appreciably reduce the fruiting and will be in many ways desirable.

Morning Glory Killed in One Year.

[Professor F. T. Bioletti, viticulturist of the University Experiment Station, and his assistants tackled during 1910 an old piece of vineyard on the University Farm at Davis which had for years been possessed of morning glory and from which the vines had been removed as unprofitable. It was a bad piece of morning glory, the weed having triumphed over previous owners, because of their neglect, and fully asserted its claim to the land. Professor Bioletti has demonstrated that morning glory can be extirpated in one season by proper tillage—if the land be cleared of obstructions and sub-surface cutting be faithfully done as he describes. He also shows by the usual laboratory tests that the roots of the plant are unable to form starch under this treatment and the plant dies from the lack of it. The way to do this is shown below by extracts from a University circular just published.—EDITOR.]

The Plant and Its Distribution.—The wild morning glory (Convolvulus arvensis) is one of the most troublesome weeds in vineyard, orchard, and other cultivated soils. It is a native of Europe, but is well distributed throughout California. It grows in nearly all soils, from light sand to heavy clay, and the better and deeper the soil the more difficult it is to eradicate. Wherever it grows abundantly, it has a most deleterious effect on the crops. This is particularly true of any crop which requires clean cultivation. It may completely destroy young vines and trees, and will stunt and render unprofitable old vineyards and orchards. It is less harmful to annual crops which mature early, such as hay or grain, as it does not commence to grow vigorously until they are harvested. In alfalfa it does little or no harm, but remains alive ready to infest any susceptible crop which may be planted.

In the worst cases, the growing of trees or hoed crops has sometimes to be abandoned, and in any case where morning glory is prevalent it necessitates an amount of extra cultivation variously estimated at from $5 to $10 per acre.

The weed is a perennial with strong, far-reaching roots. The smallest piece of root is capable of growing and originating a new plant. Ordinary cultivation has no apparent effect except to make it grow more vigorously. Very thorough and frequent cultivation with a good weed-cutter throughout the growing season will keep it down so that there is no appreciable harm to the crop. With vines and small crops, however, this must be supplemented by a considerable amount of hand hoeing.

Why Ordinary Cultivation Fails to Kill the Plant.—There are two causes for these failures. The first is that when the morning glory appears above the surface it produces normal green leaves very rapidly. These leaves commence the manufacture of starch immediately, and quickly replenish the store of reserve material in the upper roots. The draft on the lower roots is thus stopped, and they remain well nourished and healthy. The only way to exhaust the roots, therefore, is to cut off the new growth before it appears above the surface. The second cause is that, owing to the voluminous root system of the morning glory, the amount of reserve starch is very large. New growth will continue so long as any available starch remains, and it takes a large number of renewals of growth and removals of material by cutting before the whole root system is exhausted.

Roots well supplied with starch and capable of producing new shoots have been found at a depth of 14 feet. In a rich, deep soil at Davis a determination of the weight of roots at different depths was made with the demonstration that there is little difference in the volume of roots at different levels down to the sixth foot. From this level down there seems to be a diminution. A micro-chemical examination of the roots showed that they were about equally well supplied with starch at all levels. To exhaust all this mass of food material, extending to a depth of probably more than seven feet and amounting to from 2½ to 5 tons per acre requires a large number of cuttings extending over considerable time.

The Right Way to Do the Cutting.—This experiment, with cutting in the way which will be described below, may be taken as a complete demonstration of the possibility of the practical extermination of morning glory in one season by weed cutting repeated with sufficient frequency, where the character of the soil and the condition of the surface are favorable to thorough work.

The main points to be observed are:

1. The weed-cutter must be of such a form that no part of the ground is missed. The form used was a straight knife 4 inches wide and 4 feet 6 inches long. This was attached to a riding cultivator drawn by two horses. It was attached perpendicularly to the direction taken by the cultivator. By overlapping about 6 inches on each passage through the piece, it was easy, with steady horses, to avoid missing any spot. On rough land this would be more difficult; where vines, trees, or other crops are growing, impossible.

2. Every weed cutting should take place before any shoots appear above the surface. The smallest growth of green leaves commences to renew the starch, and therefore diminishes the exhaustion of the starch supply of the roots, which is the object of the cutting. Any considerable growth of leaves replenishes the starch supply completely.

3. The weed cutting should continue until the coolness of late autumn prevents the growth of the weed. A growth in autumn would probably furnish the partially exhausted roots with sufficient food materials to preserve them during the winter and to promote a new growth the following spring. How early in the season it is necessary to commence thorough weed cutting was not determined by the experiment. June 1st, at Davis, after the morning glory had already made a vigorous growth, is evidently not too late.

4. The depth at which the weed knife should be run for the most economical work is another point which was not determined. In the experiment, the depth did not average more than 3 inches. By running the knife deeper, say 5 to 6 inches, it is probable that the time between cuttings could be lengthened and the number of cuttings diminished without any inferiority in the results.

Cost of the Operation.—The cost is easily estimated from the above data. From June 1st to November 1st is 153 days, which represents 30 weed cuttings. The 10 acres treated required 2 horses and 1 man one day for each weed cutting, so that the total work required 30 days, which, at $3 per day for man and team, represents $90, or $9 per acre.

Wherever the morning glory can be exterminated in a piece of land for a cost not exceeding $10 per acre, it is undoubtedly economical, and it would, in all such cases, pay to delay the planting of a vineyard merely to keep the morning glory down sufficiently to prevent injury to the vines and without hope of extermination.

Other Ways of Applying the Principle.—Other methods of treatment have been suggested, but all which give promise of successful results depend on the same principle: The promotion of continuous new growth to exhaust the reserve matter of the root system and the removal of this growth before it has an opportunity to replenish these food reserves.

Penning chickens or hogs on an infested spot has been recommended, but it is doubtful if this would be successful unless a comparatively large number of animals were kept continuously on a small patch. Covering the ground with black building paper has also been suggested, and would undoubtedly be effective if the growth of the plants could be prevented from reaching the light between the sheets of paper. In the presence of heavy winds this would be difficult, and in any case probably more expensive than efficient weed cutting.

THE CALIFORNIA RAISIN EXCHANGE.

To the Editor: Important steps toward the improvement of the commercial side of the raisin industry have been made recently in the development of the California Raisin Exchange. The Exchange, it is probably understood by most persons, is an organization like the Elgin Butter Exchange of Illinois through which the price of Eastern butter is determined, the San Francisco Dairy Produce Exchange, or other exchanges in all parts of the country. It is simply to act as a medium by which the grower may dispose of his raisins to the packer and, if necessary, the packer sell to the jobber.

The working of the concern as an exchange will be about as follows, judging from the operation of similar exchanges for other commodities: A grower who wishes to sell his goods, or to contract for them early in the season, will offer them to the highest bidder, and when the price is satisfactory will sell. The price at which the sales are made is naturally the regular price for the time being, and no grower will sell for less, nor packer pay more unless the demand or supply increases greatly. When the raisins are offered in number the price will fall, and buying increase to take them up. On the other hand, when the price goes up, the packer will buy less, so that excessive fluctuation will be prevented and sales governed mostly by the law of supply and demand—or at least this is the effect in the markets where similar Exchanges have been established.

Exchanges are supported by membership fees and small commissions on sales. What the ultimate membership fees and commissions will be in the Raisin Exchange will be decided upon when it is ready to be put into operation. Since, however, a buyer's commission under present conditions is $1 per ton, and the crops vary from 45,000 to 70,000 tons, it can be seen that the commissions may be very small in order to pay all expenses and still leave a balance for advertising and gathering information of benefit to the industry. All receipts above necessary expenses will be used for the good of the industry and not for private profit, as the Exchange is to be a public and not a private concern.

Its purposes and the plan adopted to put it into operation may be well indicated in the report of a committee appointed by Judge M. K. Harris. The committee was composed of J. J. Welch, A. G. Wishon, and Chester K. Rowell, and reported in favor of beginning an immediate campaign for members and subscriptions; that work be started in gathering statistics, and that the Exchange be opened for trade early next summer, when contracts for the new crop begin to be made. The organization and management of the Exchange by W. R. Nutting, to whom belongs the credit for originating the idea as applied to the raisin industry and promoting it up to this time, were commended and ratified.

As stated above, aside from merely acting as a medium of trade in raisins, the Exchange is designed to obtain accurate information regarding the size of the prospective crops, here and elsewhere, and to show just what supplies the trade will have to supply the market during any season and to gather any data that will affect the market conditions and price. This will relieve the uncertainty that afflicts the market and industry every year and furnish a firm basis upon which sales can be made.

Some evils of the present disorganized conditions of doing business and the way the Exchange is expected to remedy it are as follows: In the first place, it will make a fixed price for any particular time, so that the grower may know that he is getting what his goods are considered to be worth, and the packer will know that he is getting goods as cheap as his competitor. It will put all on an even footing. At present most packers are inclined to understate the prices and growers to overstate it, and the correct price has to be guessed at. Butter and eggs sold through an Exchange have a definite price every day; raisins are always stated in the market reports with a variation of several points. If they were handled through an Exchange, the price would be fixed each day.

In the second place, an Exchange will facilitate sales, both by giving a convenient place of sale, publishing the real price, and furnishing informa-

tion that will let each person know what the prospects for crop, competition and market are. At present this is more or less of a gamble. The packer overstates the size of the crop to keep prices down, and many growers understate it to boost prices up. The Eastern trade hears conflicting reports, even among the packers, and is uncertain what to believe, and from sad experience usually finds it best to hold off buying until the raisins are in the sweatbox and can be delivered. When accurate information is ready, conflicting reports will largely cease and the trade come into the market earlier and with more confidence, and grower, packer and jobber will all profit. This will, of course, make it possible to dispose of many more raisins than under present conditions and at better prices.

The breaking of contracts upon insufficient reasons will also be stopped. In the first place, by making a more stable price, as it should, the reasons for contract breaking will largely cease. In the second place, every Exchange has inspectors, or a committee to investigate all disputes regarding the quality of the goods, whose word is final. Now it all seems to be left to the packer, when prices fall, to say whether the raisins are up to standard, and the only recourse the grower has is a lawsuit which costs more than the raisins are worth.

By insuring contracts it will justify making more, so that the packer can sell early to the jobber and the jobber to the trade, as stated, earlier for a different reason, and the packer, knowing that the contracts will hold good, will have no incentive to bear the market, since he will have to pay the price anyhow.

In brief, the Exchange, if developed along its present lines and in the way it appears to be going, should relieve uncertainty all along the line, remove the many grounds for disputes, and make the selling of raisins easy and not difficult. Similar Exchanges have been found profitable without half the excuse for existence that the present condition of the industry seems to show.

While some persons, disgusted with the failure of all previous attempts to organize the industry, seem to feel that it is useless to make any concerted or organized effort to improve the commercial side of raisin growing, it is noticeable that there is no actual opposition to it from any quarter. It is true that, although the brunt of the attacks made upon the market falls upon the grower, the packers are not pleased with present conditions, and would welcome anything that would help the industry and insure a fair profit. This is especially true with those concerns that live up to their contracts in spite of falling price, and have to compete with others who reject contracted raisins and buy again at a lower figure.

It is certain that nothing else can be done to organize the industry in face of the attitude the growers take toward binding themselves to handle the crops in any special way or to paying out more money than they expect to when joining. The Exchange lets every person sell at any time he wishes, at any price he can get, and allows him to dispose of his crop as freely as at present.

The present condition of the raisin industry is unfortunate. Fair prices may rule now, though far from what they should be, and there is no guarantee, unless something is done, that they will not go to bedrock next or any other season. The jobber is uncertain as to what prices will be and refuses to buy until he has to, the packer's hand is usually against every other packer, and the grower bears the burden of it all. Whatever benefit will come to the industry will be most felt by the grower, and as he prospers prosperity will come to packer, jobber, consumer, ordinary tradesman and the private citizen who is influenced by the economic conditions of the district in which he lives. W.

Drainage by Deep Well Pumping.

A possible solution of the problem of preventing the rise of ground water in the soil as a result of over-irrigation without going to the expense of installing expensive tile drains has been tried out this year by the Fresno Canal & Irrigation Company, with results that promise well for the future. The proposition is simply to sink wells down until the gravel bed or water bearing strata nearest the surface is reached, then pumping out the water as fast as is possible. When the water is removed from the gravel, its place is taken to some extent by the soil water that sinks down into the gravel, and partly through other water coming through the gravel from a distance. At all events it is supposed to prevent a rise in the water level during the irrigating season, even if the actual lowering effect is not great.

This work was started this season with two wells, about three miles northeast of Fresno, one on the Eggers, the other on the Burness vineyard. The wells are about half a mile apart and distant several rods from an irrigating ditch, which ran between them and was partly responsible for the original rise in surrounding soil. The first gravel bed found was more than 62 feet below the surface of the ground. The water-table before the wells were put into operation was within a few inches of the surface, in one or two places coming fully up to the surface and causing the tules to start. Pumping was done by electricity with a 40 horse-power engine, and about 1½ cubic feet of water per second delivered into the canal from each well.

To determine the effect of the pumping small test wells were sunk in different places from a few rods to half a mile distant from the wells and the level of the water-table noted frequently.

As an indication of what the result of the pumping was, the levels of the water-table in the different wells may be given. The water in well 1, a half mile from the well on the Eggers place, was standing at 3 feet 8 inches throughout the irrigating season, varying only two or three inches from this. In well 2, one-fourth mile from the well, the water stood at 13½ inches on May 22, fell to 15 inches by June 21, and 21 inches by July 17. In well 3 the water at June 14 was 18 inches below the ground surface and 19½ inches on July 3. This well was in an alfalfa field which was irrigated the latter part of July, causing the water to rise greatly. The pump also was not working from July 26 to August 3, but by August 12 the water had again gone down to 14 inches, and by September 15 to 26 inches.

In well 4, one-fourth mile from the pump and close to a former tule patch, the water on June 14 was 12½ inches below the surface, on July 3 it was 17 inches, August 3, 16¾ inches, and August 25, 2 feet 7 inches. In well 5, one-eighth of a mile from the pump, the water remained about 4 feet 7 inches below the surface, falling to 5 feet 9 inches by the middle of August. In well 6, one-fourth of a mile from the pump the water was 21 inches down the last of May, 26 inches on June 14, 29 inches July 3, and over 3 feet below the ground surface by the middle of August. The difference in the distance of the water-table below the ground surface was due to irregularities in the surface of the ground, making the top of some of the test wells higher than others.

The records are not especially valuable as showing a lowering of the water-table, but rather as evidence that by this means the water can be kept from rising to an injurious height by pumping. During the previous irrigating season some of the vines were drowned by the surplus water in the soil, while this season there was no damage from this source, the tules that previously grew up were kept under and, as noted once above, alfalfa had to be irrigated. An open drainage ditch in which the water stood in the previous irrigating season was dry this season, evidently showing that a normal rise in the water table was prevented by the pumping.

The amount of water that had to be removed, over a cubic foot per second, is, of course, out of all proportion to the amount removed from the soil surrounding the wells, and most of it came from a distance through the gravel strata. This water, however, could be used farther along the ditch into which it was pumped and fully justified the cost of pumping to the company. The water-table, it can also be seen, was still within the danger limits of the surface, and to get the most products from the soil, would better be eight or ten feet down. There can be no doubt, however, but that if this kind of pumping was done over the whole district, the soil water would sink down into the gravel strata, from which the pumping would be done in sufficient quantity to effectively drain the ground and lower the water-table to any desired depth, and it is this wholesale pumping that the company is wishing to operate.

The cost of draining the land by this method, according to I. Tielman, engineer for the company, who has been directing the work, would be in the neighborhood of $5 per acre. The company wishes the land-owners where the reclamation should be done to pay for the cost of digging the wells and installing the pumps, and the cost of pumping would be offset by the value of the water for irrigating further along.

It is the intention of the company, in case this method of draining is adopted, to run a secondary ditch between the two main canals, now about a mile apart, and install pumping plants half a mile apart, both along the main canals and the supplementary one.

As can be seen, if the draining is done this way the cost per acre would be very little in proportion to the cost of installing tile drains, which cannot be effectively used on large areas without having a number of minor systems. The tile drains have also, of necessity, to be close to the surface of the ground, especially at the upper ends.

The effectiveness of drainage by removing water from gravel strata underlying the soil will depend partly upon the ease with which the soil water can sink into it. It is apparent that if the water is removed rapidly enough from the gravel to leave a space for the water directly above to sink into it, this will go down and be removed by the pumps. If hardpan or strata more or less impervious to water intervenes, the pumping will, of course, be ineffectual for drainage purposes. As a matter of fact, however, the hardpan usually occurs in layers, whose edges overlap instead of meeting, and in such a case the water can go around the edges of the hardpan instead of through it.

The cause of the excessive rise of water in the soil is due to excessive irrigation. In most places near Fresno before irrigation was practiced the water was often 80 feet or more below the surface of the ground, or at least as far down as the gravel bed from which the water is being pumped. Heavy irrigation throughout the section combined with seepage from the ditches, has raised this water-table until in many places large swamps and tule beds may be seen.

By removing this water the whole water-table would, of course, be lowered toward its original level. It may be noted here, however, that irrigation authorities claim that success by this method of drainage can be expected only through working on a large scale, and that single pumping plants cannot be expected to be an entire success.

What effect pumping from a well sunk far down but not into a regular water-bearing strata, one from which the water would come from a distance, is not indicated here. In the case described the water removed from the wells was replaced by water from the gravel, and the drainage from the soil into the sides of the well was not of any importance. D. J. W.

THE VALUE OF WALNUTS AS FOOD.

Extract from The Lancet, the leading London medical journal, sent us by George Robertson, State Statistician: "The food value of walnuts is very high; they are very rich in fat, containing as much as 63%, while the proteins amount to nearly 16%. It has been calculated that thirty large walnut kernels contain as much fat as 2¾ pounds of lean beef, and yet the walnut is used as a supplement to a square meal. In the combination, therefore, we have all the elements which make for a complete diet, viz.: fat, protein, carbohydrate, to which may be added mineral salts."

KILLING MORNING-GLORY AT THE START.

Under the above heading in the issue of the Pacific Rural Press of November 4, we printed the method of killing morning-glory practiced by John Shepherd of Berryessa. As a supplement to this, we received from Louis F. Scribner of Pasadena the following: "The method of eradicating morning-glory mentioned on page 368 is very good. I have used a sprinkling can and after the new leaves came up gave them a shower of kerosene. Two applications is generally sufficient."

Notes and Comments.

THE NEW CASUALTY LAW.—One day last week we received a call from Frank Swett of Martinez, who, by the way, is one of the best-read and most practical farmers we have met in California. Mr. Swett came into the city to learn what he could of the new accident law which recently went into effect in this State, and how best for farmers to prepare to meet its demands. In these columns last week the editor pointed out very clearly the unjustness of this new act as related to the farmer, and this week in another place we give a digest of the law for the benefit of our readers.

While the law may be needed, and also may not be as drastic as some are inclined to believe, yet the fact remains that it is a law, and farmers must prepare to meet its possible demands. As the casualty insurance companies have advanced their rates to three times what they were, some indication is shown as to what may be expected, and this brings us to the primary object of Mr. Swett's visit. The suggestion is made by Mr. Swett that at the coming special session of the legislature a committee be appointed whose duty it will be to obtain information as fully as possible during the coming year, as to the results of the law, to ascertain the number and cause of accidents, the cost to the employer in settlements, lawyers and court fees, etc., that a fair basis be established for casualty insurance where employers wish to avail themselves of it. Further, that the facts and figures secured by the committee be used if wished, for the establishment of a State casualty company, or for the organization of mutual casualty companies by farmers, if found necessary, to protect themselves. The object Mr. Swett has in mind, to have the legislature in special session act upon this measure, is to save time, because if allowed to go over, three years may be consumed before such measures could be passed. While there is no doubt but the new law will be a good measure in many instances, yet as relating to the farmer it is what one of our subscribers calls "vicious legislation." Such an insurance protective measure as suggested by Mr. Swett will save many a farmer from bankruptcy, will tend to equalize the burden by distributing the losses as in fire insurance, and if done at cost by the State or by mutual companies, for a time at least, will give farmers a chance to readjust themselves, and the law a chance to prove its value to society. To get action on this matter at the special session next month, immediate work will be necessary upon members of the legislature by farmers in all parts of the State.

WHERE ORGANIZATION WOULD HELP.—If the fruit growers north of the Tehachapi were organized as the citrus growers of the south are, if the stockmen had strong associations, if the general farmer had some means of expressing himself through organized effort, such laws would not be passed, and when occasion arose they could quickly make themselves felt. Even should farmers feel shy about entering fruit market exchanges or other marketing organizations, yet they should organize for mutual protection. The move of the deciduous growers of Placer county now going on to perfect a league for standardizing fruit and for marketing information is a step in the right direction, and should spread to every county in the upper part of the State. True, there is the Grange, the Farmers' Educational and Co-operative Union, and some stock organizations, but as a rule they are not strong enough in membership or cohesiveness to actually carry their demands into practical effect. Perhaps the strongest non-marketing organization of farmers in the country today is the Citrus Protective League, with headquarters at Los Angeles. Because the citrus growers had to, they have gotten together in an organization with a membership that counts, with money enough in the treasury to back up its expressed will, and officered by men of ability. This League during the past few years has successfully appeared before Congress and secured an advance of the tariff on its products; it has won its contentions time and again when freight rates and icing charges have been before the Interstate Commerce Commission, and it has sent its officers to Europe to find the way for California growers to successfully meet competition against cheap labor. Before the farmers can hope to become industrially independent they must place their business upon a basis of "knowing why." The past two years' successes in deciduous fruit growing and marketing, and the high prices of stock and dairy products during that time is the strongest possible reason for immediate organization. More and more land is being planted to fruit, more herds of cattle, and more and larger alfalfa fields are the result of good markets and good prices. To keep from overdoing a good thing, it is necessary to go further afield for markets; glutting of one section while others are bare is the poorest possible business. Only by close organization can markets be expanded, can better and more products be produced, can conditions be studied and provided against and continual success attained.

ANOTHER NEED OF ORGANIZATION.—As the season for planting is nearly here, many fruit growers are earnestly studying the problem of what varieties to set out. Owing to a successful season in many varieties, such as prunes, pears, olives, almonds and walnuts, many nurseries have already heavily sold their largest trees of these lines, and the grower has to decide whether he should use smaller trees, which may give just as good results under good conditions of soil and care, or use other kinds of fruit trees, or not plant this season. Why this unusual demand for prunes? Because little new land has been set out of late years, and because it looks as though prunes were good property, and the same is true to some extent with the other varieties of fruit trees. But the real question that faces the grower is, not what one year's market may prove, but what of ten years, and what competition he will meet with in the way of young trees that have been set out during the past few years.

NEED OF BETTER INFORMATION.—We know that there is not a reliable set of figures made up of the acreage planted to fruit and nut trees in California—bearing and non-bearing. Last summer, when this paper printed at various times estimates of the growing crop, we used the figures made up from the county assessors' roll as to the number of bearing trees in each county. We knew at the time that they were not accurate, but they were the best that could be had. To show how little reliance could be placed in them, we need note but one instance: We desired an article on the apple commercially in California and sent a special writer to the Pajaro valley and to the Sebastopol district of Sonoma county as the two principal apple-growing sections of the State. The question was raised as to why not get the production and condition of the crop in Los Angeles county, as the assessor's returns showed over



Citrus Trees Exclusively

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135,000 bearing trees there. As a matter of fact, there are practically few apple trees now in that county, and the district was never an important apple producer commercially. The land formerly set out to apple orchards is now devoted to raising sugar beets or has been sold off for town lots. In July the statistician for one of the great railways came to our office to ask if our printed figures were correct regarding the number of bearing trees. We promptly said no, and asked him if he had a better list. He showed us three lists, made up from various sources, and each utterly unreliable. Later we had a talk with State Statistician Robertson, who stated that he could and would get up reliable data covering the matter if he could have the support needed from the State Agricultural Society.

ORGANIZATION FOR WISDOM.—Every grower, shipper and buyer should have access to correct information along these lines, and apparently that can be had only by concerted demands of the people who count. How can a grower intelligently plant an acreage to trees, tying up valuable land for years, unless he has such data to go by? Also, how can he successfully market his crop—say of prunes—when he has no data as to the crop? Suppose you have a good crop of prunes on your trees in Napa county, the buyer comes along early and wishes to contract for them. He tells you that prunes are a big crop over the State, that Sonoma, Yolo, and other counties have large crops, but fails to mention Santa Clara county, which may have less than 50% of a crop, yet has more than two-thirds of the bearing trees of the State? The same may be said of practically all other fruits.

If a co-operative marketing organization does not suit you, you should at least help organize some association of farmers in your community for information and be ready to co-operate with other sections for the general good.

VALUE OF PURE-BRED SIRES.

The value of a good bull in the dairy herd is something that dairy farmers are now giving more attention to. Prof. E. H. Fraser, of the Illinois Experiment Station, has made this feature of farm dairying a study, and explains its benefits in this way : "If, for example, the good pure-bred sire improves the milking capacity of his daughters by only one and one-half pounds of milk at a milking, above the production of their dams, this would mean an increase of 900 pounds of milk for the ten months or 300 days during which the ordinary cows should give milk; they would also be much more persistent milkers; that is, would give milk for a longer time in the year, and would regain their flow of milk better after an unavoidable shortage of feed as in a summer drought. Such daughters may certainly be credited on the average with 1000 pounds more milk per year than their dams produced. At the low estimate of $1 per 100 pounds, this extra amount of milk would be worth $10 per year. The average cow is a good producer for at least six years, or until she gets eight years old. Each daughter having a pure-bred sire will, therefore, earn $60 more money in her lifetime because of the good qualities of her sire. It will, on the average, be four years after purchasing the sire before his first daughters will have finished their first lactation period and brought in the first extra $10. Eight dollars and twenty-three cents kept at compound interest for these four years at 5 per cent will equal $10, so a daughter's improvement or increase of income the first year is worth $8.23 at the time her sire is purchased."

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The trees in the orchard on the left in this illustration are starving to death for lack of nourishment in the soil around their roots. The orchard on the right has been fertilized and is bearing a bounteous crop.

There is no need of asking which is the more profitable.

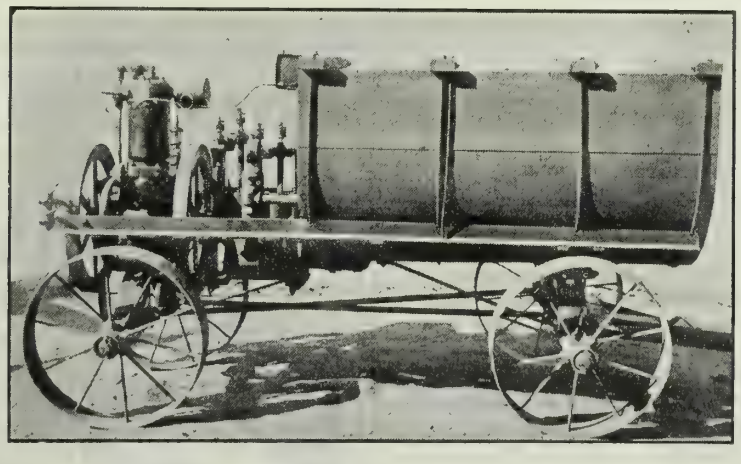
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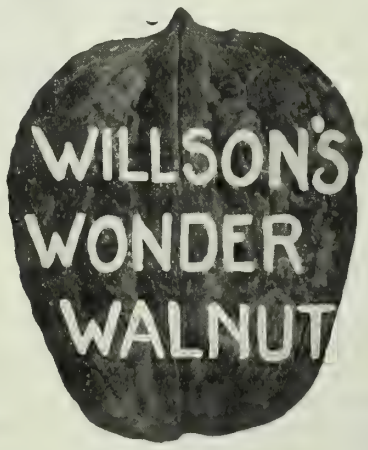
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Big Farms on the Pacific Coast.

There are many big things in the State of California—big trees, big mountains, and such natural wonders—but in many ways the bigness of these is no more impressive than are the great land holdings of some of its citizens. Out of a total area of over 100,000,000 acres nearly one-third of California is in the hands of thirty-five men or companies. The bulk of these large holdings is in the hands of the pioneer settlers. Take the great firm of Miller & Lux, those two shrewd German butchers of whom it has often been said that they could drive a herd of cattle from San Diego to the most northerly end of the State and every night they would be on their own land. Mr. Lux died some years ago and Mr. Miller is lying upon what is doubtless his death-bed. There is much regret at the passing of these rugged old men who made the State, because there will be no one to keep these great land holdings together.

Somehow the younger generation is content to see the wonderful ranches and pastures broken up and divided rather than assume the burden of keeping them together and in working order. That this makes for the best advancement of the State does not change the sentimental side of the thought as these men toiled mightily to bring together these vast estates and have made of them the most highly organized productive land holdings to be found anywhere in this country, if indeed not in all the world.

One of the models of agricultural organization on a large scale is that of the great Kern County Land Co., with headquarters at Bakersfield, Cal. This company is owned mainly by the Tevis sons and J. B. Haggin, who, now over 93 years of age, lives in Kentucky on Elmendorf Farm, with its famous thoroughbreds, trotters, Jerseys, Short-horns and other stock. For something like forty years—in fact, almost from the beginning—the management of the company has been in the hands of H. A. Jastro, president of the American National Live Stock Association.

The Bakersfield holdings of the company are, in round numbers, a little over 480,000 acres, not entirely in a solid body, but near enough to be considered as one whole big field. Originally Mr. Tevis and Mr. Haggin only figured on a great stock ranch, and much of the land was bought because of its grazing value. Much of this land was considered worthless except for grazing. Much of it was swamp or tule land, covered for most of the time with water. Large areas were classed as alkali land, not to be farmed under any circumstances. Then the irrigation idea spread until today almost all of it is under cultivation.

We rode into a great wheatfield. As far as the eye could reach the yellow grain stood waist high. "Twenty-five thousand acres in one solid field of wheat and barley," said Mr. Jastro, and added, with pardonable pride, "I believe it can be said to be the largest grainfield in the world."

We saw half a dozen giant power harvesters at work in one place. As the old Swede cradlers of my boyhood days swept across the field, each following the other, so these monsters swept across this field, six of them, one after another, moving at a speed of about 3½ miles per hour, each sickle bar cutting a swath 32 feet wide, each dropping from the sack chute at regular intervals nine sacks of grain ready for the mill. These machines seemed more like great prehistoric monsters creeping through some antediluvian growth than tools of a farmer of the twentieth century. Eight men manned each machine, two of them steering and guiding it through the grain like the captain and steersman of a huge ocean steamship.

The raising and lowering of the long sickle-bar was far easier than is the same process on a modern small mowing machine. No matter how tangled or mixed the grain, it carefully picked up every straw, far better than the best of the ordinary small binders. So clean was the work that we were unable to find a dozen grains of wheat in any of the piles of straw and chaff which the machine dumped behind it at regular intervals. The whole operation is carried on in such a thorough manner that there is practically no waste and the saving over the old-fashioned way of handling grain, estimated at three bushels to the acre, is enough to pay the cost of the machine in a single year where the acreage is large enough.

There are two types of these machines—one steam and the other gasoline. Of the two they think the gas engine by far the better. The very latest type uses the gas engine to generate electricity which runs the separating machinery. While they seem a very complicated affair they are in actual practice unusually strong and easy to handle, with very few breakdowns. They are geared so as to handle on hillsides of as high as a 30% grade by means of a most ingenious method of swinging the long cutter-bar and at the same time keeping the rest of the machine on a level.

Each of these harvesters costs from $6000 to $8000, while the horse-drawn machines cost about $2000 each. Their average daily cut is about 60 acres with the eight men, and the cost is below $1.25 per acre.

We rode across the great plowed areas which Mr. Jastro said were so rich that it was necessary to plow it up and let it lie for a year to reduce its strength rather than have such a heavy growth of straw as to interfere with grain production. This land was obtained by draining a lake which originally covered a large area. By means of dikes and ditches the lake has been forced back into one corner and the land thus obtained seems to be unusually fertile, being the deposit of ages of vegetable matter.

Every part of this huge ranch is under a system of management almost military in its exactness. Phones connect every corner of it with the central office. Each foreman has his own particular place and is responsible for the management of the area under him.

There is a good-sized slaughtering establishment with cold storage capacity for 200 steer carcasses and other animals in proportion. Most of the output goes to supply local demand.

Alfalfa covers about 100,000 acres, and meadow land 50,000 acres. There are over 50,000 cattle, steers and cows on the ranch now, sometimes many more. Sheep are not so numerous at present, say 30,000. They are called scavengers of the ranch and are used to clean up the feed on the stubblefields and such places which otherwise would go to waste. One whole section of the ranch is devoted solely to hogs, about 15,000. We saw possibly a thousand acres of nothing but artichokes, planted expressly for the hogs to harvest. Then, too, when the grain is gone they turn them into the stubble to help the sheep clean it up.

A flour mill turns out a first-class product, besides a barley crusher, both of which work up the product of the place into shape for market. As for smaller machines, one sees 300 ordinary mowing machines, almost as many self-binders to get into corners and fields where the big ones cannot well work, plows and cultivators and such implements by the trainload, until you are lost in astonishment that such a multitude of tools can be and are looked after. Of course it is all system, yet no system can succeed without the proper man at the head of it.

Over a thousand work mules and horses and as many men at ordinary times and twice that many in busy times keep things running, while a whole fleet of autos are at the command of those who must needs get quickly from one part of the place to another.

Two hundred and fifty miles of main canals with many laterals carry the irrigating waters upon the lands, while all over the place wherever they are needed for stock water, artesian wells spout up from a depth of about 700 feet.

The grain product of the ranch for the present year will be over 400,000 sacks, averaging 120 pounds each, while no man can estimate the hay product, much of which is harvested on the ground by the cattle and other stock.

"And what is the future for this great estate?" I asked of the man whose powerful hand has for so many years controlled its destinies. "But one," he replied, a look of regret in his eyes and a tinge of sadness in his voice. "We are all growing old together, those of us who built it up, and there seems to be no desire among the younger ones to take up the load when we are forced to drop it. In the natural course of events it will be broken up into smaller holdings and colonized. These great fields will be the homes of thousands of settlers who will probably make its production even greater than it is today."—Will C. Barnes in Breeders' Gazette.

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A few carloads of fancy white Sonora.

The New Liability Law.

The employers' liability law passed at the last session of the legislature has greatly changed the financial liability of employers, including farmers who hire help, and on account of several things has been greatly misunderstood.

In the first place, it may be said that the law will make the employer pay for many accidents for which he did not have to pay before. He will not, however, have to pay for all accidents, or for any which he was not in some way responsible, unless he cares to come under the jurisdiction of the Industrial Accident Board, and then he is protected in several ways.

The classes of accidents he will have to pay for are these: Any for which he, his foreman or agent is at all responsible, or another employee than the one that is hurt. Previously accidents occurring through the fault of a fellow-employee were not ground for suit. If the employee was at all at fault, he formerly could not collect damages; now he can, if the employer is at all to blame, though the damages are reduced in proportion to the fault of the injured party. Before the employee who worked under conditions he knew were dangerous could not collect damages for injuries sustained from those conditions; now he can, provided the employer consented to them or knew that he was working under the conditions.

Put in concise form, it can be said that the employer is liable for all injuries which he, his agent or other employee, is at all responsible for, and not for those where he is not responsible, and before the employee took all the risk he knew existed and could not collect damages where a fellow-employee was at fault. For pure accidents and those for which the employee is deliberately responsible, he does not have to pay damages.

The method of collecting damages is exactly the same as before. The injured party, or his heirs, have to bring suit, prove damages, the extent of the damage, the responsibility of the employer, and a jury decides what the damages are to be. The damages are paid in a lump sum, unless there is a compromise to the contrary, and there is no limit in either direction as to what the damages shall be.

The first two sections of the law state the new status of employer and employee and the second part has no bearing upon the subject unless the employer so wishes.

This second part of the law is what causes the confusion. Under it the employer is liable for all accidents whatever received by an employee in the course of his employment—pure accidents for which the employer is not at all responsible, those sustained through the carelessness of the injured party, and so on. If, however, the employee goes and gets drunk, or deliberately puts himself in the way of the accident, the employer does not have to pay.

The benefit to the employer for coming under this part of the law is that he will have to pay a much smaller sum than he would under the other conditions, and the Industrial Accident Board attends to the settlement without the expense of a suit. He comes under the jurisdiction of the Board only after applying to do so, which must be before the accident occurs. So far no employer of farm labor has yet applied to the Board, and until they do the second part of the law will be absolutely without effect upon them.

The amount of damages under the Board is never to be more than $5,000, nor more than what three years' earnings at the time of the accident would be. It is not all paid at once, but in weekly installments, which shall not be more than 65 per cent of what the injured or killed person would earn during the same time. If he is only partly disabled, he is paid 65 per cent of what he cannot earn, so anything he earns helps to take the load off the employer.

The exact method of fixing damages and liability can be found by applying for a copy of the law to the Industrial Accident Board, Royal Insurance Building, San Francisco, Cal.

A third method of paying is by insurance. This will cost for farm labor $1.50 for every $100 paid in wages, or 15 per cent of the pay-roll will be added to the expense of running a ranch, provided insurance is taken out. The insurance companies stand all suits for damages, and do not choose to come under the jurisdiction of the Board at all. These companies, in soliciting insurance, generally state that the employer is responsible for all accidents whatever, under the new law. An examination of the law itself seems to show the contrary.

It may be said that the rates asked now are over three times as great as those in force before, which might show the greater risk the rancher has now to pay damages to injured help. If he can think how much has been paid out in former years for accidents and then multiply it by three, he might guess how much he is likely to pay in the future, unless the law is again changed.

The constitutional amendment adopted at the October election further enters into the question, although not altering the above-described law. It permits the passage of a law that will make the employer liable for any accidents whatever, whether he is responsible or not. Reasonable legislators, it appears, should not pass a law, although under the second part of the present law the employer is liable under such conditions, and it is possible that an effort will be made to make him liable for these accidents in all cases, so it evidently behooves the farmer to see that his representatives are as reasonable as they should be. There is still a possibility that if such a law were passed, the United States Constitution would keep it from going into effect, but it would be unfortunate to have conditions reach that stage.

It is claimed, through data gathered in all parts of the country, that only half of the premiums collected by the liability insurance companies go to pay damages, the rest being lost in office expenses, salaries, interest on capital invested, etc. To determine what the rates should be in this State, the members of the Industrial Accident Board will attempt at the special session of the legislature, now at hand, to obtain funds and authority to gather statistics of accidents in California, through which possible damages and the correct insurance rates can be determined. If valuable information is gathered, a plan for a State-managed mutual liability insurance company could be submitted at the next regular session of the legislature, or other improvements or changes to the law submitted. Whatever is done, it must be seen that any changes in the law are reasonable, and the more information on the subject that can be obtained, the better can this be accomplished.

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AGRICULTURAL REVIEW.

With the Fruit Men.

State Horticultural Commissioner Cook has sent out a request to the county commissioners to urge the spraying of peach trees for the blight as soon as possible.

The annual meeting of the El Dorado County Standardized Fruit Alliance has been called for Saturday, November 25, at Placerville. A meeting of the fruit men of Placer county was held at Newcastle, November 20, at which committees in charge of the standardization were appointed.

A review of the fruit season in Butte county shows that only about one-half a crop of prunes was packed. Peaches made a heavy crop, but had less sugar than usual. Almonds bore well, and the orange crops are very good.

Some difficulty is being found in disposing of the walnuts of the Walnut Association, as independent dealers have put their nuts on the market at a cent below Association prices. There is a large proportion of the walnuts still in storage in the south, but it is thought that this will move freely, when the independent nuts are out of the way. The crop has been found to be much larger than it was expected to be a short time ago.

Apple trees planted fifty years ago by General John Bidwell near Chico were uprooted last week, having outlived their usefulness.

A cut of 50 per cent in the freight rate on almond kernels and shells has been ordered by the State Railroad Commission.

The St. Louis Bros. of Princeton, Colusa county, state that they harvested 29 tons of dried figs from 3½ acres of White Adriatic figs, besides having a lot of hog feed from the culls this season.

Ten acres of valencia oranges near Placentia, Orange county, recently sold for $2600 an acre.

A meeting of the California Deciduous Fruit Protective Association was held in Sacramento Tuesday to further complete the organization. Former Horticultural Commissioner Jeffrey, who was appointed organizer and manager, arranged for the meeting.

The National Apple Show is being held at Spokane this and next week, from November 23 to 30.

From Watsonville a year ago there were 3000 cars of apples sent out by the same time that only 2000 cars left this year, owing to the lateness of the season of 1911.

The monthly report of Horticultural Commissioner W. H. Volck of Santa Cruz county shows that the codling moth this fall has been reduced to a minimum through proper spraying and favorable conditions. The average loss to apples is but 3 per cent. Other insect injuries have also been slight, although fruit dropping has been greater than usual. A number of experiments have been practically completed for the year and are to be reported upon next month.

One of the largest evaporating plants in the Pajaro valley burned last week with a loss of $15,000.

A kind of apricot fruit paste that is used extensively in Asia Minor is being displayed in the San Jose Chamber of Commerce rooms.

M. J. Fontana has been appointed president of the Italian-Swiss Colony in place of the late P. C. Rossi.

The recent frosts in the Sacramento valley showed one instance where running water protected the fruit. On the Fred Fox ranch, near Live Oak, Sutter county, irrigating water was left running all night, and in that part of the orchard frost did no damage at all, while in other parts the trees were slightly nipped.

The Winters Fruit Company has been incorporated to do a general fruit brokerage business.

The fall meeting of the California Association of Nurserymen was held in Los Angeles November 23 and 24.

The opening of the subscription work for the Raisin Exchange brought 15 subscriptions of $100 each for it, with nothing smaller asked for and many large concerns that are interested in the industry not approached. These with the others that will subscribe like and smaller amounts, and the membership fees are expected to put the Exchance in a workable condition within a few weeks. Trading on the Exchange will not begin until next spring, according to present plans. The interest taken in the Exchange recently has been extremely encouraging to its supporters.

The annual fall of price accompanying the putting of the whole raisin crop on the market at one time is at its height, and 3¼ and 3½ cents is quoted as the sweat-box price. It is stated that several packers are attempting to break down this price to 2½ cents. Much of the crop that has been sold to the packers is now off to the trade in the East.

The Elk Grove, Sacramento county, winery was destroyed by fire last week, with $30,000 loss.

Frosts in the San Joaquin have practically put a stop to the shipping of Emperor grapes.

A recent review of the grape season for Europe in the London Times states that the hot clear summer reduced insect pests and disease greatly, leaving the vines in good condition for next year, as well as making a fair crop of good quality this.

State Horticultural Commissioner Cook has been appointed chairman of the committee of awards for the Oroville Citrus Fair, which will open December 5.

State Horticultural Commissioner Cook has announced that monthly bulletins will be issued in the future from his office dealing with matters coming up in his work and that of the county horticultural commissioners. Similar bulletins were issued for a time, a number of years ago, and proved of great assistance in the work of the commission.

At the meeting of the Deciduous Fruit League of California at Sacramento Saturday, $5000 was raised to get the League started. It was arranged to have J. W. Jeffrey, manager and organizer, visit all deciduous fruit districts of the State to obtain members for the League.

The first oranges shipped from Porterville, Tulare county, this year, brought $2.15 to $2.28 net per box to the grower. Shipments will continue until December 15.

The raisin crop on the Kearney estate will amount to 675 tons. They are to be held for higher prices than are ruling at present. Some packers are offering only 3 cents for raisins.

The first meeting of the members of the Raisin Exchange was held Friday to organize and elect directors.

H. D. Blanchard and G. A. Grafton, of Terra Bella, Tulare county, are having wells sunk on their property and will make extensive plantings of oranges and olives as soon as it is possible to do so. The success of olive raising in the vicinity has encouraged planting greatly.

General Agriculture.

The crop reports for November 1, 1911, show that flax is making only two-thirds of the crop of 1910. Potatoes are only 281,173,000 bushels, as against 338,811,000 bushels for the previous year, and hay is but little over three-fourths of that of

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We grow all kinds of high grade deciduous fruit trees, leading varieties of Peach, Plum, Prune, Cherry, Almond and Apricot.

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Bartletts, Gravensteins, Peaches, Walnuts, Royal Annes, French Prunes, Late Apples, etc. Resistant Cuttings, Bench Grafts, Resistant Vines. Stock all true to name and free from disease. Selling rapidly.

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Ornamentals (Medium to heavy grades)

Special prices to clear leased land.

Elm	Umbrella (Texas)
Maple	Poplar (Carolina)
Catalpa	Mulberry

Ready for early delivery.

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Citrus Stock a Specialty

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The supply of **good trees** is very, very short—

Some varieties sold out.

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The Rhubarb and Berry Specialist

FREE CONTOUR MAP
You need such a map before laying out your irrigation work.
KERNS-SESSIONS, Engineers
Postal Telegraph Bldg., San Francisco

1910, and still more below the ten-year average. The total production of this State is 93 per cent that of last year and 108 per cent of the ten-year average.

The Sacramento Valley Beet Company is having much land prepared for next year's crop. Three traction engines and 200 horses and mules are being used for the plowing. Land for 20,000 acres is already under contract.

Waite Brothers of Turlock made a record of 1002 sacks of Egyptian corn threshed in nine hours with a new threshing machine.

Washoe county, Nevada, has been making heavy shipments to the Fallon beet sugar factory. The returns at the end of the season are expected to be the deciding factor affecting sugar growing in that vicinity.

The first shipments of both asparagus and rhubarb have recently been made from this State, and the quality of both is said to be superior to that of the first shipments of other years.

Orders have gone out from the office of the State Horticultural Commissioner that no Utah alfalfa seed is to be imported without thorough fumigation to destroy the weevil. The quarantine has improved the market for California seed.

Driscoll Brothers, one of the leading strawberry growing firms of the State, purchased recently 105 acres of land between Mission San Jose and Irvington, Alameda county, which they are intending to plant out to the berries. The purchase is the result of growing berries in the vicinity this year.

Reports have come in from various places recently of the fine quality of peanuts that have been raised this year.

The Yolo County Hardwood Company will plant out 200 additional acres to eucalyptus trees this season. The company has already 600 acres planted out to this tree.

B. F. Oatman of Lakeview, Oregon, is displaying a turnip 42 inches in diameter taken from a half-acre plot which brought him $200.

The Reclamation Service reports that very encouraging proceeds have been secured from land this year in the Klamath project in Oregon and California.

A seed testing plant has been established at the Agricultural Station at Berkeley, where farmers may have their seeds identified and tested for weeds and vitality.

The Nevada potatoes which have been barred out of California on account of the presence of eel worm are reported to be selling at big prices in spite of the quarantine.

A quarantine has been declared by Horticultural Commissioner Cook against Nevada potatoes on account of the eel worm. Since the worm was found in shipments made to this State, a practical quarantine has existed.

The San Francisco and Los Angeles quotations on butter Tuesday was 31½c, that of Portland 35½ to 37c, Chicago 33c, making California the lowest market in the country. The price of butter in Portland bids fair to keep California prices from falling more than a very little for some time to come.

Secretary Wilson has ordered 12 sheep which the Government is developing for range purposes in the Rocky Mountain States, to be exhibited at the International Live Stock Exposition at Chicago, December 2 to 9, and at the National Wool Growers' Association at Omaha, December 13 to 16. The foundation stock of the sheep was Delaine and Rambouillet.

Miscellaneous.

At the irrigation meeting held in Stockton it was decided to request an amendment to the present law regarding irrigation bonds, rather than to draft a new law. Systematic work to secure the proper amendment has been begun.

The Butte County Poultry Association has been formed at Oroville to encourage the raising of high class poultry in the county.

The second annual poultry show is to be held at Corning, Tehama county, from November 28, to December 2. Entries have been made from all parts of the Sacramento valley.

The Sutter County Land Company has purchased the Mark Pease property and the Markeley estate near Yuba City for subdivision purposes, about 1000 acres in all.

A large amount of dried peach culls has been sent from Chico to Philadelphia to give plug tobacco a peach flavor. Heretofore the culls have been a loss to the packers.

F. W. Chandler of Fresno is the purchaser of 10,300 acres of land near Suisun, Solano county, which will be reclaimed and subdivided. The former owners were H. R. Timm of Dixon and Edward Dinkelspiel of Suisun.

The International Harvester Company has been found guilty of operating in restraint of trade and barred from doing business in the State of Missouri.

Two hens at the Oregon Agricultural College at Corvalis have laid 259 eggs each in the past 12 months, breaking the Experiment Station records for the country.

A clipping from a London paper states that English hop growers are receiving 12 guineas per hundredweight for their hops. The guinea amounts to $5 and the hundredweight is 112 pounds.

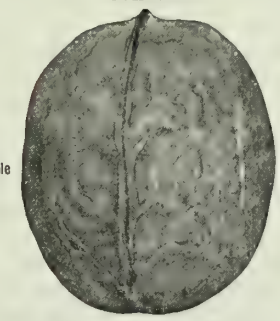
The anti-mosquito campaign around Oroville has been brought to a close for the year. Great success in preventing malaria is reported through the work.

(*Continued on Page 453.*)

The best blight resisting, well tensed walnuts; heavy bearers; bloom late; mature early; grafted trees only.

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California Dairy Values Wonderfully Increased.

The dairy development of California challenges all other phases of the State's progress. A preliminary statement of the general results of the thirteenth census of establishments engaged in the production of butter, cheese, and condensed milk has just been issued by Census Director Durand. It includes summaries comparing the general figures for 1904 and 1909, and showing the different products by kind and quality, but does not embrace statistics of butter and cheese made on farms (these are not yet available for 1909). The report was prepared under the direction of William M. Steuart, chief statistician for manufactures, Bureau of the Census. The figures are subject to such revision as may be necessary after a further examination of the original reports.

FEWER CREAMERIES, BUT MORE PRODUCT.—The summary shows increases in all the items of the census of 1909 as compared with that for 1904, except in the number of establishments, which decreased from 8926 in 1904 to 8479 in 1909, or 5%.

The capital invested increased 51%; the gross value of products, 63%; cost of materials, 65%; value added by manufacture, 54%; average number of wage-earners employed during the year, 18%; amount paid for wages, 32%; number of salaried officials and clerks, 44%; amount paid in salaries, 161%; miscellaneous expense, 108%; primary horsepower, 8%.

The capital invested as reported in 1909 was $71,284,000, a gain of $24,028,000, or 51%, over $47,256,000 in 1904. The average capital per establishment was approximately $8000 in 1909 and $5000 in 1904. In this connection it should be stated that in the census schedule the inquiry concerning capital invested calls for the total amount, both owned and borrowed, invested in the business, but does not include the value of rented property, plant, or equipment which was employed in the conduct of manufacturing enterprises.

VALUE OF PRODUCTS.—The value of products was $274,558,000 in 1909 and $168,183,000 in 1904, an increase of $106,375,000, or 63%. The average per establishment was approximately $32,000 in 1909 and $19,000 in 1904.

The value of products represents the product as actually turned out by the factories during the census year and does not necessarily have any relation to the amount of sales for that year.

COST OF MATERIALS.—The cost of materials used was $235,546,000 in 1909, as against $142,920,000 in 1904, an increase of $92,626,000, or 65%. In addition to the component materials which enter into the products of the establishment for the census year, there are included fuel, rent of power and heat, and mill supplies. The cost of materials, however, does not include unused materials and supplies bought either for speculation or for use during a subsequent period.

VALUE ADDED BY MANUFACTURE.—The value added by manufacture was $39,012,000 in 1909 and $25,263,000 in 1904, an increase of $13,749,000, or 54%. This item formed 14% of the total value of products in 1909 and 15% in 1904. The value added by manufacture represents the difference between the cost of materials used and the value of products after the manufacturing processes have been expended upon them. It is the best measure of the relative importance of industries.

The miscellaneous expenses amounted to $8,480,000 in 1909 and $4,074,000 in 1904, an increase of $4,406,000, or 108%. Miscellaneous expenses include rent of factory or works, taxes, and amount paid for contract work.

SALARIES AND WAGES.—The salaries and wages amounted to $14,972,000 in 1909 and $9,789,000 in 1904, an increase of $4,883,000, or 50%.

The number of salaried officials and clerks was 5056 in 1909 and 3507 in 1904, an increase of 44%; their salaries increased from $1,376,000 to $3,591,000, or 161%.

The average number of wage-earners employed during the year was 18,431 in 1909 and 15,557 in 1904, an increase of 18%; their wages increased from $8,413,000 to $11,081,000, or 32%.

The primary horsepower was 101,349 in 1909 and 93,845 in 1904, an increase of 8%.

The average horsepower per establishment, considering all establishments, was approximately 12 horsepower in 1909 and 11 in 1904.

INCREASE IN BUTTER.—The number of pounds of butter produced was 624,764,653 in 1909 and 531,478,141 in 1904, an increase of 18%. Of these amounts, 410,692,616 pounds were packed solid in 1909 and 364,432,996 pounds in 1904, an increase of 13%; 214,072,037 pounds were made into prints and rolls in 1909 and 167,045,145 pounds in 1904, an increase of 28%.

DECREASE IN CHEESE.—The number of pounds of cheese produced was 311,126,317 in 1909 and 317,144,872 in 1904, a decrease of 2%. Of this amount 297,913,775 pounds were reported for full and part cream cheese in 1909 and 239,652,634 in 1904, a gain of 24%; 7,770,812 pounds consisted of skimmed cheese in 1909 and 3,459,582 in 1904, an increase of 125%; and 5,441,730 pounds of other kinds in 1909 and 74,032,656 in 1904, a decrease of 93%.

The large decrease shown for "other kinds" of cheese is due in part to a change in methods of reporting the different kinds. The slight decrease in total number of pounds of all kinds of cheese is credited to a deficiency of material due to the better price received by the milk raiser for his cream at the butter factory than for the milk at the cheese factory. The separated cream can be transported with greater ease than the bulky milk, and the milk raiser also has the fresh skimmed milk for feeding purposes.

OTHER MILK PRODUCTS.—The number of pounds of condensed milk produced was 494,796,544 in 1909 and 308,485,182 in 1904, an increase of 60%. Of these amounts the sweetened consisted of 214,518,310 pounds in 1909 and 198,355,189 in 1904, an increase of 8%; and the unsweetened, of 280,278,234 pounds in 1909 and 110,129,993 in 1904, an increase of 154%.

The number of pounds of skimmed milk sold in 1909 was 352,594,574 and 1,161,114,457 in 1904, a decrease of 60%.

Of casein, dried from skimmed milk, 13,018,298 pounds were reported in 1909 and 11,581,874 in 1904, an increase of 12%.

There were 19 establishments in 1909 and 7 in 1904 engaged primarily in the manufacture of other products, that made either butter, cheese, or condensed milk as by-products.

If the butter, cheese and condensed milk made in these establishments be added to the quantities in the summary, the total number of pounds of butter produced in 1909 becomes 627,145,865, and in 1904, 533,449,261; and of condensed milk, 495,197,844. There were 49,413 pounds of part cream cheese reported as by-product in 1909; added to the full and part cream cheese given in the summary the total becomes 297,963,128 pounds.



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IMPORTER and BREEDER of SHIRES

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If you are interested please send in your name and you will be notified when they arrive.

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During the same week at the Ohio State Fair another exhibit of ours won every highest prize and every Championship.

At the last six World's Fairs our Percheron and French Coach Stallions have won every Championship.

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PURE-BRED SHORT-HORNS, Poland-China hogs, and Shropshire sheep. Roselawn Stock Farm, Woodland, Cal.

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POLAND CHINA HOGS; Barred Rocks and Black Minorca poultry; young stock and eggs for sale. M. Bassett, Hanford, Cal.

GEO. V. BECKMAN, Lodi, San Joaquin Co. Cal. Registered Poland-China Hogs, both sexes.

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STUDARUS & CUNNINGHAM, Mills, Cal Registered O. I. C. swine.

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Blake, Moffit & Towne, Los Angeles
Blake, McFall & Co., Portland, Ore.

Difficulties in Tropical Dairying.

Lest some of our readers operating in this paradise of dairying may be tempted to slip across the ocean on the lure of high prices in tropical countries, it is just as well that they should fully realize that tropical dairying is not easy. U. S. Consul-General George E. Anderson at Hongkong sends some account of it to the State Department. He says that one of the first requirements for foreigners, if they are to live reasonably healthy lives in the tropics, is a supply of wholesome food, including milk and milk products. It is in some respects more important than modern sanitation.

How difficult is the problem of establishing such dairying enterprises may be understood from the fact that with all the expenditure of time, money, scientific knowledge, and experience, no such undertaking has yet been successfully established, and the Americans and others from the Temperate Zone have so far been compelled to content themselves with condensed and other tinned milk. Several unsuccessful attempts have been made to establish imported herds of milch cattle, including private attempts at great expense. In Manila another effort to establish a modern dairy as a food supply for the people is now being made with every Government encouragement and with a great outlay of capital and of effort. Cattle are being imported from Australia, and it is understood that a tract of land about 12 miles from the city has been selected as the site for the establishment.

SUCCESSFUL DAIRYING IN HONGKONG.—Probably the best example of the successful establishing of such an institution under the most adverse circumstances presented by tropical conditions is the Dairy Farm Co. (Ltd.) of Hongkong. The farm was founded 25 years ago and originally was a philanthropic rather than a business enterprise. It is fortunate that this was the case, for it paid no dividends the first 15 years. Its herd was completely wiped out three times, and its losses from disease, costly feed, and various causes were constant. The fact that at the present time the concern is paying about 18 per cent on the investment demonstrates what the enterprise now means to the community.

The two main difficulties to overcome were lack of proper food and disease. The former has been solved by growing what is known as Guinea grass—a wholesome green grass grown on the island and used as part ration—and by importing all other food. Disease has been avoided by stall feeding the animals and quarantining them from the outside world. The herd now consists of over 450 head of Ayrshires, Holsteins, and Jerseys of the best milking strain.

The plant is modern in all respects. Milk at the farm is reduced to a temperature near freezing and is transferred to the city station in bulk. It is bottled, sterilized and distributed from the central station. The company has an advantage of cheap delivery by coolies, bottles being carried in baskets slung at the end of a short pole carried over the shoulder.

The feed, aside from the Guinea grass, is imported from Australia, Europe and North China. Rations that experience has established as standard for milk cows in the United States are not at all suitable for cattle under Hongkong conditions, and the result has been that constant experimenting has been necessary to establish the effect of different cereals upon cattle under tropical conditions. These experiments are continuing, though in general the best ration has been ascertained.

The manner in which the milk cattle of this dairy are quarantined illustrates the constant danger from disease. Visitors from other portions of the island or from China are not allowed, except under such conditions as make the carrying of disease germs impossible. Employees are not allowed to leave or enter the premises except after changing clothes. Animals introduced into the herd are quarantined carefully before being allowed to come near other animals. The herd is stall fed; in fact, it is practically confined to the sheds, which are carefully screened against the admission of disease-carrying insects.

The present plant represents an investment of $1,000,000 local currency, or about $425,000 gold.

SUGGESTION FOR AN ANNUAL LIVE STOCK EXHIBITION.

The following letter has been sent to the live stock men of California by E. W. Howard, president of the Howard Cattle Company of San Francisco, and will doubtless meet with the ready response that it deserves.

"Assuming that the aim of the directors of the 1915 exposition should be to plan for the permanency of many features of the fair, I would ask their consideration, not only on behalf of the live stock industry of California, but that of the entire Pacific Coast, of the desirability of their so laying their plans as to make the live stock show feature of 1915 the finest exhibit of improved live stock ever brought together in the United States, and with this as the starting point, they could, by building permanent accommodations, make it possible for San Francisco to hold annually a live stock exhibition, worthy of any in keeping with her position.

"Possibly it is not as well known as it should be that California and the Pacific Coast States have excelled the world in every branch of live stock improvement. In the light of these facts, why should California producers be forced to look to other States for the proper setting in which to exhibit their products to the world? The Chicago International, the Kansas City Royal, the Denver and Fort Worth live stock shows hold annually great exhibits of improved live stock, made possible by the far seeing wisdom of their citizens, who have provided the setting and invited the producer to do his part. Could San Francisco do better than to follow their lead, by erecting upon public property a Coliseum, which would be a lasting asset to the city, in that it would not only afford the opportunity of holding the Pacific States Live Stock Show annually, but would be found to fill many other needs. I say, with knowledge of the facts, that, had the setting been available, such a live stock exhibition would long since have been numbered among the attractions of San Francisco.

"If San Francisco wishes to take and hold her rightful position as the metropolis of the Pacific, she should leave no stone unturned whereby she may become the center of every activity representative of the Pacific States. It is not sufficient that she cater alone to the comfort and amusement of the people living contiguous to her; she must stimulate their every activity by taking an interest in their efforts for advancement and education. Co-operation of this nature will draw closer the natural ties between those in the country districts and those engaged in the mercantile business of the city, and will, therefore, redound greatly to the upbuilding and prosperity of San Francisco."

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Azoturia in Horses.

By Dr. C. A. Pyle, Pathologist, S. F. V. C.

The approaching rainy weather and the holiday seasons, bringing enforced idleness for the work horses, comprise a season for that serious disease called azoturia. A word as to the conditions under which it occurs and advice as to what to expect and do, are in good order at this time.

Azoturia is a peculiar trouble, the exact cause of which is not known. It affects most frequently horses that are well and in prime condition and especially those working steadily, but for one or another reason are left idle for a short time on a full ration. Hence the disease is spoken of as "Holiday sickness" or "Monday morning sickness." When a horse is attacked the following history is usually given.

The horse kept under the conditions stated above, is taken out of the stall and lead or driven a short distance, expressing the best of spirit and health. Sometimes even walking briskly to a water trough and back will cause the development of the trouble, but more often a horse goes from a quarter to one mile when he lags, begins to sweat, breathes laboriously, is worried or excited and if urged to go on knuckles over on his hind fetlocks and may fall down and rise with difficulty. The muscles over the hips are hard and somewhat swollen. There may be symtoms of colic and if the horse urinates the urine is thick and dark or reddish in color. Often the horse in unable to relieve himself of the urine and feces due to a paralyzed condition of the bladder and rectum.

The disease is serious in that it affects the blood system and muscles in a manner, and causes an accumulation of waste material which prolongs the sickness and may lead to complications that are difficult to relieve. Also the disease is more apt to recur in horses once affected; of course provided the conditions are favorable for its cause.

If the horse is stopped, blanketed and properly treated before falling down, the sickness usually is brief and yields easily to treatment, but if the horse is unable to arise and if treatment is delayed, the chances of recovery are much less and after recovery serious and persistent paralysis and wasting of the muscles of the legs may follow.

What to Do With a Case of Azoturia. —First stop the horse and quiet him, supporting, if need be, to prevent falling. Remove the harness and put on a blanket. Encourage the horse to urinate by placing bedding under him, or if possible draw the urine. Send for a veterinarian promptly and he will give the treatment the case needs. Do not move such a horse until the doctor advises, and do not give remedies or treatment for colic, etc. While waiting, a blanket sprinkled with turpentine and wrung out of hot water and bound over the hips under a dry blanket is very useful and may be repeated in forty minutes or such a matter. Also give the horse plenty of good water to drink.

If a horse gets down, then some practical means of carrying to shelter should be used. Once in a barn if the horse can support himself partially, a sling is very good, but if he relies on the sling entirely, then he can breathe better and will do better on a good bed with plenty of room to be turned over. A patient of this sort is very restless and should be turned several times a day.

Prevention of Azoturia. — This is largely a preventable disease. Horses in good condition and working regularly should not go one entire day with no exercise. Freedom to run in a lot for an hour or so is usually sufficient. The feed should be reduced in amount and in richness by giving each idle day from one-third to one-half the usual ration, and, if possible, substituting partly with bran-mashes or a little green substance, and in some cases a light dose of Glauber's salts is indicated. So serious is this trouble considered by some veterinarians that they several times a year send post-card warnings to their clients, emphasizing the simple methods of prevention. Such warning may be heeded with profit in many, many instances.

BLACK LEG AND ANTHRAX.

With the occurrence of black leg and anthrax among herds of cattle in different places and at unexpected times, the following description by the Cutter Laboratory of the difference between these diseases and Texas fever will be of value. As Texas fever is present only in two or three isolated parts of the State, and the quarantine keeps it from spreading, there need be little fear of it elsewhere.

1. Black leg usually attacks only young cattle in good condition; Texas fever attacks cattle of any age, but does not affect other domestic animals; while anthrax attacks all kinds, ages and conditions of animals, particularly cattle, sheep, goats, horses and mules.

2. That in black leg the characteristic swellings that crackle under pressure are nearly always present, while in anthrax swellings may be hard and solid, or doughy, but they never crackle under pressure. In Texas fever there are no swellings.

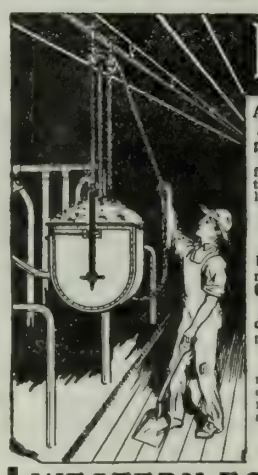
3. Texas fever is virulent only in the hot months; anthrax is also more prevalent in hot weather, while black leg is virulent at all seasons and liable to break out whenever feed conditions change for the better.

4. After death, if the spleen is found to be greatly enlarged, blackish and soft, and if the blood is black and tarry and does not coagulate, the disease is not black leg, but is probably anthrax. We say probably anthrax, because in Texas fever the spleen is also found to be greatly enlarged, and in sections where both Texas fever and anthrax exist there may be some confusion in diagnosis on this account. However, when Texas fever is present the Texas fever tick will also be found on the animals, and the blood will be found to be thin and watery rather than black and tarry. In black leg, the spleen is unchanged, and the blood is naturaly and readily coagulates except in the region of swellings.

WANTED: AN OLD HOME-MADE SILO.

M. L. King, agricultural engineering experimentalist of the Iowa Agricultural Experiment Station, has offered a reward of $50 for the first definite information about any home-made round silo built in 1898 or before. The reason for this is that several manufacturers claim that dairymen cannot build round silos of any kind, without paying royalties on patents they have taken out, and this last summer have sent out thousands of letters threatening suit to farmers who were building their own silos.

Prof. J. B. Davidson and M. L. King of the Iowa station, three years ago designed and sent out plans for a successful hollow tile silo, which they dedicated to the American farmer for his free use. Where these silos have been built suits for royalties have been threatened. It is claimed at the station that the patents of the manufacturers apply only to wood silos and not to those designed at the



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station, and also that it is doubtful if the patents are valid at all. If a wooden silo with the desired features can be found to have been built before June, 1899, the contention of the station will be proved.

The features of the silos the manufacturers claim are covered by their patents are: One continuous door, reinforced door jambs, door-jamb braces, and devices for holding the doors in place.

It is known that wooden silos were built long before 1899, and a discovery of one with one or more of these features will save much money and trouble to the American farmer. The person that gives information leading to this discovery will be richer by the $50 offered.

DAIRY NOTES.

A new dairy to supply certified milk to Riverside, has been started by H. S. Sawyer, a graduate of the University of California, and a former employe of the H. R. Timm certified dairy at Dixon, Solano county.

An inspection of dairies supplying milk to Reno, Nevada, has recently been completed, the places receiving scores running from 68 to 47½% according to the system of judging adopted.

Reports from Chicago state that prices for fancy milk cows have fallen $5 per head during the past 10 days and $7 to $8 during the month. Prices range from $25 to $33 for inferior to fair cows to $60 and $70 for fancy Holsteins.

Ferndale, Humboldt county, dairy and creamery men met recently to discuss the best methods to prevent unpleasant flavors from feed occurring in butter.

An outbreak of virulent tonsilitis in Boston is claimed by the medical men there to have been spread by impure milk.

The output of the Suisun, Solano county, creamery for the year ending October 1, 1911, was 405,632 pounds, or 50,000 odd pounds more than the previous year.

The Holstein-Fresian Association has admitted 161 cows to advanced registry from September 23 to October 18, 1911.

The Visalia Co-operative Creamery paid its stockholders $19,500 for butter-fat delivered in October. There were 182,894 pounds of butter made, an increase of 84,336 pounds over the previous October.

Butter-fat prices for Ferndale, Humboldt county, creameries for the first half of November were 35½, 36 and 36½ cents with different concerns.

A certified dairy is to be started by E. B. Waterman of Medford, Oregon, on the Harris place of 160 acres adjoining the Chico Plant Introduction Station.

At the last meeting of the Kings County Dairymen's Association it was voted to confer with the Tulare Association regarding either uniting both organizations or taking steps to have them combine efforts whenever possible.

The death of a number of cows and calves on the Hahesy place near Visalia, has been found to be due to black leg and not anthrax, as was first reported.

LIVE STOCK NOTES.

The American National Live Stock Association is to hold its annual meeting in Denver, December 12 and 13.

That the merits of California live stock is appreciated in many places is indicated by a letter from the Hutchinson Sugar Company of Hawaii to the Howard Cattle Company, which says of a shipment received early this month. "That the bull, Orange Frantic, 304,969, is the finest animal of its kind in the Hawaiian Islands today."

S. N. Griffith of Turlock, Stanislaus county, has received 12 registered mule-foot hogs from the Argentine Republic. These and similar animals previously obtained are to be kept on a part of the Crane ranch south of Merced river.

State Veterinarian Dr. Charles Keane has sent out his annual letter regarding the Texas fever quarantine to the supervisors of the counties in which the disease exists. The notification is required to keep the quarantine effective.

Heavy shipments of sheep from Chinco have been made during the last week, 24 cars going out in two days.

Several of his Poland-China hogs were sent by W. A. Young of Lodi to Salvador, Central America, recently for breeding purposes.

While stitching a wound in the leg of a horse last week, Dr. S. W. Struthers of Merced was severely kicked by the animal, dying an hour later.

Peter Haack of Tulare county is restocking his 7000-acre ranch, receiving 22 cars of cattle from Arizona last week.

Wholesale dipping for scab is being given the cattle of Lake and Klamath counties in Oregon, under the supervision of the U. S. Bureau of Animal Industry.

The Los Angeles Board of Veterinary Surgeons has requested the city government to have horses watered from buckets instead of from the public watering troughs until glanders is eradicated from southern California, owing to the number of horses that have recently been afflicted with the disease. Dr. Charles Keane, State Veterinarian, was recently in Los Angeles investigating conditions, and reported that both glanders and other contagious diseases in the State were being checked in an encouraging manner.

The amount of rain falling in the Sacramento valley and foothills is said by cattlemen to have been sufficient to start the grass, and further worry over a late fall prevented.

The Short-horn herd of T. B. Gibson is a leading feature of the moving pictures taken of the stock parade at the Oregon State Fair, which are being exhibited in the East and will later be returned to California.

The Howard Cattle Company has filed articles of incorporation for a period of four years. The management of the concern will continue the same as before.

In October 80 bounties were given for coyote scalps in Siskiyou county.

James Walker, of Scott Valley, Siskiyou county, has imported from the East some registered roan Durham cattle to add to his herds.

Mintaberry Bros., of Winnemucca, Nevada, have been sued for $5,000 for damages it is alleged their sheep did to the range of Randall Sage, a cattleman of McDermitt.

About 2000 head of one, two and three-year-old Herefords have been purchased in Arizona by Forgeus & Mitchell to restock their range in Colusa county.

A number of Fresno men are organizing a company to purchase an island off the coast of Lower California from the Mexican Government for the purpose of raising goats, which they claim are extremely numerous there.

The feeding of garbage to hogs as a method of disposing of the waste from towns in southern California is being set back by agitation from all those and neighboring towns against selling those hogs in the very places from which their food is provided. Thus there is a possibility of a new market opening for well-fed country hogs.

The county fair in Imperial county brought out numbers of very fine dairy stock and swine. The number of imported Jerseys was especially noticeable.

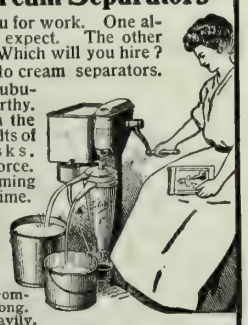
A number of business men of Marysville are contemplating the building of a packing-house at that place if they can get the assurance of a full supply of hogs from farmers in the neighboring counties.

The State wool growers are to meet in annual convention in San Francisco, November 27. The problems resulting from their relations with manufacturers and importers are to be especially discussed. The White Pine Wool Growers' Association of Nevada are to meet at Ely, November 20.

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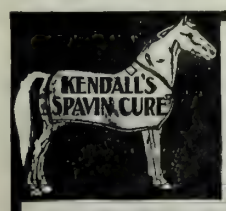
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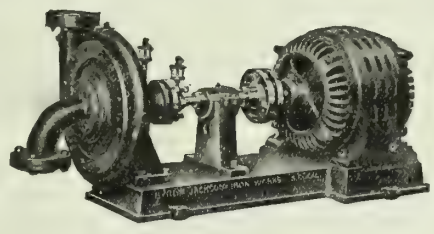
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Winter Eggs and How to Get Them.

Written for the PACIFIC RURAL PRESS
By Mrs. S. SWAYSGOOD, Healdsburg.

A great many people think that in order to get eggs enough to count in winter it is necessary to dope and doctor the hens. Another common mistake is that, in order to get eggs in winter, they must have pullets that have been hatched at some particular time. While admitting that early pullets are, as a rule, good winter layers, I would much rather depend on a flock of good strong hens that have gone through the molt.

Pullets of the smaller breeds are not very reliable as winter layers, as they are sensitive through the feet to cold wet ground. A very common complaint among poultrymen in winter is that the flock, as a whole, does not lay. Individual pullets may start and lay a few eggs, while the rest appear to be dormant. Such a condition as that is hard to get at, and can only be reached by enclosing the flock in a good scratching shed where the feet will be kept dry and feeding very liberally for a few days on green cut bone, fresh cooked meat, etc., in addition to the regular feeding.

The eggs is largely protein, and, while there is protein in all grains, especially in wheat, it is not enough, nor is it exactly the kind that goes to make the egg. Vegetable protein cannot take the place of animal protein, and this we must remember.

Springtime is nature's time for the birds of the air, and domesticated birds too, to lay the eggs that will later hatch the chicks. But as we have removed the domesticated hens as far from nature as we know how, it is up to us to provide substitutes for natural conditions. The hen, under natural conditions in springtime, finds some worms, grubs, or some form of insect life as she travels around; she also finds weeds, grasses, mineral matter and seeds of various kinds. By the time evening comes wildfowls always have a full crop, denoting that they have been all day very actively engaged in finding enough of the different varieties of food to fill the crop.

If we want to get winter eggs we must take a lesson from fowls under natural conditions, both in regard to feed, exercise and sleeping conditions, we must also, as far as possible, give the fowls the same conditions that exist in springtime.

On nearly all farms there are sheds for every other kind of stock but chickens, and yet there can on almost any farm be found material lying around that would make a good shed to house the poultry in—no new expense at all. A scratching shed is almost a necessity if we want winter eggs, not merely for shelter, but as an exercise ground. Here the fowls can exercise regardless of weather; and when we think of, say, a flock of 50 hens hustling and singing among a good armful of litter just thrown in to them, it makes us think spring is here in reality.

Feed a quart of wheat to every ten hens, in the litter, the first thing in the morning; after breakfast is well over, throw a head of cabbage in, or, better yet, fasten it on a stake driven into the ground, sharpen the upper part of the stake and press the cabbage down firmly over it, head down; this keeps it clean until the last bit is gone. Beets and mangels can be done the same way, if you have not a root cutter. About noon throw in the litter about a quart of oats to twenty hens; if there are any table scraps they may be thrown in, too. Or mix what is called a scr tching food composed of 50 lbs. of wheat screenings, 25 lbs. clipped oats, 10 lbs. of rye or broom corn and the same of split peas or the small Canadian field peas, 25 lbs. of Gyp corn, 10 lbs. Croley's green bone. This makes a very fine scratching food that gives good success in getting eggs. A quart of this given to every twenty hens at noon, well mixed in the litter, will keep them scratching till well toward evening. If the fowls are Leghorns, or any of the small breeds, a dry mash will not hurt them, but for the heavier breeds I do not advise its use, because they are liable to get too fat, and fat hens never lay well, winter or summer. The evening meal can be varied acording to time and other work on hand; if busy, feed dry grain as at the other meals. I have had splendid results with an all-grain diet by keeping green bone and beef scraps before them all the time. But if there is time, and the material at hand, a mash about three times a week is a great improvement. Any of the ready-mixed mashes are good, but for those who keep mill foods on hand for other stock, a home-mixed mash gives good results. Care should be taken to not have it sticky or wet, but just crumbly and short like pie crust. A very good mixture is: wheat, bran, ground barley, brown middlings, beef scraps, a little charcoal, a little salt, and about 5% alfalfa meal; mix with skim milk or water and feed for supper.

Of course, the fowls must be supplied with shells, grit, and animal food of some kind, either in the mash or in hoppers kept before them all the time, unless there are such things as refuse meat to be had or plenty of skim milk. In case there is an abundance of milk, no other animal food will be needed, as milk is the best kind of a substitute, and in the latter case it would pay to mix a mash every evening, or warm the milk in the morning and give it in place of water.

And, by the way, the water is a very important factor in the winter egg question. Water that is left in any kind of drinking vessel over night, in California, gets several degrees colder than it usually is any other time. The very first thing a hen does when she gets off the perch is to get a drink; now if she drinks that cold water it chills her system, and it requires a good part of the morning feed to replace the warmth. So when we are striving for the high-priced eggs, we just go around the last thing at night and dump the water out. This leaves the hens, provided, of course, they are yarded, without the means of quenching their thirst. And this is the real secret of the winter egg question. After the exercise of working for the grain thrown in the litter, fill the drinking vessel with fresh water from the pump or skim milk slightly warmed. The hens will drink greedily and as the body is warm from exercise and circulation good, the water aids the digestion.

Another good way of getting winter eggs on the farm, and by far the least trouble, is to give the hens wheat and oats from the stack and let them thrash the grain out themselves, simply providing them with a shelter to keep the grain dry and a little animal food and other accessories.

Exercise and water with the chill taken from it are worth more than food given without any help.

It takes a lot of feed to keep the hen's system going when she is allowed to drink cold water and stand around in drafts or corners waiting for a little feed to warm her up. This she gobbles up, and then stands around again shivering, waiting for the sun to come out and warm her up. All that is fed to her goes to maintain the bodily heat, and the egg is left over for some other time when conditions are more like spring.

IN THE FARMER'S HANDS.—But there is no need to wait three or four months for conditions that any farmer can make for himself in as many hours. Californians do not have to shovel snow to reach their poultry-house, neither is there any danger of frozen combs; the only thing we have to contend with is a little rain and an occasional cold wind, and the scratching shed, with 2-inch mesh wire around it, solves all the trouble and puts the fowls under spring-like conditions. Just a few hours work and material that is lying around on nearly every ranch in the country does the trick, so who would be without this comfort for their hens and money-maker for their own pocket? If the house faces the east, so much the better; knock one side out, close the door, if there is one in the end, raise the house up from the ground, and put four corner posts under. We raise our houses about two feet from the ground and then the space under the house adds to the size of the shed, giving more room. Bright sunshiny days the fowls can be let out after the noon meal, and if there is green feed to be got, even before that, because the exercise at the morning feed will have started the circulation, so there will be no more shivering and standing around, and as some form of bulky food is absolutely necessary, the hens may as well get their own when possible.

The greatest factors in the care of poultry, as in other live stock, is forethought, looking ahead and planning for the comfort of the stock under our charge. Of course, comfort includes cleanliness, and cleanliness includes the extinction of lice, mites, and all parasites that prey upon fowls. And while these unpleasant things are mentioned last, they are by no means least in the comfort of the fowls. Costly buildings are not at all necessary to the fowls' health or comfort, but clean buildings are if we expect any profit from fowls, winter or summer.

And lice breed in winter pretty fast, especially when the hens are confined to wet grounds with no accommodations for a dry dust bath. Given a clean house where the droppings are cleaned away once or twice a week, a good dust bath of loose soil made slightly damp, not wet, and good healthy, vigorous hens will attend to the lice question themselves without any fuss. Lice cannot breathe in dust, that is why nature instructs the hen to dust herself. Everywhere chickens are annoyed with these blood-sucking pests, and in some places there are two to every one we are troubled with. A lady from Kansas told me that bedbugs preyed on the hens to such a degree where she came from that it became a serious question. A sitting hen had to be watched from them, and removed perhaps a dozen times over sitting out a clutch of eggs. This was a sure enough surprise to me, for I had always associated that pest with lumber and a timber country, but the lady lived on the prairie, so that idea was upset.

It is simply impossible to find anything that is not fond of chickens in some form or other. Of course, most of us prefer our share cooked, but most all vermin, from a tiny mite that gets on the fowl at night and sucks its blood, to the four-legged varmints, such as skunks, rats, coons, etc., and by the way, some humans prefer chicken raw. Yes, sir, raw chicken cut into small dices and eaten with some kind of sauce is a great relish with the Japs, and, for my part, they are perfectly welcome to eat of their favorite dish, but not at my table nor in my presence. But this goes to prove that chickens are mighty good things any and all ways, and, as we don't know which comes first, the egg or the chicken, in general we do know that if we want winter eggs our first care must be with the chickens, gathering the eggs will be a pleasant job later.

POULTRY.

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The best testimonial to the merit of my birds can be found in my winnings at San Jose October 4th to 17th, 1911, where I took 1st and 2nd cock, 1st cockerel, 1st, 2nd and 3d pullets and the American Poultry Association Medal for best cockerel in the show.

In White Wyandottes, I have quality just as good.

With seven Wyandotte entries at San Jose I won 1st cock, 1st and 2nd hen, 1st and 2nd cockerel, 1st and 2nd pullet.

Stock and eggs for sale.

I also breed utility Pigeons, Homers, Carneaux, and Polish Lunx.

My foundation stock in all three breeds was imported.

Youngsters and guaranteed mated pairs for sale.

MARSHALL BLACK

Palo Alto, Cal.

Poultry Quotations.

To the Editor: Will you kindly inform me through your paper why chickens that should be sold by the pound since September 1, 1911, are still quoted per dozen? —Constant Reader, Elmira.

There is no good reason except custom why quotations on poultry should be made by the dozen rather than by the pound, and in practically all of the markets in the country with the exception of San Francisco and New Orleans they are made on a pound basis.

Up until the last few years fowls were nearly all sold by the dozen, and many retailers and fruit and vegetable commission houses that handle a little poultry for their clients still follow the old method of doing business. Most of the large poultry houses, however, sell by the pound. As far as we know there was no change made in the system of selling poultry at large on September 1, of this year, although some one commission house might have made the change.

As a matter of fact the pound system of selling is the most accurate method and fairest to both seller and buyer, and even when a crate of chickens is sold by the dozen there is some mental arithmetic done as to their weight. Unless they are weighed the bargain is only guess work, with the odds in favor of the best guesser. There might well be $2 or more difference in the value of a crate of good hens if sold by weight instead of the dozen, if guess work was used in fixing the price, and this difference has to be noted in the market quotations. These now vary too much between the highest and lowest figures of each class of poultry to be of great value. If the quotations were made by the pound there would be but little variation in the published price and the shipper could know just how he was being treated if he weighed his fowls when he shipped them. Since the most of the selling is done on a pound basis, and the rest ought to be, there is no good reason why the quotations should not be changed.

Another reason for changing the system of selling to a pound basis is as follows: Many of the retailers, especially those that do not handle many fowls at one time want to make purchases of fowls of all ages, sizes and quality so as to suit the varying needs of their customers. Unless they buy a great many fowls at one time they perhaps do not get a full dozen of any one class of birds, and the purchase is made in broken lots, where to quote them accurately by the dozen is difficult. In such cases the dealers now either sell by the pound, or guess at what the dozen or so of assorted fowls ought to be, and fix the price that way. Whatever method is used in this kind of sales or any other the shipper is entitled to have his goods sold in an accurate, scientific and reasonable manner and have a price quoted that will show as nearly as is possible the condition of the market at any definite time.—W.

Also: I have some chickens hatched from eggs that I bought for Buff Orpingtons. They are dark, almost red, with greenish-black feathers in their tails and look like Rhode Island Reds. Are Orpingtons ever this dark in color?

Buff Orpingtons and nearly all other buff chickens are very difficult to breed true to color, as they are a composite breed developed by crossing several varieties of fowls, and in every lot of chickens hatched a very small percentage will run true to feather even when the parents are good specimens. The more expert the breeder and the more thorough knowledge he has of his stock, the better will he succeed along these lines, but it is quite a study in itself.

The Buff Cochin, being the oldest breed of this color, comes truer to feather than the other buff fowls, in fact the Cochin was used to give the other buff chickens their color. Probably your chickens are thoroughbred Buff Orpingtons, but have reverted back to another type.—T. G.

AN OREGON EGG-LAYING EXPERIMENT.

Interesting tests for egg laying have been conducted at the Oregon Agricultural College at Corvallis by John H. Mack, a special poultry student from Portland.

In these tests single-comb white leghorns were used, five pullets and a cockerel being given a run of but 10 by 10 feet, in which space was the house, so that they were in close confinement. The house was a 6 by 3½-foot brooder coop rearranged for their use. Half was used for roosting quarters and half for a scratching shed.

This scratching shed was kept well bedded with straw about 8 inches deep, and a large part of the whole grain given the fowls was fed here, though some was fed in the yard to induce the fowls to scratch outside when the weather permitted. The front of the house consisted of two doors which were either wide open or partly so, even in the coldest winter weather. No ill effects were noticed, and the egg record and general vitality of the flock showed that they were benefited by the more nearly natural conditions, although the cold sometimes seemed extreme for them.

As the soil was rather heavy, several inches of sawdust was spread on the ground, so that the chickens did not track in cold wet mud, and had a good scratching place which dried rapidly after a rain.

A dry mash was fed them in hoppers, and whole grain, oats in the morning and wheat in the afternoon, strewn in the litter. The fowls ate only about one-third as much oats as wheat, but as there were oats and barley in the mash, they probably made up deficiencies there. The mash, which was fed dry and kept constantly before them, consisted of two parts of bran to one of ground corn and one of ground oats and barley. Other hoppers to which they had access all the time held beef scrap, charcoal, grit, and ground shell. A good supply of kale was kept before them to pick at, and good fresh water was always within easy reach.

They were all apparently in good health throughout the experiment, but on the last day the pullet numbered 2 was found dead in the pen without apparent cause, though she had been laying up to that day.

The following record of the amount and cost of the feed from November to May is interesting in the light of the production records: 158 lbs. of wheat, $2.22; 66½ lbs. of oats, 88c; 13 lbs. of bran, 15c; 7½ lbs. of ground oats and barley, 10½c; 9 lbs. of beef scrap, 32¼c; 8 lbs. of charcoal, 4½c; 5½ lbs. of grit, 5½c; 5¾ lbs. of shell, 5¾c; 5¾ lbs. of ground corn, 8¾c; total cost, $3.92¼.

Pullet No. 1 weighed 3 lbs. 8 ozs. at the beginning of laying, and exactly the same at the end of the experiment six months later. She laid 113 eggs valued at $2.35, averaging in weight about 2.01 ozs. each. Pullet No. 2 weighed 3 lbs. 4 ozs. in the beginning, but gained 3 ozs.; she laid 112 eggs valued at $2.75, averaging in weight 2.05 each. Pullet No. 3 weighed 3 lbs. 2 ozs. and gained 12 ozs.; she laid 101 eggs valued at $2.39 and averaging 2.08 each in weight. Pullet No. 4 weighed 3 lbs. 12 ozs. in the beginning, but lost 3 ozs.; she laid 113 eggs valued at $2.94 and averaging 2.15 ozs. Pullet No. 5 weighed 3 lbs. 2 ozs. at the beginning, and but 2 lbs. 6 ozs. in May; her laying record was 99 eggs valued at $2.23 and averaging 1.8 ozs.

Thus it is seen that the total expenditure for the five pullets and the cockerel was but $3.92¼, while the income from the eggs was $12.66, leaving a profit, if the work in caring for the chickens is not counted, of $8.74.

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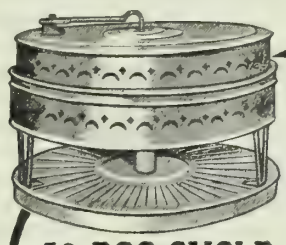
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The Home Circle.

Thankful Joe.

I used to know a queer old man,
Some fifteen years ago,
I'll tell you of him, if I can;
They called him Thankful Joe.

For every day he wore a smile—
Not just a simple grin—
A real beam, that seemed worth while,
And dimpled in his chin.

What'er the weather, drought or pour,
He had no fault to find,
Said he was "thankful o'er and o'er
That there was any kind."

If worms were on his cabbage rows
He simply picked them off,
If sick with cold he blew his nose,
And gently nursed his cough.

Said he "was thankful, truly glad,
To have a nose to blow,
For once he knew a man who had
Scarce enough to show."

When rheumatism drew his feet
So he could scarcely walk,
He still "was glad that he could eat,
And use his tongue and talk."

One slip'ry day, Joe's leg got broke,
They bore him off to bed;
He soon "came too" and brightly spoke,
"I'm thankful 'taint my head!"

And so what'er might be his lot,
He never seemed to mind;
In rain or shine, in cold or hot,
He kept his temper kind.

His neighbors thought him awful queer,
Some said he must be "daft,"
But when their words he chanced to hear,
Good naturedly he laughed,

And said he "did not have the heart
To mope or fret or pout,
For, God, who portioned him his part,
Knew what He was about."

He often read, with sweet content,
A large, old-fashioned Book,
And if you'd know just what he meant,
In it you'd have to look.

And now, on this Thanksgiving Day,
Let's count our blessings o'er,
Be glad like Joe, and think and say,
That we'll complain no more.

—Mrs. J. M. Hunter in Ex.

Thankful's Thanksgiving.

Only a few days remained until Thanksgiving, and the little town of Whatley was alive with interest in the coming feast day. The air was redolent with the odor of mincemeat, and preserves, and pumpkins simmering into sweetness.

The hard times seemed only to have increased every one's appetite and hospitality, and Mr. Hodges, the veteran storekeeper, was authority for the statement that there had not been, for thirty years, so many orders for turkeys.

Thankful Bean lived right in the center of the village, and many an anxious matron had consulted her judgment in the festal preparations. Bags of sage and summer savory, from her garden, waited in many a pantry for the grand turkey stuffing, and every family for a mile around had her recipe for plum pudding, which had been given her by Governor Henshaw's wife, and had been the standard recipe for Thanksgiving pudding, in his family, for years. Thankful had helped them all, as they desired, no more and no less, but she had gone about with a stern look on her face, and with no pleasant thoughts for the near Thanksgiving Day.

Ever since she was born the day had always been sacredly observed at Thankful's home. Time was when the dining-room table had to be reinforced by the kitchen table and two light stands, to make room for the large family and the invited guests. But the number had gradually grown less until, for years, Thankful had kept the day alone in the silent, old house, browning her turkey and steaming her diminutive pudding, and eating her dinner, with no company but her memories.

This past year, as Thankful looked back upon it, seemed to have brought nothing but trouble and loss. A bank in which some of her money had been deposited had failed, and other investments had kept her constantly anxious. Then Millie had gone away with the summer. The very thought of her made Thankful's heart sore. Millie was an orphan niece who had come last winter to live with her aunt. She was a sweet young girl, and, in the few months of her stay, she had grown into Thankful's heart as no one ever had before. Her bright presence had brought an unwonted softness into Thankful's face, and her dainty touches had transformed the house.

The girl seemed happy and contented, until the city people up at Hudson's had chosen to be attracted by her pretty face and winsome ways. They had fascinated her with their stories of city life and of the art schools where her talent could be cultivated.

When the city people went back to their homes, Millie went with them, and Thankful said good-bye with a steady voice and went back to the old life, and no one knew the bitterness in her heart.

Then followed a slow fever, days and nights of sleeplessness and pain, and the torture of having to accept the unloving service of an ignorant girl. Thankful's strong constitution had triumphed, and she was about again, but it had been in spite of utter indifference.

So, with Thanksgiving near, Thankful, knitting by her fire, thought the whole year over, and she said to herself that for once in her life this day should be the same as every other day. The outward observance of it would be hypocrisy, for the year had brought nothing but trouble, and she had no thankfulness in her heart.

Thankful had just come to this decision when she heard a knock at the door. A little boy stood on the step. He had an honest face, framed in a shock of red hair, which fairly lifted up his small cap. His gray, threadbare coat had black sleeves in it, and his shoes were patched.

"Mother told me to tell you I was Mary Ellis' boy. My name is Billy Peters. Can't I come in?" he said.

Thankful led the way into her sitting room, with a little more warmth of manner than she usually showed to boys of Billy's age. Mary Ellis and she had been nearest neighbors and intimate friends in girlhood, but after the former's marriage her home had been a mile away, and, as the cares increased with the years, she and Thankful drifted apart. Her husband had died recently, leaving her penniless, with four little boys.

Thankful had heard sometimes of her friend's brave struggle to keep the wolf from the door, but her own misfortunes had absorbed her mind so completely that she had little place for thoughts of others.

"I'm a committee," said Billy, settling himself in the big chair which Thankful drew out for him, and holding his hands up to the cheerful blaze of the hearth.

"You are?" said Thankful, putting on her glasses to examine him more minutely.

"I be." And Billy drew himself up proudly. "You see, it's like this: There's ten poor children down to the county farm this year, and Mr. Walker, what manages the farm, says he hain't got 'thority to git up Thanksg'vin' dinner for 'em. So, down in our Sabbath school, some committees was chose, to go round and see what folks would give toward gettin' 'em a Thanksgivin' dinner. We want 'em to have a first-rate one—turkey, 'n' cramberry sarce, 'n' onions, 'n' pumpkin pie, 'n' puddin' chuck full o' raisins, 'n' an orange apiece."

Billy dwelt long and lovingly on each item of the Thanksgiving dinner.

"Are you going to have all those things yourself?" said Thankful, looking keenly at the poorly-clad child.

"No'm, not this year; but we have had 'em some years. Father's dead, 'n' the rent's high, 'n' mother don't get much washin' now. But she says things might be a good deal worse. 'Tain't as though we were poor, like them children. We're goin' to have some fried liver. We ain't poor," he said, stoutly.

Somehow Thankful's glasses needed wiping as she looked at Billy, who had his mother's eyes. Indeed, he was not poor! His bravery and utter forgetfulness of self were possessions a king might envy!

"How much shall I put you down for?" said Billy, taking down his little stump of a pencil from behind his ear. "Some folks gives five cents. Mother give ten, and she said she guessed you'd give that."

"You may put me down for twenty-five cents," Thankful answered, with a burst of generosity.

Billy almost bounced out of his seat at the munificence of the gift, and he mentally resolved to add nuts and raisins to the Thanksgiving bill of fare for the county farm children.

Long after Billy's sturdy figure was out of sight, Thankful sat idly with folded hands, gazing into the fire. Billy's earnest little soul had awakened new thoughts within her, which were destined to change the current of her life. Could she, too, not be thankful that things were no worse? She had lost her small deposit in the bank, but another investment had proved successful beyond her expectation. She had got up from her illness better than she had been for a long time before. Millie had gone, it was true. But had she not cause for thankfulness that the bright young life had touched her own, even for a little time? If she so willed it, might not this tender memory keep her heart from being quite the withered thing it was?

Now that Thankful was in a softer mood, there came to mind many little causes for gratitude which she had not reckoned before. How they grew as she thought of them, every one standing out clear and beautiful, a gift of a Father who never forgets his children!

At length Thankful arose, and, going to her desk, she wrote in a fine, old-fashioned hand, an invitation to Mary Peters to come with the boys and take Thanksgiving dinner with her. Then she went out and ordered the largest turkey Mr. Hodges could procure. After that her kitchen was a scene of unusual activity. Cranberries popped and sizzled, pies and cakes baked into odorous richness, and jellies quivered in the most approved way.

Early Thanksgiving morning a little procession of red-headed boys, led by Widow Peters, wended its way toward Thankful's home. Billy meant to be decorous, but just as they passed the kitchen window, Thankful had opened the oven to give the turkey a basting. It lay in full view, in all its grand proportions, and was a sight to turn an older head than Billy's.

Thankful's currant cookies kept the boys in a state of bliss till dinner time. And that Thanksgiving dinner! It stands out clear and delicious in the mind of every one present. Thankful heaped up the plates and filled them again and

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again, and when, from sheer exhaustion, the boys had to stop, the turkey seemed hardly worsted by the encounter, so gigantic he was!

At last it was over. Thankful watched the happy company going homeward, Billy bringing up the rear with a basket containing the remains of the feast. Long after they were out of sight she sat with folded hands, gazing after them. Her house was in a state of wild disorder. There were three sharp dents in the carved legs of her dining-room table, where little Joe Peters had pounded with his boots to express his delight at the sight of the steaming plum pudding. Joshua, her pet cat, had taken to the woods, and she knew it would require a great deal of diplomacy to bring him back again. It had been a busy, anxious day, and she was tired from head to foot. But there was a strange warmth in Thankful's heart, and, looking back upon the day, she felt that it was the pleasantest one she had known for years. She had utterly forgotten her own troubles in looking after the comfort of her own guests, and she was conscious of having given them an unusual pleasure.

Thankful did not hear the whistle of the incoming train, nor the light step on the garden walk. Some one opened the door softly, hesitatingly, but she did not hear. Then Millie knelt down beside her, and Millie's voice said, tremulously:

"Oh, Aunt Thankful, I've been so homesick. Won't you take me back again?"

And, with Millie's arms around her neck, Thankful felt that the day had, indeed, been a blessed one.—Martha H. Pillsbury in the Household Journal.

Fourteen Chief Mistakes of Life.

Somebody has condensed the mistakes of life and arrived at the conclusion that there are fourteen of them. Most people would say, if they told the truth, that there was no limit to the mistakes of life; that they were like the drops of the ocean or the sands of the shore in number, but it is well to be accurate.

Here, then, are fourteen great mistakes:

To measure the enjoyment of others by our own.

To expect uniformity of opinion in this world.

To look for judgment and experience in youth.

To endeavor to mold all dispositions alike.

To yield to immaterial trifles.

To look for perfection in our own actions.

To worry ourselves and others with what cannot be remedied.

Not to alleviate all that needs alleviation, as far as lies in our power.

Not to make allowances for the infirmities of others.

To consider everything impossible that we cannot perform.

To believe only what our finite minds can grasp.

To expect to be able to understand everything.—Selected.

Simple House Disinfection.

After sickness of infectious nature in a home the house should be thoroughly disinfected. When it becomes generally understood that infectious diseases may linger for many months in the walls and floors of houses inhabited by sick persons, the public will demand that each house shall be thoroughly disinfected by a competent person before allowing it to be occupied by another.

John F. Nicholson of the Idaho Experiment Station says that formalin is one of the best disinfectants that we have if used properly. One thousand cubic feet of space require 16 ounces of formalin if the temperature of the room is above 60° F. and about 24 ounces if the temperature is below this.

The following process is recommended by State boards of health as being efficient, cheap and easily performed: After completely closing the room, stopping all cracks and openings thoroughly, place 6¾ ounces of potassium permanganate in an 8-quart earthen vessel and pour 16 ounces of formalin upon it. The chemical action resulting liberates the formaldehyde gas, which is the disinfecting agent. The action of this gas should be allowed to continue for at least twelve hours, after which the room is opened and thoroughly aired before occupancy. Should the temperature of the room be below 60° F., 10 ounces of the potassium permanganate should be used and 24 ounces of formalin. The earthen vessel containing these substances should be placed in a larger pan to protect the floor in case the boiling of the liquid should overflow the container.

If every house was treated in this manner before being occupied by another family, the suffering from infectious diseases would be materially lessened.

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BEAVER BOARD
Walls and Ceilings

are put up easily and quickly in panels of all convenient sizes. They Keep out heat and cold;
Deaden sound;
Retard fire;
Do not crack;
Save expense;
Resist Vibration;
Take the place of lath, plaster and wall-paper in every type of building new or remodeled.

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IRRIGATED LANDS

20 to 40 acre tracts in cheapest and best irrigated district in the West; fine alfalfa, fruit and vineyard land, $100 up per acre, ¼ cash, balance easy terms.

Good improved land in alfalfa or bearing trees from $200 to $300 per acre; easy terms.

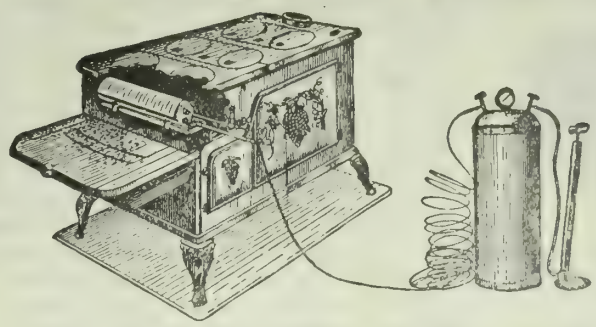
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MASONIC TEMPLE,
Modesto, Cal.

The Fresno Scraper



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FRESNO AGRICULTURAL WORKS,
FRESNO, CALIFORNIA.

PERFECT GAS



NO SOOT, SMOKE OR DIRT.

IN YOUR HOME OR ANYWHERE—for heating, cooking, brooders, furnaces, or anything that requires heat.

MORE EFFICIENT than wood or coal, immeasurable comfort and conveniences.

Four years of hard tests has given them a wonderful reputation, and they have solved the fuel question most satisfactorily.

You can have unlimited heat anywhere from our gas system at one-half the cost—Positively guaranteed. Write today for full particulars.

BLUE FLAME DISTILLATE BURNER COMPANY
650 SOUTH LOS ANGELES ST., LOS ANGELES, CAL.

Finest on Wheels

Sunset Limited

Excess fare Train de Luxe between San Francisco and New Orleans twice a week.

First departure from San Francisco December 5th

Electric lighted—Steel car train—Barber shop
Shower bath—Stenographer—Ladies' maid
Manicure—Hairdresser.

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SOUTHERN PACIFIC

TICKET OFFICES

FLOOD BUILDING PALACE HOTEL
THIRD AND TOWNSEND STREETS DEPOT MARKET STREET FERRY DEPOT
SAN FRANCISCO

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600 SOUTH SPRING STREET, LOS ANGELES

PACIFIC TANK & PIPE CO.



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National Wood Pipe Company
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MANUFACTURERS
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TANKS FOR WATER, OIL, WINE, MINING AND CYANIDING.

WOOD PIPE FOR IRRIGATION, CITY SYSTEMS, MINING, POWER PLANTS.

Machine Banded Pipe 2 in. to 24 in. made up ready to lay.
Continuous Stave Pipe 12 in. to 12 ft. shipped knocked down.
Send for Printed Matter. New Pipe Catalogue in Preparation.

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Kenton Station, Portland, Ore.
404 Equitable Bank Bdg., Los Angeles, Cal.

BOXES and BOX SHOOKS

FRUIT AND VEGETABLE BOXES OUR SPECIALTY.
WRITE FOR PRICES.

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231 BERRY STREET (Near Fourth) SAN FRANCISCO, CAL.

See This Engine in Operation



The Simple Oil Engine

(A BOY CAN RUN IT)

WHAT'S THE MATTER NOW?

Did your engine cough and spew and splutter and roll over like a dying calf this morning, and then "just quit right there"?

Did you "cuss it out" and in a "speak right out in meetin'" fashion, say all that you thought of it, and the man who made it, and the man who sold it and said it would, yea, guaranteed it would run? Forget it. Don't be penitent and worry about it if you did deliver yourself fully and freely in hundred thousand volt profanity.

When the commandment "thou shalt not swear" was written, the type of engine you have been trying to run was not contemplated, the incentive to swear was not considered; but now that we are carrying the gospel of the Simple Oil Engine to you and show you an engine which is fool proof, profanity proof and a joy forever, no longer is your "cussin'" excusable or pardonable, and we will cut the remembrance of such offenders as you out of our prayers in the future, having mentioned to you the name of our engine, which is all the name implies, and our address is,

THE SIMPLE OIL ENGINE CO.

412 Pacific Building
(After November 30th, 400 Seventh Street)
San Francisco, Cal.

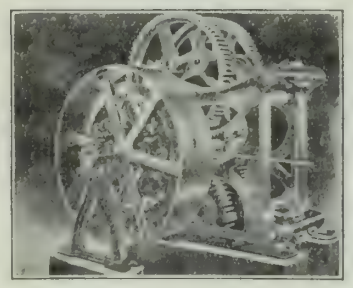
114 East 8th Street, Los Angeles, Cal.

Catalogue and Prices on request.

The Engine is being demonstrated at 400 Seventh Street, San Francisco.

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FOR DEEP WELLS

BUILT FOR FARM OR IRRIGATION PURPOSES



WATER RAISING FROM DEEP WELLS OUR SPECIALTY.

POMONA MFG. CO.
POMONA, CALIF.
Or WEED ENGINEERING CO.
PORTERVILLE, CALIF.

Wells Fargo Nevada National Bank
of San Francisco,
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Capital Paid Up - - - $6,000,000.00
Surplus and Undivided Profits $5,000,000.00

Total - - - - $11,000,000.00

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SAFE DEPOSIT VAULTS.

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Write for our Guide to Inventors, sent free on request, containing nearly 100 mechanical movements and full information about Patents, Caveats, Trademarks, and Infringements.

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PIPE IRRIGATION OF ALFALFA.

To the Editor: I have made some tests and find in my Muscat vineyard the soil is 2 to 2½ feet deep. We have had very little rain and after about a foot the soil is quite hard. As the hardpan is approached the soil is very red. In one place I used a crowbar and eventually threw out pieces about as thick as a lead-pencil; under this this soil was moist, red and coarse, looking like broken granite. I want to put in some alfalfa and have had no experience with it. What I want to know is, can I expect it to do well on 2½ feet of soil with plenty of water. How thick hardpan will the roots penetrate?

On one side of my place is a ditch. I can put the alfalfa next to this. It has been proposed to take out the vines, plow deeply, harrow, and then use a leveler to smooth the land and eventually to put in the seed without checking. The land slopes away from the ditch and would run along it in a strip say 150 feet wide. I plan to put gates in the ditch and use surface irrigation pipe for the wetting. I am told if several grain sacks are put down where the water comes out of the pipe it will save the cutting of the land by the water. This would be much cheaper than to check up the land. Would it be a satisfactory plan?

Fresno. FARMER.

[Your alfalfa roots will take care of a hardpan layer as thick as a lead-pencil without difficulty, providing there is water enough from above to moisten it. Subsequently the alfalfa will root to a certain extent in the open layer below and will grow well and continuously, providing there was moisture enough moving in that under layer. Your arrangements for supplying water seem to be adequate. —EDITOR.]

THE WOOL GROWERS' ASSOCIATION CONVENTION.

The program for the Wool Growers' Association meeting, which will be held at the Palace Hotel, San Francisco, Monday morning, November 27, has been announced by Secretary Fred A. Ellenwood in a circular letter to the wool growers of the State.

One of the most important features of the meeting will be an address by Hon. F R. Gooding, president of the National Association, on the tariff.

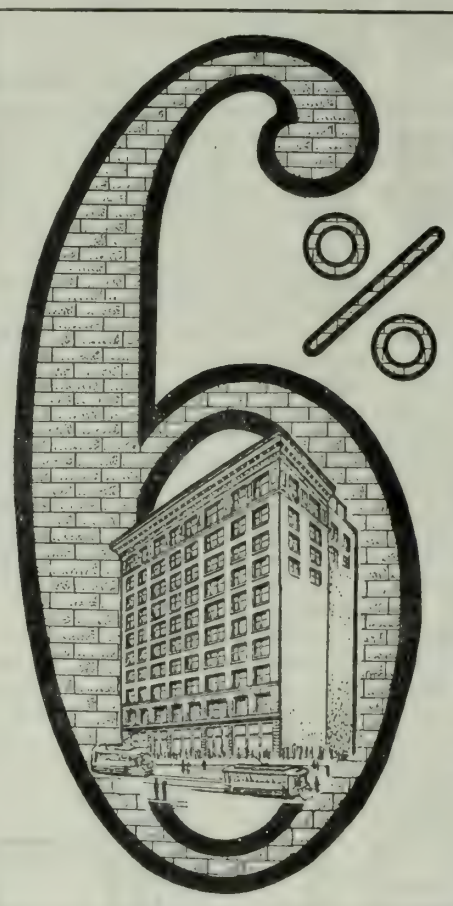
Messrs. Coert DuBois and John H. Hatton, district and assistant district foresters, are to speak on "National Forests and the Sheep Industry." Dr. H. H. Hicks of the U. S. Bureau of Animal Industry will talk on the relation of the Bureau to the sheep industry. Dr. Chas. Keane will speak of the progress of the eradication of the scab in the State, and Hon. J. F. Ellison, of Tehama county, on "The Necessities of the Hour." Secretary Ellenwood is to read a paper on "Schedule K." Wool buyers will also give talks on their side of the industry.

Inasmuch as the sheep business could be put on a better footing if several legal and economic matters were improved, it is hoped that there will be a large representation of wool men present to lend their aid to the work of the Association.

The Tulare county honey this year, most of which was sold through the Tulare County Bee Keeper's Association, was worth over $23,000, not including $4100 worth of orange honey.

A citizens' committee has been organized in San Joaquin county to arrange for advertising San Joaquin land at the Chicago Land Show.

Cholera has been found to be doing much damage to hogs in San Diego county recently.



Your Money Should Earn You 6%

"Syndicate Sixes"

will return you 6%—will give you a steady, safe, handsome income each and every year.

Over $20,000,000 worth of assets (mostly real estate) back of "Syndicate Sixes."

We have several booklets we would like to send you, if interested.

Realty Syndicate
1242 Broadway
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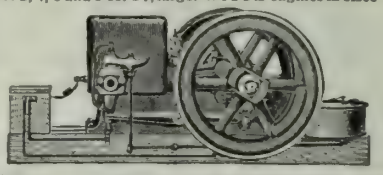
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AN HOURS WORK ONE CENT!

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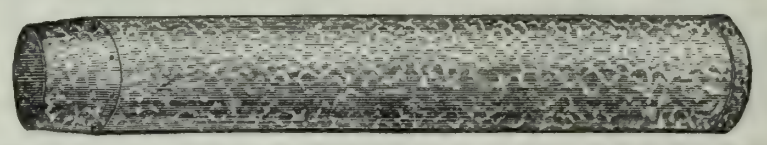
FIVE YEAR GUARANTEE

The WITTE JUNIOR is built in sizes 2, 4, 6 and 8-H. P.; larger WITTE engines in sizes 10 to 40-H. P. Spend **one cent** for a postal card, **state the size engine you need** and let us send you our new free catalog with the best proposition ever made on this "money-saving" engine. A **special inducement** to introduce in new localities.



NORMAN B. MILLER
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PUT YOUR WATER JUST WHERE NEEDED



This cut illustrates our special pipe made for surface irrigation. We have a circular which gives the construction of same with prices and fully explains its use, which we will cheerfully mail you if something modern and economical appeals to you.

We also manufactnre all fittings for the pipe, such as ells, tees, and gates. Address all inquiries to Dept. A.

AMES & IRVIN CO.
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We also manufacture Metal Roofing, Conductor Pipe, Eave Troughs, etc.

THE IMPERIAL LAND GRADER



The only grader and scraper combined that moves earth and levels the ground perfectly and with ease.

GASOLINE ENGINES. CENTRIFUGAL PUMPS.
TRACTION ENGINES. ELECTRIC MOTORS.

ALL KINDS OF MACHINERY REPAIRS ON HORT NOTICE.

DIXON IRON WORKS,
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Save Money By Buying This Good Second-Hand Pipe

We can supply you with any size and quantity of **Standard Pipe or Casing**—all new threads and couplings—all stock guaranteed first class.

If thinking of buying any kind of pipe, your best interests will be served by writing us for prices and particulars.

Pacific Pipe Co., Main and Howard Sts., San Francisco

AGRICULTURAL REVIEW.

(*Continued From Page 443.*)

The holdings of the Oregon Valley Land Company in Lake county, Oregon, comprising many thousands of acres, have been sold to the Goose Lake Valley Irrigation Company, and will be prepared for irrigation soon and sold.

Prof. C. J. Booth of the King City high school of Monterey is familiarizing his students with the dangerous weeds of the county. Commissioner J. B. Hickman, of the county, states that much Russian thistle has been found and the general public was unfamiliar with the plant and permitted it to spread.

The Supreme Court of the State has sustained the Superior Court of San Joaquin in the suit to test the validity of the bonds of the South San Joaquin Irrigation District. The decision is regarded as a victory for irrigation districts.

The State Game Farm will be managed in the future by W. N. Dirks of Alameda, J. A. Argabrite, the former manager, having resigned since the decision to move the farm was made.

Breeders of Indian Runner ducks near Lodi are said to be planning to organize an association to promote the breeding of the birds.

In Butte county this year $1089 has been paid out in bounties on coyote scalps.

The Rancho Buenaventura of 2700 acres near Cotton, Shasta county, has been sold to Dr. M. M. Kelleher of Lompoc, Santa Barbara county, for subdivision purposes.

The many friends of C. G. Hinds will be pleased to learn that this well known poultry judge, who was for many years the leading spirit among Alameda county poultry breeders and fanciers, has decided to get into the game once more. Mr. Hinds announces he is again prepared to accept the position of judge at any of the coast shows.

The Fresno Poultry Association has requested that an experimental poultry station be started on the Kearney estate.

Wells sunk by the San Joaquin Light & Power Company during the fall will by the first of the year increase the irrigated area in Kern county by 7500 acres.

THE TRACTION ENGINE ON THE FARM.

(*Continued From Page 433.*)

cludes all expenses, from labor to depreciation on tne machine.

In early days the cost was greater than this, and with the improvement in the machinery the advantages of plowing with tractors have been further increased, and the number of them sold in the State recently shows it.

The initial cost of a large tractor and outfit is less by a large amount than the cost of the horses, mules and equipment needed to do the same work and the inanimate outfit is the more effective when conditions are most favorable for its use. A steam tractor with 70 horse-power at the draw bar can be delivered at any point in the State for $6000. All equipment necessary for its operation and care, such as horses and wagons to haul fuel and water, shelter, etc., can be provided for $4000 more. The horses can be used when the tractor is idle and will be needed on the ranch at all times, so their expense ought really not be all charged to the machine. The 70 horses or mules that would be needed to do the same work will cost at $200 each $4000 more than the total cost of the machine, and their equipment and shelter about $2500 more. The depreciation in value and upkeep of a tractor will be less than that of the animals.

The cost of operation is also less than with mules, as four men can manage machine and plows for a big steam tractor, while many more will be necessary with animals. There will, of course, always be more work for horses than for tractors, and the above only applies to conditions where tractors can be used to good advantage.

Tractors can work upon any land that horses and mules can go over, and with wheels of big diameter and width, lose less in efficiency from soft ground than the animals would. They can be used, if necessary, 24 hours a day and for several weeks at a time, stopping only for fuel and water and a little oiling or repairs. In extremely hot weather when mules are unable to work continuously the engines work better than ever, if possible.

Steam tractors are of recent years becoming of secondary importance to the driven ones, in this State at least. As stated above, steam machines are of most profit when very large, with a 100-brake horse-power or over. Gas tractors are now being made of this size and also with 25-brake horse-power and less, and are just as effective in proportion to size and initial cost as the larger machines.

The gas tractors burn distillate in California, while in most other States more expensive refined oil is required. The invention of the automobile gave these engines their start and the small gas tractor resembles in appearance a cross between the automobile and the steam roller. Their advantages are many. Only one man is required to run them, and their management can be learned as quickly as that of an automobile, there is no trouble from hard water, no fuel consumed except when working, the engine is very easy to care for, and they can be used to advantage on much smaller ranches.

The smaller machine has also opened up a different line of work, that is, orchard plowing. The great size of the large tractors makes it impossible to plow with them in an average orchard, and so much land is required before they can be used profitably that there could be little demand for them for this purpose even if they could be so used. The smaller, lighter and less expensive gas tractors can run between two rows of trees without interfering with the branches, and the plows can come within a few inches of the trunks of the trees, if it is thought advisable to set them that close. Thus far but few are used for this kind of work, but nearly all manufacturers are studying to build still smaller tractors, and the smaller the tractor the better for orchard work.

In the Eastern States large engines are used for two main purposes, as tractors and for stationary work, such as threshing and the like. Most of such work is done on the move here, but nearly all the machines sold can also be put to work furnishing power for pumping, threshing or anything else, with just as much efficiency as an ordinary stationary engine.

For tractor work they can be used for any pulling that is needed, to pull a road machine, a string of gang plows, a combined harvester, or other implement.

While in planting grain with animals the ground has to be gone over more than once, a tractor can turn the sod, drill and cover all in one operation, and the land can then look after itself until the grain is ripe and the combined harvester comes in.

Their popularity may be seen by the fact that in the United States there are 50 concerns either manufacturing, or getting ready to manufacture them, and a trip through the grain districts of the State at the plowing or harvesting periods will show how they are received here.

THE FARMERS' UNION MEETING

At the annual meeting of the Farmers' Union which was held at Modesto last week the following officers were elected: Homer A. Craig, Campbell, president; John McKinney, Riverside, secretary-treasurer; Guy H. Miller, Modesto, vice-president. H. W. Wrightson of Fowler, former president, was elected a member of the executive committee, together with A. K. Beck of Auburn, both filling vacancies.

The convention voted in favor of having agriculture, domestic science and manual training taught in the schools of the State, in favor of compulsory arbitration of labor disputes, the fixing of school vacations so that the children could help in the busy season with orchard work. The Farmers' Union of Fresno was appointed agent for selling the dried fruit of members, and the Placer County Union agent for fresh fruit. The parcels post was endorsed, and the decision made to invite the National Union to hold its annual convention in San Francisco in 1915. The next annual convention will be held in Auburn.

A preliminary report of the orange and lemon crops of California and Florida for the past decade was made public by the U. S. Census Bureau last week. The number of California orange trees in bearing in 1910 is given as 6,615,929; non-bearing trees, 2,093,101; boxes of oranges produced in 1909, 14,436,424. Number of orange trees in bearing in Florida for 1910 is given as 2,751,118; non-bearing trees, 1,097,896; boxes of oranges produced in 1909, 4,852,967. Number of lemon trees in bearing in California in 1910, 927,130; non-bearing, 376,859; boxes lemons produced in 1909, 2,715,974. At the same time Florida had 11,740 lemon trees in bearing, 7329 trees non-bearing, and number of boxes of fruit produced in 1909 is given as 12,367. The California orange crop made a gain of 145.4 per cent from 1899 to 1909, while Florida's gain was sixteenfold. California lemons gained in the 10 years 210.7 per cent, while Florida's output gained four times over 1899.

Olive growers of Corning, Tehama county, have organized a marketing association to secure better prices in the future for their product.

Options have been obtained on a large amount of land in the foothills of Glenn and Colusa counties for colonization by 3000 Russians.

SECOND HAND
TRACTION ENGINE
FOR SALE.

A Holt caterpillar traction engine, in good condition, with two wagons for same. Burns distillate. For information write to

NEVADA WONDER MINING CO.,
Wonder, Nevada.
J. A. BURGESS, Superintendent.

CLASSIFIED ADVERTISEMENTS

Rate, 1½c. per word. No order for less than 25c. per week. If you have anything to sell, or want anything, use these columns.

FOR SALE.

HOG RANCH.

The best hog ranch in California, in Sacramento Co., and near the city of Sacramento. Creek water the year round, large oak shade trees, 1500 feet of portable hog fence, all fenced hog tight, barn 48 by 48, hog house 128 feet long, good well, 17 acres of alfalfa. 8 H. P. gas engine, 5 inch pump, ⅙ H. P. gas engine, 1½ inch pump, big tank, 6 cows, over 100 hogs, 40 tons of hay, and all the tools and implements necessary to work the place. $6000 will handle it.

BROOKE REALTY CO.,
"BIGGEST LAND DEALERS,"
618 "J" Street, Phone 253.
Sacramento, Cal.

20 acres peaches and vines in bearing. Good buildings, pumping plant, utensils, etc. Income this year $2500. One mile to street car and city limits. Price, $9500; $4000 cash, balance easy time. P. M. HAMMELIN, R. R. No. 5, Church Ave., Box 92, Fresno, Cal.

FREE—20% in fresh package seeds, to introduce our goods, on all orders amounting to $2 and not over $5. Prices: Apples, 12½c; Pears, 30c; Roses, 30c; first-grade trees, No. 1 roses. We pay the freight. MEDFORD NURESRY CO., Medford, Ore.

MAMMOTH BLACKBERRY PLANTS—For Sale—Large, strong and well rooted, $15 per M or 2c each. Orders taken now for early delivery. L. E. BARLOW, Sebastopol, Cal.

MISSION OLIVE TREES in any quantities, guaranteed true to stock, for delivery in fall of 1912. Address MILLS & JORDAN, 410 14th St., Oakland Cal.

RING-NECKED PHEASANTS for sale. Pairs or pens of four; eggs in season for hatching. Address T. D. MORRIS, Agua Caliente, California.

POSITIONS WANTED.

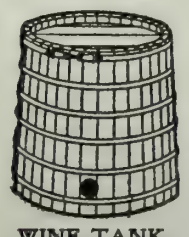
WANTED—By married man, position as foreman or manager of fruit or dairy ranch; experienced; references. Address Route 1, Box 23, Ceres, Cal.

CAPABLE YOUNG MAN wants position as manager or foreman on fruit ranch. References. Box 61, Aptos, Cal.

WANTED.

WANTED—A field boss for large orchard; must have thorough knowledge of fruit growing and cultivation, and of live stock; write fully as to experience, and enclose references. Address Box 818, Pacific Rural Press.

CARBO STEEL POSTS FOR ALL FENCING
PATENTED TRADE MARK
Cheaper Than Wood
Last You Forever
AMARICAN STEEL POST COMPANY
Violet and Santa Fe Ave., Los Angeles, Cal.


WINE TANK.
Tanks Tanks
WINDELER'S PLANING MILL AND COOPERAGE
GEO. WINDELER, Prop.
Water Tanks, Wine Tanks, made from carefully selected stock by careful and experienced workmen. "Tanks that are well made last a long time." It will pay you to get my prices before buying.
GEO. WINDELER,
144-154 Berry St. San Francisco, Cal.

WATER TANK.

THE MARKETS.

San Francisco, Nov. 22, 1911.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Trading here is now fairly active, although mainly on the jobbing order. Quotations stand as before, though there is more strength in the Northern market than last week.

California Club	$1.50	@1.55
Sonora	Nominal	
White Australian	1.65	@1.70
Northern Club	1.50	@1.55
Northern Bluestem	1.70	@1.75
Northern Red	1.65	@1.70

BARLEY.

The market on this grain continues in a rather excited condition, with strong demand and light supplies. Brewing grain is especially scarce, and firm at another advance. Choice feed is largely nominal, with a strong demand, holders in general being reluctant to sell, even at present prices.

Brewing and Shipping	$2.05	@2.10
Choice Feed, per ctl	1.95	@2.00
Common Feed	1.80	@1.85

OATS.

All grades are quoted as before, though the market continues very strong for desirable offerings, and trading is fairly active. Supplies, however, have been increased by arrivals from the North, some of which are in poor condition.

Red Feed		$1.85
Gray	1.75	@1.80
White	1.75	@1.80
Black	1.75	@2.00
Red Seed	1.95	@2.10

CORN.

All grades remain firm at the last quotations, though there is no active movement locally. Desirable offerings of California corn are light.

Cal. Small Yellow	$1.85	@1.95
Eastern Yellow		1.85
Eastern White		1.90

RYE.

Values stand unchanged, and largely nominal, as the present demand is light.

Rye, per ctl ..... $1.75 @1.85

BEANS.

The bean market continues in good shape for sellers, most varieties being steady to firm at the last quotations. Bayos, however, are a little lower, and pinks are still weak, though no further decline is noted. New stock is still arriving in large quantities, and while the demand in most lines is hardly as active as a few weeks ago, dealers expect a heavy movement later on. Limas are quite firm at an advance, and the Association seems to be in control of the situation, offerings being sufficiently light to maintain the present figure without difficulty. The consuming demand so far has been very fair, considering the prices obtained. The New York Journal of Commerce says: "Spot California lima beans are reported to be in limited supply, notwithstanding the recent heavy arrivals. Such stock as is available is generally held at 6c per pound, less tare, in jobbing lots. The Coast market, according to wire advices, is extremely firm, with decidedly higher prices anticipated for the last half of November contract orders booked with the Association."

Bayos, per ctl	$3.65	@3.75
Blackeyes	3.75	@4.00
Cranberry Beans	4.00	@4.15
Garvanzos	3.00	@3.50
Horse Beans	2.75	@3.25
Small Whites	4.10	@4.15
Large Whites	4.00	@4.10
Limas		5.60
Pea		4.25
Pink	3.10	@3.20
Red Kidneys	5.10	@5.25

SEEDS.

The demand in most lines is very light for this time of year, owing to the prevailing dry weather, though some little improvement is noted and prices are steadily maintained.

Alfalfa	17	@18 c
Broomcorn Seed, per ton		$28.00
Brown Mustard, per lb		5½c
Canary		4½c
Hemp		4½c
Millet	3	@ 3½c
Timothy	Nominal	
Yellow Mustard		5¾c

FLOUR.

Values are steadily held, and there is little feature to the local trade, demand being rather quiet.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.80	@5.00

Hay and Feedstuffs.

HAY.

Very little grain is now coming in, the week's arrivals being light and consisting largely of alfalfa. The surplus alfalfa in the river district is now about cleaned up, however, and decreasing arrivals are expected from now on. Prices have already been quite sharply advanced, and are expected to go still higher. The demand for alfalfa, which was light early in the season, has been quite heavy for the last few weeks. Grain hay is quiet here, as most large consumers still have some on hand, but there is an active demand in the interior, where prices have been advanced. An advance in the city market is expected. According to local dealers, the price of hay is no longer regulated by city conditions, owing to the heavy increase in country requirements. The cold weather and lack of green feed have caused a heavy increase in demand, and the outlook for green feed is now very poor.

Choice Wheat	$18.00@20.00
Good Wheat Hay	13.00@17.50
Other Grade Wheat	10.00@12.50
Wheat and Oats	10.00@17.00
Tame Oats	10.00@16.50
Wild Oats	8.00@13.00
Alfalfa	8.00@13.50
Stock Hay	6.00@ 7.50
Straw, per bale	35@ 70c

FEEDSTUFFS.

All lines of feed are in strong demand, and rolled barley shows another advance, though bran is easier, owing to large offerings in the North.

Alfalfa Meal, per ton	$18.00@19.00
Bran, per ton	27.00@28.00
Oil-cake Meal	Nominal
Cocoanut Cake or Meal	25.50@26.50
Cracked Corn	39.00@40.00
Middlings	34.00@36.00
Rolled Barley	40.00@41.00
Rolled Oats	38.00@39.00
Shorts	32.00@33.00

Garden Truck.

VEGETABLES.

Onions receive less attention than for some time past, and are quoted somewhat lower. Except for such winter vegetables as cabbage, cauliflower, etc., garden truck produced in this vicinity is disappearing from the market, and the principal supplies are coming from the south. Some local tomatoes are still coming in, and a little eggplant, but the latter is of poor appearance and hard to sell. Southern eggplant and bell peppers bring an advance, and hothouse cucumbers are held at the usual winter price of $1 per dozen. Southern string and lima beans are also higher, and a few green peas are held at 8c. The best lots of cauliflower bring an advance, while carrots are easy.

Onions: Yellow, ctl	90c@	$1.05
Garlic, per lb	3@	4c
Tomatoes, per box	50c@	1.00
Cucumbers, per doz		1.00
Cabbage		50c
Carrots, per sack	50@	60c
Cauliflower, per doz	50@	75c
String Beans, lb	6@	9c
Lima Beans, lb	5@	8c
Summer Squash, per box	1.00@	1.25
Eggplant, per lb. (Southern)	3@	5c
Bell Peppers, per lb	6@	7c

POTATOES.

A quarantine just declared against Nevada stock may have some effect on this market later in the season. At present, however, the market is rather quiet, and river stock is unchanged, Oregon potatoes being somewhat higher. Sweets are easier.

River Whites	$ 1.10@	1.25
Sweet Potatoes, per ctl	1.65@	1.75
Salinas Burbanks	1.65@	1.85
Oregon Burbanks	1.50@	1.70

Dairy Produce.

POULTRY.

The retail trade in turkeys is increasing, but is not yet of anything like holiday proportions, and consequently the heavy arrivals of the last day or two have had a depressing effect, both live and dressed stock being lower, though fancy dressed gobblers will bring the top quotation. Both Eastern and local chickens are arriving freely, and the market is slow, though values are on practically the same level as before. The quotations given are city values, including allowance for freight and 5% commission.

Large Broilers, per lb	25	c
Small Broilers, per lb	30	c
Fryers, per lb	18	c
Hens, extra, per lb	15	c
Hens, large, per lb	14	c
Small Hens, per lb	15	c
Old Roosters, per lb	12½	c
Young Roosters, per lb	17	c
Young Roosters, full grown	16	c
Squabs, doz	2.00@	3.00
Geese, per pair	2.00@	2.50
Ducks, doz	4.00@	8.00
Turkeys, live, per lb	21@23	c
do dressed	22@29	c

BUTTER.

No marked change is noted in either prices or conditions, though there is a little fluctuation from day to day. The general situation is firm, and storage stock is higher, though fresh firsts are ½c lower. Seconds are no longer quoted.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed
Extras	31½	31½	31	31	31½	31
Prime Firsts	28	28	28	28	28	28
Firsts	27	26	26	26	26	26½
Seconds	24	24	24	24	—	—
Storage Extras	27	27	28	28	28	28

EGGS.

Production continues very light, though some increase is expected before long. Extras are 1c higher than last week, and storage stock has also advanced, though selected pullets are lower. Seconds are not quoted at present.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	50	50	50½	51	51½	52
Firsts	45	45	45	45	45	45
Seconds	28	28	28	28	—	—
Selected Pullets	41	42	42	42	42	42
Storage Extras	27	27	28	28	28½	28½

CHEESE.

Local flats remain steady at the recent advance, and Y. A.s and Monterey cheese are both higher, the later being especially firm, with very light supplies.

Fancy California Flats, per lb	17 c
Storage	14½c
Firsts	14½c
New Young Americas, fancy	16½c
Monterey or Jack Cheese	18 c

Deciduous Fruits.

FRESH FRUITS.

The local deciduous fruit market is quiet and shows little feature at present, prices on most lines remaining about as before. Plums have been dropped from the list, though there are still a few figs, which are held at an advance. Otherwise few changes are noted. Much of the stock arriving is of poor appearance, and is rather hard to move. Ordinary lots of strawberries are lower. Cranberries are in demand, but the high prices tend to limit trading to some extent. Fancy apples find only a moderate demand, but are steadily held, and a better movement is expected next week. Winter pears, quinces, etc., are having about the usual run for this season. A few persimmons are appearing at $1 to $1.50 per box. Grapes are more plentiful than anything else, though some lines are scarce and higher. Muscats and some other lines, however, have been arriving in much larger quantities than the market could absorb, and as many of them are in poor condition, the market is irregular and weak. Shipments will probably continue heavy for another week at least.

Strawberries, chest	4.00@	7.00
Huckleberries, lb.	10@	12½
Cranberries, per bbl	13.00@	13.50
Apples—		
Fancy, box	1.00@	1.50
Choice	60@	75c
Figs, box		1.25
Pears, Winter Nellis, box	1.25@	1.75
Other varieties	75c@	1.25
Quinces, box	65@	90c
Grapes—		
Muscat, box	60c@	1.00
Isabella, crate	1.00@	1.25
Seedless	1.00@	1.25
Other varieties	40@	60c
Pomegranates, small box	40@	50c

Dried Fruits.

While the packers are still very busy with shipments, business in most descriptions is quieting down a little, owing to the small quantity remaining in first hands and the reluctance of buyers to pay the prices at which small lots are held in the country. There is a good inquiry, however, for practically everything except muscatel raisins. Dried apples are more plentiful than was anticipated, and local packers have again reduced their offers. Apricots, peaches, and figs are too closely cleaned up to be much of a feature, and while there is very little to be had at the present quotations, the demand is not sufficient to bring any advance at present. Prunes remain strong as before, but there is little left to sell, and what there is is rapidly cleaning up. Muscatel raisins find only moderate demand, and with the leading packers 3½c is the top price for loose stock, which can be had at this figure in sufficient quantity for all demands. The New York Journal of Commerce says: "The feature in the market for California prunes at present is an unusual demand from Great Britain for the extreme small sizes. Recently several lots of 120s and over were sold from New York to Glasgow, a market which heretofore has had little to do with California fruit of such sizes. It is reported that 1600 boxes of 120s and smaller have been bought in this market for immediate shipment to Liverpool at full prices. The large and intermediate sizes of California prunes are inactive. Recent arrivals and other stock coming on early shipment contracts give distributors ample supplies. A few small receivers who bought when the market was lower are said to be anxious to convert their holdings into cash and therefore are willing to shade the market more or less in order to turn over the goods quickly, but the majority of those who have goods here or coming seem to be reluctant to sell except at the full equivalent of Coast cost, with a reasonable profit added.

"Peaches on the Coast are firm, as there is very little stock in growers' hands, and packers are not trying to force sales. The spot market is dull, with prices nominal. Late offerings for prompt shipment from the Coast in 50-lb. boxes unfaced were at 9c for choice, 9¼c for extra choice, 9½c for fancy and 10c for extra fancy f. o. b. common shipping points. Apricots are receiving little attention, but holders on the Coast do not seem to be disposed to force sales, and the market remains steady.

"California seeded raisins do not seem to be wanted for shipment from the Coast, and the tone of the f. o. b. market is easy. On the spot the movement in Coast seeded, as well as the product of city seeded, is confined within rather narrow jobbing limits and prices favor the buyer."

Evap. Apples, 1911, per lb	7	@	8 c
Apricots	12	@	12½c
Figs, new crop			4 c
Calimyrna figs			6 c
Peaches, new crop	9	@	9½c
Pdunes, 4-size basis	6	@	6¼c
Pears, new crop	8	@	9 c
Raisins—			
Loose Muscatels, in sweatbox	3	@	3½c
Thompson's Seedless	6	@	6¼c
Seedless Sultanas	4½	@	5 c

Citrus Fruits.

The Eastern auction markets at the beginning of this week reported higher prices, with good demand for good fruit. Valencias from California at the New York auction, Monday, Nov. 20, sold for $3.15 up to $5.85 per box; one lot of fancys from Chapman's Old Mission brand sold for $7.35. The same day at Cleveland, valencias sold for $3.80 and $4.15 per box. At Philadelphia valencias brought $3.30 and $3.70, while Florida oranges sold for $3.70 to $3.85, and grapefruit $2.90 to $3.15. Lemons are bringing good prices. The auction at New York on the 20th showed averages from $2.90 to $3.95. Cleveland paid $1.65 to $4.25. Philadelphia averaged $3.80 to $4.60.

Very few cars of new crop oranges have left the State, but heavier shipments will commence very soon, as the cooler weather will color the fruit, making it salable for holiday trade.

Citrus fruits at San Francisco are not yet receiving very much attention, though the demand is gradually increasing. Much of the fruit, however, lacks color, and with increasing arrivals prices show a general decline, which extends to navel oranges, grapefruit, limes, and lemons. Valencia oranges are firm at the old prices and tangerines are higher.

Oranges: Navels	$ 2.50@	3.00
Valencias, choice to fancy	$ 4.00@	4.50
Tangerines	1.25@	2.00
Grapefruit	2.50@	3.50
Limes	4.00@	4.50
Lemons	1.50@	5.50

Nuts, Honey, Hops, Etc.

NUTS.

Almonds are in moderate but steady demand, and are gradually cleaning up The walnut market is quiet, sales of some

odd lots by independent growers at 12½ to 13c having put a stop to the buying of Association nuts. Much of the Association crop has already been moved, however, and the remainder is firmly held at opening prices.

Almonds:	
Nonpareils	18½c
I X L	17¼c
Ne Plus Ultra	16½c
Drakes	14½c
Languedoc	14½c
Hardshells	8 @ 8½c
Walnuts, 1911 crop:	
Softshell, No. 1	14 c
Hardshell, No. 1	13½c
No. 2	11 c
Budded	16½c

HONEY.

Values have not quotably changed, but the fancy grades of both comb and extracted are extremely scarce and firm. Lower grades are in ample supply and steady as before.

Comb, white	13 @15 c
Extracted, water white	8 @ 9 c
Amber	7 @ 7½c
Off grades	5 @ 6 c

BEESWAX.

There is no demand of any consequence, prices standing nominally as before.

The market continues quiet at unchanged quotations.

Light	28 @30 c
Dark	23 @26 c

HOPS.

Prices show a further advance. Large sales are reported in Oregon at 45c and better, and some business has been closed in California on a similar basis, though the crop is now pretty well cleaned up. A few growers who still have something left are holding for 50c, with a fair chance of getting it before long, as the demand is urgent.

1911 crop .....45@47½c

Live Stock.

All prices stand as before, and aside from a continued active movement of hogs at the prices quoted, there is little feature to the local market, though considerable business in sheep is reported in the northern part of the State.

Gross weight:	
Steers: No. 1	5½@ 6 c
No. 2	5 @ 5¼c
Cows and Heifers: No. 1	4½@ 4¾c
No. 2	4 @ 4¼c
Bulls and Stags	2 @ 3 c
Calves: Light	6½@ 6¾c
Medium	6 @ 6¼c
Hogs: Grain-fed, heavy	6¼c
150 to 250 lbs	6½c
100 to 150 lbs	6½c
Small prime wethers	3¾@ 4 c
Large prime wethers	3¾@ 4 c
Ewes	3¼@ 3½c
Lambs	4½@ 5 c

DRESSED MEATS.

Steers	9 @ 9½c
Cows	8 @ 8½c
Heifers	8 @ 8½c
Veal, large	9½@10½c
Mutton: Wethers	8 @ 9 c
Ewes	7½@ 8 c
Lambs	9½@10½c
Hogs, dressed	10 @10½c

WOOL.

The wool market remains dull, as for some time past, California wool receiving little attention in the East, and local buyers appear to take no interest. Values are nominal as formerly quoted.

Spring Clip—	
Choice Southern, Year's sta-	
Northern, year's staple	14 @16 c
ple	10 @12½c
7 months	8 @11 c
Lambs, spring	8 @10 c
Fall Clip	5 @10 c

HIDES.

The hide market shows a general advance of ½c, and is fairly active in most parts of the country.

Heavy Steers, over 56 lbs	12 c
Medium	11½c
Light Steers, under 48 lbs	11 c
Heavy Cows, over 50 lbs	11 c
Light Cows, 30 to 50 lbs	10 c
Kip	12 c
Veal	16½c
Calf	16½c
Dry—	
Dry Hides	18 @19 c
Dry Bulls	16 c
Dry Kip, 10 to 15	18½@19 c
Dry Veal, 5 to 10	20 c
Dry Calf, 7 down	23½@24 c
Sheep Skins—	
Long Wools	$ 0.85@ 1.25
Medium Wool, 6 to 9 mos	50@ 75c
Short Wool, 3 to 6 mos	30@ 50c
Lambs	35@ 50c

HORSES.

Quite a lot of desirable stock is being auctioned here this week, and local buyers show considerable interest, the general run of prices being within the range quoted. Country prices are unusually high as compared with those in the city, and heavy stock seems to be in demand everywhere at present.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	200@225
Wagon Horses, 1250 to 1350 lbs.	125@175
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	125@200
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

Deciduous Fruit Shipments.

The regular weekly market letter sent out by the California Fruit Distributors at Sacramento dated November 18 states that pear shipments for the week previous had amounted to 2 cars only. The report says: "These pears consist mostly of Easter Beurres with a few small lots of other varieties, which represent the finish of the crop. While it is possible there may be a car or two yet to go forward, it is not probable, and it is expected that this shipment will be the last of this variety for the season."

Of grapes there were shipped 209 cars during the week, and the letter, in discussing these shipments, says: "The varieties now going forward are mostly Emperors with a few Cornichons. Heavy frosts in most localities have destroyed what grapes were on the vines. In a few sheltered places, however, no damage was done, and limited shipments will go forward for a few days yet. It is not likely that the entire shipments from the State, from this time on, will aggregate more than possibly 100 cars, and it may not be as large as this. It is expected that the shipments will be entirely completed during the next seven days."

This week practically closes the heaviest fruit shipping season that California has ever had, and while some money was lost by buyers on grapes and pears, yet as a whole it has been very successful to growers.

Total shipments to Nov, 20, 1911, 12,444 cars. To same date last year, 11,894 cars.

It is reported that the raisins of the Helm Company have been sold to the Phoenix Packing Company at Fresno. The deal involves 350 tons, including all the product of the Helm Company's vineyards proper and enough of the Helm interests outside the company to make up the amount specified. Although there has been no definite price stated, the opinion along Raisin Row is that 4 cents per pound is not wide of the mark. The raisins are now being delivered.

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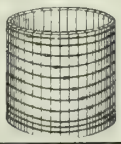
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The new 1911-12 catalogue has been received from the Leonard Coates Nursery Co. of Morganhill, and while the book is not bulky, yet it is very handsome and is filled with information for the planter in compact form. Send to the firm for a copy.

A new book from George W. York & Co., 117 North Jefferson St., Chicago, entitled "First Lessons in Bee-Keeping," has been received. There are but few bee-books that are intended for beginners, but "First Lessons in Bee-Keeping" is just such a book. It contains nearly 200 pages. and is perhaps the most fully illustrated bee-book ever published, for it contains over 150 pictures. Price, postpaid, 50c per copy.

J. F. Costello, of Vacaville, is again advertising his new power sprayer. Last season Mr. Costello sold a number of these machines, and the success they made emboldens the attempt to place many more upon the market this year.

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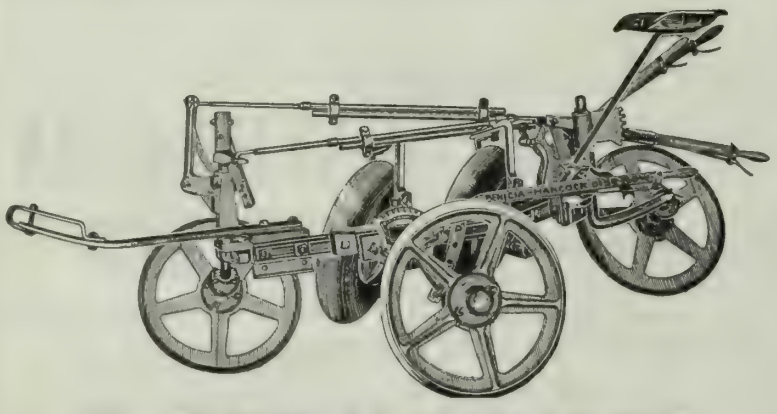
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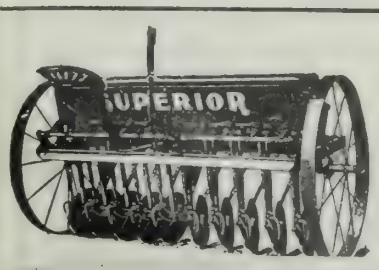
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Farmer's Reflections at a Great Poultry Show.

Written for the PACIFIC RURAL PRESS by T. GREGORY.

I did not count them, but one of the officials informed me there were some twenty-five hundred birds on exhibition at the Alameda County Poultry Association's eighth annual show at Oakland last week. Certainly the largest available hall with two floors was utilized to its fullest capacity, and the crowds that attended had the greatest difficulty getting a look at all the exhibits at one visit, the congested aisles making a couple of visits at least necessary for those interested enough to want to see the whole show. For variety of breeds, possibly no other poultry show in the State can offer such an exhibition; over eighty distinct breeds and colors of chickens, turkeys, ducks and geese being catalogued, besides dozens of varieties of pigeons with peculiar names that only an expert with years of experience could remember, much less recognize.

This Oakland fixture must certainly be tagged the leading and aristocratic gathering of poultrydom in the West. Every bird, whether land or water fowl, showed "class," and to the amateur it was difficult to understand how any of them missed getting first prize. The big entry list prevented most of the leading poultry appliances and feed manufacturers from obtaining space for their exhibits, so that most of those interesting demonstrations of incubator hatching and subsequent handling of the young chicks were missing. Only three or four favored ones secured a small space to exhibit their products, the Cyphers Incubator Company and the Western Feed Company making very creditable displays in the cramped space at their disposal.



Breeding Pens Among the Fruit Trees on Rancho Yojame, Near Napa, Cal.

It is somewhat difficult to define the exact relation of a fancy poultry show to the average farmer, but a farmer without a few chickens around the place has not yet been found, and many of them—if for no other reason than that they look better—are beginning to appreciate an even and symmetrical flock of thoroughbred fowls. All the experts are agreed that "chickens pay," and that many farmers are commencing to give this department of their farming more attention, with a view to making it productive of revenue like the other branches of their business.

Probably no class of farmer is better equipped to try out this than the California orchardist with acres of orchard for the fowls to range; where they will find a good portion of the food they like best and keep the orchard free of insects that may cause damage to the trees, and at the same time fertilize the land.

The experts tell us, however, that to make the poultry department profitable a reasonable amount of care in housing and feeding is necessary, and aside from making a choice of the breed or variety of fowl to adopt—a visit to a poultry show would be of educational value. After walking round you may halt in front of a pen containing a fowl you cannot help admiring; 29 or 30 seconds later you are listening to the owner of that bird giving a most glowing description of the merits of that particular breed as winter layers of the largest eggs at a minimum cost for feed, etc. You take the owner's card and have half decided his breed is the very one adapted to your purposes, when the owner of another variety nails you, and being a faster and more convincing talker, you wonder how you ever considered the first for a moment. And so it goes all round the show room, and the most peculiar fact about these chicken fanciers is that each and every one of them is thoroughly convinced that what he tells you is correct, and he or she has facts and figures at hand to prove it.

There can be no doubt, however, that some breeds of chickens are better adapted for the farm than others, but a little consideration after reaching home of what the breeders and fanciers have told you, and making due allowance for your own leaning toward any particular breed, should help you to make a selection; but do not select any breed you do not thoroughly fancy.

Then, should you want a few pointers on modern feeding to produce a maximum profit at minimum cost, pause for just a moment in front of the poultry supply dealer's display. If you can only assimilate the information fast enough, you should leave the poultry show thoroughly qualified to commence a profitable poultry business forthwith, for, believe me, the poultry feed and supply salesmen can impart more valuable and profitable information in a given time than any other class of salesmen I have met.

Seriously, here is an undoubted profitable side line in an $800,000,000 industry of the country, to which orchardists would do well to give some attention, and, as the fanciers say, it costs no more to feed thoroughbreds than it does to feed scrubs.

Taking the fancier's end, I saw a Buff Orpington hen for which the owner asked $1000, claiming she could readily dispose of this patrician lady hen's eggs for $5 each, while a White Plymouth Rock Cock, judged to be the best male bird in the show, was tagged at the moderate figure of $250. The inability of the latter bird to lay $5 eggs most likely accounts for this apparently low valuation as compared with my lady Orpington. But then these are exceptional specimens, and I was given to understand that in breeding fancy poultry, only comparatively few bred true to feather, shape and other requirements called for by the Standard of Perfection, a recognized work followed by the poultry judges in making their awards. In this way, good thoroughbred stock of tested productive egg strains, that may be a little "off" on feather or other points that decrease their value in the show room, may be bought at very moderate prices.

(*Continued on Page 477.*)

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Nov. 28, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	00	4.12	9.10	60	38
Red Bluff	00	1.59	5.30	72	36
Sacramento	00	.34	3.38	74	40
San Francisco	00	.88	3.85	74	42
San Jose	00	.98	3 00	76	30
Fresno	00	.26	1.95	70	36
Independence	00	.80	1.90	66	24
San Luis Obispo	00	.60	3.40	80	38
Los Angeles	00	1.49	2 17	86	50
San Diego	00	.52	1.29	82	46

The Week.

Returning from the distant East we find California skies as dry as the people are in several of the States we traversed. Having no diploma as a rainmaker and no confidence in our ability even to draw tears from dry eyes, we forbear efforts to bring the refreshing downpour for which most parts of the State are longing—although there are places where rain enough has already fallen to satisfy the needs for early plowing and sowing. While, then, the new season is dallying with its effective opening we indulge farther in reflections born of distant observations.

Cities and Their Environment.

Columbus is a large city, having a population of about two hundred thousand, in a distinctly rural environment. It has therefore to work out some development problems the solution of which will be of wide value. The rush of cities usually is to secure factories and to build population largely on the increase of operatives therein. It is a question whether this is the most desirable basis of growth or the best foundation of municipal prosperity and the higher municipal life. We are inclined to believe that President Soule of the Georgia Agricultural College was correct when he said, in one of the conventions: "It would pay large cities like Columbus more in a financial way to spend money for the betterment of rural sections surrounding them than to expend the same amount in securing three or four large manufacturing institutions." Probably the most obvious thing the towns can do for the country around them is to secure good roads to all parts of their environment. City sentiment has recently advanced considerably in this respect, for there is a wide urban consent to be taxed for good road work when counties undertake it—the leaders in this sentiment agreeing that the cities should build their own streets and in addition bear their share of the cost of street extensions into first-class country highways. Now that city people have a better idea of rural investments than they ever had before, they may be expected to take a deeper interest in rural improvements. This would increase rural and suburban population and increase city trade in lines beyond the usual needs of the factory population. It is undoubtedly true that rural activity and prosperity in its environment will build up manufacturing in the town more safely and surely than the effort for factories merely as such is likely to do it. We saw, as we studied the towns we rolled through, a number of instances of promoted factories in which probably a wheel had never turned. How much better it would have been for such towns if the money had been spent in building roads into their back country. The country needs more population to attain fuller production, and by distributing labor in this way the city will be more prosperous than it can possibly be by concentrating labor as is now the way, with all the attendant turbulence and selfishness of its organizations. Four-fifths of the farms of Ohio are in need of labor, according to A. P. Sandles, secretary of agriculture of that State. If the cities will take an active interest and effort to make the rural districts more attractive for work and residence, they will find that many of their present difficulties will disappear.

Lessening the Hours of Labor.

Wearying somewhat of the academic point of view which teachers naturally take, we sought diversion by listening to other people as they conversed aloud in public places in Columbus. Such conversation clearly showed that the public mind is in a state of fermentation politically and sociologically. Politically, we were surprised that favorite sons of Ohio had so little home support either present or prospective. Insurgency of the New Jersey and Wisconsin types prevailed. Nobody seemed afraid of socialistic ideas—nearly all, however, scouting the proposition of equalization or communization of property. Nationalization of public utilities in transportation, illumination, hydration and finance or control of the functions and of organizations for production and trade, seemed to be favored by all who gave us words to overhear. One bunch of people, who appeared to be employers of labor, agreed that a legal dey's work would in all probability be reduced to six hours, as the eight hour day has so easily prevailed. One man, who was apparently operating a continuously active plant, said he expected to run four shifts of men a 24-hour day, instead of three eight-hour shifts as at present, and the others did not seem to be shocked at the concession; they only understood that they would have to add that more to the selling price of their product. This suggestion returned our thought at once to the proposition which we recently discussed, viz: how is the farmer who does not fit the selling price of his product to live under all the afflictions of increased cost of production which are being thrown upon him, by this prevailing sentiment of socialistic derivation. So far as we can see, there is no help for him except in back-firing. He must organize for legislative, financial and commercial strength, until he can handle his product as other producers do and force the people to pay him all costs of production and a fair profit besides. Everybody expects to do this with everybody but farmers and everybody disregards the farmers because he does not put himself in a position to demand regard as others do. For a generation more perhaps he can retain more or less of the longer hours and a less hour-rate for his laborers. He may do this by very inertia, but ultimately he must do as other producers are being forced to do by labor organizations and the laws which they secure. And this brings us to another point which we recently tried to emphasize: there must be more farmers in our legislatures. No progress is now being made in this direction. Mr. Laylin, master of the Ohio State Grange said in an address at Columbus: "At present there are fewer men in the legislature who are interested in agriculture than ever before; in fact, there is not a farmer in the Ohio senate and only a few in the house, and it is not within the bounds of reason to expect that the efforts of our committee should meet with that consideration which we desire."

And Mr. Laylin is right. Legislatures are supposed to be representative of the people and to reflect the conditions of various classes. A State legislature without farmers can have no agricultural point of view and no agricultural force—and yet radical measures, embodying all other points of view and commanding all other forces, are creating situations which affect farming. It is simply a question of time when the worm will turn—he cannot be crushed, for the world would starve.

Reducing the Cost of Living.

There is one way in which the producer of food supplies fixes the price upon them, and that is when he deals directly with the consumer, or at least with the retail distributer. We will not take time to discuss how hard this is to do: first, because no large producer has time to be a peddler; second, because consumers are, or in these days ought to be, too busy to spend half the day in getting things to eat during the other half—to say nothing about the necessity of making the money to buy them with. However this may be, as a theoretical view, we observed a very interesting fact in the city of Columbus—to wit: direct trade in actual progress. They have started market days in some of our California towns, but they are a poor imitation of the real article, because most of the buyers insist on home delivery by the seller, just as they do when they buy at stores, and the seller has to consider that fact in making his price, and thus one of the demons of the high cost of living enters. In Columbus it is not so. We counted on one of the prominent corners in the business section over one hundred women carrying large market baskets—not reticules or string bags or other containers into which you might get a pound of candy and a box of hairpins, perhaps—but good large and strong baskets into which you could put half a bushel of potatoes and top off with a turkey, a bundle of celery and a nickel's worth of soup vegetables, with a total weight, we should judge, of forty to fifty pounds. This was direct trade in action, and when a dozen or so of these heavy freighters were struggling to get aboard a pay-as-you-enter trolley car through the narrow entrance pertaining thereto, it was fun for the visitor, you may be sure. However, it works, just the same, and the cost of living is surely reduced in each of the families to which those foraging females belong. Whether the saving is worth the effort, we do not undertake to determine. The method is, however, stirring provisioning circles in Columbus, for we read carefully a long advertisement by a city grocer in which he claims that he can afford to give seven days' food for a family for the usual cost of six days' food—if the customer will pay cash and carry the goods away. And he uses this significant paragraph: "I don't want half of my customers paying the bad bills of the other half; and I don't want some of them who come for their groceries paying the delivery bills for those people who telephone for every nickel's worth they buy and order it sent over right away. Some people have the idea that the grocer pays for that horse and wagon, for the man who drives it, and for repairs. Wrong. The customer pays it all;

the groceryman just tacks it onto the stuff you buy, and you pay for it whether you have your goods delivered or not."

For this reason he prefers to divide the savings of his cash-and-carry trade with his customers, giving them a quarter of it, perhaps; for we are not looking for wings on the backs of even repentant grocers. But his confession that all costs are added to the selling price gives us a chance to say once again that this is always done by everybody but the farmer.

Opportunities for Women.

Naturally there were in the labyrinth of conventions which we threaded at Columbus some things which have a bearing upon feminine opportunities which, in view of California's advanced standing therein, may have particular local interest and importance. For example, at one of the meetings, United States Commissioner of Education Philander H. Claxton of Washington, D. C., addressed the College club of young women on what he believed to be the duty of the girls in life. "Educated women have the time, means and knowledge to teach people how to live," he explained. "Modern machinery and invention leave them little to do in keeping a home, and they ought to use their leisure time in rearing decent, healthy and moral boys and girls. Men, because it makes money, raise fine specimens of wheat, horses and cows. It remains with the women to rear perfect boys and girls, and it's about the last thing that anyone now tries to do. The duty of the college-bred woman is to be the servant of all, because of her knowledge and leisure. She should build a new society and use the real freedom which has come to her. It was Bernard Shaw who said, 'Men look after things; women look after life and living.'"

We take this to be an instance of prophetic vision, based upon the anticipated attainments of the new domestic science and home economies which is being so strongly promoted as a branch of public-chool education. What will come of it, each must try to determine for herself, but it seems clear enough that the home-slavery of women is passing, and their home-opportunity is dawning. Just what will be the various features of this opportunity cannot be now discerned. There will be evolution based upon experience, no doubt. Mr. Claxton anticipates a notable betterment of men and women because the latter will have the training and the leisure for it, as cooking, washing, house-cleaning, and the like, are accomplished by steam, electricity, radio-activity, and new agencies we still wot not of. Other social prophets see other things, as, for instance, the claim that the old-fashioned mother is out of date, according to Professor Zueblin of the University of Chicago, who urges women to desert the fireside to help social and political progress. We do not know what will come of it all, but this much seems sure: California will be second to no State in favoring environment to work out the problems. In no State or country have the women as a class been so free from household drudgery; in none is their intellectual average so high; in none is there such widespread leisure resulting from prosperity in all classes. And now there comes the right to vote to those who are better fitted to use that right than the women of any commonwealth previously enfranchised. California bids fair to be the field where many advanced problems will be worked out for the welfare of humanity.

The Social Function of the Country Schoolhouse.

Nearly all country life reformers are proclaiming the advantage of the schoolhouse as a social assembly place. They do not seem to know that this is a rejuvenescence and not a new idea or fact. They have probably been born since the days when the old log schoolhouse was really the social center of the rural life of their grandfathers. When the new schoolhouse of frame, lath and plaster came in, it was so grand a thing that the community stood in awe of it, and decided that it should be held inviolably sacred as a temple of learning. About the same time denominationalism invaded rural communities, multiplied structures which were cold, dark and desolate on all days and nights of the week but one, and promoted also a chilly exclusiveness among the people. The young people were largely denied the natural pleasures of social assemblies because all public buildings were consecrated to higher uses. The farmhouse was open to visiting, of course, but only enduring young men could wait for a single word of joy until after the old people had been talked to bed and the small brother had been wheedled away in the same direction by specious promises. None but determined young people would pursue bliss over such a rocky road; others left the farm, preferring to make a living in village kitchens or behind the counters of village stores, bringing up finally in considerable numbers in the darkest places of great cities. On the basis of such facts, and attributing them largely to the absence from the countryside of places of social assembly, the reformers are demanding that the schoolhouses and churches shall be restored to their former social services. The same claim is being made for villages, especially where organized effort is being made to keep the young people off the streets and away from the saloons, by vigilance committees of women. One of these women is said in a recent book on the subject to have reported to her committee:

"They won't set home, an' when we've vigilanced 'em off the streets, where are we goin' to vigilance 'em to?"

Another committee woman had an inspiration:

"Give 'em the place that's theirs," she says. "Give 'em the schoolhouse, open evenin's an' lit an' het an' music an' things doing."

And yet some people claim to doubt the ability of women to settle social problems!

Queries and Replies.

Horse Beans and Field Peas.

To the Editor: Please advise me if horse beans and field peas could be drilled in after the first good rain without previous preparation of the soil, with any chance of a crop, in the San Ramon valley, either on flat or hillside. The land is adobe and will not permit plowing if the rains are very heavy. I also desire to get the crop in as early as practicable, in order to have forage for hogs as early in the spring as possible. What is the best variety of field pea for forage crop under these conditions?—H., San Francisco.

Who has secured anything worth while in this way? Our notion is that, on a free loam, with the rains coming along just right, there might be a good cover, but on adobe liable to be either water-soaked or baked hard, or both at different times, one should not expect much by early spring. In fact, more could probably be had by waiting until February and getting the soil into good condition before sowing. We do not know which pea could be grown as our correspondent proposes with least loss of time and seed.

Working on Myrabolan.

To the Editor: Will you kindly inform me regarding the myrabolan root to bud on? I wish to bud from certain trees that nurseries probably do not carry, as it came from a seedling. Is there more than one variety of myrabolan used, and if so, is one as good as another? If I take sprouts that come up where the roots have been cut, will they make good trees? I have tried a few, now three years old, and the trees are doing nicely so far, but the roots sprout up where cut. I am informed that if I can raise them from slips they will not sprout up from the root. Would you advise using the sprouts from roots that have been cut, to bud on where they have come up from trees grafted to apricots? Will apricots and peaches grafted or budded on myrabolan produce fruit as large as they will if grafted on their own stock?—Grower, Solano county.

We would not use a root sprout. We are not aware that the matter has been scientifically demonstrated, but experience seems to be clear that from sprouts you will get sprouts. We would prefer cuttings to sprouts, but even these are abandoned for seedling roots of the common deciduous fruits and of citrus fruits also. The apricot does well enough on the myrabolan if the soil needs that root; they are usually larger on the peach root or on apricot seedlings. The peach, so far as we know, is no longer worked on the myrabolan in this State. One seedling of the cherry plum is about as good a myrabolan as another.

Citrus Fruites and Temperatures.

To the Editor: Would four feet of good loose soil be enough for lemons? What is the lowest temperature at which grapefruit and lemons will succeed?—Tenderfoot, Fresno county.

Four feet of good soil, providing the underlying strata are not charged with alkali, would give you a good growth of lemon trees if moisture was regularly present in about the right quantity, neither too much nor too little, and the temperature conditions were favorable to the success of this tree, which will not stand as much frost as the orange. Grapefruit is about as hardy as the orange. The fruit will be injured by temperature at the ordinary freezing point if continued for some little time, and the tree itself is likely to be considerably injured by a temperature of 25 or 27° if continued for a few hours. The matter of duration of a low temperature is perhaps quite as important as the degree which is actually reached by the thermometer.

Budding Oranges and Apples.

To the Editor: Will you please advise me why young apple plants in the seed bed become mildewed? They are in a lath house. How late in the fall can budding of orange trees be done—plants that are two years old? Does the rain hurt the budding, and what advantage, if any, is late budding? Can you tell me what to do with some old trees that were budded about two months ago and are still green but not sprouted yet? The budding was done on young shoots. What is the best time to bud apples?—Subscriber, La Canada.

The apple seedlings mildewed because too much moisture was associated with too much shade. More sunshine would have prevented it, and if they had enjoyed it they could have made better use of the water probably. Late budding of the orange can be done as late as the bark will slip well; usually, however, not quite so late as this. Such buds are preferred because in the experience of most people they make stronger growth than those put in in the spring. Such buds are not expected to grow until the lowest temperatures of the winter are over. The buds which you speak of as green but still dormant are doing just what they ought to do. They will start when they get ready. Apples are budded in July and August and remain dormant until the following spring.

California and the World's Raisin Trade.

More than 1 million dollars' worth of raisins were exported from the United States in the last fiscal year, the quantity, 18½ million pounds, being far in excess of the total exported in any earlier year. The imports during the year amounted to only 2½ million pounds, against 10 million pounds in 1900 and as high as 50 million pounds in certain years prior to the development of production in the United States. Comparing 1911 with 1900, the figures of the Bureau of Statistics, Department of Commerce and Labor, show that exports grew from 2½ million pounds to over 18½ million pounds, and value from $140,000 to $1,069,000. During the same period imports of raisins fell from 10⅓ million pounds in 1900 to 2½ million in 1911, and their value from $531,000 to $237,000. The largest exportation of raisins recorded in any year prior to 1911 was that of 1907, a little over 9 million pounds, or less than half that of 1911, while the largest importation of raisins on record is that of 1884, when a total of 54 million pounds entered the country, as against but 2½ million pounds in the fiscal year 1911.

Canada is by far the largest market for American raisins exported, the exports thereto in the fiscal year 1911 having been 11 million pounds, compared with less than three million to New Zealand, about 1 million each to England and Germany, and 3 million pounds to all other parts of the world. Of the 2½ million pounds imported last year, Spain, England, Asiatic Russia, and Asiatic Turkey were the chief sources, the first named country being credited with over 1 million pounds, and the others less than a half million pounds each. These figures contrast with those of 1884, when of nearly 54 million pounds of raisins imported, Spain was credited with 47½ million pounds; England 3½ million, and Italy nearly 2 million pounds.

The marked falling off in importations of raisins is the result of the rapid increase in domestic production, which first attained commercial importance in the early seventies. The American raisin industry had its beginning in the great San Joaquin valley and certain counties of southern California, which is still the chief producing area in the United States. In 1873 the California crop was but 120,000 pounds; by 1880 it had grown to 1,500,000 pounds; by 1890, 38,000,000 pounds; by 1900, to 90,000,000 pounds, and in the later years has risen as high as 140,000,000 pounds in 1907 and 1909, and fallen as low as 75,000,000 pounds in 1904, the figure for 1910 being 112,000,000 pounds. These figures of production are supplied by Mr. George Robertson, statistician of the California Board of Agriculture, and are here quoted in the absence of official data covering the production in the United States as a whole.

The effect of domestic production upon imports and exports of raisins is clearly set forth in the figures which follow:

Period.	Av. annual. *production. Million lbs.	Av. annual importation. Million lbs.	Av. annual exportation. Million lbs.
1873-1881....	0.78	35.3	....
1882-1891....	17.70	41.9	....
1892-1901....	81.20	12.7	†3.4
1902-1910....	111.66	6.7	5.9
1911	No data	2.5	18.7

*California crop only. †1898-1901.

While these figures suggest a growing consumption of raisins in the United States, the per capita consumption is still but one-third as large as in the United Kingdom, Mr. George Robertson, the statistician above mentioned being authority for the statement that the per capita consumption of raisins in the United States in 1910 was but 1½ pounds, compared with 5 pounds in the United Kingdom. Dr. Josiah Oldfield, D. C. L., Oxford, places raisins first among all known foods and superior to grapes, "because the sugar has been thoroughly matured and ripened and transformed ready for digestion."

The year 1910 was one of short production of raisins throughout the world. In 1909, when conditions were normal, four leading sources produced 333,000 long tons, of which Greek currants represented 185,000 tons; California raisins, 70,000; Turkish Sultanas, 50,000 tons, and Spain, 28,000. Australia's product is mostly consumed in the home market, but the output is increasing.

ALFALFA IN THE ORANGE ORCHARD.

Burle J. Jones, formerly of California, but for several years in charge of experimental work with the orange in Arizona, writes for the Progressive Farmer of that State his observations on growing alfalfa in the citrus orchard: This plan of putting the groves to alfalfa has been recommended by the experts of the University for some years, and results from a considerable and very careful survey of the situation. It is not desirable that the alfalfa should be planted while the trees are young, as it forages too vigorously for their good, but it has shown itself to be a very satisfactory thing among older trees that are well rooted and that carry a sufficient top to shade the ground about their stems. This does not mean that any other fertilizer may be disregarded. On the other hand, it should be the rule to give one or two good applications of commercial fertilizer a year. This may be sown on top of the alfalfa and worked into the soil with a disc or alfalfa renovator and will be found very beneficial. In putting the groves to a permanent crop of this sort it is desirable to put in as few borders as possible and to make them as low and inconspicuous as possible. Generally one to each tree row is sufficient. These may be made directly in the tree row, and if the lands be graded perfectly between them they may be made low and flat so that a mower can be run over them perfectly, thus making it possible to keep the grove clean and tidy with a maximum expense. This is a matter that all growers would do well to look into with reference to the various methods that have already been tried, and also with reference to the general thrift and crop results of groves that have been so planted as compared with those where clean culture is practiced during the summer. If only a winter cover crop is planted it may be sown to advantage between borders and irrigated by the same method as alfalfa.

CITRUS FIGURES FOR THE YEAR.

Although we have previously given some of the interesting figures prepared by B. A. Woodford, general manager of the California Fruit Growers' Exchange, for the annual meeting of the Association, there are other points included in the following statement: The report shows that the returns for this season's crop will aggregate $33,737,000. The crop for both oranges and lemons was by far the largest in the history of the business.

Because of the recent fight made by New York importers to have the duty on citrus fruits entirely wiped out or greatly reduced, which would mean ruin to California's greatest industry, the figures compiled by the Exchange show the vital importance of this industry to the State.

This year the Exchange handled 10,842,831 boxes of citrus fruits, for which the growers received a total sum of $20,579,560. This is an average of a little more than $1.89 per box. There were 28,123 cars used in the transportation of the fruit.

The increase for this year over that of last year is 43%. Last year the number of cars used was 19,639. The boxes numbered 7,578,801. The number of boxes is more than double that of the seasons of 1905 and 1906.

More than 61% of the total crop of the State was handled by the California Fruit Growers' Exchange, which shows the great volume of business transacted by the association for the benefit of the growers. The Exchange has marketed all the fruit at the low cost of 6½ cents per box, which is ½ cent less than that of last year. More money has been spent for advertising this season, the sum of $150,000 having been devoted to the purpose; this is ½ cent per box more than that of last season.

Estimating the freight rate at 84 cents per box, the Exchange has paid the railroads this season $9,107,998. For the entire crop in the State it is estimated the total amount paid to the railroads is $15,000,000.

TRANSPLANTING OLD ORANGE TREES.

E. L. Koethen of Riverside tells the Fruit World of his success in moving some of the oldest orange trees in the Riverside district: During the present summer we have had occasion to clear ground for some street extension and widening. The trees involved were among the oldest trees in this section; over 35 years old. They had been seedlings budded about fifteen years ago. The trunks were large and heavy—so heavy that in order to make them light enough to handle, about the whole root system had to be removed, except that portion immediately under the trunk. As they looked when moving them they reminded us of the Stringfellow method of transplanting. We cut off all the foliage except just a few leaves to indicate the amount of wilt we were going to have—say not over a dozen leaves to each tree. They were so heavy, even then, that we were compelled to devise a way of loading the tree onto a pair of wagon wheels on an axle, and then it was a good load for one horse to haul it to the hole already prepared for its occupancy.

We moved about fifteen of these monsters at dates ranging from the middle of June to the last of August, and out of the whole lot there is but one left that has not already put out a very encouraging growth. We will now see that they are kept growing throughout the fall, and wrap them carefully to protect them from possible frosts. Our experience with such trees is that they will outgrow small trees very fast, and be large bearing trees long before the small ones would amount to much. This is especially the case where they are planted where they are among old bearing trees.

We have seen such trees stand until the spring following their planting without leafing out, and yet make rapid growth and good bearing trees.

BORDEAUX FOR ROOT-DIPPING.

To the Editor: In the treatment of young trees before setting out, would an immersion in bordeaux hurt them before planting? Borers were very bad with us last year, and I am inclined to believe that some of the stock was affected before receipt. It is my idea to make up a mixture of six pounds of lime and six of bluestone with fifty gallons of water, and dip the trees, roots and all.

How about it? SUBSCRIBER.

Lincoln.

[It will not hurt the trees nor the borers either. It may knock some fungus, but it is not an insecticide.—EDITOR.]

RESULTS OF STANDARDIZATION OF FRUIT IN PLACER COUNTY.

In view of the work of organizing the fruit growers in Placer county, now under way, by J. W. Jeffrey, the following letter by H. E. Butler of Penryn, in the Placer Republican, is of interest, showing as it does the work already accomplished:

Placer county has standardized her pack of fresh deciduous fruit for interstate shipment. In other words, has put her pack on an honest basis. Have buyers discovered it?

The trade has handled "stove-piped" potatoes and speckled apples below the first layer in the barrel so long that it may be slow in realizing that a whole shipping district has voluntarily become honest and accomplished what cities and States have attempted by passage of laws and regulations.

In Placer county this was made possible by the co-operation of all shippers, buyers, and growers' organizations throughout the county. After the first experiment of the five years, the movement was continued for 1911 with the same unanimity.

Ninety-five per cent of Placer county's deciduous fruit, except that sold to canners, is marketed fresh in interstate shipments. The annual output of the county is about three thousand cars.

Standard pack originated here, at a mass meeting before the opening of the 1910 shipping season. The committee of fifteen, selected at that time, was made up of seven shippers and eight practical and successful growers. This committee was probably as well qualified to prepare standard rules for packing of fresh fruit as could have been gotten together. Its members were experienced in the growing and packing of fruit, and its marketing wherever California fruit is offered for sale. Practical methods and trade requirements were well known to these men. So well were the rules and regulations prepared, few, if any, changes have been found necessary in the two seasons they have been in use.

At any time, during the season just passed, if a representative of Eastern buyers had visited the principal shipping points in Placer county, he would have observed a corps of inspectors working from one shipping house to another, carefully examining the various lots of fruit ready for shipment. He would have seen occasional lots marked by these men as rejected and below standard, and such lots trucked aside, separated from the fruit for interstate shipment. These inspectors were employed and paid by the growers and shippers' association of the county, and were all practical and experienced fruit packers, well qualified to interpret and apply the standard rules. They were also deputies of the County Horticultural Commissioner.

At the close of this second season, the question is being asked, "Has the trade seen the result of Placer's effort to standardize her pack?"

This year the daily reports from the auction rooms of New York, Boston, Montreal and other places have read: "Placer county peaches averaged ——; others ——," with the former invariably higher—often the difference being equal to the cost of production. Had standardizing the pack anything to do with this?

Placer county growers have standardized their pack of fruit and tried the experiment two years. Their rules provide that fruit of every kind, offered for interstate shipment, must be well matured and fit to be eaten fresh, honestly packed throughout the box, basket, or carrier, and correctly labeled as to contents.

The movement is one of policy, of course. Marketing immature, undersized fresh fruit ahead of others was a temptation to which growers had yielded since fruit was first grown, and prices obtained for such early stuff often seemed to justify the practice. Later shipments suffered as a result, however, and from such experience growers and shippers alike saw the wisdom of a standard pack.

There is more than the direct financial gain in it: the satisfaction to be had from handling first class goods, honestly packed, and the development of the district which attains a reputation for a high standard of products, are to be considered.

It will be interesting to see if Placer county can maintain its high standard and honest pack. Only unexpected influences can affect it, for the support of the movement has been so general that the experiment has worked out in practice beyond reasonable expectations.

Studying Split Oranges.

Edward O. Amundsen, a senior in the University College of Agriculture at Berkeley, is making a study of splitting of oranges upon which to prepare a graduation thesis, and has recently been making observations in the Fair Oaks region of Sacramento, where he was caught by a writer for the Fair Oaks Citizen and led into talk of what he was seeing.

This question has been studied by University experts in southern California for several years, and an outline of conclusions was given by Dr. J. Elliot Coit in his paper at the Pomona Convention of Fruitgrowers on "The Relation of a Sexual or Bud-Mutation to the Decadence of California Citrus Orchards." It is generally believed that one cause of splitting is irregular sap flow, due to uneven irrigation. When there is a short supply of water, the outer cells of the orange become hardened and the growth becomes slower than those of the interior of the orange. This interior growth causes a split of the orange at the navel end or on the side where the peel is thinnest. It is also thought that the different degrees of humidity in the air may contribute in some degree to the splits. Dr. Coit concludes that the cause lies deeper than these contributory sources. He claims that the primary cause is in the imperfections of the skin and variations in its thickness. The remedy lies, according to Dr. Coit, in a careful selection of bud wood by which we may eliminate undesirable types of fruit. There is no doubt that this conclusion is, in a large degree, correct. We have many imperfections in the navel orange and many variations in a typical navel tree which are directly chargeable to improper bud selection. Budding wood has too often been chosen, not because of the quality of fruit the tree produces, but because of the vigor of the bud, and the most vigorous bud is found on suckers or water sprouts. Realizing the importance of bud selection, all our leading nurserymen are giving careful attention to this matter.

Observations at Fair Oaks.—Under the supervision of Prof. W. T. Horne of the University, Mr. Amundsen has been conducting investigations along the line of fluctuations in irrigation, or, more accurately, in variations in the supply of moisture. The supply of moisture depends upon soil conditions as well as upon the amount of water. He noted that the split oranges on the outside of the tree were usually at the extreme end of the branch, and that those on the inside of the tree were also on the terminals or lateral branches. He thinks that a scanty supply of moisture could not be carried to all the fruit and that those oranges most remote and on slender twigs would be most likely to lack moisture. He claimed that the lateral twig would not receive much moisture, since the main branch would use most of it. The data collected seemed to point to the correctness of this theory. Some oranges were split which were not thus located. This, however, might be due to the same cause, since there might be some physical condition of a twig which might partly arrest a feeble flow of moisture.

Other Observations.—The Citizen also reports that some other observations were made since Mr. Amundsen's visit, looking more at the general character of the orange grove. It was noticed very uniformly, that all the trees that had deep soil, good cultivation, and were well fertilized had a very low per cent of splits, often less than one per cent. Indeed, many trees were found heavily laden with fruit with few splits. One grove of ten acres or more had less than one per cent of splits. This grove has been liberally fertilized, and during the present season has been cared for by the clock, every irrigation at regular intervals, and evenly distributed, and where the soil gave evidence of little variations in quality and depth the trees had a very uniform appearance. Another grove of five acres which is some three years older, but which was planted by the same hand that has cared for it ever since, showed so few splits that they might be neglected in estimating the crop. The whole of no grove was examined, but portions taken so as to get a good estimate, and on these the conclusions taken. Five of the best cultivated orange groves were examined, and in all of these the number of splits fell below one per cent, except in one case. And in this case the evidence was quite conclusive that the fault was not a cultural one, but a soil condition. These investigations will be continued in Fair Oaks, and sub-soil examination made where splits are in greater numbers. In this case 5 per cent of splits were counted, while all the fine-looking trees did not show one per cent. If an orange tree has plenty of root room for the gradual expansion of its root system, and a soil deep enough to keep on depositing an abundance of soil moisture and plant food and a careful cultivation, we may expect fewer splits, especially if our trees have come from carefully selected budded stock. Bud selection is fundamental.

Thrips Theory.—Some have thought that thrips may be a contributory cause of splits. It cannot be shown that the orange thrips (Euthrips citri) contribute in any way to this trouble. Besides, at Fair Oaks no orange thrips are found. They have thrips in some orchards in large numbers, but they are comparatively harmless thing and belong to the grain thrips (Euthrips tritici). All they do is to scar oranges in spots, and where they are quite numerous they simply injure the appearance of the fruit without seriously injuring it. These thrips may be seen in blossoms at all seasons. The true orange thrips do more damage to the young trees and tender foliage and injure the young fruit, scabbing the ripe fruit. The grain thrips have not yet done much injury to the fruit.

Other insects are always to be found on split oranges, such as feed on decaying fruit or suck the juice from the exposed pulp. There is at present quite a number of the alfalfa insects which are so destructive to the seeding of alfalfa. This is a much larger insect than most found feeding on the split fruit. The grain thrips are found inside of the opening of the orange splits.

THE CENSUS AND CITRUS FRUITS.

It is announced from Washington that a preliminary statement giving statistics of the orange and lemon crops in California and Florida, the two principal States of production, as reported for the Thirteenth United States Census, has been issued by Director Durand of the Bureau of the Census of the Department of Commerce and Labor. It includes a summary giving the number of trees, of both kinds, of bearing and non-bearing age, on farms on April 15, 1910, together with the number of boxes produced and the value thereof in 1909. It was prepared under the direction of Dr. Le Grand Powers, chief statistician for agriculture, Bureau of the Census.

The Census Bureau calls attention to the fact that the number of trees reported in 1910 is not altogether comparable with the figures reported in 1900. In the latter year the trees reported as of bearing age undoubtedly included a considerable number not of bearing age. In the census of 1910 the difficulty was eliminated, as both the number of trees of bearing age and those not of bearing age were called for by the schedule. Moreover, the orange and lemon growers of Florida had not in 1900 recovered from the damage by frost inflicted a few years earlier, resulting in a crop less than half as great as in 1890.

California Orange Crop, 1909 and 1899.—The orange crop of California made a gain of 145.4% during the decade between 1899 and 1909, increasing from 5,882,000 boxes in 1899 to 14,436,000 boxes in 1909. During the same period of time the number of trees of bearing age increased from 5,649,000 to 6,616,000, or 17.1%. There were also in 1910, 2,093,000 trees of non-bearing age. In 1909 the average product per tree was 2.2 boxes. With respect to quantity of fruit, San Bernardino county rose from third rank in 1899 to first in 1909. In 1899 Los Angeles county ranked first and Riverside county second.

The value of the oranges produced in 1909 was $12,952,000, an average of 90 cents per box.

California Lemon Crop, 1909 and 1899.—The lemon crop increased from 874,000 boxes in 1899 to 2,716,000 boxes in 1909, a gain of 1,842,000 boxes or 210.7%, although for the same period the reported number of trees of bearing age decreased from 1,493,000 to 927,000, or 38%. The number of trees of non-bearing age in 1910 was 377,000. The number of boxes per tree in 1909 was 2.9; in 1899 it was just under three-fifths of one box. The value in 1903 was $2,926,000, or $1.08 per box.

Florida Orange Crop, 1909 and 1899.—The production of oranges in Florida increased from 273,000 boxes in 1899 to 4,853,000 boxes in 1909, a sixteen-fold gain. The number of trees of bearing age was 2,553,000 in 1900 and 2,751,000 in 1910, an increase of 7.8%. The number of trees of non-bearing age in 1910 was 1,098,000. The value in 1909 was $4,305,000, or $1.11 per box.

Florida Lemon Crop, 1909 and 1899.—The lemon crop increased from 2359 boxes in 1899 to 12,367 boxes in 1909, a gain of 10,008 boxes, a four-fold gain. The number of trees of bearing age reported decreased from 22,691 in 1900 to 11,740 in 1910, or almost one-half. The number of trees of non-bearing age in 1910 was 7329. The value of the lemon crop in 1910 was $13,753.

First Convention of California Nurserymen's Association.

A new organization effected during the San Jose meeting of the Pacific Coast Nurserymen's Association is the California Association of Nurserymen, which held its first convention in Los Angeles. This association, by which the propagators of standard and new varieties of trees, fruits and flowers will undertake to cheer on their important work, and possibly to protect it, if need be, bids fair to assume large membership and influence in the horticulture of the State. It will assume naturally the nurserymen's point of view and he helpful to the craft, but still the work of the nurseryman so clearly underlies planting and production that it is evident that an organization which enables those engaged in growing trees to bring their enterprise to a higher state of intelligence, wisdom and prosperity will render a distinguished public service. Therefore we are glad to state that the convention was notably successful, that something more than 150 nurserymen of California took part in the assemblies and were so appreciative of the work of the officers who produced the first convention that they re-elected them for the ensuing year. The purposes of the association, which have already been published in full in our columns, were thus ratified and demonstrated to be capable of realization.

The convention was held in the spacious assembly hall of the Los Angeles Chamber of Commerce, and President W. V. Eberly conducted the meetings very skilfully.

The welcoming address was delivered at the opening session on Thursday, November 23, by Thomas Chisholm of Pasadena, and was responded to by George Roeding of Fresno. The latter has the distinction of being the "father" of the association. He introduced the fig industry in California and has written many text books on plant and tree life. Mr. Roeding remarked the development of the fruit industry in California and congratulated those present on the strength and growth of the organization.

On Thursday afternoon W. P. Weber of San Fernando read an instructive paper on "Regulation and Stability of Prices."

Other speakers were: P. A. Dix of Roy, Utah; J. W. Jeffrey, former State Horticultural Commissioner; C. B. Messenger, editor of the California Cultivator; Fred H. Howard of Los Angeles; E. Wrightman of Chicago, Alexander Kirkman of Fresno, Max Crow of Gilroy, W. S. Marshall of Fresno, T. D. Robertson of Santa Ana, Leonard Coates of Morganhill, R. W. Teague of San Dimas and W. R. Wood of Los Angeles.

Phillip D. Wilson, general manager of the Pacific Land and Products Exposition, read a paper entitled "Exhibiting a Business Proposition." Members of the association fell in readily with Wilson's suggestion for an exhibit at the Land Show. The nurserymen will be one of the largest class of exhibitors, insuring exhibits of rare and tropical plants and flowers such as are seldom seen outside of nurseries.

On Friday particular attention was given to the desirability of passing the bill now before Congress for the establishment of a national horticulture quarantine and inspection law. Stirring speeches were made by George C. Roeding, S. A. Pease, Frederick Maskew and others. "This association should give its hearty indorsement to this bill," said Mr. Roeding. The people in this country cannot ship an infected tree into Europe. Why should we be forced to handle imported trees that are covered with scale and other pests? More than $1,000,000 has already been spent in New England in an effort to eradicate the gypsy moth and the brown-tailed moth. If we had had Federal quarantine this pest might have been destroyed long ago. California has proved to be one of the greatest fruit countries in the world, her annual income from various fruits amounting to more than $150,000,000. California, of all States, needs the protection of the government along this particular line."

"State and County Quarantine," was the subject of an address by William Wood, Deputy County Horticultural Commissioner. The speaker said that all shipments cannot be properly inspected because of the fact that there is no proper quarantine station. The best manner so far discovered, he said, is to fumigate the trees at the points where they are delivered, but even this plan does not prevent the spread of scale and other pests. He said that quarantine stations should be established at San Francisco and here.

P. T. Barnhart made a plea for a more general distribution of literature describing the life and habits of the various tree-destroying insects.

John S. Armstrong of Ontario gave statistics showing that many of the best fruits of California thrive better in this State than in tropical climates. He said that no finer plums and oranges are to be found anywhere than are grown in California and that the loquat and guava reach perfection here. The alligator pear and the mango, he said, are fast coming to the front as California products.

Other speakers at the morning session were Stephen Strong, Jacob Dietrich, D. W. Coolidge, E. H. Rust, F. H. Howard and C. E. Howland.

On Friday afternoon the leading paper was by John Vallance, vice-president of the Pacific Coast Association of Nurserymen, as follows:

MR. VALLANCE'S PAPER.—Mr. Kruckeburg, our secretary, kindly asked me to read a paper on the nursery business in California. It was with misgivings and apprehensions that I gave a rather reluctant consent, because it is no easy matter to write on this subject, to an intelligent body of nurserymen in convention assembled. Nnowing, however, at least hoping that I would not have a hypercritical audience, I decided to make a venture, and shall entitle said paper, "New Trees and Plants Introduced During the Last Quarter of a Century or More in California."

Having been for twenty-five years resident in this beautiful State of California, whose shores are lapped by that great Pacific ocean, I may be able to tell you something that may be of interest.

The first introduction or creation (the latter term seems to have found great favor with introducers the last few years, though I do not like it myself) that I remember, and that has stood the test of time, is the "P. Barry" Pear, raised by the late B. S. Fox of San Jose. This has now become a world wide variety. I see it catalogued by English and Australian nurserymen. I handled the product of this variety for many years in the Fox orchards in San Jose, and can say that it is the best late shipping pear we have today, being a far more regular and heavy bearer than the Winter Nelis, which up to the advent of the "P. Barry" was the leading late shipping variety. The "P. Barry" is a very russet, long pear, yielding annually very heavy crops of excellent shipping pears, ripening from December to February.

The late B. S. Fox also introduced the "B. S. Fox" and "Col. Wilder" pear.





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WEST INDIA GARDENS

Altadena, California.

These two latter varieties have not, however, been such acquisitions as the "P. Barry." In this connection, in looking over an Australian catalogue, I see the "P. Barry" is credited to France. This, of course, we all know is an error.

About this time or a little earlier, the late Mr. Hatch introduced his now famous paper-shell varieties of almonds. What these introductions have done for the almond growers, and for our State at large, it is hardly necessary for me to mention, as you all know their superior qualities. The IXL, Nonpareil and Ne Plus Ultra have revolutionized almond growing in California. These three varieties, as well as others that I shall comment upon later, have been introduced wherever almonds can be grown.

The Drake's Seedling, another fine California variety, has also become a standard sort. The Peerless, a popular variety in Yolo county, I cannot determine whether this is a California seedling or not, because in looking over an Australian nurseryman's catalogue, I find the "Peerless" almond catalogued there. The description says that this variety was raised by a Mr. Wides Payneham, South Australia. Whether this variety is identical with the Yolo county Peerless I am unable to tell. I am inclined to think, however, it is a different sort, because the description of the Australian "Peerless" says, "the shell is easily broken between the fingers," whereas the Yolo county Peerless has quite a hard shell.

In passing from this, I would say that I think in future we should catalogue the IXL, Nonpareil and Ne Plus Ultra as the "Hatch IXL," "Hatch Nonpareil" and "Hatch Ne Plus Ultra." It would be a mark of appreciation for the great work the late Mr. Hatch has done for horticulture in California. I believe in giving credit where credit is due, and any one man who can introduce one, two, three or four sterling new varieties of any kind of fruit or nut, is, in my estimation, deserving to be remembered by succeeding generations.

The Drake's Seedling, introduced by Mr. Drake of Suisun, is another standard California introduction. Lewelling's Prolific, raised by the late Mr. Seth Lewelling, a variety planted extensively in earlier days, still stands the test of time. I think I have mentioned the best tested, true and trustworthy almonds of California origin.

In no other part of the world does the apricot do as well as it does here. In fact, California leads the world. In this connection I would like to say that some of the varieties grown here are of English origin. One, in particular, I would like to mention, and that is the Blenheim. It is, according to my views, the best apricot. I observed it twenty-five years ago and predicted a great future for it.

To come down to California introductions, however, I mention the Newcastle, introduced by C. M. Silva & Son, valuable chiefly, I believe, on on account of its earliness, thus making it a good shipping variety. We have also as California introductions, the Routier, very popular in Sacramento and San Joaquin counties; Spark's Mammoth, popular in Ventura county; Tilton, popular in Hanford county, and perhaps I may add Blenheim, popular in Santa Clara and Alameda county.

I hope that we will have a discussion on these varieties that I have just mentioned, as no doubt some of the attending nurserymen can give us their opinions on the Tilton, Routier and Spark's Mammoth. If these are better varieties than the Blenheim, I would like to know.

New introductions in peaches of California origin have been rather limited, in my day, but I cannot pass some very excellent varieties on that account, as I wish to make this, as far as possible, a complete record.

The first in importance in freestones is the Muir, followed by the Lovell. Both were raised by Mr. G. W. Thissell of Winters. What these sorts are I need hardly tell this body of nurserymen, so well known are they. They certainly have done much to advance the dried fruit industry in California. Before their advent I don't know what they had in the peach line suitable for drying. These varieties, as you all know, dry away less than any other sort, and are of excellent flavor after dried. Some claim that the Muir is identical with Wager, but I do not think so, as I have fruited both sorts, and there is a great difference between them, the Muir being a much more juicy and sweet peach, and far handsomer than is the Wager.

Brigg's Red May, raised on the farm of Mr. Briggs, near Yuba City; the fruit is medium in size, white skin, rich red cheek. I have noticed, however, that this variety, with us is subject to mildew. Whether it is so affected in other parts of the State, I am unprepared to say. Some of you assembled here may tell us later on as to this.

Some twenty years ago we used to grow a good many of the Newhall peach, raised by the late Slyvester Newhall of San Jose, but of late years it has not been grown or planted to any noticeable extent.

California has introduced many cling stone varieties. I suppose this is accounted for by the fact that in other peach countries they do not seem to grow this class of peach to any great extent. Why, I am unable to tell you, so we Californians had to raise clingstone varieties for ourselves, and there has been many varieties originated here, of great excellence. Phillip's Cling, originated with Joseph Phillips of Sutter, is considered one of the best, if not the best, of clingstones. Runyon's Orange Cling, originated with Solomon Runyon, is also a very fine cling. Seller's Orange Cling we used to grow in large quantities, but of late years you do not see so many of them. I should like to know why, as I consider this a most excellent variety, large, beautiful color, used to bear heavily with us in San Jose, and why it has been discarded I cannot tell you. This variety originated with S. A. Sellers. Nichol's Orange Cling is another California clingstone of great excellence, and originated with Joseph Nichols of Niles. McDevitt's Cling, until the advent of the Phillip's, stood, I think, pre-eminent, and I think it is still one of the best. McKevitt in former years used to be very extensively planted, as it has many fine qualities.

Taken all in all, California has originated a variety of peaches that she may well be proud of.

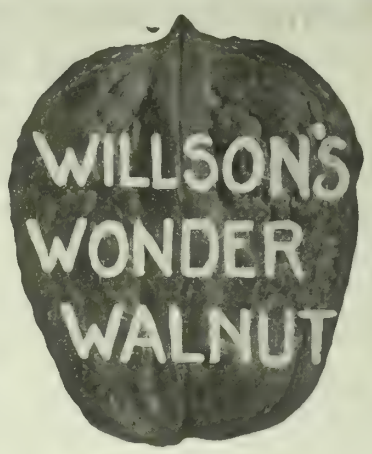
The cherry does not seem to have been improved upon in our Golden State like other varieties of fruit. The varieties of our forefathers still stand unrivalled.

I will mention, however, the Centennial, a seedling of the Royal Ann, which, when it was sent out created a great furore among fruit growers. I would like to hear from anyone who can tell us if this variety turned out as well as anticipated.

I used to be in the orchard business and could tell a good deal about these new introductions, but of late years I have been in a sense out of this business, and only know them in the nursery.

Plums and prunes have been added to very extensively by our famous horticulturist, Luther Burbanak. Among these, I may mention the following: Bartlett, Santa Rosa, Wickson and Climax; all excellent shipping varieties. The following were also introduced by him: Splendor,

(*Continued on Page 466.*)



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Some Mistakes in the Management of Reclaimed Salt Marsh Land.

Written for the Pacific Rural Press
By C. A. Bodwell, Jr.

(Continued from page 416 of the issue of November 18.)

Plowing Reclaimed Lands.—Many of the early cultivators of reclaimed marsh when first breaking up the land believed that deep plowing was a necessity. They usually turned up a sod from six to ten inches deep. This sod laid in almost continuous long strips, so tenaciously do the furrows hang together.

It was utterly impossible to break them by any of the usual means of cultivation, so rolling cutters were used, which, by going over the ground many times, finally reduced the plowed surface to lumps of reasonable size. Gradually the depth of plowing has been lessened for the first breaking, until at present the best practice is thought to not exceed that at which the sod will barely turn completely over.

Subsequent plowings are made progressively an inch or two deeper each succeeding season, until finally a depth of six or eight inches is reached. By following this procedure it is found much easier to bring the land to a fine state of division or tilth. Also if plowed too deeply at first the large lumps frequently covered grain to such a depth that it failed to sprout. This was probably due, as in similar cases in uplands, to the fact that the ground in this season of the year is cold. However, these lowlands are usually warm if properly drained and in cold and wet weather grain may be seen making a better growth than it does on upland. This does not mean that the climate is warmer than uplands, but that the soil is tempered.

The Tractor Saves Much Labor.—When first breaking many tracts of these lands it has been the custom for men with picks or mattocks to first go over the area and break down edges of the larger cracks and partially fill small sloughs. Teams which came later were not then in such danger of injury from stepping into cracks. Now, however, there are tractors built which may be used, at least for the first breaking, that will not injure drainage. This will save much of the costly hand labor that was necessary where horses have been used.

While this has been probably the greatest expanse incident to the breaking up of the land, it cannot properly be called a mistake, because it has until recently been the only available method, for want of a proper tractor.

Leveling Slough Banks.—When these lands have finally settled down after a few years of cultivation and cropping, it will be observed that the surface for a distance of say ten to fifty feet wide and bordering the banks of old sloughs, is higher than outside of that distance. It occurs because when the marsh is being formed, the water in the sloughs always carries a certain amount of very fine silt, even if at a distance from fresh water streams. This at high tides and when water flows over the marsh, is together with floating stuff, such as tules, etc., caught in the grass near the sloughs first, or in greater quantity than farther back. Thus the banks are built up the fastest. They also have a greater content of silt in the soil, which accounts for its not settling or shrinking to so great an extent as the purer peat.

It is considered a mistake that cultivators do not grade down these high banks. Instead, they really add to their elevation by constantly throwing the plow furrow toward them. They might be leveled off and the material deposited in low places to the very great advantage of such places. It would mean that these low spots now producing only wild grasses, which are mixed with the crop at harvest time to its detriment, would yield as good material as the balance of the land. Also the banks of the old sloughs being cut down would make it possible to cross such sloughs with plows and other implements and the working of the land in more regular shaped pieces. This leveling might be done comparatively cheap with some of the devices which are used in the irrigated districts for leveling land preparatory to irrigation.

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PECULIAR CONDITION OF THE SURFACE.—By one not familiar with these marshes, it might be supposed that as they are level bottom lands they would at all times be moist. Such is not always the case in the summer months above the drainage level, where drainage is good. By fall the top may become quite dry. Of course it is not possible to convey heavy loads on narrow tired vehicles, because moisture is not far away. Also as the bottom of mud under the peat is so soft and jelly like it will support no great weight in any one spot. There have been many mistakes in piling up levees to excessive heights which have broken through the top crust. Also warehouses have been placed on foundations of light underpinning, resting only on planks, with the result that when great weight was stored in them settling accurred to such an extent that in instances the buildings have been wrecked. Nevertheless, this dry peat top will stand more rain before becoming thoroughly wet than will high land.

POLICIES OF THE CULTIVATOR.—It has become a general custom in the cropping methods followed, to do the larger part of the plowing before the rainy season commences, and if it happens to be unusually late, to also seed before the rains. This has frequently caused the land to become very "foul' with devil grass, foxtail, wild oats, etc., which in most instances prevent the growth of the sowed grain. One of the reasons for early plowing is that the land cannot be worked after becoming excessively wet. There is always danger of this happening if left until winter and heavy rains occur. On the other hand, it plows well when dry. This dry plowing allows the extending of the plowing season or period through a greater number of months and the consequent use of fewer draft animals. However, it has been proved by actual experience that if the lands are properly drained they are workable after heavier rainfall than when poorly drained.

This would mean cleaner crops. But there is a feature which has been noticed in very late sowing, or during the late winter or early spring months, which is, that the crop does not cover and shade the ground before long sunny days commence. This causes rapid evaporation, which, of course, leaves salt on the surface. In instances it has been seen in sufficient quantity to injure the tender plants to so great an extent that they either died or matured so poorly as to be useless as a crop. It would occur more markedly where drainage is shallow, yet from recent experiments at Berkeley it is demonstrated that water will rise through soil three to four feet by capilarity and be evaporated from the top.

For this reason, fairly early sowing may be advised, as well as to obtain a longer growing season. Yet it would seem better not to seed so early as is commonly practiced, so that the early starting grasses may be killed.

It might be desirable to consider summer fallowing or to plow in the spring before the grass seed has formed. This would also add humus to the soil, which, however, is not generally needed.

CROP ADAPTATIONS.—When attention was first attracted to these lands and they were being reclaimed in a small way, there was a belief among owners that they were probably adapted to as many different crops as the earlier developed lands on the Sacramento or San Joaquin rivers. This by experience has been demonstrated not to be so. They are not as valuable as the river lands, in that they will not usually produce the quantity nor the diversity of crops. The river lands are underlain with fresh water. Fresh water may be had for subirrigating at any desired level during the growing season, by the proper manipulation of drainage pumps and gates. On the contrary, these lands are underlaid and surrounded with salt water. For them fresh water is available only where wells are possible. In such places more valuable crops may be cultivated. In parts where such water is not available, moisture is dependent on rainfall only, together with the proper cultivation necessary for its retention. Thus it may be understood why so many of the vegetable crops producing such good revenue on the rivers are impossible of profitable production here.

The above is by no means to be understood that they are not very valuable lands, for they are in many instances of much greater value than uplands immediately adjoining. Their particular adaptabiiity seems to be for grain and hay crops, as well as a second growth, generally known as Australian rye. This makes very good late pasture.

Particularly is their yield of grain hay very heavy and profitable. There have at times been objections to the hay whenever of a very rank and coarse growth, as well as when mixed with wild grass. The latter is due to bad drainage.

On the river lands coarse hay occurs, and much of the high land product will be found equally mixed also with the wild grasses. Therefore any complaint in that particular must apply to the product wherever grown. There have been thousands of tons of this hay, clean and of first quality, sold on the San Francisco market to consumers who fed it satisfactorily. They did not know but what it came from some of the hill regions, which are producers of the best hay.

If for nothing more than this crop alone, these lands are in the future sure to be very valuable.

The continued subdivision of large holdings and their future devotion to crops other than the forage they are now producing, will soon necessitate new territory being devoted to this product. They are admirably adapted to the crop, and as it is a crop as necessary to the general prosperity as any other, there is no doubt of its being produced here in quantity.

OPPORTUNITIES FOR RECLAMATION.—At present several thousand acres about the bays are unlevied and unproductive. They should be contributing their quota to the general prosperity of the State. It is bad economics that they are not. To satisfy the quest for land and the need for land which the increasing population demands, the United States Government is executing reclamation projects by bringing water to irrigable deserts, as well as draining vast swamps. It is recovering lands which for different reasons have been carelessly allowed to pass into the hands of speculators, and is placing them in the hands of cultivators.

These salt lands were ceded to the State and sold under the supposition that they were to be reclaimed. Therefore in not utilizing them there might seem to be cause for claiming bad faith. When the greed for land becomes keen enough, these unreclaimed tracts so near to centers of population will attract the attention of the land hungry. There will then be some means found, either by the State or some combination of individuals by which they will come into their proper use.

Here is an opening for capital that will return one of the best and surest of revenues. There are some owners who have not sufficient capital to develop their holdings. There are others who have it but will not develop. The former are holding in the hope to develop in the future or to sell. The latter for the same reasons, but many of them would develop if they knew positively that it was to be properly handled. They see some of the past mistakes that have occurred under the bad management of those unfamiliar with the subject, and, doubting, they hesitate.

REQUIREMENTS OF SUCCESS.—Too frequently these combined engineering and agricultural projects are undertaken by some successful business man, who has probably a patronizing feeling almost amounting to contempt for the apparent simplicities of such undertakings. His success in making and selling doughnuts or running a bank has bred in him a large expansive confidence in his abilities, frequently evident in men shut in the narrow walls of offices. He relies on his own large judgment and selects perhaps a reliable bookkeeper, an inexperienced engineer, a hill farmer or a man who has been successful in some other vocation, to operate a proposition about which he knows nothing. Necessarily that man must spend almost a lifetime in expensive experimenting. This is the primal reason for the greater number of the unnecessary mistakes, a few of which have been noted above. The good general is the one with the happy faculty of selecting a lieutenant possessed of a knowledge of a particular piece of work, superior to his own.

No matter how he gets him, but get him he will, at whatever the cost. He himself knows little of the detail to be followed. He asks for the main results, no matter how they are achieved.

An owner of these lands, with capital available and with proper management secured, may develop them with the feeling that he is creating a property which can neither shake down in earthquakes nor burn. It cannot be destroyed by either tempest or flood, for here there are no floods as on fresh waters. The nearest approach is an occasional unusual oscillation of the tide. He causes grass to grow where none grew before and is a benefactor. He accumulates a property durable through generations. On the other hand, the tall, smoky chimney of industry generally so attractive to capital and erected in all confidence of permanency, by change in tariffs and trade routes or in riot and war, will long since have become cold and collapsed in ruin.

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NITRATE AGENCIES COMPANY

LOS ANGELES SAN JOSE SEATTLE

FIRST CONVENTION OF CALIFORNIA NURSERYMEN'S ASSOCIATION.

(Continued From Page 463.)

Giant and Sugar. This latter variety, when it was sent out, it was hoped that it would be an improvement over the French prune, but trials have not borne this assertion, I think. It is, however, an excellent shipping sort.

The California Red, introduced by the late J. T. Bogue of Marysville, is a variety well worthy of extended culture Kelsey Japan, introduced from Japan by Mr. Hough and desseminated by the late John Kelsey, is a beautiful plum, but rather a shy bearer.

Tragedy prune, a California seedling, but by whom originated I am unable to say. I consider it, however, one of our best seedlings. The Clyman, introduced by Leonard Coates, is valuable on account of its earliness, and commands good prices in Eastern markets.

The fig next claims my attention. Our eminent horticulturist, Mr. George C. Roeding, stands in a class by himself, for to him great credit is due for what he has done in introducing into this State the fig of commerce and the blastophaga, without which commercial fig culture is a failure. What he has done for this industry is now history, and I refrain from praising his work, as he is with us today, and I know that he is a modest retiring man. I would say, however, it was only by Herculean efforts on his part that he attained his object and gave to the new world a most valuable possession which is even now yielding a rich harvest to this beautiful State. In the introduction of new citrus fruits we have been exceedingly fortunate, because to this State the credit of introducing the Eureka lemon belongs. This, as you all know, is a variety comparatively free from thorns. It is needless to say what an advantage this is It originated by C. R. Workman of Los Angeles from seed imported from Hamburg and it was distributed by T. A. Gary. The Mediterranean Sweet was also introduced by Mr. Gary. The Riverside Washington Navel, while it did not originate in this State, has been planted extensively and it has become world wide known that we deserve great credit for what we have done in propagating and sending out this greatest of all oranges.

In the way of grape vines we have to our credit the Pierce grape, originated with J. P. Pierce of Santa Clara, admitted to be the best of the American grapes. This variety is shipped into the San Francisco market and has gone in the past under the name of "Isabella Regia," and into the Los Angeles as "California Concord."

In the originating of small fruits California has been wonderfully successful. Judge Logan's now famous Loganberry and Mammoth blackberry have become world wide known and are certainly acquisitions to the horticultural world that we may be very highly proud of.

Mr. Burbank later sent out the "Phenomenal" berry, a variety which bears close resemblance to the Loganberry, I think.

In conclusion, it is only fitting that I should mention the names of some eminent horticulturists, known to the writer, who have done much for the furtherment and betterment of our profession in the past twenty-five years.

The late John Rock, also well known to us, did much for horticulture in this State. He imported many sorts to this Western slope, which have been of great benefit to the fruit industry.

The late John Sievers, a San Francisco florist, gave to the world the "Rainbow" rose. This variety is now grown the world over and it will be a lasting memorial to his name. I remember the first bloom that was exhibited by Mr. Sievers. It was at a flower show in San Francisco. He had it under the cover of a large glass, and it was indeed beautiful. It created a great furore at the time.

A few words more, and these are, that Professor Wickson of Berkeley has done much for California in writing his "California Fruits." I consider it one of the best of its kind ever published. It is of incalculable value.

There are many varieties of fruits and many horticulturists that I may have overlooked, as I do not pretend to know and remember them all. Therefore, to make this paper complete, I would ask anyone here to give us their experience on what they know along these lines.

The late Mr. Edward Gill of Berkeley deserves to be remembered by his fellow workers in the introduction of many choice roses. He imported a number of kinds that have proved very satisfactory in this country.

Many other addresses were delivered at the convention, from which we shall draw later those parts which seem to use most widely interesting and instructive. We congratulate the association upon the success of its initial assembly.

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THINK WHAT THIS MEANS TO YOU—The average nursery is in business today and out tomorrow, so you have no recourse should anything go wrong. In addition to guaranteeing our trees true to name, we select our buds only from best individual fruiting trees, which would eliminate the possibility of having non-fruiting trees, or poor bearers in your grove. We follow the same plan of bud selection as the Government experimental work.
CONSIDER THIS FULLY. One tree that will not produce after five years of work and attention will have cost you fully **TWENTY TIMES** its original purchase price. **YOU CANNOT AFFORD TO TAKE CHANCES.**
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AGRICULTURAL REVIEW.

With the Fruit Men.

According to C. A. Chambers of the Fresno Nursery, there is a heavy demand for fig trees in the San Joaquin valley, with a normal demand for peaches, apricots, and plums. Thompson's Seedless are being planted more than other grapes, Muscats and table grapes being in only moderate demand. Pomelos, Washington navels, and valencias are being called for among citrus trees.

Horticultural Commissioner B. V. Sharp of Kings county announces that spraying for peach blight should be done before December 15 in his county, with the bordeaux mixture, for which he gives the following formula: Five pounds of live lime and five of bluestone to 50 gallons of water.

Shipments of oranges from the Tulare citrus belt are 25% greater than up to this time last year, being 729 cars, up to November 23.

At the first meeting of the California Raisin Exchange in Fresno last Friday, M. K. Harris, H. H. Welsh, A. G. Wishon, David Newman, and W. R. Nutting were elected directors. A promotion committee was appointed to secure more members and funds, and preliminary arrangements were made for the work of the Exchange. When the membership increases so that all who wish to join have the opportunity to do so, other directors may be chosen, so that every member will have a voice in the management of the concern. At a meeting of the Merchants' Association of Selma the Exchange plan was endorsed and a committee to promote it in that district appointed.

The putting of a large part of the raisins on the market at one time has served to drive the price down further than a week ago, sales now being made for from 3 to 3½ cents. So much of the crop has now been sold that many growers are holding for the high prices they expect to come with the shortage that is due before the next crop comes in.

A patent has been taken out by Louis Detoy, of Fresno, on a process for rolling seeded raisins in flour before packing, so that the entire packing process may be done by machinery. The Pacific Coast Seeded Raisin Co. is to install such machinery for the 1912 crop.

The U. S. Bureau of Statistics announces that 18,500,000 pounds of raisins were exported from the United States in the last fiscal year.

One of the largest shipments of fruit trees ever made into Humboldt county arrived recently. In the shipment were 1000 walnut trees, which will be planted at China Flat.

The action of Horticultural Commissioner J. F. Wetzel in refusing to permit the importation of diseased fruit trees, although the disease was neither infectious or contagious, has been sustained by the State Horticultural Commission.

At the last meeting of the El Dorado County Standardization Fruit Alliance, C. W. Ball and A. L. Daniels were reelected president and secretary.

The Noyo River Apple Co. has been formed to plant several hundred acres near Noyo river, Mendocino county, to apples.

The San Diego Land and Town Co., which ships about 350 cars of lemons per year independently, has affiliated itself with the California Fruit Growers' Exchange.

Almond men report that the supply of bitter almonds this year is far below the demand.

General Agriculture.

Sanford Bros. of Ukiah have sold their crop of 230 bales of hops at an average price of 38 cents.

The spray system of irrigation has been installed for experimental purposes on part of the Bidwell orchard, near Chico, by C. M. Reed, secretary of the National Irrigation Co.

From five acres planted to Burbank potatoes August 1, on the Moulton Irrigated Land Co.'s property near Butte Slough, Colusa, 450 sacks of potatoes have just been harvested.

The Southern California Beet Growers' Association has sent out notices to growers that the price of beets next year will be $5 per ton for beets testing 15% and 30 cents extra for each additional per cent of sugar.

An experimental garden, in which various sub-tropical plants will be grown, is to be started on the Haggin grant, across the river from Sacramento.

The Maxwell and Delevan units of the Kuhn project in Glenn county will be opened this or next week.

Melon growers of the Southern States have applied to the Interstate Commerce Commission asking for lower rates to the North.

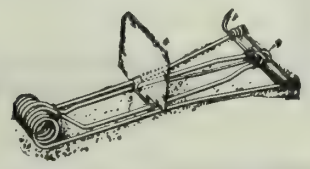
Miscellaneous.

San Francisco warehouse and produce men have filed complaint with the State Railroad Commission charging that San Francisco is being discriminated against in favor of Sacramento and Stockton in railroad and warehouse rates upon potatoes, onions, and other agricultural products.

A tract of 1090 acres of marsh lands near Fort Seward, Humboldt county, has been sold to H. M. Devoy. Most of the land is already reclaimed.

Farmers' Institutes will be held in southern California as follows: Colton, Dec. 11; Bloomington, Dec. 12; Highlands, Dec. 13 and 14; Redlands, Dec. 15 and 16; Beaumont, Dec. 18; Banning, Dec. 19; Coachella, Dec. 20.

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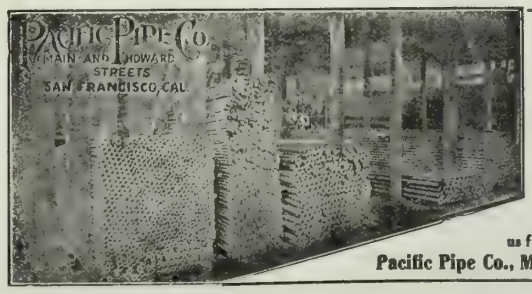
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The Use of a Silo in Solano County.

The best answer to the question, "What use is a silo," can be given in the actual benefit that is obtained by finding what some special one has been on a ranch in a typical dairying district of the State. The first real dairying center one comes to after leaving San Francisco for the northern trip through the Sacramento valley is Dixon, in Solano county, and one of the finest dairies in the vicinity, or State, or country at large for that matter, is that of the Hutton Brothers. Like one or two others in the vicinity it it a certified dairy and therefore run on a much different plan than would be the case if it were simply used to supply cream for butter making. The greatest difference between the classes of dairies, however, is in the handling of the milk, and not in getting the cows to give the milk, so the silo is of equal benefit for the milk production, no matter for what purpose the milk or cream itself is used. As a matter of fact the silo was constructed and in use before the dairy was used to supply the certified product.

It was built in 1905 and filled that fall. Mr. Fred Hutton states that it was the first concrete silo as far as his information goes, in the State, and he had to guess what the specifications would be. Errors in construction were on the safe side for durability and strength, however, so that it is very serviceable and profitable. If it had to be replaced with the greater knowledge that has been obtained about the construction of silos, it would only cost about $300 instead of several hundred dollars extra. The dimensions are 12 by 30 feet, inside measurements, and it will hold 70 tons of alfalfa silage.

The first year it was filled, or rather partly filled, with chopped corn, which proved to be the ideal ensilgge. For instance, the bees were attracted in great numbers to it when being fed, showing how good it was, though a slight disadvantage in handling, and cows relished the food greatly. Since then, owing to the difficulty of obtaining corn, alfalfa has been used instead, and when fed with grain proves eminently satisfactory.

The silo was filled this fall by November 23, although some years unfavorable weather makes it necessary to feed the alfalfa earlier, while one year the weather was so favorable as to make filling unnecessary until just before Christmas. There is no danger of having rain spoil the alfalfa before it can be put in, as wet alfalfa makes just as good fodder as dry. When the last crop of alfalfa is to be used for hay the rain aften ruins it, so this as a matter of fact is one benefit the silo gives to the alfalfa grower.

The feed of the cows after the ensilage is to be used is composed of 20 pounds of ensilage per day, 4 to 6 pounds of cracked barley, wheat or other concentrates and about 25 pounds of alfalfa hay. This 20 pounds per day with the 100 odd cows on the place uses up a ton of ensilage per day, or the silo full lasts about 70 days. This is rather too short a time, as the herd is much larger than when the silo was planned, and it is probable that a second silo may be built to supplement the present one. The silo is only about the size that would feed 60 cows during the time that ensilage is needed.

The cost of making the ensilage from the time the alfalfa is ready to cut is a little less than 50 cents per ton, added to the $2 or less per ton for the green alfalfa will make $2.50 per ton. The alfalfa is taken at once to the barn, cut and blown into the silo, before more than a very little moisture has been lost. The hay is also run through a cutter and blown into the proper location in the barn, and it is found that it is cheaper to make silage than chopped hay.

The 20 pounds of ensilage furnish all the succulent food that is required, and with the hay and grain fed is just as good as if the cows had all the grass to eat that they wished. As this is given in just the time that milk is high and hard to get its value is very great. In fact, Mr. Hutton estimates that it is worth about three times the same amount of alfalfa made into hay.

The silo is put at the end of the stable so that the ensilage can be thrown out into the truck below and wheeled to the mangers. This is more convenient and easier to handle than the hay, and added to the small cost of it makes it a profitable food. The $2.50 per ton in the silo gives 100 cows succulent food at a cost of 2½ cents per cow per day. The 25 pounds of alfalfa hay that goes with it costs at $8 per ton 10 cents per cow per day, or four times as much. The concentrates, of course, vary greatly in cost in different years, and could be dispensed with if necessary, and still the food would be as good as if the cows were fed entirely on alfalfa when it was at its best, as is done on most dairies in the alfalfa districts.

In some places it is customary to put the first cutting of alfalfa in the silo, instead of the last cutting. When this is done, the cows are given fully ripened silage all at once, and it takes some time for them to become accustomed to it. When the last cutting is put in it is about time to begin providing green food, and this is taken out of the silo. The cows thus become accustomed to the ensilage as it ripens, and no ensilage is wasted, nor do the cows lose anything in changing from the green alfalfa to it.

When there is also plenty of green alfalfa in the fields in the fall this is given in connection with the hay and the ensilage, which makes the ensilage last longer than it otherwise would.

Some other points of interest in the management of the dairy could well be noted. It is the practice to force all cows to go dry six weeks or two months before calving, and those cows which at first trial are found to be persistent milkers are taken in time before the next calving and forced dry so as to give them a long rest. This is practiced, of course, in many places. Here, in addition to this, instead of turning them out to pasture to within a few days of calving they are given as good care and shelter as is possible, even if out to pasture, and fed with as much care as the milking cows. As a result of this, cows that at the first milking promised to be little more than "boarders" are milking like thoroughbreds and give profits that would look good in any herd.

A large part of the yard adjoining the barn is concreted over, for use when the rest of the yard would be muddy if the cows had to go upon it.

The stable manure is put into the manure spreader at once and distributed among the fields. The liquid part is pumped into the irrigating ditches to fertilize the fields. These, of course, are practically required in a certified dairy, though Mr. Hutton states that the convenience of management and the fertilizing value would recommend the system on any dairy whatever where there were sufficient cows to justify it, whether certified milk, common milk, or cream for butter-making was produced.

Live stock men of the San Joaquin state that insufficient rain has fallen to start the grass as yet, though the pastures still contain a fair amount of feed.



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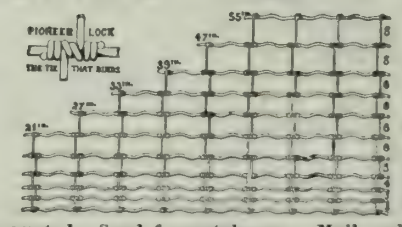
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Statistics relative to live stock (domestic animals, poultry, and bees) reported on farms and ranges for the continental United States at the Thirteenth Decennial Census, April 15, 1910, are contained in an official statement based on tabular summaries prepared by the Bureau of the Census. The present statement relates only to live stock on farms and ranges. It does not include the live stock in the cities and towns.

The aggregate value of all live stock, including domestic animals, poultry and bees, as reported in 1910, was, in round numbers, $4,895,000,000, as compared with $2,075,000,000 in 1900. This is an increase of nearly $1,820,000,000, or 59.2%. Slightly more than half of this enormous increase took place in the States of the East and West North Central divisions, although greater percentages of increase are reported from the South Atlantic, East South Central, and Pacific divisions. The smallest relative increases were in the New England and Middle Atlantic divisions.

The aggregate values of principal classes of domestic animals on farms in 1910 were as follows: Horses and colts, $2,076,000,000; cattle, $1,485,000,000; mules and mule colts, $522,000,000; swine, $398,000,000; sheep and lambs, $231,000,000; poultry, $153,000,000. In 1900 cattle constituted 48% of the value of all live stock on farms, and far exceeded any other class in value. But in 1910 horses had taken first place, outranking cattle by a wide margin. Cattle increased in value less than $10,000,000, or 0.7%, during the decade, while the increase in the value of horses was $1,180,000,000, or 131.6%. Cattle now represent only 30.3% of the total as compared with 48% in 1900, and horses now represent 42.4% of the total, while in 1900 they were only 29.2%. Moreover, mules increased $326,000,000, or 166.2%, in total value, and whereas that class of live stock was 6.4% of the total in value in 1900, it has now advanced to 10.7%. The two classes of horses and mules together, therefore, now constitute over half the total value of live stock on farms and ranges.

Swine have advanced materially in total value and now represent 8.1% of the total for all live stock, the increase during the decade being $166,000,000, or 71.6%, and the present total value being nearly $400,000,000. For the country as a whole there has been an increase of $60,000,000 in the value of sheep, but this is not as great as the relative increases for other classes, and therefore, while they represented 5.5% of the total value of live stock in 1900, they are now 4.7% of all in value.

Poultry shows a greater relative increase in value during the decade, amounting to nearly $70,000,000. Poultry now is valued at more than $150,000,000 for the United States, while the investment in bees is $10,000,000. There has been practically no change in the total value of bees during the decade.

WINTERING HORSES ON PASTURE.

This is naturally not much of a question in California valleys and foothills, for horses in such parts of the State generally lead a fresh-air life. The question arises in our mountain farms and our readers in such districts will be interested in Eastern discussion of experience.

The custom of running horses out on pasture during the winter is the common one on the range in most sections of the South, and to a certain extent in the corn belt. It is rare, however, in localities such as New England, where the winters are cold. The greatest obstacle to profitable animal husbandry in New England is the necessity to feed and shelter live stock during the long winter period. The Department of Agriculture has found this a constantly increasing bill of expense at the Morgan Horse Farm near Middlebury, Vermont, and is devising means to reduce it to a minimum. In 1910 cheap barns costing $500 each were built in three pastures, each barn having a door in each end and two having a door in one side, facing either south or east. Hay storage is overhead, and grain storage at one end. A hay manger runs along the inside of the back wall and a grain trough is outside. One or all of the doors are open all the time and plenty of bedding is provided.

The yearling fillies and the brood mares were given these accommodations during the winter of 1910, the brood mares being brought up to the main stables about three weeks before they were due to foal. The first winter's trial was completely satisfactory. The horses had a bed which was roomy, always dry and free from drafts, and were free to come and go as they wished. No colds or coughs were observed. The horses were undoubtedly better for their winter's outing. The cost of stabling was cut from $2 to $1 per head per month, and the cost of attendance from $3 to $1 per head; it is possible still further to reduce the latter charge by increasing the number of animals on the pastures. The horses ate practically the same amount of grain that they would have consumed in stable and somewhat more hay.

During the coming winter the foals of 1911 will run out, having an open shed in an especially well sheltered location. The barn for the brood mares has been enlarged and changed into an open L-shaped shed, facing south and east. A 100-ton concrete silo has been built in conjunction with this shed, and silage and timothy hay will make the ration of the brood mares during the winter.

The leading stallion at the farm, General Gates, has for a year been given the run of a tightly fenced paddock of about three-fourths acre, to which he has access every day in winter and day and night during spring, summer and fall. In this time he has never worn a blanket and has never been in better health or spirits, or more easily handled.

The Department's experience thus far seems to indicate that horses may run out during the winter, provided they have a dry bed, sheltered from storms and are given enough to eat, and that the practice will result in a considerable saving in cost of stabling and attendance.

Secretary Wilson says that for 20 years a herd of horses has wintered out doors on his Iowa farm. He puts the horses in at one year old coming to two. He built a shed for them when he put them out at first, but found they would not go into it no matter how severe the weather was; they preferred to go into a heavily timbered ravine, where they got all the shelter they seemed to want. A colt is never taken out until he is to be sold or broken for work. The hair of the animals grows long and thick and protects them. Unless the snow is too deep the horses paw the range for blue grass, of which there is always abundance in the pasture. It is well known that horses and sheep will paw the snow to reach grasses, while the bovine does not do this.

Milk from a large dairy on the Sacramento river in Yolo county has been barred from the San Francisco markets by city inspectors through failure of the owners to comply with several of the regulations imposed by the city Board of Health.

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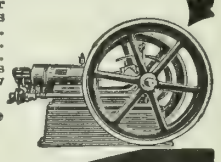
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LIVE STOCK NOTES.

Twelve Patterson, Stanislaus county, ranchers have formed a stallion company and purchased a three-year-old registered Belgian stallion weighing 1800 pounds for $3600.

An epidemic of distemper among the horses of the Pajaro valley recently broke out. Thirty-five horses are known to have suffered from the disease.

A. O. Lowe of Woodland has lost in the last few weeks three draft horses by an obscure trouble which is thought might be caused by poison. Six other animals were attacked but recovered.

The approach of winter has taken a record number of cattle into the valleys of Lassen county this year for fattening. Most of the sheep have already been moved out of the valleys to southern or Nevada ranges.

About 20,000 head of sheep are reported to have been dipped in lower ranges of Sutter county this season. Only one flock of the sheep was found to be infected with the scabbies.

John L. Matthews of King City, Monterey county, has just received a large shipment of Utah cattle for fattening for the market.

Harry Sickles and M. Anderson of Springfield, Tulare county, received last week 13 cars of cattle from Arizona for fattening. William Frakes of Bullion Mountain, San Bernardino county, accredited collector for the Smithsonian Institute, reports that he has obtained a cross of mountain sheep and Leicester does, which is very promising for rough ranges.

Stephen Griffin of Solano county is the owner of a lamb with six legs. Unlike most animal freaks it is strong and growing as rapidly as normal lambs.

The Hemet, Riverside county, Stock Farm has been incorporated with a capital stock of $100,000. The object of the company is to raise and sell thoroughbred live stock.

DAIRY NOTES.

Retailers of Alameda have agreed to raise the price of all milk to 10 cents per quart after December 1, and to charge 6 cents per pint.

The new creamery of Coachella valley will probably be in operation by the end of this week.

The 3000 acre dairy ranch of A. C. Smithers near El Casco, San Bernardino county, has been purchased by William Singleton, Jr., who will improve it and add more cows. The purchase price was $125,000.

Edwin N. Gunsalus, U. S. Consul at Johannesburg, South Africa, reports that the quarantine against live stock from Great Britain on account of the foot and mouth disease has opened a market for American breeders of registered dairy stock. Registered Holstein bulls are generally worth $300 f. o. b. the European shipping point, and heifers half that amount.

FIGHTING JOHNSON GRASS.

Los Angeles county, through its horticultural commission, is officially on the trail of our old enemy, Andropogon halepensis, commonly known as Johnson grass. The onslaught for the present is limited to its presence along the county highways, the idea being that if adjoining acreage will co-operate, something really worth while will be accomplished. The effort has been somewhat pretentious. Whether it will result in a lasting victory will depend on the unity of action shown and the continuity with which it is prosecuted. Johnson grass is certainly a persistent pest to have on the land, but it may be destroyed by frustrating its going to seed and at the same time cutting it down about an inch or so below the surface of the soil every two or three weeks, especially in the growing season. Keep this up through the second season, and there will be a good prospect of victory, unless seed is again deposited on the soil by means of irrigating water. To conquer a virulent growth like Johnson grass after it has once become established is indeed a problem; it may, however, be kept down below the danger point by constant vigilance, coupled with community efforts persistently and intelligently carried on. Whether weed extermination comes within the province of our county quarantine regulations is, of course, quite another question.

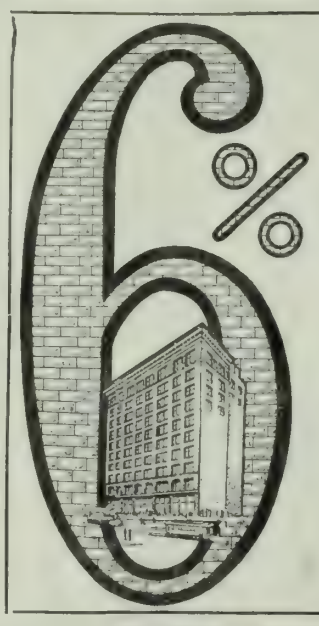
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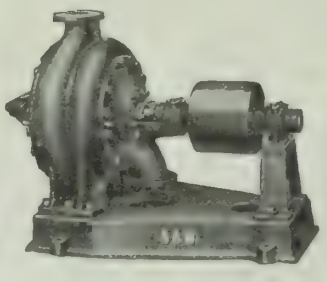
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Sheep Herding in Interior Ranges.

California does not see much of the old style of sheep herding, now that lands have risen in value and are so largely enclosed or reserved; still, there is a growing interest in sheep, and if our Government policies favor it our old sheep indsutries may be rehabilitated—on somewhat different lines, however. The survival of the old California way with sheep is found now on the plains of Montana and Wyoming. Fred G. Warren, of Cheyenne, gives an interesting review of its methods:

When one understands that during the course of a year one sheep will graze an average of four to five acres in this short-grass country, a better grasp can be had of the situation. The sheep are grazed in bands of about 2500, and during the year one band will therefore cover about ten or twelve thousand acres, or nearly 20 square miles. It can be easily seen, therefore, that with several bands, a sheep company must have a great stretch of territory, viewed from the standpoint of one not familiar with the business. The same is also true of the cattle business. A sheep ranch, therefore, is rather a large stretch of grazing country than a collection of buildings admirably called a ranch. It has its camps and so-called ranches where supplies are kept and sheep handled, but the most essential part of the ranch is the range so-called, or open stretch of country where the sheep are grazed.

Methods of handling sheep on the range vary widely in different parts of the country, but throughout the west sheep are run in bands of anywhere from 1500 to as high as 4000. These bands are in charge of a herder, usually aided by one or two trained dogs, and who is sometimes supplied with a horse. The herder's duties are to graze off his section of the range systematically, taking care that no available feed is neglected, that the sheep do not get lost and on the other hand to allow them to scatter enough so that the sheep feed rather than tramp out the range. Contrary to widely accepted opinion sheep herding is an art by itself, and individual herder's methods have much to do with the good or ill condition of the flock.

The good herder has his sheep out on feed at daylight and stays out until dark, whereas his poorer brother gets out late from camp and is back before dark. The good herder allows his sheep to scatter and graze naturally, using his dogs as little as possible, whereas a poor one keeps them bunched and "throws the dogs into them" as the phrase goes.

The good herder is a fine judge of feed and hunts places where it is the best, while the poor herder seems content to take his sheep out in any direction, regardless of the condition of the range. In a thousand other particulars there are ways in which individual methods of herding make for profit or loss, and so the popular opinion that a herder is a man too lazy or incompetent for any other work is wrong. It is true that many are herders who cannot do other work—for instance, one-armed men. Others are attracted to the life because they want, for reasons of their own, to be alone.

At night each band of sheep is brought back to camp and bedded down together. In many parts of the country they spend only a night or two at each camp and then move to the next, but in northern Colorado our camps are more permanent. In the summer time they are not corralled, but in this part of the country our high winds in winter make corrals with high wind-break fences on the north and west imperative. In practically no section are there any covered corrals, barns or sheds provided for the winter shelter of ordinary range sheep, although we have adopted the use of sheds for shelter during our April lambing. Our summer camps consist only of tents with the herder's bed and supplies. These camps are located on water, and from them the herder takes his sheep out in different directions each day until he has used up the feed within herding distance, whereupon his camp is moved to a fresh locality.

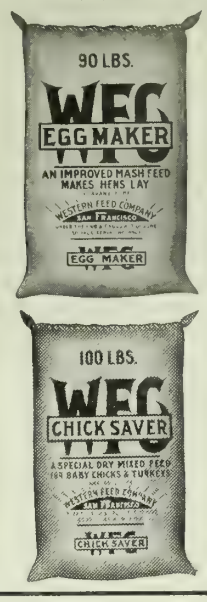
The summer range is largely open Government land, for it can be easily shown that with present conditions sheep, in fact stock of any kind, cannot be profitably run on land entirely owned or leased at prices prevalent in this locality. For each four or five camps there is a camp tender who hauls supplies and moves the camps from place to place. Sometimes the camp tender looks up the range and moves his sheep acordingly, but of late we have had regular range riders whose business it is to ride over the country, observing its condition, water supply, etc., and direct the location of sheep accordingly. He is thus the foreman over several bands of sheep, and his judgment as to how much the range will stand and how to locate his herders has much to do with the condition of the flocks, for with a given amount of range available, it is necessary to utilize every portion up to the limit without overfeeding and not allowing even a temporary setback to the sheep.

The labor of a herder is continuous, with no vacation or days off. When he goes out with a band it means from two to six months of continuous work, with every hour on duty. Every hour of the day or night he must have the same watchful care over the band given to him. Perhaps during all this time he will not see a single soul but the camp tender who makes regular trips to him to replenish the larder. Truly, it is a lonely life. The day of the week is first lost track of, the day of the month is unknown, events of national importance are never heard of or cared for—a human being, but temporarily out of circulation. Not appearing in society very often, and the weather being so warm, there is but little trouble over the matter of dress. Extra clothes would have to be packed, and so, to avoid trouble, just enough are provided to cover himself and no change is thought necessary. A pair of thick, heavy hob-nailed shoes, a sombrero, a red handkerchief about the neck, and a pair of pants, a shirt, and a jacket or coat, is about the wardrobe. Especially funny is it to see a herder who has been out several months. He must resort to many things in order to keep his clothes upon him, for he has not access to either tailor or shoemaker, nor can he leave the band for the long journey into civilization to repair or replenish his wardrobe.

CREAMERY OPERATOR'S CONVENTION.

At the Creamery Operators' Convention in San Luis Obispo last week the following officers were elected: President, A. P. Ferguson of Turlock; vice-president, Mr. Beck of Visalia; secretary-treasurer, F. H. Daniels of Alameda. The next meeting will be held in Turlock.

In the butter-scoring contest the Danish Co-operative Creamery of Fresno received first prize. Probably the most important topic discussed at the convention was the grading of cream so as to secure a better quality of butter.



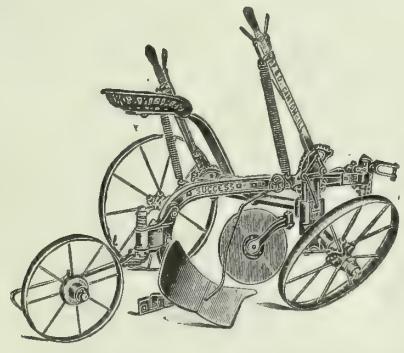
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The Success is a medium-priced plow that will work anywhere, and it is backed by an unqualified guarantee. Why buy a high-priced plow when you can accomplish the same results with the Success, a medium-priced plow?

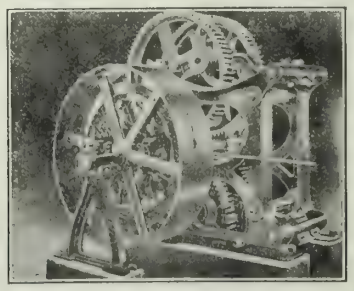
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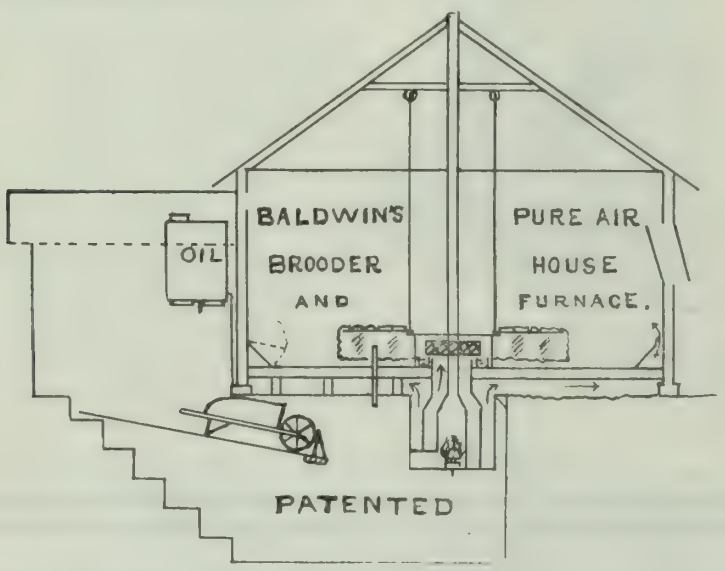
Pomona Manufacturing Company
POMONA, CALIFORNIA

Mr. Baldwin's Patent Brooder House.

In our issue of October 21 we referred to Mr. F. E. Baldwin's new pure-air brooder house which is in operation at his poultry plant in San Jose, California.

HOUSE AND YARDS.—The house is sixteen feet square, with a capacity of 1500 chicks. The floor is but a few inches above the level of the yards, making easy traveling for the chicks. They pass freely in and out through an opening three or four feet wide and about a foot high. This opening is fitted with a board, sliding up and down and counterbalanced with a brick in a sack weight, so it can be adjusted at the height of the chick's back's, at any age, and permit only a small amount of heat to escape, while allowing free movement to the chicks.

The yards, three in number, are arranged so that barley is grown in two yards while the chicks run in one yard. This barley is cut and thrown over the fence for green stuff until that yard is partially cut off, when the chicks are turned into same, and the bare yard sowed to barley. This operation is continued with the yards successively, resulting in an ample supply of green stuff



all the time and fresh ground for the chicks frequently. The watering trough is twenty feet long, supplied with running water. The trough rests on a platform of wood and slides thereon under the dividing wire fence into either yard for cleaning with a broom. One yard was full of strong, active chicks running in and out of the house to warm up at will.

Inside the house were many more chicks scratching for feed in the litter upon the floor. The roosting frames were hinged to the walls about a foot above the floor, and we were informed that about one-half of the chicks were found upon the roosts at five weeks of age and that in a little while all would be roosting. The roosting frames were then folded up against the side walls so we could better observe the working of the house when the chicks are small. The hover, which was at the ceiling when we went in, was lowered till it rested upon what is known as the heat dome in the center of the room, as shown in the cut. The lowering of the hover was effected from the outside of the brooder-room by pulling a cord lightly, the hover being counterbalanced in weight by a coal oil can containing sand.

The furnace is below the floor, heating pure fresh air as it passes up from below and spreads in all directions from the heat dome under the hover, where the chicks are placed when first hatched.

By raising the hover to the ceiling and opening a trap door at the baseboard the floor litter is swept into a chute which conducts it to a wheelbarrow or suspended gunny sack below. This cleaning of the house is said to take twenty minutes for a flock of 1500 chicks.

ADDITIONAL VENTILATION.—At one end of the house were two ventilators for bringing in fresh air from outside near the ground and permitting it to enter the brooder-room near the ceiling. At the other end of the house is a ventilating shaft that takes the air out, from just above the floor, and discharges it above the roof.

OPERATING THE FURNACE.—Going downstairs to the furnace, we were shown a distillate burner in a round fire-box connected with a stovepipe passing up through the center of the house and discharging the products of combustion above the roof. (See cut.)

Surrounding the fire-box (with the exception of the passage way to operate the burner) is what is called chamber No. 1, where the air is admitted at the bottom, through a damper, where it is heated by contact with the outer surface of the fire-box before passing up into the brooder-room above.

Around the outside of chamber No. 1 is a second chamber No. 2 into which the pure fresh air enters below, is slightly warmed by contact with the outer surface of chamber No. 1 and discharged below the brooder-room floor, where it flows in all directions, and, passing up under the slanting base boards, reaches the brooder-room along the side walls as shown by arrows in the cut.

This arrangement furnishes pure fresh heated air in the center of the room under the hover, and a separate inflow of pure, slightly warmed air along the side walls above the base boards.

The fresh heated air from furnace is required to pass over water in tomato cans inside the heat dome, where it takes up the needed moisture. The slightly warmed air from furnace chamber No. 2 partially warms the floor in the center of the house and takes the chill of the remainder of the floor to and including the base boards. The hover holds the heated air where the little chicks need it most, and we were informed that with a temperature of 100 degrees under the hover the base board has a temperature of 85 and the ceiling a temperature of 90 degrees. The fact that the ceiling temperature is 10 degrees less than the hover shows that the fresh heated air imparts considerable of its heat to the chicks before it passes out and is diffused upward therefrom. The base board temperature and the ceiling temperature being only 5 degrees apart shows a remarkable circulation of air within the brooder room. The base board temperature being 15 degrees lower than under the hover gives the young chicks a chance to exercise in a space two or three feet wide all around the hover, and run in where it is warmer when they like, just as they would under a hen.

When the chicks are first put in they are kept near the hover by surrounding them with a foot-high wire fence covered with burlap. This is gradually moved farther away from the hover, giving them more room, until they are four or five days old, when it is removed, giving them the whole floor. We were advised that the chicks go under and remain under the hover at night without driving, forming a perfect circle, with their heads sticking out all around under the hover sides. On top of the hover are glass wondows through which the chicks can be observed without disturbing them. These glass windows furnish light in the day time, which induces the young chicks to go under the hover and warm up. They run in and out and seem to like the hover almost as well as the lighter outside space, when not feeding.

The rest of the hover is made of gunny sacks resting on wire netting upon a wooden frame. The gunny sacks come down to within an inch or two of the floor all around.

COST OF OPERATION.—We were informed that stove distillate costing 4 cents per gallon was used, without sooting, thereby cutting the cost of running to one-half the cost of the so-called houses burning engine distillate at 80 cents per gallon.

We were also informed that by warming the floor and holding the pure heated air down under the hover where the chicks get the hottest air in the room a very low flame is required and the cost is reduced to about one-fifth of that of the engine distillate burning houses.

We noticed an entire absence of odors in the house, the air being sweet and pure because of the fresh air coming in all the time through the furnace. We were advised that the house is run at night with the windows closed, and in the morning the air is perfectly pure and sweet.

FURNACE.—The furnace is high enough above the floor of the cellar passageway to be easily operated standing up or sitting upon a stool or tall box. The oil tank is protected from the elements and the supply pipe to the burner is easy of access. The tank is filled by pumping through a flexible pipe directly from the oil wagon.

CELLER PASSAGEWAY.—The cellar passageway is only three or four feet wide and dug under the house only far enough to install the furnace. Sitting on a stool or box by the furnace the operator can reach the needle valves, damper burner, cleaning irons and the "thermometer rod," which latter pulls the thermometer down from above, where the temperature of the hover is taken without dusturbing the chicks.

GENERAL OBSERVATIONS.—The chicks show for themselves. Mr. Baldwin said that this new equipment would enable him to raise five times the number of chicks heretofore raised without increasing the working force, and also makes the following claims for his invention: that the fuel cost is no greater to raise 1500 chicks in the new house than it has cost him heretofore to raise 300 chicks in six coal oil brooders with 50 chicks each; that the work of brooding 1500 chicks in this house is less than one-tenth of the work of handling the same number in his small brooders; that the loss is less and the flock more hardy and even than formerly, notwithstanding the fact that his success in raising chicks in small brooders is well known, as his record for prize-winning birds will prove; that after three years of study and experimental work he has invented this brooder house and furnace with satisfactory ventilating means and scientific ap-

POULTRY.

INCUBATOR CHICKS—White Leghorns and White Plymouth Rock in quantities. Black Minorcas, Brown Leghorns, Buff Leghorns in reasonable quantities. Arrangements for deliveries can now be made. Send for booklet of prices. Mahajo Farm, P. O. Box 597 Sacramento, Cal.

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CRYSTAL WHITE ORPINGTONS (Kellerstrass Strain) carefully selected for breeding. Cockerels or pullets from $5 to $25 each. A $10 cockerel and two $5 pullets make a good pen. Address J. A. Filcher, Sacramento, Cal.

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FAMOUS BREEDER of White Plymouth Rocks. Eggs, Utility and Show Stock for sale; 75 choice cockerels now ready; Also White Crested Black Polish. Mrs. D. A. Robertson, R. 3, Box 16, 511 Willow St., San Jose.

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POULTRYMEN—"Simple" leg bands. Made in Germany. 2 samples and full particulars for 5c. Agent for Solano and Sacramento counties. C. R. Fontana, Dixon, Cal.

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I have the largest flock of Black Orpingtons on the Coast.

The best testimonial to the merit of my birds can be found in my winnings at San Jose October 4th to 17th, 1911, where I took 1st and 2nd cock, 1st cockerel, 1st, 2nd and 3d pullets and the American Poultry Association Medal for best cockerel in the show.

In White Wyandottes, I have quality just as good.

With seven Wyandotte entries at San Jose I won 1st cock, 1st and 2nd hen, 1st and 2nd cockerel, 1st and 2nd pullet.

Stock and eggs for sale.

I also breed utility Pigeons, Homers, Carneaux, and Polish Lunx.

My foundation stock in all three breeds was imported.

Youngsters and guaranteed mated pairs for sale.

MARSHALL BLACK
Palo Alto, Cal.

plication of the heat to the chicks where needed, at a minimum cost for fuel; that he has patented the essential features of the furnace and house separately and each feature in combination with others in fourteen separate and distinct claims; that every poultryman who has seen the chicks and house in operation is enthusiastic in their praise and that he is ready to demonstrate the merits of the system to all who may be interested enough to call or enquire.

PREPARING TURKEYS FOR MARKET.

Written for the PACIFIC RURAL PRESS
By Mrs. S. SWAYSGOOD, Healdsburg, Cal.

Presuming that the largest, earliest hatched turkeys have graced the tables at Thanksgiving dinners ere this reaches RURAL PRESS readers, we can perhaps help to get the late-hatched ones in good shape for Christmas. The mistake of marketing the immature and undeveloped birds at Thanksgiving and holding over larger birds for the later feast is sometimes made by farmers, but we hope no California farmer would make such a mistake, for it is not profitable at all. To sell half or even three-quarter grown turkeys at Thanksgiving is to cater to a losing proposition, because that is the right size to commence making weight, therefore money, for the owner. In fact, he loses on weight and quality both, for if a few of these immature birds are mixed with some that are well matured and fattened, the whole are very often sold at the price of the poor ones. It is like mixing small apples in a barrel of good ones—the few small ones lower the price on the whole package.

A small boy was asked by a lady whether his "Grandpa put the small apples in the bottom of the box." The old man had gone for change to a neighboring store leaving the child to guard his wagon, and in response to the question, looked up and said: "No, ma'am, he puts them in the middle."

Now, you can put immature turkeys in the middle, on the bottom, or outside, and the commission man will find them just the same; moreover, he will put the price down to their level.

By holding all immature birds for the Christmas market there is just time to get them in quality shape for market. As they are partly confined for a least a month, they should be allowed room enough to take some exercise. A lean-to at one side of a barn, fenced around with two-inch wire, makes a good place for turkeys. Provide roosts before putting the turks in and put all feed troughs where they are handy to get at so that they can be swabbed out occasionally; besides that, the less noise or confusion about turkeys that are confined, the better. The more secluded and quiet, the better they will do.

After they are in their new quarters, feed them lightly for a few days; it matters little what, so that they are kept hungry. Then commence to feed for flesh; the fat will come later. If possible, one or two meals a day should be partly boiled potatoes; the small ones are quite as good as the large ones for this purpose. Boil potatoes enough so there will be, when mixed with the ground feed, a good meal without any leavings. It is best to let them cook soft, as they are easier to mash. When cooked, mix in sufficient cornmeal, ground oats or ground barley, and keep mashing potatoes and mixing until the whole is like stiff dough. A little practice will tell you how much water and potatoes you can use to make the mash a good fattening one. Enough there must be, but none to leave over, because it soon sours, and turkeys in confinement are very particular about what they eat. Vary the grain that goes into the mash so the appetite will not cloy so soon as if one kind is fed. Ground oats stand first, if you can get them reasonably fine ground; corn comes next, and barley ground fine last of the three. If you want something extra fine, feed boiled peas a few times a week. Pea meal would be better, but it is hard to get. If there is plenty of skimmed milk on hand it could not be put to better use than in making the mash for fattening turkeys. Or give it slightly warmed as a drink. Don't forget that the birds are confined and must be served with good sharp grit or gravel. Steamed or boiled corn is also a good fattening food. What you want is something that will digest easily and rapidly. Uncooked grains make firm flesh, but it takes longer to get the quality, because the fowls do not digest it so well or so quick. If you are fattening turkeys for your own use, or for some particular private trade that pays well to cater to, add a little chopped suet or tallow to one mash a day and also chop up a stick of celery. Or even celery seed may be mixed in the mash, and the result is a very juicy, rich-flavored turkey worth at least five cents the pound more than the ordinary turkey.

English feeders that cater to high-class trade have many secrets on the feeding question. Beer and sometimes port wine is fed for a few days, just to give the flesh a flavor.

The recipe for jugged hare that has made English dinners so notable is to stew the hare in Dublin Stout or half-and-half instead of water. Try it, and if your mouth does not water for more you are not an epicurean.

For ordinary markets flavor is not considered. What is wanted is size and weight. These two qualities fix the class, therefore the price, of your turkeys. When you market them see that they are penned according to size and weight. If there are several of a smaller size, then put them in a coop together. By doing this you will get a more uniform price for all, and both the commission merchant and yourself will be better satisfied.

TO FATTEN GEESE.

Geese are easily fattened; all they require is the material to convert into flesh, a good clean bed at night, and a dish of clean water served with their meals. Any kind of scrapple or refuse meat cooked tender with small potatoes and mixed into a stiff dough with cornmeal will soon make fat geese or ducks. But meat they must have if they are to pay for your trouble. A good cake of cracklings fresh from the press, soaked in cold water a few hours, then boiled up before the meal is added, makes an excellent mash for the quacks. They will get so fat on that diet that you will have to kill them. The old system of cramming is unnatural, though it is practiced yet; but if the geese are fed on the right kind of food they will hold their appetites quite a while, and when they are stalled it is time to kill them instead of resorting to cramming.

After the appetite fails, it is but a question of time when an unhealthy condition arises; gas begins to form, and if the bird is crammed for, say a week, there is just time enough to set up an inflammation of all the mucous lining; then the bird is killed and eaten by humans, who are perhaps by temperament easy victims to inflammatory diseases, and there we are. Inflammatory rheumatism and many other conditions are brought about by just such heedless methods. No bird or animal should be kept after it has gained all the flesh it can gain by clean natural methods of feeding. If it is, it is a disease breeder; its blood is filled with uric acid and it is not fit for human food.

The same principle applies to the fattening of poultry; nothing should be kept after the appetite fails to respond to good clean appetizing food.

Thousands of dollars are lost annually from the carelessness of keeping stock after they have reached the line where profit and loss are merged into one. They need watching at mealtimes to see how keen they are for food, and the moment they begin to leave it lying in the troughs untouched, away with them to market before they commence to lose weight, for remember that they lose weight faster than they gained, even at their best.

THE NATIONAL BIRD.

Deacon Wingood of Missouri says: "Show me the greatest bird in the world." Answer—Here she is: The Billion-Dollar Hen.

Poultry and eggs this year amount in value to more than $1,000,000,000.—Crop Report.

Dr. A. A. Brigham, of South Dakota, is always just about right in anything he says on poultry matters. And what he says is always readable. Here is a bit of his latest, told in a droll manner that one loves to read: "You have probably all heard of the man who had three hands, a right, and a left, and a little behind hand. Well, a poultryman should be right-handed, left-handed, two-handed, fore-handed, never underhanded, and get there with both feet." Right you are, Doctor, and if you want to succeed you must plan to use all your handed hands together.

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The following list of farm books are kept in stock and will be mailed on receipt of prices quoted:

The Book of Alfalfa, by Coburn	$2.00
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Soiling Crops and the Silo, Shaw	1.50
Swine Husbandry, Coburn	1.50
Studies in Horse Breeding, Carlson	2.00
Greenhouse Management, Taft	1.50
Mushroom Culture, Falconer	1.00
The Study of Corn, Shoesmith	.50
Plant Life on the Farm, Masters	1.00
The Hop, Myrick	1.50

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The Home Circle.

Autumn.

Aglow is the scene on which I gaze,
The rapturous beauty of the autumn days;
The sky o'erspread with the deepest blue,
And wide-stretching forests of varied hue.

There's a charm in the picture that I behold,
The leaves of scarlet and brown and gold;
The calm that rests over hill and plain,
Of this, autumn's fair and peaceful reign.

I listen, and through the enchanted trees
Is softly playing an autumnal breeze;
Leaves, one by one, are seen to fall,
While a hush sublime rests over all.

Sadly the birds flit here and there,
The sweet wild flowers seem mildly fair;
And there's naught in sight, nor even sound,
To mar the spell of the sweets profound.

—Mary A. Wilson.

The House That Jack Built.

Jack Waring was bashful, but it was a question if he was any more bashful than Ethel Talcott. They could not speak to each other on even the most trivial subjects without stammering and blushing, but Jack persisted in calling, despite the apparent discomfort his visits caused both. Everybody could see that he was desperately in love, and it was a saying among their friends that if Jack could ever summon up the courage to propose, Ethel would be too bashful to refuse him, whether she loved him or not. She had just come out at the beginning of the season, about the same time that Jack, who had just graduated from college and entered his father's business, of which he was the prospective heir, first began to attract the attention of designing mothers and attractive daughters. Perhaps it was while avoiding them that he met Ethel, who had found that there are ways of keeping out of sight when a ballroom was crowded with other girls who were enjoying themselves.

Although Jack was bashful, he called on Ethel as often as he dared, but in spite of all his resolutions to overcome his diffidence he made little progress with his suit. Unlike most young people in a similar case, they courted rather than avoided the company of Ethel's little brother, Gus, and Jack soon became such friends with him that he felt called upon to remember his birthday. This he did by sending him an elaborate box of building blocks, which Gus dragged into the parlor on the occasion of his next visit, and insisted that the donor teach him how to build with them.

"What shall I build?" Jack asked.

"Build me a big hotel like the one Ethel and I were at last summer."

Jack obediently drew his chair to the middle of the room and began on a suitable design. But he soon found that building while sitting on a chair was difficult, and as Gus was sprawled comfortably on the floor watching the work, he presently slipped down beside him.

In a very few minutes Jack was as deeply interested as if he were building a sure enough hotel, and Gus watched with admiration. Presently he tried to put in place an arch that was in two pieces and needed two other blocks to be placed beside it in order to keep it in place. Gus tried to hold the pieces in place, but in doing so he knocked a corner out of the building with his elbow.

"You clumsy boy!" exclaimed Ethel, who had been watching with the most intense interest. "Here—let me hold them," and a moment later she was sitting on the floor with them.

Jack patiently rebuilt the damaged corner and then Ethel held the arch until he had built around it.

"Now make some bathing houses on the beach," commanded Gus.

Jack obeyed, and then Gus brought out some men and women cut out of cardboard and set them around to represent the guests.

"Here's you and Ethel. I'll introduce you, for you weren't acquainted then," said the young rascal, as he placed the figure of a man raising his hat before that of a young woman with a parasol.

"All right," said Jack. "But I am not raising my hat at her as I should. I am raising it at the far corner of the building. Here, let me set them right."

Saying this, he reached out and turned the figure representing Ethel. Immediately a white hand shot out and turned the back of the pasteboard belle toward the bowing figure.

"Snubbed!" exclaimed Jack, having a boldness for his pasteboard representative that he never would have presumed to have for himself.

"But you don't know him yet. He's the cheekiest man on the beach, at heart;" and he moved his representative with his bow in front of the maid with the parasol.

"And she's the haughtiest girl at the beach," said Ethel, as she again snubbed her cavalier.

"Try them behind the hotel where the hammock is and folks ain't lookin'," volunteered Gus.

"Great head!" exclaimed Jack, picking up the two figures to make the change.

"Take care whom you're handling like that!" exclaimed Ethel, grasping him by the wrist and striving to pry his fingers loose from her figure.

There was a struggle full of the abandoned gayety of the nursery, to which the blocks had brought them back far from the formalities of social life. Gus jumped into the struggle to help Jack, and in the general mixup the hotel was wrecked worse than any house that was ever built on sand.

"Now you must build me something else, you two," whined Gus, over the ruins of his hotel.

For an hour they built and rebuilt all kinds of houses, to the infinite delight of the boy, who watched and criticized. At last they disagreed about what should be built.

"Let's build a cottage," said Jack.

"No, let's build a church," said Ethel.

"I want you to build both," said Gus.

So, as there were plenty of blocks to build both, they started a race to see who could finish first. But it was a peculiar thing that Jack built with his left hand and Ethel with her right, while each leaned on the hand that was supposedly disengaged. But an observer less interested in building than Gus might have noticed that the two hands not used in building were trying to rest on the same spot of floor, and occasionally the fingers intertwined in a way that brought color to the cheeks of the two young people, whose faces were carefully averted.

"Jack's cottage is done first," cried Gus, sprawling forward with his cardboard figures. "And there you both are going in the front gate."

"But we should go to the church before we go to the cottage," said Jack gallantly "Don't you think so, Ethel?"

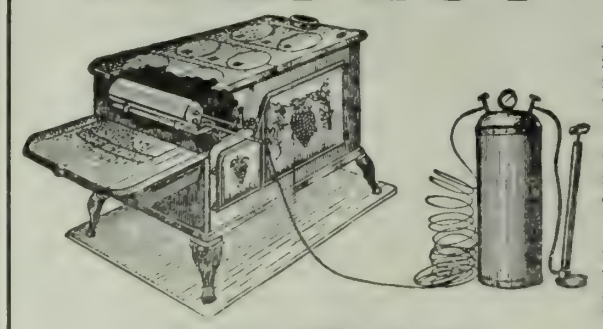
A gentle squeeze of the hand was the only response.

"Then it is settled," he exclaimed, in a trembling voice, glancing at the back of an averted head. "First to the church and then to my cottage."

Another pressure of assent.

Just what would have happened next, in spite of the presence of Gus, will never be known, for his mother, who had entered the room unnoticed, suddenly exclaimed:

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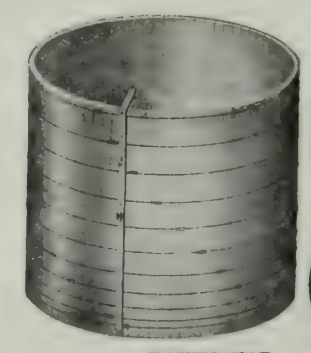
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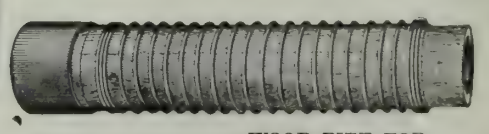
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"Well, bless my heart, is this a nursery?"

They both sprang to their feet in confusion, but Jack still clung to Ethel's hand. Her mother looked from one to the other, and then Jack managed to stammer:

"That's right—we want your blessing."

"Engaged!" exclaimed the mother. "Well, I never. And that boy in the room all the time! Talk about bashful people!"

"Never mind that," said Jack, suddenly grown as bold as brass, as he planted his first kiss on Ethel's lips. "The question is, do we get the blessing?"

"You'll be able to tell better after you are married," said the mother, as she pushed them ahead of her toward the study, where her husband was sitting pretending not to overhear.

The Dollar Not Needed as a Starter.

Many of our boys think they might make a success in life if they had something in the way of capital to start on. That dollars are not the necessary or even the best capital upon which to start a business career is illustrated by the following incident as reported by the Oklahoma City Times:

At a recent meeting of the directors of the National Reserve Bank of Kansas City, the president asked each one present who had begun business with a capital of $10,000 to stand up. There were 25 directors in the room, and their wealth would aggregate about $20,000,000. Not a man of the 25 arose. Dr. Johnston, the president, then put another proposition. "Each of you who had $5000 with which to begin business, stand up."

The directors looked around at each other, but not one of them arose.

"Each of you who had $1000, stand up," persisted Dr. Johnston.

The directors began to laugh as they looked around at each other and all remained seated. Dr. Johnston kept putting the proposition, lowering it each time by $100. When he got down to $100, one of the directors stood up and said that was the amount of his capital when he began business.

The majority of the others began without a dollar. Dr. Johnston himself, estimated to be worth a half million dollars, began his business career without even a pair of shoes.

Defective Education of Housewives.

The annual report of Sir George Newman, M. A., chief medical officer of the Board of Education, London, shows that vast numbers of school children suffer from malnutrition—in other words, are starved.

It is pointed out that merely to increase the supply of food would not solve the problem, though food is lacking in many cases, for the real trouble seems to be the want of housewiefly ability on the part of the mothers. It is, after all, questionable whether the "old-fashioned" system of training, which did turn out good housewives, is not a better foundation for the healthy family life than the present method of teaching girls a smattering of many things which will never be of any real value to them afterward, and of which—though it is supposed to "broaden their minds"—few girls ever make use of in later life. A contemporary quotes the suggestion that "the waste of an ordinary English household would maintain an ordinary French one of the same class," and it is a lamentable fact that many servants drawn from the lower classes regard anything savoring of economy as "meanness." A radical change in methods of training is called for. The simple tasty dinners which can be made by a good cook out of a few scraps at small expense, rarely enter into the dietary of the lower classes, who stand most in need of wholesome food at low cost, and a knowledge of how to make soups and stews would be worth a good deal more to the laborer's wife than an acquaintance with the whereabouts of Timbuctoo or the ability to "parse."

Useful Hints.

To make a good dusting cloth, wash thoroughly a piece of cheesecloth the desired size and let dry on a line. Then saturate with coal-oil, wring dry, and dry outdoors, when it will be ready for use.

To keep kettles bright, rub the bottom of the new kettle with soap before setting it on the fire. When washed the soot will all come off, making it look like new.

When tablecloths become thin and worn in spots, cut them up and make the good pieces into napkins for use in the children's school lunch.

When buttonholes on the neckband of a shirt wear out, stitch a piece of tape over the worn place and work in it a new buttonhole.

When dirty, white paint can be easily washed by using skim-milk.

Before blacking a stove, grease your hands, and the black will be easily removed by washing them in warm water with soap. Better yet, keep a pair of old gloves handy.

Chilblains.

Chilblains are an inflamed condition of the hands and feet generally—caused by the cold. The symptoms are: first, the skin of the affected part becomes red, purple and very itchy; second, blebs containing a thin fluid form on the discolored part and become painful; third, these blebs break and leave behind an ulcerated surface, difficult to heal. Preventative treatment is the best—good food, warm clothing, plenty of exercise, comfortable boots (a good size), and thick stockings for the feet, and warm gloves, covering well the wrists, for the hands. If the hands and feet are cold they should be rubbed for warmth, but not held near a fire. On the first indication of symptoms a good remedy is to powder some common salt, on a plate; put it in the oven to warm, cut an onion in half, dip it in the salt, and gently rub this over the chilblain. Another good preventive is to get from any chemist a fluid called "New-Skin," and follow the directions on the bottle. A camel's-hair brush will be required. Should the chilblain become broken, boracic ointment spread on old linen and wrapped round the sore is best. Care should be taken to prevent the stocking from sticking, or the shoe from pressing.

Fig Candy.

A dainty and inexpensive candy is made thus: Chop into bits and boil a pound of figs. When soft, strain and press through a sieve. Return to the water in which they were boiled, and which should be reduced to one cupful. Stir in three pounds of granulated sugar and cook down slowly until a thick paste is formed. Pour in pans lined with paper. Let cook. Take out on the paper and cut into sections. Dust with powdered sugar.

Two Irishmen died, so the story ran. One went to heaven and the other didn't Mike called down to Pat:.

"What are yez doin', Pat?"

"Shovelin' coal."

"Arre yez workin' harrd?"

"Not very. We has shifts an' work only three hours a day. What arre yez doin' up there in hivin?"

"Oi'm sweepin' the golden stairs."

"Arre yez workin' harrd?"

"Yis. Oi hov to worrk eighteen hours a day. We're short of men up here!"—Hardware Reporter.

An Incident of the Road.

"Stop!" cried the man in the road. "You are exceeding the speed limit!"

"That's all nonsense," retorted Binks, bringing his car to a standstill.

"That's what they all say," said the man in the road, climbing into the car. "You can tell your story to the magistrate at Hinktown—just seven miles up the road. Start along, please."

They drove on in silence to Hinktown, where, as the car drew up in front of the court house, the man in the road got out.

"Much obliged for the lift," said he. "You can settle that matter of speed with the magistrate if you want to. As a stranger in these here parts, I don't think my word would go for much."

To make chicken-feather pillows, first wash the feathers in soapsuds, rinse thoroughly, and put in muslin flour sack to dry. Put where air will dry them as quickly as possible, shaking them often till dry and fluffy.



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Alkali Lands.

Written for the PACIFIC RURAL PRESS
By THOS. H. MEANS.

Inquiries continue to come in concerning alkali lands. Everyone connected with the development of agricultural properties frequently encounters inquiries concerning the best methods of handling alkali lands, questions concerning the kinds of alkali lands, the kind of crops to grow, and how best to grow them, and a host of other questions of a similar nature.

Although a great deal of information has been published by the agricultural press and through the bulletins of the Experiment Stations, yet few people seem to have an exact knowledge of what alkali soils are, or of how they can be handled. Everyone seems to fear alkali soil, and no one seems to have a good word for land which has even a small amount of alkali in it.

In various parts of the United States, alkali soils have been handled with profit, and in some places barren land has been reclaimed and made fertile. It would seem, therefore, that though alkali lands have been described many times, other statements about them would be of interest.

The term "alkali soil" is used in the Western States to indicate any lands which contain an excess of soluble salts, whether these salts are alkaline in the chemical sense, or not. The term is a popular one, and, though inaccurate as a technical term, has become of such general use that it has a definite meaning to the farmer. The salts which form alkali soil include a number of the common soluble salts. Among them are sodium chloride or common salt, sodium sulphate or glaubers salts, magnesium sulphate or Epsom salts, and sodium carbonate or washing soda. The last salt, sodium carbonate, is generally called "black alkali" for the reason that it has a corrosive action upon the humus or other organic material in the soil, and deposits black crusts on the surface. All of the other salts are generally classed as "white alkali" salts.

Alkali soil is common in all parts of the arid regions of the world. In fact, nearly all arid soils contain more soluble material than that commonly found in the soils of the humid regions. The soluble salts are formed during decomposition of rocks to form soil, a chemical process which is going on all the time. Where the rainfall is heavy enough to leach the soil of the soluble matter as fast as it is liberated, the material is carried away to the ocean or some inland lake or basin, and there accumulated. Lakes or basins which do not drain into the ocean invariably accumulate soluble material in this way. Such lakes as Owen's lake in California, Great Salt Lake, Caspian Sea, Winnemucca lake in Nevada, and a host of others, are all more or less brackish or salty, depending upon the amount of soil leaching they have received. The ocean is a great receptacle for the accumulation of soils liberated from rocks.

The amount of soluble matter removed from decomposition of rocks to form soil has been shown by Dr. Merrill, the geologist of the U. S. Natural Museum, to vary from 10 to 60% of the original rock. Or, for every acre-foot of soil formed, from 200 to 2500 tons of soluble material is removed by water and leached out. A portion of this soluble material consists of silica, alumina, iron, and other chemical compounds which generally are redeposited in the ocean or inland basins, and do not accumulate in sufficient quantities in the water at any one time to be harmful to plants. The remainder, and what is the most important part of the leachings from decomposing rock, consists of salts of calcium, magnesium, sodium, and potassium. These form the alkali salts found in arid regions.

The rocks of much of the Western country are sedimentary in origin. That is to say, they consist of sediments laid down under water of rivers or lakes. They are called shales, sandstones, mudstones, or clay, and often contain layers of soluble salts or gypsum. It happens that when these rocks are exposed to decomposition they liberate soluble matter, in just the same manner that igneous rocks liberate soluble matter.

As stated, alkali soils are broadly divided into two groups, while alkali and black alkali soils. The amount of alkali plants can endure and thrive depends upon the age of the plants, kind of soil, chemical composition of the alkali, location of the alkali in the soil, and the climate under which the crop is growing. Individual plants of one variety, plants of different varieties, and plants of different species show great differences in their ability to resist alkali. Considering all these factors that enter into the problem, it becomes well-nigh impossible to lay down definite limits of endurance to alkali, so that only the most general figures can be given. The average limits of endurance in those plants more resistant than others are given in the following tables:

LIMITS OF ENDURANCE OF ALKALI FOR GOOD PLANT GROWTH.

	White Alkali Principally Sulphates. % total salts.	White Alkali Principally Chlorides. % total salts.	Black Alkali Sodium Carbonate. % sodium carbonate.
Good for all crops	0.0 to 0.40	0.0 to 0.25	0.0 to 0.05
Good for alkali-resistant crops	0.40 to 1.00	0.25 to 0.60	0.05 to 0.10
Too much alkali for good growth	1.00 or more	0.60 or more	0.10 or more

PLANTS SEEMINGLY RESISTANT TO ALKALI SALTS.

Alfalfa (old plants)
Barley
Bermuda grass
Cotton
Grapes (some varieties)
Date palms
Kafir corn
Oats
Olives
Pears
Salt grass
Sorghum
Sugar beets
Orchard grass
Pomegranates
Johnson grass

There are many exceptions to the above tables, to be found in practice, as so much depends upon the treatment of the soil and plant by the farmer. One sees good and bad fields separated only by a barbed-wire fence; the difference in yield between the two fields being due to superior farming in one case. The first table is based upon the amounts of alkali in the first foot of soil. The majority of plants root into the second or third foot of the surface, and should there be any quantities of alkali below the first foot this may have a very marked effect upon the growth of the crops. In examining alkali land, care should be taken to investigate the soil as deep as crop roots are likely to go; for while the surface foot may be entirely free from soluble salts, there may be sufficient in the lower depths to injure the ground if a rise of alkali occurs.

There is probably no irrigated district in the West—or, for that matter, in any other country—which has not suffered to a greater or lesser degree from alkali. An estimate in 1902 from the detailed examination of a number of soil surveys made by the Department of Agriculture showed that about 13% of the irrigated and irrigable lands covered by those surveys was so damaged by alkali as to be either unproductive or else have its productivity seriously impaired. This means that one acre in every eight, in our irrigated districts, is not producing its full quota of crop.

Alkali lands are sometimes natural, and their cultivation has not been attempted. The greater part, however, is land which has accumulated alkali through bad practices of the irrigator, or through lack of knowledge of the conditions which govern alkali accumulations.

This trouble is not confined to America, but in Egypt, India, Algeria, Italy, France—in fact, wherever irrigation is practiced the problem is recognized. A few years ago, the writer was making investigations in southern Arizona, where there are evidences of prehistoric irrigation. Old ditch lines are traceable for miles, and lying beneath those ditch lines were found patches of alkali land, in a district which otherwise was free from alkali. So it seems likely that the prehistoric people who built these ditches and farmed in southern Arizona encountered an alkali problem. It is not impossible, but their lack of knowledge of how to handle alkali lands may have been the prime cause in their abandonment of the irrigation systems and their retreat to other lands.

In another paper the question of handling alkali soils and methods of cultivation of them will be discussed.

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Dean and Professor of Agriculture in the College of Agriculture of the University of California; Director and Horticulturist of the University Experiment Station; Author of "California Vegetables in Garden and Field"; Editor PACIFIC RURAL PRESS; member National Council Horticulture, etc.

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FARMER'S REFLECTIONS AT A GREAT SHOW.

(Continued From Page 457.)

The illustration shows the pens of a poultry plant run in conjunction with an orchard at the Rancho Yojame in Napa county, where several varieties of prize-winning chickens are raised, but where good breeding stock suitable for the farmer can always be obtained at very moderate prices.

Taken all in all, the poultry industry in Alameda county has made very noticeable advances during the last few years, and there does not appear to be any immediate danger of her losing the prestige, established long before the fire, of having the largest number and most expert poultry breeders in the State; but I would again, in conclusion, direct the California farmer and orchardist to look further into the possibilities of the poultry branch of farming, being thoroughly convinced that it will ultimately be the up-to-date and progressive farmer and fruit grower that will extract more profit from the poultry industry than any other class—with the possible exception of those that breed thousand-dollar hens.

REPELLING DEER AND RABBITS

To the Editor: I have had a great deal of trouble with the deer eating off my young trees, but have now got a fence up, which seems to keep them out. It is over 7 feet high, with 26-inch woven wire on the bottom and from 10 to 12 barbs above; posts 12½-foot centers and three wires tying the barbs together in between. I have not been bothered with rabbits all summer, but now that the deer have let up, the rabbits have started and are eating the trees the deer left above the protectors. Is there anything that you know of which can be done to stop them? Will it do any good to paint the trees with whale-oil soap? How should it be put on, and how often? As the two miles of fence I have around the orchard has cost me about $1400, I don't want to have to go to the expense of putting poultry netting around the bottom if I can help it. If you will answer this in the PRESS it may help some one else at the same time. E. W. GOULD.

Ukiah.

Rabbits are repelled by rubbing blood, spoiled meat or fat on the bark. Some growers kill a rabbit, open it up, and use the carcass as a rubber. Others make a tea of quassia chips or of commercial aloes, one pound to four gallons, which is intensely bitter and prevents the rabbit from taking a second bite.

The New Mexico Experiment Station says that injury to trees by rabbits may be prevented by painting the trunks with washes prepared according to any of the following formulas:

FORMULA No. 1.—Slake in water over night the quantity of unslaked lime needed for the work. In the morning add enough water to make a good thick wash. Stir the mixture well and to each 2½ gallons of the wash add 2 tablespoonfuls of paris green. Take care to mix well in the wash. Apply to the trunk of the tree with an ordinary paint-brush; keep the wash stirred up so the ingredients will not settle to the bottom of the pail.

FORMULA No. 2.—Slake the lime as above and stir in just before using in place of the paris green from ½ to 1 pound of arsenate of lead to each pailful of the wash. A handful of salt added to the wash will make it stick better to the trunk of the tree. Apply this wash in the same manner as in No. 1.

FORMULA No. 3.—Take equal parts of unslaked lime and cow manure and add enough water to make a thick wash, and apply with a brush. This makes a cheap and effective remedy to keep rabbits from gnawing young trees.

FORMULA No. 4.—Make a wash of equal proportions of sulphur, stove soot, and unslaked lime. Put in enough water with these ingredients to make a thick paint. Apply with a brush in the ordinary manner.

It takes no extraordinary skill or practice to make and use any of the washes given in the above formulas. All the care that will be necessary will be to mix them carefully and apply in a workmanlike manner. In formulas 1 and 2, two ounces of strychnine may be added instead of the paris green or arsenate of lead.

WAYS TO SPREAD LIME.

To the Editor: Kindly let me know how to apply commercial lime to alfalfa lands. READER.

Covelo.

There are many ways for field application to land, but not so many for application to a growing crop, which is more difficult and dangerous because of too great strength in spots. Probably, for alfalfa, application during the rainy season, when the plant is dormant, in the colder parts of the State, would be most convenient, and the use of a lime spreader, which our implement men ought to be advertising at this time of the year, is commended. Lacking this, one can safely spread slaked lime with a shovel from a wagon, if there is just enough air movement to carry the dust away.

Though not in all respects applicable to our correspondent's question, the following details on application of lime, from the Michigan Experiment Station, may be helpful:

If the lime is being applied for the benefit of any immediate crop, it should be applied, in whatever form used, after the plowing has been done, and should then be thoroughly harrowed into the surface soil. It is best to make the application some little time before sowing the crop.

Whatever form of lime is used, if it is in a fine condition, either as the result of grinding or of slaking, the best method of applying it to the soil is by the use of a lime spreader, of which there are a number of kinds on the market. The ordinary fertilizer drill does not spread any of these materials well except the very finely ground limestone.

It is occasionally recommended that lime in whatever form, if in a fine condition, be applied to the soil by hand, much as one would sow grain by hand. In windy weather this method is likely to prove very disagreeable to the sower. At any time, unless gloves are used, the lime is very likely to irritate the hands.

A very satisfactory way is to distribute the material in piles two rods apart each way, and then later each pile can be spread with a shovel over an area extending about one rod in all directions from the pile—each pile is spread so as to cover four square rods of area. A fairly even distribution can be made in this way and the distribution is improved when the lime is harrowed into the soil. By this method there will be forty piles to the acre. The amount of material to be put in each pile is found by dividing the rate of application in pounds per acre by forty. If the rate be 800 pounds per acre, 20 pounds is the amount per pile. If the rate be 1200 pounds per acre, 30 pounds is the amount per pile, and so on.

In applying unground or unslaked burned lime, probably the best way is to distribute in piles as described above and allow to stand until slaked. It will not require a long time for the air to accomplish the slaking. A small amount of water may be applied to each pile, though this might prove something of a task. A few shovelfuls of moist soil thrown upon each pile is said to accomplish the slaking in a very short time. When the slaking has been accomplished the spreading should be done as indicated above.

IRRIGATION RESOURCES OF CALIFORNIA.

The mapping of the irrigable agricultural areas of California and the preparation of a report showing the present and possible future irrigation development in the State is the task turned over to the Irrigation Investigations of the United States Department of Agriculture by the State Conservation Commission of California, of which former Governor Pardee is chairman, and Francis Cuttle and J. P. Baumgartner are the other members.

Ten thousand dollars has been set aside by the Conservation Commission for this work under co-operative agreement with the director of the office of experiment stations and the Secretary of Agriculture. According to this agreement, not only is the Department of Agriculture conducting the investigation and supplying part of the immediate funds needed, but it is also placing at the disposal of the Conservation Commission for the purpose of this report the results of the irrigation censes in California recently completed at a large cost under co-operative agreement between the Department of Agriculture and the Bureau of the Census. All of the data gathered in California along irrigation lines during the past eleven years under authority of the Secretary of Agriculture and in co-operation with the State of California will also be drawn upon.

While the irrigation may being made is not to be based on precise surveys made during the present year, it will follow careful field investigations into the irrigable agricultural areas of every valley of any importance in the State. The map will be prepared on a large scale and will show the irrigable agricultural areas in every part of the State where irrigation is or should be practiced. It will also show the irrigated areas, the water resources of importance in irrigation and all of the co-operative and company canals.

The field work of this investigation has already begun and the northeastern counties of the State are covered. From eight to ten men will be engaged on the investigation throughout the winter, and it is expected that it will be completed by April. In the meantime progress reports will be issued stating the conditions found, and before the next meeting of the legislature it is expected that a bulletin carrying the results of the entire inquiry will be issued by the Department of Agriculture at Washington. The work is being directed from the Californio headquarters of Irrigation Investigations, at Berkeley.

WOOL GROWERS' MEETING.

At the annual meeting of the California Wool Growers' Association in San Francisco, Monday, November 27, it was decided to work for a tariff that would apply more to the raw wool than the present one does, and that, if possible, the tariff should be made on a scoured basis. Secretary F. A. Ellenwood led the discussion upon this subject. Among other addresses delivered were those by John H. Hatton, Assistant District Forester, Dr. William Hicks of the U. S. Bureau of Animal Industry, and State Veterinarian Charles Keane.

The officers chosen for the coming year were C. A. Kimble of Hanford, president; J. H. Glide of Dixon, vice-president; F. A. Ellenwood of Red Bluff, secretary; and L. L. McCoy of Red Bluff, treasurer.

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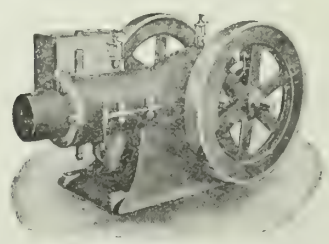
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THE MARKETS.

San Francisco, Nov. 28, 1911.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The local market continues fairly active, though trading is mostly of a jobbing nature, and a large portion of the supplies are brought from the North. Coastwise freight rates have advanced, but no change is noted in local quotations.

California Club	$1.50	@1.55
Sonora	Nominal	
White Australian	1.65	@1.70
Northern Club	1.50	@1.55
Northern Bluestem	1.70	@1.75
Northern Red	1.65	@1.70

BARLEY.

The movement has fallen off materially this week, due to the absence of any large offerings. Futures have declined in the last day or two, but the spot market is firmly held, and there is a strong demand for both feed and brewing grain.

Brewing and Shipping	$2.05	@2.10
Choice Feed, per ctl	1.95	@2.00
Common Feed	1.80	@1.85

OATS.

The scarcity of barley is causing a heavy demand for feed grades, but with continued heavy arrivals from the North the market is amply supplied. Prices are firmly held at the last quotation.

Red Feed		$1.85
Gray	1.75	@1.80
White	1.75	@1.80
Black	1.75	@2.00
Red Seed	1.95	@2.10

CORN.

California small yellow is nominal, in the absence of offerings. Some large yellow is arriving, but prices have not been established. Eastern grades are quoted as before, both demand and supply being limited.

Eastern Yellow	1.85
Eastern White	1.90

RYE.

Both demand and supply are light, and the market is featureless, prices standing nominally about as before.

Rye, per ctl	$1.75	@1.85

BEANS.

Some improvement is noted in practically all lines this week, pink and colored beans, which have been easy, being considerably stronger under a good demand. All descriptions are moving off in good shape. Bayos, which have been rather weak, are quoted higher, and an advance is also noted in blackeye and cranberry beans. Whites are unchanged, though the tendency is still upward. The most interesting development is in limas, which at the beginning of the season were rather weak, as dealers were doubtful of the possibility of moving the large crop. The demand, however, has been greater than was generally supposed, and it is said in some quarters that not over 75,000 bags remain in growers' hands. Stocks seem to be light all over the country. The Association, after naming prices for shipment in the latter half of November, has again withdrawn from the market, and a further advance is predicted for December. The excessive demand, it is reported, comes mainly from the Colorado and Mississippi river districts, where the demand has increased about 100%. Prices on Madagascar limas are about $1 higher in New York than on California stock, so competition is almost entirely eliminated.

Bayos, per ctl	$3.75	@3.85
Blackeyes	3.90	@4.00
Cranberry Beans	4.15	@4.35
Garvanzos	3.00	@3.50
Horse Beans	2.75	@3.25
Small Whites	4.10	@4.15
Large Whites	4.00	@4.10
Limas	6.00	@6.10
Pea		4.25
Pink	3.10	@3.20
Red Kidneys	5.10	@5.25

SEEDS.

So far there has been practically no movement of alfalfa seed, owing to lack of rain, and other lines are largely nominal.

Alfalfa	17	@18 c
Broomcorn Seed, per ton		$28.00
Brown Mustard, per lb		5½c
Canary		4½c
Hemp		4½c
Millet	3	@ 3½c
Timothy	Nominal	
Yellow Mustard		5¾c

FLOUR.

Prices are unchanged, and the local market remains quiet as for some time past, though there is still a fair shipping business.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.80	@5.00

Hay and Feedstuffs.

HAY.

Prices have not quotably advanced, but the market is extremely firm, and from present indications higher figures will be quoted next week, as some dealers are refusing to sell at the range quoted, and there is more inquiry from local consumers than for several weeks past. Just at present, however, local business is light. The country market is quite active, the absence of green feed making heavy purchases necessary in many districts. A great deal of hay has already been taken from the warehouses, and the withdrawals will doubtless be much heavier from now on. There is some inquiry from points up and down the Coast.

Choice Wheat	$18.00@20.00
Good Wheat Hay	13.00@17.50
Other Grade Wheat	10.00@12.50
Wheat and Oats	10.00@17.00
Tame Oats	10.00@16.50
Wild Oats	8.00@13.00
Alfalfa	8.00@13.50
Stock Hay	6.00@ 7.50
Straw, per bale	35@ 70c

FEEDSTUFFS.

Prices are unchanged, but there is an easier feeling in bran, which is arriving freely from the North. All descriptions are in active demand, and in most lines prices are firm.

Alfalfa Meal, per ton	$18.00@19.00
Bran, per ton	27.00@28.00
Oil-cake Meal	Nominal
Cocoanut Cake or Meal	25.50@26.50
Cracked Corn	39.00@40.00
Middlings	34.00@36.00
Rolled Barley	40.00@41.00
Rolled Oats	38.00@39.00
Shorts	32.00@33.00

Garden Truck.

VEGETABLES.

Onions are still quiet, and with liberal offerings prices are rather easy as last quoted. Most of the general garden truck now in the market is coming from southern California, the arrivals for the last day or so being rather heavy. Some tomatoes, however, are still arriving from nearby points, and the best lots are held at an advance. Celery is quite a feature at present, being in demand for the Thanksgiving trade, and is bringing good prices. Southern bell peppers, eggplant, and green lima beans are higher, and cucumbers show a wider range, though at present prices there is no great demand. Local winter vegetables are in ample supply and move well at former prices.

Onions: Yellow, ctl	90c@	$1.05
Garlic, per lb	3@	4c
Tomatoes, per box	50c@	1.25
Cucumbers, per doz	75c@	1.25
Cabbage		50c
Carrots, per sack	50@	60c
Cauliflower, per doz	50@	75c
String Beans, lb	6@	9c
Lima Beans, lb	8@	10c
Summer Squash, per box	1.00@	1.25
Eggplant, per lb. (Southern)	5@	7c
Bell Peppers, per lb	6@	8c
Celery, per doz		50c

POTATOES.

There is no particular demand from other quarters at present, and with plenty of stock on hand for immediate needs the market is quiet at the old quotations.

River Whites	$ 1.10@	1.25
Sweet Potatoes, per ctl	1.65@	1.75
Salinas Burbanks	1.65@	1.85
Oregon Burbanks	1.50@	1.70

Dairy Produce.

POULTRY.

Chickens have been quite plentful this week, but with a good demand prices for broilers and roosters are a little better, and the best lots of squabs, ducks and geese also bring an advance. The Thanksgiving turkey market has hardly been as good as dealers expected. Live stock is a little higher, but arrivals of dressed turkeys have been extremely heavy, including considerable stock in only fair condition which was shipped in on account of the high cost of feed. While the demand has been satisfactory, it was not sufficient to clean up the market, and only the finest offerings would bring over 28c.

Large Broilers, per lb	27	c
Small Broilers, per lb	31	c
Fryers, per lb	18	c
Hens, extra, per lb	15	c
Hens, large, per lb	14	c
Small Hens, per lb	15	c
Old Roosters, per lb	12½	c
Young Roosters, per lb	18	c
Young Roosters, full grown	17	c
Squabs, doz	2.00@	3.25
Geese, per pair	2.50@	3.00
Ducks, doz	4.00@	9.00
Turkeys, live, per lb	21@24	c
do dressed	22@29	c

BUTTER.

Extras are unchanged, but firm and rather scarce, while prime firsts, firsts, and storage extras are a little higher than last week. Supplies in general are light, and some extra local demand is noted on account of the holiday.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed
Extras	31	31	31	31	31	—
Prime Firsts	28	28	28	28	28½	—
Firsts	26½	26½	26½	26½	27	—
Storage Extras	28	28	28	28	28	—

EGGS.

Pullet eggs are coming forward a little more freely, but this grade is in good demand and has been gradually advancing. Storage stock is about as before, while extras show very little change, being firm under an active demand.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	51	51	51	52	51½	—
Firsts	45	45	45	45	45	—
Selected Pullets	42	42	42½	43½	43½	—
Storage Extras	28½	28½	28½	28½	28½	—

CHEESE.

The first grade of California flats is lower, while storage stock has advanced. Arrivals of Y. A.s and Monterey cheese are decreasing, and prices on both lines show some advance.

Fancy California Flats, per lb	17	c
Storage	15	c
Firsts	13½	c
New Young Americas, fancy	17	c
Monterey or Jack Cheese	18@19	c

Deciduous Fruits.

FRESH FRUITS.

Trading is rather quiet at the moment, as the trade is giving most of its attention to poultry, but the week opened with an active movement, and there will be a little extra demand for the holiday. Cranberries are steadily held at former prices, though the holiday requirements have about been filled and the demand is now rather light. Other berries are quiet. Apples have found a good local demand, and fancy Spitzenbergs are higher. Winter Nellis pears are also moving off well. Figs are pretty well cleaned up, but a few are still offered. The grape market is in somewhat better shape, the large offerings of inferior stock being pretty well off the market, and while supplies are still rather excessive, prices are higher.

Strawberries, chest	4.00@	7.00
Huckleberries, lb	10@	12½
Cranberries, per bbl	13.00@	13.50
Apples—		
Fancy, box	1.00@	1.75
Choice	60@	75c
Christmas apples	2.00@	2.25
Figs, box		1.25
Pears, Winter Nellis, box	1.25@	1.75
Other varieties	75c@	1.25
Grapes—		
Muscat, box	1.00@	1.25
Seedless	1.10@	1.35
Other varieties	60c@	1.00
Pomegranates, box	1.25@	.175

Dried Fruits.

Business in dried fruits has dropped off somewhat in the last week, as the holiday requirements of the trade throughout the country are pretty well filled, and with the exception of prunes the market is quiet. In the absence of outside demand, packers show no anxiety to buy, particularly as most lines of fruit are scarce and firmly held by the growers. A renewed demand after the first of the year is expected, however, to take up any odd lots of tree fruits that are still available. Spot prunes are now selling in New York below parity with the Coast market, but there is, nevertheless, considerable activity, and a continued demand for export keeps the market firm at present quotations. Supplies are extremely short, being, by the estimate of one packer, not over 250 tons in the State, while packers have practically nothing in 30-60s. The foreign demand has been mostly for 100s, 120s, and smaller, and these sizes are rapidly cleaning up. The raisin situation is uncertain, neither jobbers nor packers showing any great anxiety to buy. Offerings are liberal, though considerable stock is held at higher prices than packers are willing to pay at present. The New York Journal of Commerce says:

"The shortage in European prune crops is directing the attention of foreign markets more and more to the California product. Heretofore the demand has been chiefly for the very small sizes counting 100 or less to the pound, but now the inquiry extends to the intermediate sizes, and in some cases to large fruit.

"Peaches are reported to be getting scarce in some quarters on the Coast, but there is said to be still a good supply there, and in the absence of important demand for forward shipments the market, while firm, is without quotable improvement. Apricots attract little attention from buyers for immediate delivery out of spot stocks or for shipment from the Coast, and prices are somewhat nominal on the fruit in either position.

"California raisins are neglected. Eastern distributers seem to have pretty well protected their requirements for the balance of this year and few of them are influenced to make speculative purchases for immediate or December shipment from the Coast by the comparatively low f. o. b. quotations now made in some packing quarters. Those who are quoting these low f. o. b. figures, according to advices from the primary market, are counting on the apathy of buyers to use low quotations on f. o. b. stock to influence the sweatbox market in order to get goods cheap to fill their low-priced contracts. Apparently they are making little progress in this direction with the growers, representative men among whom claim that every carload sale of fancy seeded at 5¾c f. o. b. in 16-oz. cartons, the price some packers are quoting, means a substantial loss to the seller on the present sweatbox market."

Evap. Apples, 1911, per lb	7	@ 8	c
Apricots	12	@12½	c
Figs, new crop		4	c
Calimyrna figs		6	c
Peaches, new crop	9	@ 9½	c
Pdunes, 4-size basis	6	@ 6½	c
Pears, new crop	8	@ 9	c
Raisins—			
Loose Muscatels, in sweatbox	3	@ 3½	c
Thompson's Seedless	6	@ 6¼	c
Seedless Sultanas	4½	@ 5	c

Citrus Fruits.

So far this season but little of the new crop of oranges has been sent out from the southern California citrus belt. Of the nearly 100 cars shipped, most have been late valencias left over from last season. Oranges are moving well from the central and northern citrus centers, mostly going to fill holiday orders. The valencias from the south have been selling at the Eastern auctions at very good prices. Especially has this been the case with Chapman's Old Mission brands, which have commanded $4.85 for standards, $6.45 for choice and $7.85 for fancy, per box.

The orange crop from Florida is now moving, and it is claimed that not over 3,500,000 boxes will be the total output. Prices for the Florida oranges at the Eastern markets have averaged from $1.45 to $2.30 per box.

Lemons have been going East from this State in good quantities. Up to November 23 the shipments were 337 cars from the south, and 41 cars from Tulare county. Prices at the Eastern auctions are averaging good, from $3 to $3.90 per box being the range.

Prices in general at San Francisco are inclined to easiness, owing to the rapid increase of offerings, though the best tangerines and lemons are the only lines to show any quotable reduction. The demand has been quite active for the last few days, but supplies are still accumulating, and poorly colored fruit is hard to move.

Oranges: Navels	$ 2.50@	3.00
Valencias, choice to fancy	$ 4.00@	4.50
Tangerines	1.25@	1.75
Grapefruit	2.50@	3.50
Limes	4.00@	4.50
Lemons	1.50@	5.00

Nuts, Honey, Hops, Etc.

NUTS.

A good many independent growers through northern California have been cutting the Association prices, and there is accordingly little movement at the official figures. A renewed demand is ex-

pected later on, however, and the Association nuts which remain unsold are firmly held. There has been a good movement of almonds at the opening figures, and some further demand is expected before the end of the year.

Almonds:	
Nonpareils	18½c
I X L	17¼c
Ne Plus Ultra	16½c
Drakes	14½c
Languedoc	14½c
Hardshells	8 @ 8½c
Walnuts, 1911 crop:	
Softshell, No. 1	13 @14 c
Hardshell, No. 1	12½@13½c
No. 2	11 c
Budded	16½c

HONEY.

There is little feature to the local market, but supplies in the country are well sold out, and fancy grades are scarce.

Comb, white	13 @15 c
Extracted, water white	8 @ 9 c
Amber	7 @ 7½c
Off grades	5 @ 6 c

BEESWAX.

Prices stand as before, but there is little movement, both demand and supply being light.

The market continues quiet at unchanged quotations.

Light	28 @30 c
Dark	23 @26 c

HOPS.

Hops remain very firm, but there is little trading at present, as offerings are well cleaned up, and the little stock left in first hands is held at an advance which buyers are not yet ready to meet.

1911 crop .....45@47½c

Live Stock.

Prices show no quotable change on either live stock or dressed meats, and conditions remain about as before, though hogs are a little firmer. The movement of hogs continues active, local packers taking all arrivals at full prices. A good many Nevada cattle are being brought in for feeding, though conditions are less favorable for such operations than usual at this season.

Gross weight:	
Steers: No. 1	5½@ 6 c
No. 2	5 @ 5¼c
Cows and Heifers: No. 1	4½@ 4¾c
No. 2	4 @ 4¼c
Bulls and Stags	2 @ 3 c
Calves: Light	6½@ 6¾c
Medium	6 @ 6¼c
Hogs: Grain-fed, heavy	6¼c
150 to 250 lbs	6½c
100 to 150 lbs	6½c
Small prime wethers	3¾@ 4 c
Large prime wethers	3¾@ 4 c
Ewes	3¼@ 3½c
Lambs	4½@ 5 c

DRESSED MEATS.

Steers	9 @ 9½c
Cows	8 @ 8½c
Heifers	8 @ 8½c
Veal, large	9½@10½c
Mutton: Wethers	8 @ 9 c
Ewes	7½@ 8 c
Lambs	9½@10½c
Hogs, dressed	10 @10½c

WOOL.

The market for California wool continues dormant, and buyers are making no offers, stating that there is no demand in the East. Quotations are accordingly little more than nominal.

Spring Clip—	
Choice Southern, Year's sta-	
Northern, year's staple	14 @16 c
ple	10 @12½c
7 months	8 @11 c
Lambs, spring	8 @10 c
Fall Clip	5 @10 c

HIDES.

The local market continues quite firm, and there is more activity than for some time past, prices remaining as last quoted.

Heavy Steers, over 56 lbs	12 c
Medium	11½c
Light Steers, under 48 lbs	11 c
Heavy Cows, over 50 lbs	11 c
Light Cows, 30 to 50 lbs	10 c
Kip	12 c
Veal	16½c
Calf	16½c
Dry—	
Dry Hides	18 @19 c
Dry Bulls	16 c
Dry Kip, 10 to 15	18½@19 c
Dry Veal, 5 to 10	20 c
Dry Calf, 7 down	23½@24 c
Sheep Skins—	
Long Wools	$ 0.85@ 1.25
Medium Wool, 6 to 9 mos	50@ 75c
Short Wool, 3 to 6 mos	30@ 50c
Lambs	35@ 50c

HORSES.

The number of horses offered in the city markets is greater than for some time past, and some of the sales attract considerable attention, though there has been quite a lot of stock on sale which has received little interest. Prices have accordingly shown a wide range for the same classes of horses. Some unusually heavy Nevada stock has been sold at full values, and good wagon horses are bringing an advance. Buyers, however, insist upon first-class quality.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	200@225
Wagon Horses, 1250 to 1350 lbs.	130@200
Delivery Horses, 1050 to 1250	125@150
Desirable Farm Mares	125@200
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

Deciduous Fruit Shipments.

The season of 1911 for shipping California deciduous fruits has practically closed. Last week only two cars of pears were shipped, and of grapes only about 17 cars a day. As all other varieties of fruits have been out of the market for some time, as pear shipments have ceased and only a few scattering cars of grapes remain to go forward, growers and shippers may now take stock and see what the season has actually netted them. From the standpoint of the large fruit companies there is no doubt but many lost heavily, but the growers, as a rule, did well. The great demand early in the season from shippers, canners and dryers enabled those who wished, to contract their fruit at especially good prices. The growers that sold earlier in the season as a rule did much better than those who held for all they could get, and later had to sell on a broken market. The total shipment for the season to November 27 amounted to 12,520½ cars, as against 11,926 cars to the same date last year.

PUMPING FOR LAND DRAINAGE.

Referring to our recent note of observations of the width of land reclaimed by drainage in the Mississippi valley, it is interesting to state that Secretary Wilson recently ordered an investigation by drainage experts of the Department of Agriculture on the use of pumps for land drainage.

The following report on the subject has been made to the Department: Along many of the larger interior rivers are considerable areas of rich alluvial deposited by flood waters that are frequently overflowed. When the adjacent higher lands have been settled and cultivated, these river bottoms may often be profitably reclaimed, even at considerable cost. It frequently happens that besides levees to protect from the stream floods, pumps must be used to remove the drainage water from within the district. Much money has been expended for draining overflowed lands without obtaining any commensurate benefits. The chief cause of failure has been the underestimate of the magnitude of the work and the difficulties to be encountered. The result has been small levees that have been frequently broken by the floods, and pumping plants inadequate in capacity as well as inefficient in operation.

In this country, pumping for land drainage has been most expensively practiced along the Illinois river, owing to the richness of the soil, the high value of the farm lands, and the large population nearby. Pumping conditions in drainage districts are extraordinary. The pumps are operated intermittently—a few hours, a few days or a few weeks at a time—and the total time of operation in a year seldom exceeds the equivalent of 60 to 90 full days. The skill and experience of the persons in attendance are often not of high order, and without careful attention the plant deteriorated rapidly whether in operation or not.

NATIONAL AND STATE WORK FOR AGRICULTURE.

Secretary Wilson recently stated that in the several States of the Union, 71 instruction trains had covered tours of over 40,000 miles during the last year, and that the Department had collected and published information respecting the organization and conduct of country fairs. Over 12,000 fair associations are in operation in the several States, representing a membership of over 246,000. In 1909 their gross income was about six and one-half million dollars, and the amount paid in premiums over two and one-half millions. The attendance that year was between fifteen and sixteen millions.

In speaking of the results and effects of this work, the Secretary said: "The awakening of the people to the value of agricultural instruction and to the possibilities of usefulness through extention teaching has created a demand for this instruction far beyond the power of the States to supply. The inadequacy of present equipment for meeting the agricultural education needs of rural people has become so apparent that several bills have been presented before Congress looking to additional appropriations for carrying on extension work. The States also are adding annually to their appropriations for agricultural extension in very marked degree. California during the past year increased her appropriation from $10,000 for institute work to $15,000 per year; Illinois, from $23,650 to $29,000; Kansas, from $27,500 to $35,000; Minnesota, from $18,000 to $23,000; Nebraska, from $10,000 to $17,500; New York, $25,000 to $35,000; Ohio, $22,000 to $26,400; Oklahoma $5000 to $10,500; South Dakota, $9400 to $13,000; Utah, $5000 to $10,000; and Washington, $8500 to $10,000. These appropriations show in an unmistakable way the growing interest in agricultural improvement by the States and their confidence in the value of the work of the farmers' institutes as well as appreciation of what they have done for agriculture in the past."

ACTIVITY IN AGRICULTURAL IMPLEMENT TRADE.

"Department reports from our fieldmen show that during the last year more up-to-date and modern machinery has been purchased and installed on the farm than during the any previous ten years."

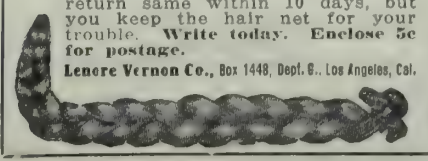
So declares Secretary Wilson in discussing the results of a recent investigation of the Department as to the extent the farmers were following the advice of Department agents concerning the use of modern tools and machinery for farm equipment.

"This demonstrates," says the Secretary, "not only the prosperity of the farmer, but his alertness in seizing upon every means to increase the yield per acre and in preserving the soil."

The statement of Secretary Wilson is based not only on personal observation of his agents who have traveled all over the country, but statements of sales of farm implements from the large dealers throughout the country. The Department, particularly through its Farm Management and Farm Demonstration branches, has been urging the use of the latest tools and machinery for agricultural purposes, especially of recent years.

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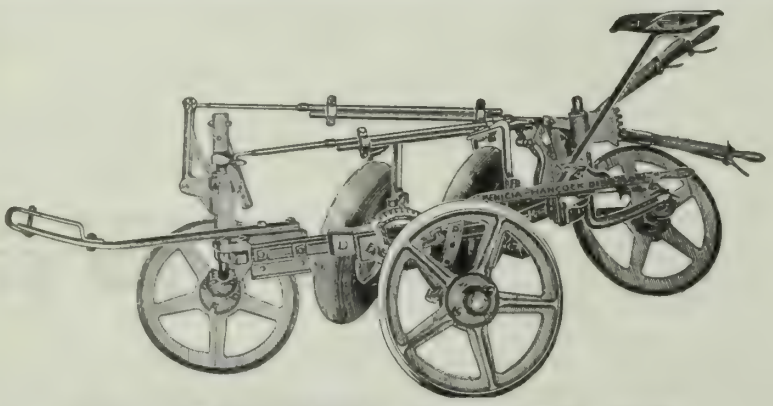
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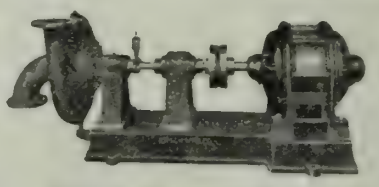
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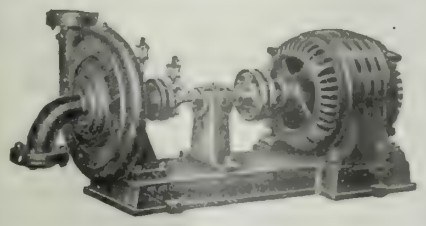
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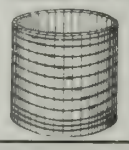
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CALIFORNIA STATE

THE PACIFIC RURAL PRESS

Vol. LXXXII. No. 24. SAN FRANCISCO, SATURDAY, DECEMBER 9, 1911. Forty-first Year.

The Apricot: California's Own.

Written for the PACIFIC RURAL PRESS by DUDLEY J. WHITNEY.

Of the standard deciduous fruits grown in this State, probably none better typify the position of California among the fruit districts of the country than do apricots. Nearly all other fruits can be grown successfully in some other parts of the country, but the apricot is a commercial success only here and a few parts of the Southwest, and its likes and dislikes cannot be well provided for in other parts of the continent.

This fruit, in quality, is one of the nearest tropical or sub-tropical of the dicuduous fruits. It shows this quality, not by any difficulty in making a fine growth of wood, but by its disinclination to bear consistently, and it is this quality that gives California a practical monopoly in its production. Even in the countries bordering the Mediterranean there are not sufficient grown to bar California-grown fruit from Europe, so that this State has all of America and part of Europe for a market.

With this condition existing, it seems remarkable that apricots are the one fruit for which a boom has not developed within recent years. The acreage of peaches has been vastly increased during the past five years, pear trees are worth $5 more per hundred than a year ago, prunes and almonds are almost sold out. All of these fruits have had their ups and downs, and nearly all of them have serious competition either within or without the State; yet apricots, for which there is no competition to speak of a world-wide market, seem to be very little in demand, and what planting is being done hardly offsets those trees that are either being worked over to other fruits or pulled out.

The explanation of this condition is largely the irregular bearing of the trees, which greatly limits the available area in which they can be successfully grown. It is true that orchards will be found in nearly all of the deciduous fruit sections of the State, but in those districts they are very particular as to situation, and if the frosts are at all troublesome, will not bear profitably. At the same time, there is sufficient good apricot land to permit a great extension of planting.



A Representative California Gommercial Apricot Orchard.

In spite of the wide range geographically in which apricots are grown, they take a second place to other kinds of deciduous fruit in every county, with the exception of Orange county.

Like most other California fruits, apricots can be either canned, dried, or shipped fresh. The latter of these is the least important of the three. In 1907, when all fruit crops were short, only 98 cars left the State; in 1908, 208 cars; in 1909, 250 cars; in 1910, 289 cars; and this year, 216 cars. Many more are canned. In 1908 there were 1,000,000 odd cases of 2½ and 3-pound cans put up, and 125,000 gallon cases. In 1909 the amount was 560,000 and 100,000 cases; in 1910, 550,000 and 200,000 cases, the latter number being gallon cans in each instance. These figures run a little below those for cling peaches, while the dried product is not a great deal below that of dried peaches.

In 1907 the output of dried apricots amounted to only 1500 tons; in 1908, 19,000 tons; in 1909, 14,500 tons; in 1910, 16,000 tons. The price in the fall of 1907 was from 20 to 23 cents a pound; in 1908, 11 to 13 cents; in 1909, 9 to 10 cents, and in 1910, 12 to 13 cents. Earlier in the summer in several of these years the price was much below the above quoted figures, in 1909 falling to 6 and 6½ cents.

The prices are far above those of most dried fruits. Peaches, for instance, were in the fall of 1907, 10 to 13 cents; in 1908 and 1909, 4½ to 5 cents, and 1910, 5½ and 6 cents. To offset these prices are poorer average crops, and the grower can expect but one big crop every three years or so, and the rest of the time the trees bear rather poorly.

In connection with these prices it should be said that they are very often probably not what they should be, and that if the grower got what he should, there would be more planting done and fewer trees worked over to plums and prunes. The delicate flavor and exquisite quality cannot be matched by any other fruit. If they could be classed as a necessity, the marked excellence of the dried apricot should entitle it to be classed as a luxury and the price justify the classification.

Aside from selling the fruit itself, there is a good market for the pits Four or five years ago they were of little value, while now they sell for

(*Continued on Page 501.*)

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Dec. 5, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.31	4.43	10.85	62	36
Red Bluff	T	1.59	6.25	66	36
Sacramento	T	.34	4.14	64	38
San Francisco	.44	1.32	4 65	64	48
San Jose	.58	1.56	3 61	66	30
Fresno	.04	.30	2.23	72	38
Independence	00	.80	2.16	60	22
San Luis Obispo	1.30	1.90	3.77	78	36
Los Angeles	T	1.49	2 61	86	40
San Diego	.01	.53	1.52	80	44

The Week.

It is interesting to note that the first storm of the season, with a true California intent and purpose, struck the upper coast during the week and distributed moisture through the coast region southward.

Earlier storms have found their southerly extension blocked by a high barometer, so that they had to unload their water in torrents on the Washington and Oregon coasts and then proceed eastward by the northern route, contributing, probably, to the force of the blizzards which have brought low temperatures to the northern tier of States and eastward, while California basked in summer sunshine. The last storm found the California gates ajar and was thus able to enter our territory in the proper winter way, but as it was only a small storm at birth, it had neither force to cover the whole State nor volume to bring us water enough to drench the interior valleys and southern California. There is encouragement, however, in its coming, in that it was a storm of the right kind and in the fact that its late coming does not indicate that its following storms will be either few or light. We have plenty of good rain seasons with a late beginning, and the fact that this little storm was not swiftly wafted away, but remained circling around over our territory, is an indication that conditions for ample rain are right to have and to hold more forceful disturbances which may drift in from the Pacific any day, and quickly make our season's rainfall to date normal and effective for production.

Contemplated Iniquity by Greeks.

We hope the attention of Dr. Wiley has been called to the horrible things the Greeks are planning to do largely with food products. The consular reports show that the National Assembly of Greece has enacted a law admitting glucose into Greece free of duty when intended for manufacture into sweets for export. This law is to enable a Greek firm to manufacture currant jelly in Greece on an extensive scale for export to the United States, utilizing as an important ingredient American glucose. The arrangement, which looks to the establishment of a number of currant-jelly plants in Greece, extends to 1925. It permits the use of 12,000 tons of glucose the first year, and increasing amounts in the future, as the development of the business warrants. This is hoped to be a sort of reciprocity arrangement, for the Greeks propose to buy glucose, glasses, labels, etc., in this country. But the product will not be currant jelly, but grape jelly, for the Greek currant is a grape, and it will be loaded with glucose made from corn and sulphuric acid, and certainly no American would be allowed to make jelly that way. We hope Dr. Wiley will send them a night letter telling them there is nothing doing in that line.

Reflections on Dinners.

We do not much enjoy reflections on dinners, because any dinner which causes much reflection on itself is certainly to be distrusted, and yet Dr. Wiley provokes to such reflection. He is telegraphed from Washington as denouncing elaborate and expensive course dinners, and that we thoroughly approve from our own viewpoint of digestion and expenditure, but we cannot follow him to the end of his prandial sermon, although he does specify a dinner the contemplation of which makes us ravenously hungry. He is quoted as saying: "My ideal Thanksgiving dinner is, first of all, a big turkey roasted to the proper degree of brownness, stuffed with oysters or chestnuts, and juicy all through. The dressing should be well seasoned and dried. With these dishes should come celery blanched to the proper whiteness by being laid away in a dark place, and luscious cranberries made into jelly or stewed as our grandmothers did them. Potatoes, of course, and any other vegetable. For dessert, pumpkin pie without a 'kiver'—a very large thick piece for every diner. You may have mince if you wish it and can be sure of its ingredients, but to my mind pumpkin pie should satisfy any man."

So far, we agree with Dr. Wiley: any man who is not satisfied with such a layout ought to be sent to dine with the hoboes. But now comes the point from which we dissent, for he is quoted as claiming that such a dinner for twelve persons can be set out for just three plunks! This is the language: "At 25 cents a pound for the turkey, a family of twelve could have a Thanksgiving dinner of turkey, celery, cranberries, vegetables and pie, made of pure ingredients, for 25 cents each. This is allowing a half pound of turkey to each diner."

How much does Dr. Wiley figure that a turkey which would give half a pound of edible flesh to each person would weigh in at 25c per pound gross weight, as turkeys are usually sold? Certainly not less than twice the net weight required, according to our experience. If Dr. Wiley would sit down to carve for twelve on a lighter turkey than that, we count him more valorous than discreet. And if he agrees to that weight, all his three plunks are gone at a flash, and who is to pay for the other indispensables which he mentions? He perhaps meant to cover them all in the closing remark of the interview: "a good managing housewife knows how to get around even the cost of living, high as it is." This is probably the right answer, and the first thing she would have to do would be to manage Dr. Wiley. It is such figuring as that on the cost of household operations which makes housewives desperate—and too many men are guilty of it.

Another Way the Farmer May Get Stung.

We have already said rather plainly what we think of pulling the farmers under that employers' liability law which our dear friends the leaders of organized labor have secured for their own constituents. Of course it is not a California invention at all and the farmers should have brought their points of view out clearly before the enactment was spread over them, for the agricultural employers liability is giving no end of trouble and vexation abroad and is certainly not worked out well enough to justify its re-enactment in California. We have just been reading in the London Farm and Home an outline of the operation of such a law in England. It seems that a farm engine-driver was engaged in threshing wheat when some wasps settled on the machine, and next day the driver suffered from a swollen leg and subsequently died from poisoning set up by a wasp sting. The County Court awarded him compensation, finding that the wasps were so aroused and exasperated by the noise of the threshing machine that in their wrath they stung the deceased; but the Court of Appeal reversed the judgment. The Lord Justice remarked that if a man sent his gardener to dig up and destroy wasps' nests, and the gardener got stung while doing so, there was no doubt that that would be an accident arising out of the employment, but it was a different matter when a workman walking along a road or elsewhere got stung. The County Court judge seemed to have arrived at the conclusion that the wasps were at the time probably hibernating in the stack on which the deceased was engaged in threshing, and that the engine induced them to come out and sting the deceased. There was no evidence to justify any such finding and the higher court declared that the employer was not liable for damages.

Evidently under the new law our judges will become our greatest agricultural teachers. It would certainly become the duty of the judge, who fixed the damages resulting from digging out wasp's nests as aforesaid, to inform the poor employer, when he found him guilty, that if he had poured a little carbon bisulphid in the hole the posts would be at once both dead and buried. But we cannot expect even judges to become wise all at once and yet there is probably no way to get wise so fast as in trying to enforce a fool law.

The Farm Labor Supply.

In spite of the difficulties which hedge about the farmers employment of labor he must still seek it in increasing volume, for labor is indispensable to the enterprises which a constantly increasing population of rural home-makers must set up. Of the thousands of people who have arrived since last spring, far the larger part are land buyers and land improvers, and they all increase the demand for labor in some degree. When the movement becomes freer from Europe, which the opening of the canal will induce, there is likely to be a great increase in our visible supply of white labor. In the need of more laborers for agriculture California is not alone and we are handicapped by distance and cost of travel in getting our share, as things now are. It is interesting, however, that something systematic is being done for the wider distribution of labor arriving at the Atlantic ports. Last week there was a convention of State immigration agents in Washington, D. C., at which the common fact was emphasized that there is a crying need for labor on the farms of the United States, offering opportunity to the immigrant and the native unemployed. The State officials were in Washington to participate in a joint conference with the Federal immigration authorities called to find a means of co-operation between the Government forces for the distribution of immigrants, settlers and the unemployed to the localities where they are needed. Practically every State in the Union was represented and a committee was appointed to evolve a practical method by which the division of information of the United States Immi-

gration Service and the State immigration officers may work in harmony.

Good Work for Sparrows.

After all, the Utah alfalfa growers may be thankful that they have the pestiferous English sparrow in their midst, for a Government entomologist and ornithologist has just observed that among the birds found in Utah, twenty-four species were found to include the alfalfa weevil in their diet. Besides feeding upon the insect themselves, the adult English sparrow relies upon the weevil for one-third of the food of its nestlings. Other birds are doing similar good work. One-fifth of the blackbird's food consists of the weevil, while in the bobolink and the cowbird the test showed as high as 53 and 82 per cent, respectively. The little Brewer's sparrow has changed his diet to alfalfa weevil almost exclusively, as only 11 per cent of the contents of his stomach were found to consist of other substances.

Dynamiting Soils.

Speaking about soil-blasting to open the subsoil, destroy hardpan, etc., our contemporary, the Denver Field and Farm, somewhat modestly remarks: "The professional dynamiters are busy these days demonstrating how easy it is to improve the condition of the ground where an orchard is to be planted. We originated this idea about twenty-five years ago and sprung it on the public—since which time the powder manufacturers took it up until now the idea has become a regular business." It was rather a late spring for our contemporary. Soil blasting was done for fruit trees and vines by James Rutter at Florin, Sacramento county, over forty years ago, and the results were fully set forth in this journal soon afterwards.

The Fruit Growers' Convention.

The great annual assembly of California fruit growers will be held in Santa Rosa week after next, according to the program which we print on another page of this issue. The change in the incumbency of the commissionership probably delayed the meeting a little, but the postponement is immaterial. The important fact is that the assembly is duly provided for, and that a full offering of very timely and important transactions is provided for. We trust that there will be the usual rally of growers and others interested and that full influence will be centered upon movements for the advancement of the fruit industries which are the chief contributors to the State's development and prosperity. Aside from this there is opportunity for individual advancement in wisdom and understanding which growers have found most valuable almost from the beginning of commercial fruit growing in this State.

Queries and Replies.

Gumming of Prune Trees.

To the Editor: I wish a little information in regard to my prune trees. They are getting along in age—I think some fifteen years or more. There is an accumulation of gum on them. I want to know what causes it, and what remedy to use for it; also, what effect it will have on the trees, if any.—Subscriber, San Jose.

Gumming is a sign of distress in the tree; it is not itself a disease; therefore treatment should be directed against the causes of distress—not usually against the gumming. There are, however, cases in which there may be trouble at just the point of the gumming which can be cured by cutting to clean bark by amputation of a gumming branch, etc. But when gumming is cropping out generally through a tree, or through many trees, the trouble must be sought in conditions affecting thrift, and these are usually in the soil and in most cases are conditions of moisture—sometimes moisture in excess, sometimes lack of sufficient moisture, either of which will injure the root action, disturb sap movement, and cause the branches to gum or to die back. The remedy for this is better farming and the use of better tillage or drainage or irrigation or fertilization, as may be demonstrated by trial of whichever of these things is in accordance with the best judgment which can be formed as to what particular unfavorable condition may exist in the particular place. The way to have better trees is generally to grow trees better, and not to seek medicine for them unless their lack of thrift is due to invasion by some pest, which can be killed by proper applications.

Black-Eye Beans and Clay Loam.

To the Editor: Kindly inform me as to the best way to prepare land for black-eye beans in Patterson, Stanislaus county. How much seed is required per acre, and what is the estimated cost of growing them? The soil is a well-drained clay loam. Would this soil grow good apricots and peaches? If so, what varieties would you plant?—Subscriber, San Jose.

The cost of growing is not particularly different from other beans, and will vary, of course, according to the capacity and efficiency of the plows, harrows, teams, tractors, men, etc. Every man has to figure that according to his conditions and methods of turning and fining the land. Sow 40 pounds per acre in drills 3 feet apart, and cultivate as long as you can without injuring the vines too much. Sowing must of course be done late, after the ground is warm and danger of frost is past, though the plowing and harrowing should be done earlier than that. So far as the soil goes, apricots and peaches ought to do well if the soil does not hold too much water in the rainy season and does hold enough in the dry season. Varieties have to be chosen according to local demonstrations of bearing and what you expect to do with the crop.

Borers in Young Prune Trees.

To the Editor: I am a beginner at the fruit business. Last spring I set out thirty acres to prune trees. They made a splendid growth, but quite a number (108) died. I am just through having them pruned, and the party who pruned them says the cause of most of the dead trees are the borers, and tells me to spray them with a strong solution of bluestone and lime. What would you advise? The trees must have been diseased with the borers when I got them from the nursery, as the ground had never been set to trees before. Do you not think so?—Subscriber, Chico.

You should have told us where the borers were found. If they were root borers, the full account of them is given on page 388 of our issue of November 11. If they were root borers, they probably came in with the nursery trees. It is, however, probable that this is not the pest which you have to deal with, and that it is the "sunburn borer" which attacked the trees. If this is the fact, you probably did not get the borers with the trees, for the parent insect is everywhere watching for tree planters who do not know enough to protect their young trees from sunburn by the use of protectors or by wrapping with burlap strips or by whitewashing. In this case the sunburning is the real cause of the trouble, and the borer is a secondary cause, increasing the trouble. The wash which is commended to you is useful in protecting trees—not in killing borers, but in preventing them. The more lime it contains, the better and more durable whitewash it becomes the more valuable it is, because the more efficiently it reflects heat and prevents sunburn.

Pruning Himalayas—Making Compost.

To the Editor: Kindly let me know the proper way to prune the Himalaya berry. Should the old wood be cut away? Will the dry barnyard manure, when heaped up and dampened with water, make a valuable fertilizer?—Farmer, Woodland.

In order to secure good fruiting from Himalaya berries, all the old wood which has borne fruit should be cut out at this time of the year, and all new shoots reduced to three or four from each root, and these three or four shoots should be shortened to a length of ten or twelve feet and be trained to a trellis or fence, or some other suitable support. Vines which are allowed to grow riotously as they will, will be deficient in fruit bearing.

Barnyard manure in heaps should be dampened with water from time to time so as to prevent too active fermentation. Of course, water should not be supplied so freely as to cause a leaching of the pile. It is also desirable that the material should be forked over from time to time to distribute moisture and promote decay. When this is done a thoroughly first-class fertilizer is produced.

Cutting Back Apples and Pears.

To the Editor: Your book, California Fruits, says the "apple does not relish cutting back, nor is it desirable to shorten in the branches." But when a three-year-old tree gets above 12 feet high, as many of mine are doing, what are you going to do? I cut these back some last year, but up they go again with more branches than ever. The pears are getting too tall, also. As these trees have not borne yet they have not been much watered—about once in August to start buds. They have been shortened back some each year. Should they not be kept down to about ten feet?—Rancher, Galt.

The quotation you make from California Fruits refers to old bearing trees, and indicates that their pruning is not like that of the peach, which is continually shortening-in of the branches to keep plenty of new wood low down. Of course, in securing low and satisfactory branching on young apples, pears, etc., there must be cutting back, and this must be continued while you are forming the tree. If you mean that these trees are to be permanently kept at ten feet high, you should have planted trees worked on dwarfing stocks. Such a height does not allow a standard tree freedom enough for thrift; as they become older they will require from twice to thrice the altitude you assign to them, probably. Pears can be more successfully kept down than apples.

Prunings as Fertilizer.

To the Editor: Will you please inform me through your paper if orchard and vineyard brush is worth enough as a fertilizer to pay for cutting or breaking and putting back on the land?—Subscriber, Fresno.

We should say not. It takes too much labor to put it in any form to promote decay, and is even then too indestructible. It is also possible that its decay may induce root rot of trees. We should burn the stuff and spread the ashes. Vineyard prunings are more promising because more easily and quickly reduced by decay. Cane-hashers have been proposed from time to time, but we do not know anyone who long used them. If there are such, we would like to know conclusions drawn from such experience.

Talks With Tenderfeet.

GETTING BACK TO THE LAND.

To the Editor: I am an Irishman who has been in the United States twenty years, holding remunerative positions. I am bringing up a young family of four Americans. I find it pretty difficult financiering for my family and wish to return to my early vocation, the tilling of the soil. I would like to get your advice and assistance in selecting a location to settle down on a farm. I was a practical farmer in Ireland, brought up on the land, and worked on it in a mixed dairy stock and tilled farm. I was trained at the Glasnevin (near Dublin) Agricultural College, and had a pretty good idea of scientific farming in that country, rotation, dairying, etc.; modern practice. I have two boys and two girls, and desire to get out of the city to farming where there is a chance of education and moral training, church, so that my children may become self-supporting good citizens and a credit to my honest, industrious progenitors instead of the opposite, as many are in large cities. Is there any land open for entry in the State desirable and accessible? I am about to sell my home here and expect to be able to do so in three or four months, and would be able in this case to reach the country in time to begin operations early enough in spring for potatoes, cabbage, and other seasonable crops, as well as dairying, poultry, etc. CLERIC.

San Francisco.

Your letter shows a commendable spirit; also indicates the possession of practical experience and systematic training, which, taken in connection with your evident purpose and energy, ought to secure for you such environment as you desire for yourself and family. This, however, is a matter which must be worked out by the individual. We have no particular information as to opportunities best for location. That is so much a matter of personal choice and preference and foresight that we cannot undertake even to give much advice about it. We are not aware that there is good public land available for entry except in remote places where the social conditions you desire are not yet developed and where opportunity for the higher arts of horticulture and agriculture which you desire to pursue would be small. Probably you would do better to locate in a well-settled region where the products of your intensive culture would find local sale or whence they could be economically shipped to large markets. As you are now in San Francisco, you could conveniently find favorable location in the valleys of the bay district. If we were you we would put on a walking suit, take a good bit of a stick and make a walking trip through the nearby valleys. The local real estate firms could give you names of places which could be rented or purchased, and looking them up would give you an excuse to talk with people and examine into all the small farming you might come across, and from such observation and inquiry you could settle some things which cannot be determined by correspondence. The real estate agent will of course invite you to ride in his automobile, but it is often wise to decline with thanks. He is apt to make ten miles look like two blocks, and he will have you admiring the crests of the distant mountains when you ought to be seeing what is under your feet. Therefore we say: to see the land, walk over it. Doubtless you can successfully carry out your plans if you are only patient and look far enough before deciding what particular undertaking to enter upon.

You Must Look for Yourself.

To the Editor: I have been told that you would give an opinion as to the suitability of lands and locations in California for fruit growing and I would like your opinion about three tracts of land in San Diego county which I have been inquiring about. They are located in the hills, thirty miles or more from the ocean, and at an elevation of 2000 feet or more. I have not been able to look at these properties, and should probably not be a good judge, anyway, so if you will tell me a few things, I should be grateful. I should like to know, first of all, whether the summer climate in that region is hard to stand, whether snakes are too numerous, and what pests are likely to interfere with success? I should also like to know whether such property (they are all said to be supplied with "abundance of best mountain water") could be utilized for dates, nuts, vines, olives, or figs? Can you tell me what are the best conditions for dates and whether they offer a promising field? It is also said that this is a good place for honey. Can honey alone be made to pay, or what other lines could be carried best with that? You see, I do not wish to cultivate for just farm crops and stock, but to pursue some one line that holds future promise. One 80-acre tract, all of which is said to have been under cultivation, for $600; one 160-acre tract, 3 acres live oaks, the source and flow of a live stream, 20 acres "very fertile" valley and a honey house, for $2000, or $1400 cash; the third place is likewise 160 acres, 100 fruit trees, "good furnished house," three spings and a well, for $1756, reduced from $2500. Are these prices good? I am seeking a place to improve and sell after 1915 unless I become too fond of it myself.

Omaha. ENQUIRER.

Our reputation for telling people what to buy is apparently greater than we deserve. It is not possible for us to give an opinion upon tracts of land in various parts of California, because we have not sufficient local information. It would keep a hundred men traveling most of the time to secure the information which you are told we are so willing to communicate. You will have to assure yourself by visitation and by consultation with experienced fruit growers who may be willing to help you with the question of determining the suitability of the different lands. Of course, if you can find the different fruits which you mention bearing satisfactorily on the land, or on similar land nearby, it is the best possible warrant that planting could be undertaken with a prospect of similar success. The next thing would be to assure yourself that the fruit thus grown could be profitably marketed without too great cost and difficulty of transportation. No matter how wise we may get, we never expect to do away with the applicability of the old proverb "That the buyer must beware"—that is, one desiring to make an investment must satisfy himself as to the desirability of the property. As for the particular places you mention, you might get the full worth of your money in the climate. The elevation and other conditions are probably not suited to the commercial production of the fruits you mention. You may get a few snakes: it is too much to expect to get very many on such low-priced land. The prices are good—in fact, too good, considered apart from the land to which they are attached. We should apprehend that some one had become very tired of the land—possibly with good reason.

DEEPENING HILLSIDE SOILS.

To the Editor: At this time much experimental work is being done with the use of dynamite for preparing holes for tree planting, for ditching, draining swamps, and other purposes. I have not so far seen any special allusion made to it in regard to breaking the subsoil on hillsides where the nature of the lower strata is stiff and more or less impervious to water. We tried it in a young orchard of ours where these conditions exist, using a stick of dynamite, 25% strength, in the center of the rows farthest from the trees. This, we found, besides the advantage gained in cracking the subsoil for a considerable distance and allowing for a deeper rooting of the trees, also forms, as it were, a series of small reservoirs, and would, therefore, I should think, add greatly to the conservation of the water-supply for subsequent use. After these hillsides are once well moistened by the early winter rains, the later rains naturally flow off rapidly, and most of this water is lost. It seems to me that if this were done pretty generally on hillside orchards, the benefit would be twofold and very great. LEONARD COATES.

Morganhill.

STRONG FAITH IN LOGANBERRIES.

Burt Aspinwall of Brooks, Oregon, is a large grower of Loganberries, and has large faith in increasing the product thereof. As California has a large acreage of this variety (which originated in this State with Judge Logan of Santa Cruz) they will be interested to have Mr. Aspinwall's method of growing and his reasons for thinking the fruit can be profitably grown to a much larger extent:

Soil and Planting.—Loganberries should have a good, deep, rich, dark loam soil with preferably a clay subsoil, as this will retain the moisture better than a gravelly or sandy soil. Land that is slightly rolling is to be preferred, as drainage is very important. The ground should be well prepared in the fall, then early in the spring should be thoroughly worked and put in good condition for planting. In obtaining plants be sure and get only first-class tip plants or good one-year-old transplants, as the growth of the loganberry for several years will depend on the start it gets. We plant them eight feet apart each way. This requires about 680 plants to the acre. In setting them out we mark the ground both ways and take out a good shovelful of dirt for each plant, packing it back around the plant by hand to keep them from drying out. After they are properly set out, they should be worked at least once each week during the summer with something to keep the surface stirred and hold the moisture. We use mostly the spring-tooth harrow and clod-masher, and work them both ways during the first summer. If planted in April the plants will not grow enough to interfere with the cultivation till late in the summer, when they will begin to shoot out over the ground, making vines several feet long before winter.

Training.—Early in the fall build your trellises, using good cedar (or redwood) posts seven feet long. Set them in the ground two feet and not over 32 feet apart in the rows, anchoring the end posts good. We use three No. 12 galvanized wires, putting the bottom one about 20 inches from the ground and the top one on top of the posts. It is best to run the rows north and south, so as to give the sun a more even chance at the ripening fruit. In training the vines, weave them around through the wires, spreading them over as much space as possible. Where the temperature goes below zero the vines should be put on the ground and covered with straw during the winter to keep them from freezing.

Making New Plants.—If plants are wanted for market or setting out more berries, train the vines over the wires and let the tips come to the ground, then cover them by plowing or with a trowel. They will then take root and make good plants for early spring. It is best not to put the tips down, however, unless there is a good demand for plants or more are wanted for new yards, as it shortens the next crop by taking off the ends of the vines.

Cultivation.—As soon as the ground is ready to plow in the fall, we plow it toward the rows and leave it in this condition till spring, so as to give the water a chance to run off between the rows. In the spring we plow it away from the rows, then, after hoeing between the hills, take a disc harrow and throw the dirt back to the rows, leveling the ground. From then on during the summer we work with a spring-tooth harrow and clod-masher about once each week. It is

also a good plan to loosen up the dirt around the hills with a spading fork. The new shoots should be kept trained into the rows so as not to break them off in working with the teams.

As soon as we are through picking, we get all the help we can in and cut out the old vines and train up the new ones for the next crop. We throw the old vines between the rows and cut them up with a disc harrow so they can easily be plowed under and serve as a fertilizer.

Cost and Crop.—The cost of setting out, trellising and caring for a new yard up to the first crop, which will be the next year after they are set out, is about $75 per acre. Of course, this depends greatly on the cost of plants, material and labor, and also the size of the yard, as ten acres can be handled at less cost per acre than a one-acre yard can.

The first crop should be from one to three tons of fresh fruit to the acre, and after that a good average yield is from four to five tons to the acre, but they frequently go six or seven tons on good land with proper care.

When the berries are ready to pick, everything should be ready to handle the crop, as a few hot days will ripen the berries very fast. It requires four or five good pickers to the acre when they are to be evaporated, as they should be picked every third or fourth day, but when picking for market more pickers are needed.

What Can Be Done With Loganberries.—The berries are now put on the market fresh, sold to canneries, or evaporated, and also make a very good wine. Where they are put on the market fresh they must be picked firm enough to carry to destination, but will stand to be fairly ripe when sold to the cannery, and should be fully ripe to be evaporated. We find the evaporator the best means of handling them, as we have the world for a market and our evaporators run every day and night during the picking season. It requires about five pounds fresh to make one pound of evaporated berries. The demand for the evaporated loganberries has been increasing since they were first evaporated some four or five years ago, until it is so great that there are not enough raised at the present time to half supply the wants of the people where they have been introduced.

As to the future of the Oregon loganberry, I must say that one can hardly realize at the present time what it will be, as it has no equal for pies, jams, and jellies, and while it has been introduced into but a very few of the markets of the world, the supply is far from equal to the demand, and it is winning favor wherever tried. Many prefer the evaporated product to the fresh berry for pies and cooking purposes, and the transportation charges to distant markets are much less. Only a few years ago the canneries could not handle them successfully, owing to the acid working on the tin cans, and they had never been evaporated, so the only market for them was to ship them fresh and take what the people were willing to pay, and usually, about the height of the season, running up against a broken market, the consequences of which were that thousands of crates were dumped or sold for little or nothing; but today, by canning and evaporating them by modern methods and opening up new markets, there is no question in my mind but what there will always be a market for all the loganberries that can be grown.

California's Greatest Shipping Plum.

By Frank B. McKevitt, Manager of the California Fruit Distributors.

[Frank B. McKevitt, of Vacaville, stands high in commercial fruit circles of California, and it is interesting to recall the fact that he entered such commercial circles with the advantage of a long and successful career as a fruit grower. We have known him for about thirty years, and he has always been a leader in progressive undertakings. He was at first associated with his father, the late A. McKevitt, from whom the McKevitt cling took its name as early as 1882—a fine white cling which stands high in its class and would have been much more important commercially had not tastes in so many things, including peaches, become so yellow, during the last two decades. We fully believe that to reach the widest public value, at least, a commercial fruit handler must have the growers' point of view, gained through experience, and this belief is demonstrated by the fact that our greatest fruit handlers have been and in many cases continue to be growers thereof. It seems to us significant to cite these facts, because we desire to introduce the best account of our greatest shipping plum which has ever been written, as it comes from the pen of Mr. McKevitt.—Editor.]

The Wickson Plum.—One of the varieties of plums attracting considerable attention is the Wickson, which is now selling at exceedingly satisfactory prices wherever it is being offered. Sales of this fruit in Vacaville cars have run up as high as $2.30 per crate, many sales being reported at $2, and very few at less than $1.50. As the variety is considered by shippers as one of the best and most promising, it may be of interest to briefly consider some of its most pronounced characteristics.

The Wickson is a plum that naturally grows very large. The best specimens frequently reach a size of from 2 to 2½ inches in diameter, and a 3 by 3 pack will fill an ordinary 5-pound basket, such as is used in the standard crate. A Wickson plum requiring anything more than a 4 by 4 pack is inferior fruit.

The Tree and Its Habits.—The tree may be called a fairly strong grower, very upright in its habit, and not inclined to spread as much as other varieties. It may be grown either on peach or myrobolan root. The fruit is heart-shaped and tapers to a decided point at the blossom end. Owing to this fact, this plum cannot be grown in windy localities, as the swaying of the branches in the wind makes a fulcrum of the projecting shoulder of the fruit, and this, together with its great weight, so weakens its hold that it is liable to drop to the ground and be lost. This fact should be borne in mind when making plantings of this variety, which should always be placed in the most sheltered locality.

While the Wickson is a heavy bloomer, it cannot be called a heavy bearer. Many fruits set, but after reaching a certain stage of growth they begin to drop, and this process is continued practically up to the time the fruit is ripe. This makes it very difficult to handle, as the grower cannot tell, at the time the fruit should be thinned, whether this natural thinning will occur or not, and in the meantime the twigs are so heavily burdened with their load that if some of the fruit is not removed they are liable to break. Here is where the exercise of judgment is required, and it really is not so much a question of judgment as of pure guesswork as to what the results will be. It is safe to say, however, that if the setting is so heavy as to break the twigs it will be necessary to remove at least a portion and take the chance of a future drop, which may lessen a heavy crop to one below the average.

It is not advisable to plant this variety in solid blocks. It is far better to alternate rows with some other variety blooming at the same time, as the cross fertilization is of great value and frequently results in securing a crop where otherwise it might be very light.

The Fruit and Its Characteristics.—About the middle of June in the average year the fruit is ready to be picked for Eastern shipment. For this purpose it should not be allowed to take on any color at all, but the rapidly changing condition is watched closely, and as soon as the deep green color is changed to a creamy white the fruit is allowed to go forward. Picked in this condition it will keep perfectly from ten days to two weeks, and during that time will gradually take on color until it becomes a beautiful deep red and acquires a flavor which is unexcelled. The fact that it will ripen in transit and arrive at this perfection of flavor is one of the grandest features of the plum.

Of all fruits the Bartlett pear probably has this characteristic in a greater degree than any other, and it is owing to this fact that our Bartletts are generally recognized in the East as the king of fruits and probably the best of all varieties shipped from this State. Now that we have plums that have the same characteristic, we have good reason to believe that they, in time, will achieve for themselves the same popularity that is enjoyed by the Bartlett, and when a fruit combines the splendid size, beautiful color, and perfect flavor of this plum, it is certain to be in strong demand.

Handling the Fruit.—The best and most common way to pack the fruit is in crates containing four baskets each. If the fruit is extra large in size it should be put up in 4¼ by 4½ inch crates, two tiers of the fruit perfectly filling the package. Should it be of smaller grade, it may be necessary to pack three tiers, in which case the 5-inch crate would be required. The fruit is so fine that it can be packed very nicely in boxes, as it averages as large as an ordinary peach, but the Eastern trade has been so thoroughly educated to receiving plums in crates, that boxes are discriminated against, and the fruit will not bring its full value if so packed. The best markets for this variety at the present time, as well as for all other large plums, are to be found in the large cities of the East.

The Origin of the Variety.—The Wickson is a Japanese hybrid and was originated and introduced by Luther Burbank, of Santa Rosa, who has added so many valuable varieties to our list of fruits. Its creator named it in honor of Professor E. J. Wickson of the University of California, and it will prove a lasting monument to the memory of that gentleman, who has always taken a deep interest in the horticultural products of the State, and who has contributed in no small measure to the general advancement and prosperity of the industry.

WHAT ARE BUDDED WALNUTS?

To the Editor: Will you kindly inform me what is meant by "budded walnuts" in the market quotations, and why are they quoted at a higher price than the so-called No. 1 nuts?

Dixon. Rancher.

[The markets referred to in the market reports come from southern California, as the nuts from the northern and central part of the State are not yet produced in sufficient quantities to be quoted. The walnut trees in the south are largely seedlings, and the best of the nuts from them, including trees that have been worked over to several standard varieties, are the No. 1 nuts. The "budded walnuts" are from trees that have been worked over to the choicest varieties, and therefore command a higher price than the others. The French varieties, like the Mayette and Franquette which are grown in the north, usually bring more per pound than the No. 1 nuts, though not as much care is given them as should be, according to dealers in San Francisco, and the price suffers in consequence.—Editor.]

COVERS AND LATE GRAPES.

Several weeks ago a suggestion was made in these columns regarding the possibility of securing late grapes by putting some kind of a cover over the vines toward the end of the season, so that the frost and rain would not injure them.

This was tried on eight or ten Tokay vines recently by Francis Bacon of Galt, San Joaquin county, but it proved only partly successful, owing to the exceptionally heavy frosts that have occurred this fall. The grapes, however, were protected from rain and received no injury from this source and were in much better condition than those on unprotected vines after the frost came. What protection would have been obtained from frosts of ordinary fall intensity it is impossible to state, but they were too great in this instance. Canvas was used for a covering, and not palm leaves, as was suggested might prove satisfactory.

What the Panama Canal Will Do For California Fruits.

California fruits have a splendid future abroad, according to Field Manager Barnicott, of the California Fruit Exchange, who has just returned from a six months' visit to Europe. "The completion of the Panama Canal," declared Mr. Barnicott, in an interview recently published in the Fruit Trade Journal, "will mean much to California, because fruit will be shipped to New York direct in from fourteen to sixteen days, under the most favorable conditions. It will, I believe, also mean much to the California fruit industry in opening up a larger trade for this State's product in England.

"Fast steamers will be put on the run, there will be no delays, the refrigeration will be better, there will be little jarring, and all the fruit will reach the markets of the East and also Europe in far better condition than it does now by being shipped by train. I fully believe that the opening of the canal will be the greatest thing in the history of California, because it will mean the greatest development. It will extend the markets by making it possible to get fruit to them in better condition and at possibly better rates."

While in Europe Mr. Barnicott made investigations for the purpose of ascertaining the prospects for marketing California fruit and other California products. This is what he said in discussing the subject in the interview cited above:

"English fruit growers do not pack nor standardize their fruit. They send it to the market in baskets, large and small, good and inferior fruit mixed. The dealers are obliged to assort the fruit themselves, and thereby add to its cost after reaching market. Dealers with whom I talked told me they preferred California fruit to the English fruit for the reason that the pack was convenient, the fruit was graded to standard, and it was consequently more attractive, bringing better prices and selling much more quickly.

"California fruit is always welcome in the London markets. It sells readily and the price is good. There is no fruit in the world that has a better reputation, and the only fruit that looks better or compares with it at all is the hothouse fruit raised in England—and the price for that is all out of proportion.

"California canned fruit, especially the Bartlett pears, is eagerly sought in London. If a better means of transportation from New York to London were possible at this time, California fruit would have a greater sale. Some of the fruit reaches the market in poor condition. This, I believe, will not be hte case after the Panama Canal is opened.

"California fruit is sold on its merit. In London it depends upon its merit the same as it does in New York or Chicago. Standardization is the secret of success in the fruit business. If our growers would only thoroughly standardize their fruits, the markets would expand more rapidly and there would be a larger demand. In England they do not go in for fancy packs—the growers, I mean—but the consumers like a fancy pack there as much as they do any other place."

STEAMING ALFALFA WEEVILS.

Possibly some of our readers would like to try killing field pests like army worms and other field-crop eaters as a Utah man is doing with the alfalfa weevil. M. W. Andrus gives this account in the Deseret Farmer:

The device used was the one patented by Gardner & Tabot, and consists of a series of pipes connected to the steam-dome of a traction engine and runs to a pipe 10 feet long perforated with small holes 1 inch apart. This pipe, being about three inches from the ground, distributes the steam evenly over the surface covered.

This year I did not start to steam until the worms were pretty well hatched, and the device above mentioned took everything before it in the shape of worms and cocoons. Some of the adults, after they were able to fly, could not be reached. In doing this way, however, I was enabled to get two good crops of hay from bench land.

Next year I intend to start steaming just as soon as the beetles get out of the ground, and see if I cannot kill them before the eggs hatch. If I can do this I can, I believe, get my three crops of hay.

CITY SEWAGE FARMS.

Some California cities are trying to turn their waste waters into salable crops. Perhaps the most prominent undertaking is at Pasadena, where some systematic experimentation is being done under the supervision of the University Experiment Station. As there has been some objection to the aroma of pigs on the sewage-irrigated alfalfa, the city is just entering upon an experiment of growing mules instead.

An interesting speculation in using sewage water is recorded by Consul F. W. Mahin of Amsterdam, Holland, who writes: "Solution of the problem, how to dispose of sewage, has been attempted at several places in this district by distributing it over fields and gardens as a fertilizer, instead of running it into canals and other waterways, which is the practice to some extent. What area of land should be allowed for the sewage of a city is a question answered by the statement that this can be regulated by the percentage of fertilizing properties contained in the sewage, the amount of fertilizer needed for the particular crops to be grown, and the natural richness of the soil. If the sewage lacks any desired fertilizer, it can be added. Experts who have scientifically analyzed the sewage of Amsterdam, with a population of 578,000, believe that it would fertilize about 5000 acres of land devoted to crops of the most soil-impoverishing character. The area, however, would vary somewhat with the kind of soil to be fertilized."

MAY HELP CALIFORNIA WINTER CABBAGE.

Consul General Robert P. Skinner, at Hamburg, writes as follows: There is a short crop of cabbage in Germany this year, and sauerkraut, usually an article of export to the United States, is in demand for domestic requirements. Hungary and Russia have been exporting fair quantities thus far, and some contracts covering German sauerkraut sold in the American market have been canceled and the difference in price paid. It is anticipated that the shortage will be still more apparent in January than at present, and offers of American sauerkraut will be received with interest by Hamburg dealers. The present prices quoted on imported kraut are from $13.09 to $14.28 per hogshead, and some business has been done at $9.52. The conventional duty on this article in Germany is $0.952 per 100 kilos (220 pounds). The general duty of $2.38 was imposed on sauerkraut imported from the United States prior to February 8, 1910, but on that date the lower rate was extended to United States products.

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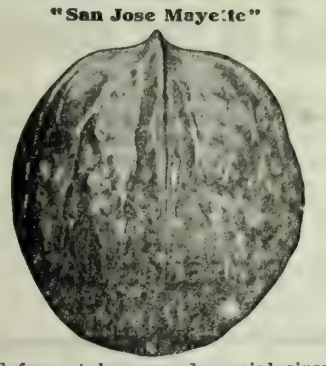
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State Convention of Fruit Growers.

State Horticultural Commissioner Cook has announced the program for the fortieth California State Fruit Growers' Convention, to be held in Santa Rosa December 19 to 22. It is expected that this convention will be one of the largest in point of attendance ever held in the State. All fruit growers are entitled to attend and to take part in the discussions and actions of the convention. The program follows:

Tuesday, December 19—Invocation, the Rev. W. C. Day; address of welcome, W. P. Overton; response, State Commissioner Cook; "Plant Lice," E. O. Essig, secretary Horticultural Commission, Sacramento.

Afternoon session—"Thrips," G. E. Merrill; "Pear Blight," E. A. Gamnan, Courtland; "Berry Culture," Mrs. L. Barlow, Sebastopol.

Evening session—"The Law and the County Commissioner," H. P. Stabler, Yuba City; "Relation of County Commissioner to the People," Charles D. Weeks, Red Bluff; discussion, led by George H. Hecke, Woodland; "Relation of County Commissioner to State Commissioner of Agricultural College and Rural Schools," J. B. Hickman, Aromas; discussion led by Earl Mills of Oroville.

December 20—"Quarantine Service," O. E. Bremner, chief quarantine officer, San Francisco; "Mediterranean Fruit Fly," E. K. Carnes, superintendent insectary, Sacramento; "A Live Soil," Dr. C. P. Lipman, Berkeley; "The Citrus Protective League," C. C. Chapman, Fullerton; "Deciruous Fruit Protective League," George D. Kellogg, Newcastle; "Requisite of a County Commissioner," by Prof. C. W. Woodworth, Berkeley; discussion led by E O. Essig, Sacramento; "Relation of County Commissioner to the Nurseryman," A. R. Galloway; discussion, Geo. C. Roeding, Fresno; "Desirability of Uniform Inspection Service for Inter-county Shipment of Nursery Stock," R. P. Cundiff, Riverside; discussion, opened by A. L. Rutherford, Modesto.

December 21—"Noxious Weeds," Prof. Elmore Chase, Fair Oaks; "Apple Culture, C. E. Hotle, Sebastopol; "California, Nurseries," Frederick Maskew, Los Angeles.

Afternoon session—"Soil Bacteria and Humus," Dr. C. B. Lipman, Berkeley; "California Fruit Exchange," B. A. Woodford, Los Angeles; "Pear Culture," Hayward Reed, Sacramento.

Evening session—"Noxious Weed Problem," H. H. Bowman, Bowman; discussion, led by W. E. Wilsey, El Centro; "Shade Tree Insects," W. H. Volck, Watsonville; discussion, led by A. R. Meserve, Los Angeles; "County License System for Contract Spraying and Fumigation," S. A. Pease, San Bernardino; discussion, led by C. W. Beers, Santa Barbara; "How Can Our Association Be Improved," William Garden, Stockton; discussion, led by George Marchbank, Madera.

December 22—"Conservation," Freeman B. Mills, Woodbridge; address by G. Harold Powell.

FARMERS MAY NOW HAVE SEEDS TESTED FREE.

The College of Agriculture of the University of California, in co-operation with the U. S. Department of Agriculture, has established a seed-testing laboratory at Berkeley, where farmers as well as dealers in agricultural seeds may have the purity and germinating power of all varieties of seeds tested free of cost.

This work will be attached to the agronomy division of the Experiment Station under the supervision of Prof. G. W. Shaw, while the actual testing will be done by Miss Anna K. Lute of the U. S. Department of Agriculture. The seed-testing laboratory is now equipped to receive samples and actively prosecute the work.

There has been a wide demand for accurate tests of seed used in California, and such tests have heretofore been referred to commercial seed-testers, but hereafter all tests will be made at the University free of cost, the only requirements being that any package of seed should be prepaid, and the name and address of the grower or dealer forwarding the seed should be stated. For all such tests it is desired that about one pound of seed be sent. Correspondence on the subject should be addressed to the Director of the University Experiment Station, Berkeley.

WHAT AN EXTRA DOLLAR MAY MEAN.

Dr. J. H. Worst, of the North Dakota Agricultural College, gives a forcible suggestion of the relation of stock to general farming in this way:

It requires approximately $7 per acre to grow a crop. This includes interest on the investment, cost of seed, wear and tear on farm machinery, labor, etc. By adding one dollar's worth of labor to each acre, there is little question but that the average profits would be doubled. In other words, as much profit should be realized from the one additional dollar's worth of labor as is now realized from the $7 worth of available labor and investments. Consequently, if farmers would devote one-third of their land to growing corn and alfalfa, neither of which interferes with the time and labor employed in farming wheat, and put one-third more labor, thus made available, on only two-thirds as many acres of wheat, they would grow more wheat than where they spread their energies over one-third larger acreage. The corn and alfalfa fed to live stock would insure them a large additional income and one that is not often adversely influenced by climatic conditions, while the fertility deposited upon the farm resulting from feeding the corn and alfalfa to live stock would vastly improve the productiveness of the soil.

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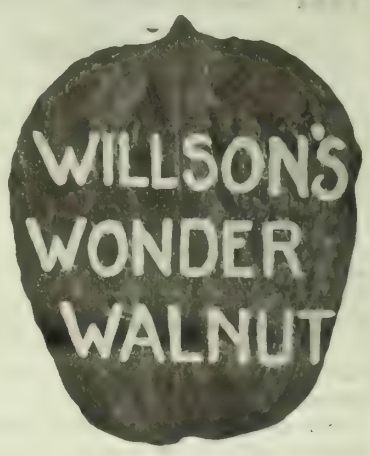
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An Eastern View of Sacramento Valley Activities.

[The real foundation of development activities, which are now attracting attention as never before in the history of the State, is of course to be found in the splendid products which Californians are making, in surprising quantities, with the exceptional natural resources in soil and climate with which the State is endowed. But it is not only necessary to make products, but to give the outside world good knowledge of the way in which they are produced, to command their interest and to win increased population and greater investment. This knowledge is of course being constantly set forth in local publications of all sorts, but its widest dissemination is secured through papers and periodicals of all sorts which are published at the East and abroad. Probably no single journal has sent to this State in quest of accurate information better expert writers, who are not only able to observe closely but to set forth facts convincingly, than has the Breeder's Gazette of Chicago. A few years ago J. E. Wing wrote several articles of high class for style and quality, and recently Will C. Barnes has produced others of similar character, one of which, reproduced in full in our issue of November 25, gave significant facts about the upper San Joaquin valley. Below is a sketch of the Sacramento valley which Mr. Barnes prepared for a later issue of the Gazette.—EDITOR.]

OUR GREAT VALLEY.—California has two great river systems, the San Joaquin, flowing northward from the southern section, and the Sacramento, flowing southward from the northern part, meeting about mid-State, where in the headwaters of San Francisco bay they join forces. The soil of these two valleys is fertile beyond belief. For countless ages these two rivers have brought down great quantities of silt, while the forces of nature have been constantly at work disintegrating the mountains on both sides and washing them down into the valley until it is filled, no one knows how deep, with a soil rich in every ingredient needed to grow plant life of any and all kinds. Here, too, eternal summer reigns, for there is little of what can be called winter, and, in the main, the temperatures are rather high throughout the entire year.

THE HARVEST SEASON.—Just now it is ranging every day from 100 to as high as 117 in the shade. It is July and in the Sacramento valley the grain harvest is in full swing. For miles the great yellow fields of barley and wheat stretch ready for the coming of the harvesters. As in the Bakersfield country, they do things by wholesale, and one sees dozens of the huge machines drawn by from sixteen to thirty mules or horses, with here and there a power machine which at one operation cuts, threshes, sacks, and deposits the ripe grain ready to be hauled to the grain warehouses, laying low each day from thirty to forty acres of grain. The heat is intense, yet the atmosphere is so dry and the humidity so small that it does not injure anyone working out in it, even in the hottest days.

It is also the time of the fruit harvest as well. Hundreds of teams are strung along the dusty roads loaded with fruits of every kind. Plums, peaches, pears, cherries, apples, and apricots form the greater portion of the loads. They use a very high spring wagon for this fruit hauling, and the loads are carefully covered with heavy canvas to keep off the sun's rays as well as the dust. These California men do everything systematically, especially in handling such things as fruits. Their market is between 1000 and 3000 miles away, and even twice the latter distance, and hence they must not only ship the best, but it must be handled as carefully as a mother handles her baby.

Each section of the Sacramento valley has its own particular crop to which it devotes its best energies. One grows only almonds, another peaches or pears or plums, while here is a whole section given up to smaller berries like black or raspberries. In this way they are able to get carload shipments much easier and can thus reach the market much cheaper than where cars must be made up of broken lots.

LABOR.—One finds every class of labor under the sun. The stopping of Chinese immigration cut them off from that supply, and then they turned to the "Japs." Now they have taken to the gentle turbaned Hindoos. These men seem especially well fitted to handle fruit, and they have been a boon to the fruit men. They are very quiet in their ways, do not drink or carouse, and are more reliable in some ways than any other class of labor from which the Coast men have to draw. They have in part adopted our clothing, excepting that they stick to the great white turbans like the Chinaman does to his queue. It is an odd sight to see them standing about town, the turbans on their heads, a pair of Levi Strauss overalls on their legs and a jumper of the same make on their backs, while on their feet, which for countless ages past with their ancestors knew no covering whatever, a pair of heavy hob-nailed shoes.

GRAIN HANDLING.—But it is the grain harvest which impresses one, for it is done on so large a scale that the conditions are unique. In the fields where the machines drop six and eight sacks at a time, it is gathered up and hauled to some central point, where they pile it up temporarily in great stacks right out on the ground, with no flooring or covering, knowing well that the weather man will play them no pranks. The huge four and six-mule teams are lining the roads hauling the sacked grain from the fields to the warehouses, some of which are monstrous things, one that I photographed being over 750 feet long and 50 wide. Inside the grain was stacked away, fifty sacks high, in great stacks with wide alleys between like the blocks of a city. For stacking they use a portable elevator worked by a small gasoline engine which lifts the sacks up on an endless belt.

Whatever the wheat crop of the rest of the United States will be, that of the Coast bids fair to exceed that of many years. It is conservatively estimated that it will take from 70 to 80 million sacks to hold the year's crop, as against 50 million sacks last season. Inasmuch as the total number of sacks in sight is about 55 millions, there is already a shortage, and those who have not bargained for their supplies are wondering where they will get them. The bulk of the sacks are imported from India, the rest being the product of the California State penitentiary. From about 6 cents each, the price of sacks has recently run up to 8½ cents, with a prospect of being higher.

THE COMBINED HARVESTER.—Referring to the big harvesting machines, one farmer told me they were one of the worst things that ever came to the State, from one point of view, and that was the question of weed scattering. In the old days a weedy field was cut and the seeds all carried to one place, and there, if necessary, they might be burned with the straw and chaff. But now the harvesters work up the whole thing as they go along, and the seeds are gathered into it, threshed

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LILLY'S "NEW WHITE QUEEN" ONION. A very early small round variety of fine, crisp flesh with deliciously mild flavor. A great favorite for the home garden, easily grown and matured.

The above three varieties are all regular 10 cent packages. We offer the three for 10 cents **to introduce.** Send money order or stamps.

Catalogue Ready for Mailing, Free.

Send for a copy of Lilly's Annual Seed Book, 126 pages, fully illustrated, with cultural directions.

Lilly's Seeds are the Standard of the West. They have given satisfaction to farmers for over a decade. They are particularly adapted to the climatic and soil conditions of the West. Our seeds are tested by us before being offered for sale. We have an expert seed tester, a government graduate.

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LARGEST CITRUS NURSERIES IN THE WORLD

Parties contemplating the planting of citrus groves this coming spring will do well to send for our prices soon, as there will evidently a a shortage of strictly first class stock. Write today for particulars, or, better still, pay us a visit so that we may be able to show you just what we have.

Our finely illustrated booklet, "Citrus Fruits," covering the industry from the seed to the market, mailed to any address on receipt of 25c in stamps.

SAN DIMAS CITRUS NURSERIES
SAM DIMAS, CALIFORNIA

GOOD CITRUS TREES

Expert grown, large, clean stock, up to size now, for 1912 spring delivery. None better anywhere. Our buds are selected with greatest care from best individual fruiting trees and positively guaranteed true to name.

250,000 Seed Bed Stock

Sour, Sweet or Pomelo—the **McMillan grown** kind—large clean plants from selected seed—the kind it pays to plant. Inspection and correspondence invited. Closest nursery to Los Angeles. Alhambra car.

McMILLAN CITRUS NURSERIES
Growers of Citrus Trees exclusively
Ten years in business and here to stay
Main 732—Home 3222 **300 So. Marengo Ave., Alhambra, Cal.**

THE STUDEBAKER BROS. CO.
OF CALIFORNIA
announce they have secured the agency for
FLANDERS CHAMPION POWER SPRAYERS
THE BEST SPRAYER MADE

Ask or write your local Studebaker Agent for particulars

out, winnowed, and dropped with the chaff and straw in new spots to take fresh hold another year. When the grain fields are harvested, there comes a rank growth of weeds, volunteer grain and best feed of all for the sheep—the morning glory. One learns that the stubble-fields are worth what seems to be almost impossible prices for sheep-fattening purposes, and one sheep-owner told me he would rather have a field of morning glory and volunteer grain than the best field of alfalfa that ever grew. He said he could put more dead weight on a band of wethers in such a field than with any other feed of which he knew.

VARIETY OF PRODUCTS.—The variety of stuff produced in the Sacramento valley is well illustrated by the loads of the teams one meets coming along the road. In one short distance outside of the town of Colusa, I think it was, we met teams loaded with wheat, plums, pears, peaches, barley, cantaloupes, several big loads of wool, baled alfalfa and grain hay, and two bands of wethers for the market, and a good-sized bunch of beef steers driven on foot.

Most of this grain land is not watered, but of course the fruit land is all watered. [Oh, no, Mr. Barnes; thousands of acres of fruits are grown without irrigation, though much of it would do better with a little extra water.—ED.] The value of such land is from $50 to $200 per acre, and like the San Joaquin valley, while there are some small holdings, the greater part of it is owned in large bodies and sublet to the farmers. For the most part, the grain farming is all done by the big owners, as it can best be handled by wholesale methods. Much of the grain land is foothill land which can never be irrigated. They have learned to use it for grain a year or two, and then let it lie fallow for three years to get back its fertility.

RIVER LAND PRODUCTS.—Down about Stockton, below Sacramento, in what they call the "delta" of the Sacramento river, lies a tremendous body of rich, deep, mucky soil, which is the ideal place for truck farming. Here are grown those crops like onions, lettuce, asparagus, and such produce. One man has several hundred acres of asparagus, almost all of which is canned right on the place for Eastern consumption. Celery is another great crop here, and last year, I understand, over 25,000 cars of this one vegetable were shipped from the State, the greater portion of which originated in this valley. These delta lands are almost all held in large bodies and are readily rented, year after year, at from $20 to $30 per acre, and the renters claim to make good money at that figure.

CHEAP POWER FOR FARM WORK.—Already some of the large areas have been subdivided and placed on the market, and sooner or later it will all be cut up, not only in the delta, but through the whole length of the valley, and when that is done, there will be a population here many times greater than now.

Nowhere in the country has the water-power been harnessed up as it has along these mountain ranges; hence electricity is at present very cheap. I asked one farmer what he paid for his electric power with which he ran his pump and other farm machinery, and he said 3 cents per kilowatt-hour. When one remembers that in the East, in the large cities, they think they are getting cheap power at from 10 to 12 cents per kilowatt-hour, the cheapness of this water-power is apparent.

THE CALIFORNIA SPIRIT.—These California farmers are many thousands of miles away from the place where they must find a market for much of their stuff. It must be hauled across deserts and mountain ranges, sometimes in deep snows and other times through a heat almost furnace-like in its fierceness. Yet they are farming out here and competing successfully with their Eastern neighbors in spite of the handicap of distance. One does not have far to go to find out why they can do so. It is their systematic development of the business, the team-work between men in the same lines of production, and the employment of machinery fit for the work regardless of its cost. It is co-operation in its very highest state of development, and their co-operative fruit-selling companies are undoubtedly the best of their kind anywhere.

The California grower knows he must rely entirely on the goods and the way they are put up and placed before the buyers. Almost every little place has its registered trade-mark or brand for its products, and they take pains to keep the goods up to standard by marketing only the best. The Eastern farmer might well study the methods of these Californians, for there is much in their methods that can well be utilized to meet their competition. With the opening of the Panama Canal they expect to increase their shipments, especially of oranges, lemons, and other products that do not require rapid movement.

DR. HILGARD PRAISES CALIFORNIA COTTON.

To the Editor: In your issue of November 11 I note in the article of my old friend Kruckeberg, on the remarkable productiveness of the Imperial country, the statement that "The percentage of lint from seed-cotton is also astonishing, the yield in the South (Cotton States) being 3½%, while on some of the Imperial valley lands it runs as high as 25 and 30 per cent."

Now, as a matter of fact, as shown in the report on cotton culture in the United States, made by me for the Tenth Census (1880, Vol. 5, p. 5), the average proportion of cotton lint to fiber in the Cotton States is as one to two; in other words, the percentage of lint in the raw seed-cotton is 33⅓%, not 3½%, as Mr. Kruckeberg quotes it. I should have thought his figure a mere misprint, if he did not afterward quote 25 to 30% as high figures.

Since the proportion varies materially with different varieties of cotton, it is possible that the percentages given for the Imperial cotton are really high; they might be for the Egyptian plant, which has been chiefly tested in the Colorado delta.

But there can be no mistake as to the high *quality* of the cotton fiber as grown in California. This was shown conclusively in the measurements made of California-grown cotton in 1880, which proved it to have longer, finer, and stronger fiber than the same varieties grown in the Cotton States. Hence the Oakland cotton factory then paid 2 cents more for the home-grown cotton than for the New Orleans article. I have lately examined some Egyptian cotton grown near Fresno, and found the same high quality as shown in my report of 1880.

The only difficulty about California cotton culture is the labor problem, and machinery may be found to solve that problem.

E. K. HILGARD.

Berkeley.

LIKES ROSELLE.

To the Editor: I tried roselle as noted in one of your issues. I am delighted with the plant, both for its ornamental appearance and productiveness, and shall have a larger patch the coming season.

A. O. NELSON.

Raymond.

[This is the plant from the fleshy calyxes of which a very fine jelly is made.—ED.]

REX REX REX

As the leaves fall from your trees with the first rains, it will be the best time to do your first spraying with

REX

the famous fruit tree protector used in every part of the U. S. and Canada, especially on deciduous trees. Accept no imitation, but use the standard article that has been tried and found not wanting.

REX has become the household word with the orchardmen from San Diego to Vancouver.

REX has made for California Thousands of Dollars in better fruit.

Ask your dealer or write for particulars to

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OF
THE HIGHEST GRADE
In development of root, stalk and branch.

Send for catalogue, and be convinced that our stock is the best that can be grown.

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Consult us as to
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We can save you money

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THE ACAMPO NURSERY

We grow all kinds of high grade deciduous fruit trees, leading varieties of **Peach, Plum, Prune, Cherry, Almond** and **Apricot**.

Write us for special prices.

WILDER & FERGUSON, Acampo, California

MARTINEZ NURSERY
ESTABLISHED 1884

Leading varieties of Pear, Apple, Plum, Prune, Peach, Apricot and Almond Trees. Grape Vines. Orange and Lemon Trees. Ornamentals, etc.

Catalogue and prices on application.

THOS. S. DUANE, Prop., Martinez, Cal.

TREES

Every Variety

suitable for planting in the interior valleys, coast counties and foothill regions. We are prepared to fill your orders for any quantity, large or small. LET US FIGURE WITH YOU.

OLIVES

There is a great demand for olives—far more than the supply—and prices are tip top.

Better place your orders now if you intend to plant. Trees are scarce and many contemplate planting. We have some of the finest pickling and oil sorts still on hand, and suggest that you get in touch with us at once.

WALNUTS

We call particular attention to the handsome returns that may be had from a walnut grove. The annual output in this State is far below the demand. As a permanent investment there is nothing in the nut line that is more profitable. We have growing in our nurseries the most elegant stand of walnuts we have ever been privileged to offer. These include:

FRANQUETTE
CUT-LEAVED
GRAFTED
MAYETTE
PARISIENNE

and many other commercial sorts. Also SEEDLING TREES OF SANTA BARBARA AND PLACENTIA PERFECTION.

ILLUSTRATED PRICE CATALOGUE FOR 1911-1912 NOW READY

This year's edition of our annual price catalogue is now ready, and we will gladly mail a copy free to anyone making application and giving a list of their probable requirements in nursery stock. It is profusely illustrated—briefly describes and prices all lines of stock carried by us. Burbank's very latest fruit introductions are also fully described.

WRITE FOR IT TODAY

Every planter should have a copy of our book—

"CALIFORNIA HORTICULTURE"
(The Fruit Growers' Guide)

An invaluable publication to growers of all classes of trees and plants. Contains 120 pages—beautifully illustrated. Gives practical and up-to-date methods of planting, care of stock, pruning, cultivating, etc., besides describing over 2000 varieties of all classes of nursery stock. Sent postpaid for 25 cents in stamps or coin.

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FANCHER CREEK NURSERIES
GEO. C. ROEDING PRES. AND MGR.
Box 18 Fresno, California

AGRICULTURAL REVIEW.

With the Fruit Men.

Offices for the Deciduous Fruit Growers' Protective League have been opened by the organizer, J. W. Jeffrey, in the Ochsner building in Sacramento.

The Borden ranch near Madera has been purchased by the Kirkman Nursery Co. and will be used for raising nursery stock. Permanent improvements on the place will be begun at once, to cost $8000.

Arrangements are being made by the State Horticultural Commission to hold a series of meetings of fruit growers of Humboldt county to arrange for as great an improvement and development of the industry there as is possible.

Orange shipments from Butte county are to close about December 10. Up to December 1, 60 cars had been shipped by the Butte County Citrus Association.

An examination of citrus trees at Marysville indicates that the white fly, whose eradication was attempted several years ago, is still present in limited amount, and work against it has been begun by the State and county horticultural commissions.

The last car of Emperor grapes from the Clovis, Fresno county, district, shipped November 14, sold at the New York auction at $1.70 per crate.

The American Olive Co. is reported to be seeking a site for a plant at Oroville.

A new packing-house has been established at National City, San Diego county. From Chula Vista and National City during the year ending November 1, 1911, 343,367 boxes of citrus fruits were shipped.

The Covina Citrus Association has re-elected officers for the ensuing year. At the meeting it was announced that the Association received a gross return of $466,201.97 for the 256,801 boxes of fruit shipped during the year, or a net return of $322,918.48.

The Clovis Chamber of Commerce has passed resolutions calling upon the legislature to provide for compulsory standardization of fruits shipped from the State.

The apple shipments from the Pajaro valley will run very close to 4000 cars, as announced by the PACIFIC RURAL PRESS early this summer.

The Commercial League of the Pajaro Valley has indorsed the official inspection of all fruit shipped from the State.

From Vacaville 923 cars of fruit were shipped this season. The last car was composed of grapes, most of which came from the H. A. Bassford place.

Horticultural Commissioner Schell, of Fresno county, reports that the mealy bug has been almost eradicated around Fresno.

The directors of the Placentia Orange Growers' Association have been re-elected for the year.

At a recent date only 14 cars of almonds were left in the hands of the California Almond Growers' Exchange.

An encouraging response has been received in the invitations for membership in the newly organized California Raisin Exchange, and long before the Exchange is opened for trade, sufficient support is expected to insure its success under all conditions. A request has been sent out from the Exchange asking for immedate data regarding the amount of stock in the growers' hands, as when this is known it will steady the market at a reasonable figure. It is generally thought that all the crop has been sold except about 40%. The promotion committee of the Raisin Exchange has been named as follows: Louis Gundelfinger, W. T. Mattingly, and N. J. Levinson.

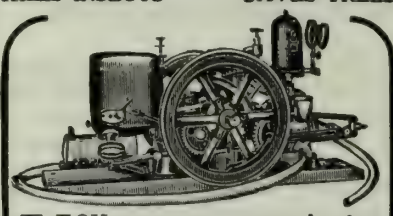
The rise in the raisin market occurred earlier than was expected this season, indicating that the trade had pretty well disposed of their stock. Most of the sales since the rise started have been made on Muscats, although the seedless varieties are strong, owing to their scarcity. The market is now reported to be 3½ cents.

General Agriculture.

Arrangements have been made by the Horticultural Commission and the University of Nevada for the latter to see that potatoes shipped from the parts of Nevada where the eel worm of the potato is not found are free from that pest, and

Fairbanks-Morse Spraying Outfit

KILLS INSECTS SAVES TREES



YOU must spray to secure perfect fruit. Use a Fairbanks-Morse high pressure sprayer and do the work quickly and thoroughly. The above 1 H. P. Gasoline Engine Outfit will supply three ¼-inch Vermoral spray nozzles at 200 lbs. pressure which is the pressure required for effective spraying for scale diseases. The "Deluge" pump gives steady pressure. Entire outfit compact, strong and easily moved about the orchard. Will give splendid service for years.

Complete description of this and larger outfits given in our Catalog, No. SF 1035

Catalog also tells just when spraying should be done. Write for a copy today.

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Geo. C. Roeding, Pres. and Mgr.

CHUL WHEAT

This new hard milling wheat leads all in yield per acre; is quick in maturing; large gluten content; late harvesting, without waste.

CHOICE RECLAIMED SEED

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A few carloads of fancy white Sonora.

Fruit Trees

Hardy Oregon Grown Stock, no Irrigation or Fertilizer, hence only sturdy normal growth, the best for transplanting.

Specialty in

BARTLETT PEARS, YELLOW NEWTOWN and GRAVENSTEIN APPLES.

A full line of

COMMERCIAL ORCHARD TREES

Send list of wants for special prices. Send for Illustrated, Descriptive Catalog, free if this paper is mentioned.

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Now is the Time to Apply

MOCOCO

SUPERPHOSPHATE

CHEAPEST FERTILIZER ON THE MARKET

For Sale by

The Mountain Copper Company, Ltd.
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Two Grain Drills for sale—cheap.

LIME FOR FERTILIZING

SPRAYING, WHITEWASHING

Acetylene Lime in putty form in iron drums
275 lbs. including drum 65 cents
F. O. B. Oakland, Cal.

The Prest-o-Lite Co.
Makers of Gas Tanks
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BULBS

For fall and winter planting; also Flower Seeds for fall sowing. New Catalogue now ready, mailed free upon application.

NOW IS THE TIME TO SOW

Payne's Royal Exhibition Pansy Seed, the best strain on the Pacific Coast, **Giant Perfection Stocks** and **Payne's Christmas Flowering Sweet Peas,** all described in the above mentioned Catalogue.

THEODORE PAYNE
345 S. Main St., Los Angeles, Cal.

Snow's Nursery

Citrus Stock a Specialty

Will accept future contracts on Citrus Stock. also Apricots.

H. K. Snow, Jr., Prop. OXNARD, CAL.

EUCALYPTUS

All varieties and sizes; extra hardy stock. "The finest trees I ever saw," is the verdict of all who see them. Write today for free booklet on their culture, etc. Questions gladly answered.

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Bolton Orchard Heater Co. of Texas, 406 Chronicle Bldg., Houston, Texas.
Mr. Robert Beers, R. F. D. No. 46, Roswell, New Mexico
The Frost Prevention Co., 107 S. Broadway, Los Angeles
The Frost Prevention Co., 109 Temple Block, Kansas City, Missouri
G. F. Stanton, Fort Myers, Florida
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Geo. H. Parker, Grants Pass, Oregon
Mr. Morris B. Carpenter, Phoenix, Arizona



THE PIONEER WITHOUT A PEER

Orders must be placed 60 days before delivery is required.

The Frost Prevention Co.

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Formerly known as the "Fresno or California Heater"
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FACTORIES:
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MR. FRUIT GROWER:

Are you profiting by your neighbor's experience? Time after time it has been demonstrated that orchard heating, or frost fighting, by Bolton Heaters, is the only sure method of preventing frost damages.

When salesmen come to you with their wonderful tales of heaters, just investigate these five features:

Fuel Economy — Ease of Operation — Burning Time — Uniformity of Heat Blanket — Cost of Installation.

There are two types of Orchard Heaters: The Bolton, which has many imitators, and the Sliding Cover type. Our circular will show you, pictorially and by description, the differences in cost and operation of these two types.

As fruit growers, you are well aware of the trouble that follows buying stock true to name. Follow your experience, and buy the Bolton Heater, instead of an imitation that leaves out essential features, in order to evade our patents. So pronounced is the success of the Bolton Heater, that even sliding cover heater manufacturers are making a flimsy imitation in a vain endeavor to pull a little money out of the pockets of those who have discovered the faults of the sliding cover type.

Read the reasons why Bolton Orchard Heaters are the only successful means of frost fighting, and remember, they were the first successful heaters ever invented. The largest lemon grove in the world, owned by The Lemoneria Co., Ventura, Cal., the largest orange grove in the world, owned by the Seth-Richard Co., Pomona, Cal., and the largest apple orchard in the world, owned by The Darby Fruit Farm, Amoret, Mo., all use the Bolton Heater exclusively.

Mr. Grower, think these facts over, do not be led away by smooth-tongued salesmen, but determine with your own mind the best heater for your use. We will be satisfied with your decision.

May the 1912 season bring you a bumper crop and bumper prices.

Very truly yours,

THE FROST PREVENTION CO.

the quarantine from those parts has been lifted in consequence. Shipments from Lyon, Churchill, and Washoe counties are still debarred from this State.

On the R. E. Jack ranch near Paso Robles the development of water by sinking artesian wells has proved very successful. A good artesian flow was found at 60 feet, and as a result a large amount of land will be put out to alfalfa. A number of neighboring ranchers have also sunk wells recently and will plant alfalfa.

O. W. Wilder, of Corcoran, Kings conty, reports an extremely satisfactory season through the use of a centrifugal pump on an artesian well. By this means 120 miner's inches has been secured, although the pump was not worked to its maximum capacity, and as a result of the plan a section of land will before long be put out to alfalfa.

O. W. Stearns is to try for artesian water on his West Side ranch near Selma, Fresno county.

A big flow of artesian water has been struck on the ranch of A. McKanna of Paicines, San Benito county, which is expected to result in the rapid development of the land in the vicinity that can be irrigated from similar wells.

As a result of the agitation over making irrigation bonds legal security for State funds on deposit in banks, a constitutional amendment has been offered in the assembly by Thomas Griffin of Modesto, allowing the bonds the desired standing.

A meeting was held by irrigators at Salida, Stanislaus county, Monday, to arrange for the construction of a new lateral to the irrigating system, which will save a large amount of water now lost through seepage on a part of the main canal.

Gabriel C. B. Moat, an Indian on the Pala reservation near Escondido, San Diego county, harvested 145 bushels of shelled corn from three acres of irrigated land. An addition to the irrigating system on the reservation is expected to provide water for 600 more acres.

Arrangements have been made by E. Clemmens Horst and a number of Eastern brewers for the co-operative growing of hops, and over a thousand acres are said to have been secured to put out to this crop. The brewers will thus be able to secure a definite supply of hops at a definite expense. As an indication of the amount of planting being done, it may be stated that roots are being sold at $10 per ton, while last year they were but $2.

Miscellaneous.

Plans are being made for the erection of an alfalfa-meal mill at Perris, Riverside county.

The program has been announced and invitations issued for the California Country Life Conference to be held in joint session with the California Teachers' Convention, Bay section, at Stockton, December 28 and 29, 1911. The main topics for consideration are "Agriculture in the Public Schools" and "Conservation."

The Federal Government and the State of California have instituted legal proceedings to condemn about 1700 acres of land on the west shore of the Sacramento river between Rio Vista and Collinsville, for the purpose of improving the river. Condemnation proceedings have begun for several parts of the land, which was appraised at $30 per acre.

Organizatfon of the Patterson Irrigated Farms Association was completed and officers elected last Saturday.

The Secretary of the Department of the Interior is to ask Congress for $381,620 with which to improve the National Parks of this State.

(*Continued on Page 501.*)

CHICO NURSERY COMPANY

CHICO, CALIFORNIA.

We still have a pretty large stock of all the commercial varieties of Fruit Trees being planted on this Coast.

Write us for our prices on California Black Walnut Threes, two years old, suitable for planting out and grafting in the field.

Catalogue free. Send for one.

CHICO NURSERY COMPANY, CHICO, CALIFORNIA

NITRATE OF SODA

For Fertilizing Purposes Good For Any Growing Crop.

Try It; You Will Get Good Results.

NITRATE AGENCIES COMPANY

LOS ANGELES SAN JOSE SEATTLE

IT'S FREE

FERTILIZERS AND FERTILIZING FOR PROFIT

Our own production Bone and Blood Fertilizers

It's the RESULTS that count in farming, and our Fertilizers produce POSITIVE RESULTS that show in the QUALITY of the products as well as the Quantity.

Our fertilizers have the largest sale west of the Rockies because they make **sure** and **good crops.** Lack of fertility means starved soil. Our fertilizers **feed the soil** and make it produce abundant harvest. Write us and let us tell you about it.

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AT PACIFIC RURAL PRESS OFFICE, 667 HOWARD STREET, SAN FRANCISCO

The Lung Worm and Other Parasites of the Pig.

Written for the PACIFIC RURAL PRESS
By Dr. C. A. PYLE of the San Francisco Veterinary College.

Aside from hog cholera and accidental troubles, the most serious menace to the hog-raising industry is an infestation with worms. These may occur in the air-tubes of the lungs, in the stomach and intestines, and the young of some forms penetrate into and remain in the muscles until the meat is eaten by some other animal.

The lung worm in the hog is not very common, but once a herd of hogs becomes infected, the succeeding litters are apt to have the worms from the older ones, and so keep up the trouble. The older hogs are not apt to be bothered, and thrifty shoats seem to get along very well, but young pigs, or those not thriving or not well fed, are apt to suffer severely from the presence of lung worms.

The worms cause a chronic irritation of the air passages. The most important signs are general unthriftiness and a hard cough. When caused to move, the pig has a spell of coughing and raises some frothy expectoration. In this may be found the small worms, a half to one inch in length. Sometimes it is best to kill one of the weaker pigs and examine the lungs for the worms. It is difficult and impractical to destroy and remove lung worms in hogs and treatment will be along general lines as given below.

Worms in the intestine and stomach of the pig also cause an unthriftiness and an occasional death among the pigs. Sometimes there is a cough which may be excited by irritation of the stomach lining due to the presence of the worms. The mature worms may be noticed in the manure. Sometimes when the feed is changed suddenly or when the wormy pigs do not get enough feed, some of them become unsteady, carry the head twisted up, go in circles and fall in a fit, and may die then or a few days later. In the absence of cholera these symptoms are usually caused by the worms, and the intestines may be fairly packed with them. Sometimes some of these worms work their way into the liver and of course injure the pig's health.

Of the tapeworms in man, the young or larval forms occur in hogs and some other animals. The hogs acquire the worms by eating soiled material or human feces, and the young worms find their way into and remain in the muscles of the pig until the pork is eaten, when, if not killed by heat or some other agency, the mature tapeworms develop. The hog is not greatly affected by these worms unless they occur generally over the body in numbers.

The trichina is another intestinal worm occurring in about 2 per cent of the American hogs. The mature worm is a little more than an inch long and remains in the bowel, doing harm according to the number. The young worms burrow through the muscles and remain in little capsules to be eaten by another hog, or by man after the meat is prepared for food. Rats probably eat some young trichinas which pass out in the manure. When eaten, these tiny forms, unless previously killed by heat, etc., mature in the bowel and give birth to other young which penetrate the muscles and complete the life cycle. This process causes a painful and serious disease known as trichinosis.

TREATMENT FOR WORMS.—This would be hygienic and medicinal, with emphasis on the first. The hog has tendencies to fair cleanliness of body and quarters if allowed room enough. But fed in the manner used for domestic swine, the pig is not very careful what gets into his food and drink, and it is through these channels that internal parasites are transmitted from one hog to another.

Hogs should have plenty of range and a clean supply of water. Their sleeping quarters and nearby yards where they are apt to leave their manure should be cleaned by scraping up and hauling away the litter and manure. This should be done several times a year. A sprinkling of dry lime or hog-dip solution in the pens and runways is very good. Dipping several times a year or cement wallows into which some dip is poured occasionally is also beneficial in that it cleanses the body and promotes the general health, but also some of the dip solution is drunk or swallowed in dipping, and this would help in the battle with the worms. The little pigs especially should be kept clean and growing, for when thrifty and well nourished they soon outgrow the effect of a few worms.

To add to the health of the herd, the following "Government formula" may be given at intervals throughout the year, or it might be mixed with more salt or charcoal and placed at the pigs' disposal in a trough under shelter. The dose advised is: once daily, mixed in the feed, one tablespoonful to each 200-pound hog.

Government formula:

	Pounds.
Wood charcoal	1
Sulphur	1
Sodium chloride	2
Sodium bicarbonate	2
Sodium hyposulphite	2
Sodium sulphate	1
Antimony sulphide	1

Mix.

For intestinal worms, copperas or dried sulphate of iron is mixed in the food twice a day for a week and followed by a dose of oil of turpentine or the above formula. The dose of the copperas is a tablespoonful to four medium sized hogs twice a day. Another method is to dissolve a quantity of the copperas in water and pour it over freshly prepared charcoal and to give it to the hogs. Oil of turpentine is used as a remedy for worms, and is given mixed in milk or a gruel. A tablespoonful to four 200-pound hogs is a fair dose. It may be given once daily for three days. Turpentine is as effective and useful as any remedy for lung worms.

PREVENTION.—In the case of a herd of hogs numbering from fifty to several hundred the herdsman has a busy task keeping them healthy and growing. Worms and other parasites come from neglect and uncleanliness of the hogs and quarters. Hogs are not easily given medicine, and prevention is always the easiest solution of the problem. Hog manure, offal, dead hogs and dead rats should not be left for hogs to eat or run through. With an occasional dipping there is an added advantage that when the hogs are kept clean of body the general health is benefited, lice and many other troubles are prevented and the pigs hasten on to market with greater profit to the owner.

PERSISTENT MILKERS.

To the Editor: I wish to ask about drying up some Jersey cows before calving. I have some graded cows which are about to calve and I find it hard to dry them up. My neighbors tell me it is best to keep milking them; or, in other words, to give them no rest before calving. They say it is the nature of Jerseys to give



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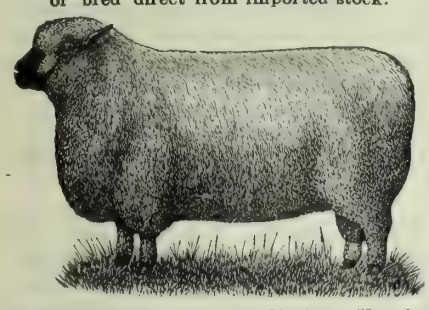
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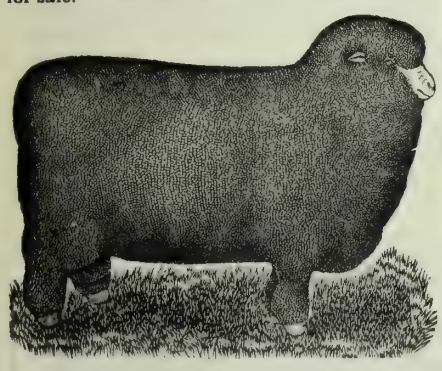
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milk from the time they come into the wet herd till they go out of the dairy. My experience with other breeds has been to give them from six weeks to two months rest before calving, so would like your advice on the matter. J. DEM.

Newman.

[You are rightly advised. It is better to keep on milking than to adopt special methods of drying off. The disposition to milk continuously is not peculiar to Jerseys—it is apt to occur with all highly developed dairy breeds.—EDITOR.]

EXPERIMENTS IN FEEDING HORSES.

"Farm horses, as a general rule, are fed entirely too much hay," says the Oregon Agricultural College Experiment League's latest bulletin to the 100 members who are to test the efficiency of a system of feeding suggested by the Department of Animal Husbandry.

"This is a positive injury to the animal, and often lessens to a considerable degree his working efficiency. It should be remembered that every time a horse inflates his lungs the stomach is displaced, and if this organ be kept constantly full of bulky food it imposes extra work upon the respiratory system. Heaves, so common among farm horses, is almost wholly due to feeding too large quantities of hay. Colic and other forms of indigestion are often due to feeding too large amounts of bulky food. Aside from its physical injury to the horse, the feeding of excessive amounts of hay is a waste that should be conserved.

"A horse weighing 1000 pounds will do more work and keep in better health on 15 pounds of hay per day than he will on 20 pounds per day. In fact, 15 pounds of hay per day is sufficient bulky food for a horse of that size. A horse weighing 1600 to 1800 pounds does not need more than 20 pounds of hay per day. The balance of his nutrients should be in the form of grain.

"Feed the 1000-pound horse 10 pounds of good hay at night and 5 pounds in the morning and he will perform more labor with greater ease than he would if hay is kept before him all the while.

"The purpose of the experiment is to cause horse owners to observe more closely the advantages of feeding less hay. If two or more teams are maintained upon the farm, feed one team as suggested and the other the usual way and note carefully the result. In making the test, however, teams should be divided as to size, age and individuality as nearly equal as possible. Whenever practicable, weigh rather than guess the amount of hay fed."

HOGS OUT OF CONDITION.

To the Editor: What disease is troubling my hogs, and how can it be cured? They seem to be mangy and scabby, but am unable to find any lice on them. They eat well, but vomit a good deal and are falling off in flesh. J. C. C.

Clovis.

ANSWER BY DR. C. A. PYLE.

The hogs described above may be affected with a chronic type of cholera, and this should be determined by some one who can see the hogs. Make a general cleaning up of the hogs and quarters, using a dip and repeating in ten days. Hogs have a true mange as well as other animals.

A change of feed may also be needed, depending on what is being fed and how the hogs are managed. Green alfalfa pasture with a moderate feed of shorts or middlings of wheat and ground barley made into a slop would be a good ration. Evidently there is some digestive trouble here, and a dose of croton oil (3 drops) mixed in a teaspoonful of raw linseed oil for each hog would be beneficial. Charcoal, ashes, salt, and a little epsom salts would be of benefit to tone the digestion. The oil should be carefully mixed in the slop.

DR. C. A. PYLE,
Pathologist San Francisco Veterinary College.

A NEW CURE FOR GRUBS IN SHEEP.

Mr. W. A. Porter, of Dixon, Solano county, has applied a new treatment for sheep that are attacked by grubs in the head that has proved a great success. This disease, though common in cold damp weather, does no great injury to most of the sheep affected, though occasionally the grub gets to a vital spot and the animal goes into convulsions or a state of coma and dies. On previous occasions on the ranch sheep so attacked did not respond to the ordinary treatment, and whether the grubs were killed or not, the animals did not profit by it.

Last year when a ewe was found so badly affected that she was blind and hardly able to move, Mr. Porter took an atomizer, used for human nasal troubles, and sprayed the glycothymoline it contained into the nostrils of the sick animal. This was done on three different occasions. The third time it was necessary to exert some effort to catch and hold the sheep, and the fourth time she was so lively that it was not worth while to run after her. From that time to this she has shown no symptoms of the trouble.

Most sheepmen find it profitable to put some tar in the feed troughs so that the tar that gets on the sheep's noses will keep the flies away. The glycothymoline appears to be still more distasteful to the nostrils, and is very easily applied. Once the grub is killed it does no more injury to the sheep.

DAIRY SHORT-HORNS POPULAR IN ENGLAND.

Those who are handling dairy Short-horns in this State will be interested in a clipping from the Hereford Journal, kindly sent us by John Bennett of Sebastopol, as follows: "Of great importance as a sign of the times was the sale of Mrs. Thornton's pedigreed milking Short-horns in Northamptonshire, on Tuesday, October 17. These cattle were in very low condition, and certainly many of their pedigrees were anything but attractive. It was thought before the sale that the 41 head would be well sold if they brought $5000. They realized over $8000, and a friend observed to me that he 'never saw such a sale in his life.' The scarcity of milk now prevailing would not account for this phenomenon, for the eagerness of bidders was indeed phenomenal. Especially must it be so considered when it is pointed out that not one of the well-known pioneers of the Short-horn dairy movement was present, the buyers being composed chiefly of recruits for the cause. The sale may be taken as a positive proof that the new enterprise of establishing a type of pedigree Short-horns with deep milking propensity has 'caught on,' and is spreading with wonderful rapidity. It should be stated here that the milk of each cow in the sale has been tested for percentage of butter-fat, and the result in each case was printed beneath the pedigree. This gave confidence and doubtless, to some extent, helped the sale."

The United States authorities are investigating the Chicago Butter and Egg Exchange, which, it is alleged, was used to establish false quotations and manipulate the market to the members' advantage.

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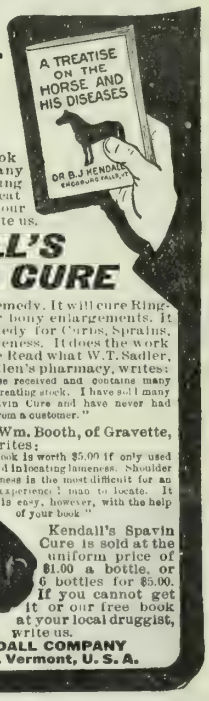
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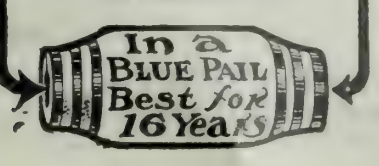
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What China is Doing in Pork Exports to Europe.

Our swine growers know, of course, that our geographical neighbor, China, is shipping pork in considerable quantities to England, and they will be interested to have more information about the kind of product China is putting out. It seems that when fresh Chinese pork appeared in the English market the meat naturally excited inquiry as to its origin and desirability, and as the British authorities are apparently quite disposed to promote this trade as they are all other trade with China, Dr. Reginald Farrar, medical inspector, Local Government Board, received instructions to inquire, during a visit to China, into the export of Chinese pork to England, and his report has now been published by the Local Government Board.

It is stated that so far as Dr. Farrar could ascertain, pork is being exported to England from only two places in China, viz.: from Hankow on the Yangtze river and Harbin in Manchuria. It is proposed, however, to export pork from Shanghai. A prejudice is entertained among European residents in certain parts of China, and has been transmitted to England, against the use of Chinese pork on the ground that the Chinese pig is said to be a scavenger pig that feeds on garbage, and is, therefore, likely to become the vehicle of parasitic diseases. It is true, says Dr. Farrar, that in many villages of China pigs are to be seen rooting about in the streets and feeding on garbage. It is also probable that these animals are eventually eaten by poor persons of the coolie class, and many Europeans have apparently jumped to the conclusion that the Chinese pork which is exported to England is derived from animals of this class. But not only the pigs that are exported to England, but in general those also which are sold in the native markets for consumption by Chinese, are grain-fed pigs reared on farms under conditions which compare favorably with those that obtain in England. To. Dr. Farrar's knowledge pork is freely eaten by Europeans in such places as Shanghai, Hankow, and Harbin. Pork is the staple meat food throughout China; the pork that the doctor has seen exposed for sale in native shops has been nearly always good fat meat, whereas the scavenger pigs, of which one or two may be seen in most villages, are lean and skinny animals, with pendulous bellies that tell of the unsatisfying nature of their food. They are generally old sows of no use for fattening. The Chinese are a frugal people who throw very little foodstuff to waste, and it is not reasonable to suppose that fat pork sufficient for the demands of the population could be fed on the scanty garbage that is to be picked up in the streets of a Chinese town or village. It is, moreover, unlikely that a firm which is trying to establish in the English market a new and successful trade in pork or bacon, would find it to their profit to export lean scavenger pigs fed on garbage. He adds that within his experience the average Chinaman is as dainty in his feeding as the average Englishman, and the idea of eating garbage-fed pork is as repugnant to the respectable Chinese as it is to ourselves. As regards the liability of the Chinese pig to parasitic diseases, he could find no evidence to justify the belief that such diseases occur more commonly in Chinese than in English pigs. It has been suggested that there might be objection to the use of pork derived from plague-infected districts in China. But Professor Zabolotny, who was one of the Russian delegates to the International Plague Conference, assures Dr. Farrar that he has found the pig, though susceptible to infection by large doses of plague culture, to be relatively highly resistant in this respect. In Hankow the inspection precautions are described as fairly stringent at present, but it is pointed out that the incentive to expend money in inspection may diminish if China becomes a recognized source of supply of frozen pork and pork products.

TUBERCULOSIS AND HIGH COST OF MEATS.

That the high cost of living is primarily traceable, so far as the cost of meat is concerned, to bovine tuberculosis was the theory advanced by Dr. M. P. Ravenel, of the department of bacteriology of the University of Wisconsin, in his recent address before the State Medical Society of Oregon.

Out of 35,000,000 hogs examined last year, said Dr. Ravenel, the government experts found 7,000,000 that were afflicted with tuberculosis, and were rejected by the government. Over $3,500,000 are lost annually through the rejection of tubercular cattle.

"The packers don't stand this loss, you understand," continued Dr. Ravenel. "It is borne by the consumer and by the farmer who raised the stock. The packer isn't going to run the risk of losing several million dollars worth of meat annually through the rejection of it, without seeing that he is reimbursed. Undoubtedly, the severe testing of tuberculous animals before the slaughter has a great deal to do with the increased cost of meat of all kinds.

"I presume Wisconsin ships more high-class cattle than any other State. Buyers from all over the world come and pay on the average $10 a head more than the market price elsewhere so as to obtain cattle free from tuberculosis.'

The opponents of the anti-tuberculosis laws are fighting hard and are working hard to bring about a return to old conditions. As an example he cited the case of Illinois, whose present laws he declared are a fitting example of the clever manipulation for the benefit of unclean dairymen.

In referring to the problems that confront those who are fighting bovine tuberculosis, Dr. Ravenel said the problem of locating tuberculous cattle need not be considered because of the enormous number of diseased cattle that are to be found anywhere. He declared he believed there should be a system of compulsory notification whenever a diseased animal was found and such animals as were suffering from open tuberculosis should be slaughtered.

That bovine tuberculosis was not hereditary was also stated by Dr. Ravenel, who declared, however, that calves allowed to run with the cows afflicted with tuberculosis contracted the disease very soon, which has given rise to the general belief that the disease is hereditary.

BUTTER WHICH WOULD NOT COME.

To the Editor: Will you kindly tell me what is the trouble with cream that you churn on from Monday until Saturday, then have to give up in despair and turn it out to the pigs? We warmed it, and we cooled it, and used a dairy thermometer, but nothing would do. A little light on the subject would be thankfully received. SUBSCRIBER.

[If the cream was in churnable condition otherwise, the probability is that it was too cool when you started churning. It should be about 62 degrees Fahrenheit. You are in luck that it did not crawl up the chimney when it got tired of being pounded.—EDITOR.]

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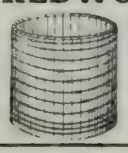
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R. F. WILSON, 447 W. Main St., Stockton, Cal.

National Forests and the Sheep Industry.

[From an address delivered before the California Wool Growers' Association by John H. Hatton, Assistant District Forester.]

In California in 1910 there were 2,200,000 sheep, 383,000 of which, not including lambs, were grazed upon the national forests under paid permits, nearly 17½%. On private lands within the exterior boundaries of the California national forests there were grazed that year about 126,000 sheep, making a total of approximately 510,000 under national forest regulations.

All the grazing work so far has been based in a large measure upon former use. The grazing regulations have been purposely framed to interfere as little as possible with past and present use and at the same time to detract as little as possible from the practice of forestry. The Forestry Service has been big enough to recognize the relative importance of our national live stock industry and the part that the national forests play in the production of beef, mutton, wool, pelts and hides. It has been and will continue to be the studied policy and aim of the Service to utilize the forage product of the forests under such restrictions only as will insure the permanent value of the lands for grazing and forest purposes.

Grazing will be permitted on any national forest so long as no marked damage is done by the stock, but when a national forest is injured by too much stock or by the way the animals are handled, then it must be insisted that better methods of handling be adopted or the number of stock reduced until the damage is stopped. In extreme cases it may be necessary to exclude all stock, but under ordinary circumstances this extreme protective measure has not been adopted unless for the protection of the water supply of cities or on some areas in process of reforestration by planting.

There is no question but that the history of grazing on the public domain without regulation has been one of depletion and disaster where competition has been rife. It has not always been due to what we term overgrazing, but to the use of the ranges in improper seasons. One of tne most destructive uses of the open range was this so-called premature grazing.

We believe that the protection given individual permittees in the use of particular ranges means just the difference between good mutton and indifferent mutton, good lambs and lambs not so good, where they would otherwise have to engage in a losing battle for position and put up with overgrazing. Conservative use of the range under Service supervision has meant better growth and better weights. It may have meant less stock on some ranges, but we believe that regulated grazing and fewer numbers has spelled more actual profit to the stockman than overgrazing and hungry stock.

Data secured from the Modoc national forest in 1910 show that lambs brought at least 50 cents more per head and weighed an average of 10 pounds more than lambs produced outside the forest. This season the Modoc forest produced 78-pound lambs. Last year weights on 10,000 head showed an average of 72 pounds, while outside the forest average weights secured on 3000 lambs showed only 62 pounds.

As far as the sheep industry within the national forests themselves is concerned it cannot be said that its volume so far has been materially affected by government supervision. In this district the Secretary's annual authorization has always exceeded the number covered by permits. There have been some reductions in the very large holdings and some transient owners have disposed of their flocks, but the variation in numbers within the forests has been influenced more by economic conditions.

The management of sheep grazing within the national forests in the past certainly does not call for alarm. In my judgment, it calls for the hearty endorsement of the stockmen concerned. In a general way the national forests of California are accommodating about as many sheep and goats as they should on areas to which this class of stock is already assigned. In some localities better methods of handling should be adopted or the numbers slightly reduced to bring about the proper correlation of forestry and grazing interests. There are other areas, however, now unused by any class of stock where sheep might later find pasturage if transportation facilities become such as to make these areas profitably accessible. During the past season efforts were made to interest sheepmen in remote localities, with successful results in several instances.

We have territory in the forests which will probably always be of more value for grazing than for other purposes, and by the continued introduction of better systems of handling, wiser methods of use, range improvement studies, etc., we hope to increase the carrying capacity of such ranges to make up, in part at least, possible reductions from other factors.

The Service has already demonstrated that the carrying capacity may be increased 20% if the sheep are not herded. Experiments with lambing pastures have also shown a profitable saving in the lamb crop. More succulent feed will be grown in the valleys by irrigation and more lambs and mutton produced on ranges not now within the forests.

The national forests have come to stay. Their primary objects are protection and use as opposed to destruction and waste. The forester in this country must realize that the task before him is broad. He cannot close his eyes to the fact that cattle are turning their heads toward the mountains. Sheep are seeking summer pastures. If in working out the silvicultural problems of forestry he did not set over against such studies and observations equally as intensive observations on our actual forage resources, and best means of developing and sustaining lands best suited to grazing, he would come far short of the obligations which are put upon him in a country like these United States.

DAIRY NOTES.

The management of the Sleepy Hollow certified dairy at San Anselmo, Marin county, is adding more cows to the herd.

W. A. Schwanat, butter-maker for the Jacinto creamery, Glenn county, has leased the creamery for a year, taking charge December 1.

The Kings County Dairymen's Association is to investigate the reason for the big difference existing between the price of cream to the producer and to the consumer.

The 320-acre ranch of Roy McCage at Brentwood, Contra Costa county, is to be seeded to alfalfa and made into a dairy ranch.

A. W. Morris, of Woodland, has left for the East to purchase several cars of fancy Holstein cattle, which will make his dairy contain as many cows as any thoroughbred dairy in the State. The cow, Sadie De Kol Burke, is completing her year's test and will fall only a little short of the thousand-pound mark for butter. Her milk record will be 26,000 pounds.

LIVE STOCK NOTES.

Dr. George S. Baker, head of the U. S. Department of Animal Industry in this State, has left for Manila, where he will supervise the erection of a large slaughter house which the Government will have constructed. Dr. Baker will be gone a year, and during his absence his place will be occupied by Dr. J. H. Webster.

Fred A. Ellinwood, of Red Bluff, secretary of the California Wool Growers' Association, will leave for Omaha December 14 to attend the meeting of woolmen in Omaha, as the representative of the local Association. From there he will proceed to Washington, where he will work upon matters connected with the amendment of the tariff on wool. Up to the time of leaving for the East he will be at the Morrill Apartments, Berkeley.

Dr. W. B. Rawland, county veterinarian for Los Angeles, announces that 100 horses had to be killed recently on account of glanders. Most of the cases were traced to infection through public watering troughs.

Hog cholera is causing loss to a number of ranchers in the northern part of San Joaquin county. Word comes from Fallon, Nev., that the cholera has broken out there also.

One of the largest shipments of hogs for the year from Hanford, Kings county, left that place last week, when Biddle & Russell shipped 1200 hogs to the Los Angeles and San Francisco markets.

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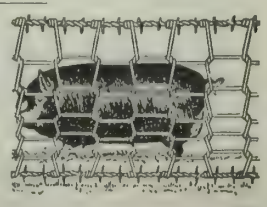
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The Best Fowls to Keep.

Written for the PACIFIC RURAL PRESS
By Mrs. S. SWAYSGOOD, Pomona, Cal.

This is a difficult question to answer, and yet it is asked in all seriousness by people who do not know the characteristics of the various breeds and do not wish to experiment. The only way it can be answered conscientiously by a second party is by a method of cross-questioning the enquirer.

It is necessary to know what his object is in keeping poultry, what his market demands, the room and accommodations he can give the fowls, etc. So, as we see, one question involves many others. And even after selecting a breed that ordinarily should be a success under such conditions, there are two other questions involved, and these are the most vital of all—the strain and the man. The man is really the most important, because a man of perseverance will keep at it until he develops a poor strain into a good one, while a careless, indifferent man will soon cause the very best strain of any breed to deteriorate.

THE WHITE LEGHORN.—The White Leghorn has had such a long reign on this Coast as the best fowl for egg farming, that it is hard to get any other of the small breeds introduced to any extent; that is, in sufficient numbers to test the question thoroughly. The Leghorn is a hustler; therefore, if its owner does not provide it with enough and even a surplus, it will hustle it from the neighbors, and it will sometimes travel quite a distance to get what it is after. But, after all, the Leghorn bears confinement well, and if well fed and cared for, will repay the owner with a full basket of eggs, especially in spring and summer. There are a few strains that in the hands of careful breeders have proved fairly good winter layers. Laying eggs of a good average size and of good white color is the especial function of Leghorns; as a table bird, or even a farmer's bird, they are not the thing in feathers, even though their eggs do bring a few cents more in the market. Moreover, the slipshod methods of breeding the Leghorn the last few years has at last commenced to tell in the progeny. Scientific line breeding is all right, but inbreeding without the proper knowledge is ruinous to any breed. That the Leghorns have stood it so long speaks well for their ancestry as a breed. In point of fact, the Leghorn will stand more abuse than any other breed I know of. But what we are after is not a breed that will stand abuse and neglect, because it is better to let all chickens alone if we keep them just to see how much we can neglect them. What the farmer and poultryman needs is a general-purpose fowl that will give an average egg yield and bring something for the carcass after being kept as long as they are profitable as layers.

OTHER BREEDS.—To those who object to keeping hens that get broody, there is the Minorca in several colors; the Houdan, Andalusians, etc. All these are good layers, and some of them larger than the Leghorn, though not a great deal, if we except the Houdan, which has a very full breast and plump body. For a purely table fowl, the Game in all varieties cannot be beaten. But here we are again confronted with the egg question. Game birds are not noted for heavy egg production, so we must look farther. Rhode Island Reds and Whites are strong, steady fowls and are classed as good layers, but are very hard to breed true to color, and when off color they certainly do look a ragged lot. When well bred and kept up to standard, their deep yellow legs and dark buff color form a very striking contrast when scattered around a farmyard.

Barred Plymouth Rocks are a good all-purpose fowl, easily fed for table purposes, because they are not given to rambling, and their markings are very pleasant to the eye. Some strains of Rocks make excellent layers as well as table fowls and good setters and mothers, while others go to making fat and are poor layers.

Wyandottes are splendid birds in many ways, fine winter layers, and every inch of them bespeaks the aristocrat. Wet or damp ground is their bete noir, as they cannot stand it very well, nor do they bear confinement as well as some other breeds. As table fowls they rank high on the market and on the farmer's table, too. On the market they rank second to Dorkings and Orpingtons, than which there is obsolutely no superior.

THE ORPINGTONS.—After raising Orpingtons for eight years, I am better satisfied today than ever that for a general all-purpose fowl they stand at the head. Sometimes printer's ink will boost a thing into prominence, but unless it has real merit to back it, the ink will soon run out. That the Orpingtons have real merit to back them is very evident, for they are gaining in popularity every day. In the Middle West nearly all the farmers that formerly gave poultry scant notice have sold off their mongrels and invested in a nice flock of Orpingtons. As layers they are hard to beat, especially in winter, because rain and snow does not seem to affect them, as they are heavily feathered. Their pinkish white legs, bright red combs and faces contrast so nicely, seeming to blend so harmoniously with either the buff or white feathers that they form a very striking picture. Then, too, they are so docile and talkative that very few persons fail to get interested in them once they see them. They are easily confined and never mind it in the least. The chicks are especially easy to raise, being strong and sturdy from the first. I have had cockerels weigh five pounds at three months, but the average is from four to five, and pullets three and a half to four at the same age. Up to four months of age they are ready for the table at any time if well fed and cared for. After that age they run to legs and should be left to grow. In the matter of meat, there is not any better, except perhaps the Dorking, as it is always fine-grained, tender and juicy.

TO HAVE THE BEST.—To some people a chicken is just a chicken and nothing more, but, happily, the number who are so unappreciative is not great, as compared to the thousands of intelligent people who know there is a difference in chickens as in all other live stock—and why not? To breed up a good strain of fowls, no matter what breed, requires scientific knowledge, care and patience, just as with live stock.

When Jacob produced the ring-streaked cattle on his future father-in-law's ranch, he had an inkling of the laws of heredity; and ever since men have been improving on Jacob's plans.

The up-to-date farmer has found in late years that everything he grows can be improved. There are thoroughbreds in the vegetable world as in the animal: even the environments of the farm can be improved and made to take on a new air that speaks of success, and that, too, without the expenditure of much money.

THE BOY ON THE FARM.

This question is being solved in various ways, the telephone, automobile, and other connections between town and country life doing their part; but the most effective way to keep the boy or girl contented on the farm is to let them own

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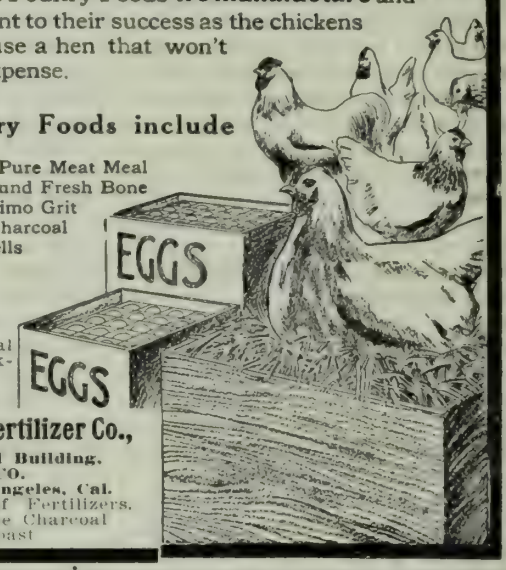
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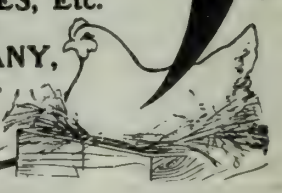


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There is more profit and pleasure to be derived from a flock of good hens than any other live stock kept, according to space given them and care required.

Then there are such a variety of breeds, and of each breed various colors, that even the most critical can be suited somewhere in the feathered world. As stated before, the best breed is really the breed that appeals to one's own taste. A man who really cares for fowls always has a distinct breed or variety that appeals to him as the best, and from them he will undoubtedly get more profit and pleasure, even though his neighbor says they "are no good."

AS A MAN THINKS.

The general consensus of opinion is that what a person thinks of the stock he owns or is making a living from, cuts no figure in the matter. But this is a great mistake; what we think we eventually live and act out sooner or later, so if anyone is foolish enough to feed poultry that he does not think amounts to anything, the sooner he sells them the better for his pocketbook. The reason is that we are so constituted that we can never give the proper care and though to any product that we think is not worthy of our time and labor. Simple enough to apply to everything on the farm, in our daily life, and in our business relations with others. If John owns a flock of poultry that he merely keeps because he is a farmer and must necessarily keep some chickens, it stands to reason that he does not place a very high value on them. If his neighbor comes along and wants to buy, John, being honest, can't put the price high—not even high enough to give him a fair remuneration for his time and labor. According to his own thinking, they are not worth much, and he sells at a low price. His neighbor, however, has an eye to the beauty and general utility of the fowls, and he takes them home, cleans up the surroundings and lo, the same poultry have risen in value ten times. Some day he invites John to "come over" and see the despised flock, and out of curiosity he goes. Just imagine how green he gets with envy when he sees the bright sheen on the feathers, the nice red combs set off by the bright, alert eyes and active feet. The whole flock has that healthy, happy look that comes from having proper food and care. And the change was brought about, not from any difference or change of breeds, but because of the difference in two men's "think boxes." One was educated in values and knew a good thing when he saw it, and the other did not know either. The so-called "Fancier" is nearly always a farmer's boy; that is, he was born and raised on the farm and commenced with a few birds given him by his father, or for doing chores for some good-natured neighbor. The love for fowls does not grow in a day; it must be nurtured like a plant, sometimes watered with tears of disappointment, but it will grow in spite of all, even after years of neglect, once it is planted in the hearts of our children.

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INCUBATOR CHICKS—White Leghorns and White Plymouth Rock in quantities. Black Minorcas, Brown Leghorns, Buff Leghorns in reasonable quantities. Arrangements for deliveries can now be made. Send for booklet of prices. Mahajo Farm, P. O. Box 597 Sacramento, Cal.

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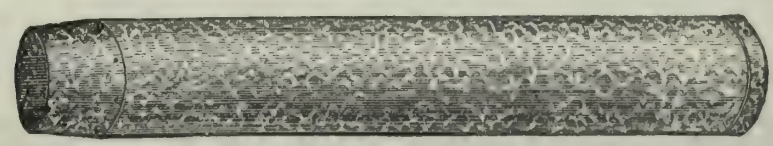
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To swing in the tree where the robbin sings;
To grow a bit larger, all ruddy and round,
And drop with a bump to the warm, sunny ground;
To lie very still and just wait in the grass
For squirrels (or bossies) or children to pass;
It's good for brown bettey and good for a pie;
It knows where the stocking will hang bye and bye;
But, oh, the most wonderful thing it can be—
An apple will make you a new little tree!

A Toast to the "Reliable" Man.

Here's to the steadfast, reliable man,
The man with the tongue that's true,
Who won't promise to do any more than he can,
But who'll do what he says he'll do.

He may not be clever; he's often quite blunt,
Without even polish or air;
But, though it's not in him to "put up a front,"
When you need him he's always there.

So here's to the man on whom one can rely,
And here's to his lasting success;
May his species continue to multiply
And his shadow never grow less!

—Noble May.

A Young Daniel.

There came a light tap at Mark Wyndon's office door. His face lighted in pleased recognition when he admitted the wife of his best friend.

"How do you do, Mrs. Dunstan? How is Jack?"

"I don't know," was the nonchalant reply.

"Is he away?" he asked, as he placed a chair for her.

"No; but we are scarcely on speaking terms."

"Impossible!" he exclaimed, looking incredulously at his young visitor.

"'Tis true, 'tis pity!" she quoted with a lightness that was manifestly forced.

"Oh, well! A first quarrel; you'll make up."

"It isn't a quarrel, so it can't be made up. It is a state of affairs that can culminate in but one way—you must arrange a divorce for us as quietly as possible."

The lawyer frowned. She had supplanted him at Jack's hearthstone. He had supposed them so devoted that he had persistently refrained from intruding upon their domesticity.

"What's the matter?" he demanded abruptly. "Jack's a big-hearted, big-souled——"

I didn't some to praise Caesar," she interrupted with an ironical smile.

"No! To bury him!"

"I think, Mr. Wyndon," she said rising, "you are not exactly professional. I came to you for the legal services you might render; not for personal comment or advice."

"I beg your pardon, Mrs. Dunstan," replied the young lawyer, wincing at the palpable hit. "In my surprise I forgot myself. I will confine myself entirely to business."

She resumed her seat, appeased by his apology.

"You want a divorce?" he asked. "On what grounds.

"Grounds?"

"Yes; you have to state a reason, you know. Cruelty, non-support, drunkenness, immorality."

"Oh, it's for none of those. It's worse."

"Worse!" he repeated in dismay.

"Yes; you could forgive one—if you cared—for any of those things. In a case like ours where there is nothing tangible——"

"I don't want to seem inquisitive, Mrs. Dunstan, but to draw up the papers legally, I must put down some explicit charge. If you would tell me how the present state of affairs came about I could work intelligibly."

"It's like this. We have nothing in common—absolutely nothing—so we can't settle down to contented companionship.

"Well," said Wyndon slowly. "I think you could apply for a divorce on the grounds of incompatibility of temper."

"Yes; that doesn't sound scandalous," she acquiesced.

"The term covers a multitude of sins. If you will call again, I will have the preliminaries arranged."

"Very well, but——" she hesitated and continued with rising color. "Perhaps it would be best not to mention it to Mr. Dunstan until I have seen you again."

"I quite agree with you," he assented.

Not long after her departure, the lawyer's door opened and a tall man, straight and slim, with slightly bronzed cheeks and serious eyes, entered.

"Jack! It's an age since I have seen you!"

"I know it, Mark. I have come now on business."

Mark looked up expectantly.

"There's no use beating about the bush, Mark. I want a divorce. That is, I want you to get one for me speedily and quietly."

Mark made little traceries on his blotter, and did not look up as he replied.

"And I supposed until today—until now—that you were perfectly happy!"

"I am—I was—until I found out that I was not making her happy. She is bored when we are alone. You see—we seem to have nothing in common."

"It will require delicate handling to keep the affair quiet. I really think, Jack, you would be more comfortable in mind if you were away while the arrangements are being made."

"I think so," agreed Jack. "And—Mark, will you broach the subject to her? I am sure it's what she wants."

"I will, certainly. But this evening I am leaving for a fortnight in the woods. Suppose you come with me. Then we can arrange matters and I will draw the papers."

"That is a good plan. I will be glad to go with you."

"I should advise you to send a note to your wife telling her you are going, but do not say you are going with me. She might think we concocted the scheme together. Why don't you send her to your Aunt Martha's to stay while you are away?

"I wish she would go there and remain until the thing is settled—but she won't."

"Tell her she must."

"You don't know Margaret," replied Jack, with a slight smile. "She would not stand for anything that savored authority."

"Have you ever tried it? You've nothing to lose by it now. Write her peremptorily that she is to stay with your aunt in your absence."

"All right," said the young husband resolutely. "I'll meet you at the five-thirty express."

Two hours later Mrs. Dunstan reappeared.

"I just received a note from Jack," she said excitedly. "He's going away for two weeks."

"That will make things easier."

"But," she continued angrily. "He dared to order me to go to his aunt's. She lives on a farm! I won't! I have a great mind to call him up now and tell him that I am getting a divorce."

"Oh, no!" protested Mark. "That wouldn't be—regular. It's in my hands and you must leave all announcements and arrangements to me. Seriously, Mrs. Dunstan, under the circumstances the ideal place for you to stay would be with your aunt. Have you considered that there must be more or less gossip and publicity. If you were with her you would be protected and also away from it all. By the time Jack returns, I will have the papers ready."

"It would be well to be away from eyes and ears, only I don't want Jack to think I am obeying him. He never told me before that I must do anything."

"Have you ever been there?"

"No; Jack used to always be proposing a visit. She's been to see us. She's a dear, but all she can talk about is her daughter and her daughter's baby, but, if you think best, I'll go. I'll take the next train before Jack comes home to pack for his trip. Good-by, Mr. Wyndon. Thank you for your advice and trouble."

Wyndon found Jack at the station.

"She went," said the latter abruptly. "I did as you said."

Later that night he again referred to the subject. "Maybe I should have asserted myself in the first place."

"Well, you'll know better how to treat your next wife."

"My next wife! Do you think I would marry again?"

"Never knew a divorced man who didn't," answered Mark.

They went among some luxuriantly wooded hills through which a stream wound its silvered way—where the air was softly warm and pine-scented. They fished and cooked, tramped and slept, smoked and talked, talked of everything except Margaret. The night before they were to break camp they sat before the fire in silence. Mark stole a glance at his friend's eyes—full of dreams and far-awayness.

"Jack, I made out those papers today. You'd better look at them."

"Bring them here," he said sharply.

"Mark went into the tent and returned with some legal looking documents. Jack took them and without a glance at their contents threw them into the fire.

"I was a fool," he said, striving to keep his voice steady. "I am not going to get a divorce! I am going to win her love. If you ever breathe a word about this—"

"A lawyer, Jack, keeps his client's secrets as faithfully as a father confessor."

"I take the first train tomorrow to Aunt Martha's."

Shortly before the arrival of the morning train at the station nearest the farm of Jack's aunt, Mark came whirling down the dust-white road in his runabout. As he halted in front of the gabled house among the elms, a young woman with a baby in her arms came down the path to the road.

"Oh, I am glad you have come. I have written and telephoned."

"I have been away. Jack will be here on the morning train."

"Oh, he has returned!"

"He came with me. We've been camping together."

"You didn't tell him!" she gasped.

"A lawyer keeps his client's secrets."

"If you have drawn any papers, you can burn them. I don't want a divorce. I want Jack! I said"—looking across the meadows and speaking as to herself—"that we had nothing in common. We can home and—"

She pressed her lips yearningly on the baby's soft neck.—Belle Maniates.

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yond just sitting around. With short days, long evenings, and, perhaps, not too much space of warmth and light, the quality of the home life depends upon the ingredients each member puts into it. It is the time above all others to see how much good there is in each of us, and the only touch-stone to bring out that good in others is the good each one determines to bring out in himself. One's development of character is not helped by clashing temperaments and mental sloth, so we think two prime requisites for well-spent farm winter are cheerfulness and forbearance, combined with some line of special reading and study. No one is too old or too young for either.

Timely Recipes.

SUET PUDDING.—One and one-half cups flour, one teaspoonful baking powder, half teaspoonful salt, quarter teaspoonful cloves, quarter teaspoonful cinnamon, half cup chopped suet, half cup stoned raisins, half cup milk, half cup molasses; sift the first five ingredients, then stir in suet and raisins; beat milk and molasses together before adding; mix all the ingredients thoroughly; pour into buttered molds (which should not be more than half full) and steam one and a half hours. This is as good as the ordinary plum pudding used so extensively at Thanksgiving and Christmas, and much less expensive.

CAKE RECIPE.—A delicious cake may be made by using English walnuts and raisins together. The recipe calls for half a cupful of butter, one cupful of sugar, half a cupful of milk, two eggs, a cupful each of raisins and chopped nut meats and two cupfuls of pastry flour sifted several times with half a level teaspoonful of cream of tartar. Beat the butter to a cream, add the sugar gradually and continue beating until a light creamy mass is formed. Add the yolks of the eggs, beat again and stir in the milk. Sift the flour several times with the soda and cream of tartar and add the raisins and walnuts. Then gradually stir the moist mixture into it and when a smooth batter has been formed fold the whites of the eggs through it after beating them to a stiff froth. Bake the cake in broad, shallow pans for thirty-five minutes in a moderate oven. One teaspoonful and a half of baking powder may be used instead of the soda and cream of tartar.

OYSTER STEW.—Two or three cloves added to an oyster stew improves the flavor, but there should not be enough to be recognized as clove. A little onion and a little parsley are also an improvement. Two or three crackers rolled as fine as a powder, mixed with a little of the soup first and then added, give just a suggestion of thickening. Don't overdo.

APPLE SHORTCAKE.—Stew some good cooking apples in as little water as possible, and press through a collander while warm. Add to a pint of this a half cupful of sugar, one teaspoonful of butter, nutmeg and cinnamon to taste, and a little grated lemon peel. Have ready a good shortcake, made in two layers and buttered; spread with the apple, lay the other piece on and serve with sugar and cream.

MINCEMEAT FOR PIES.—Five cups beef, chopped fine, well cooked, ten cups raw apples, chopped fine; four cups raisins, chopped; one cup vinegar; one cup molasses; three cups sugar; one rounded teaspoon of cinnamon; one-half teaspoon cloves; butter size of egg; one-half cup water. Add more water and vinegar if not moist enough; juice of sweet pickles is nice.

He (after a quarrel, bitterly)—"I was a fool when I married you."

She—"I knew it, but I thought you would improve."

Rules of Life.

The following from an exchange seems to be well worth printing: We get all sorts of questions from our friends. Many of them are of a personal nature, from people who are in real trouble. It is hard to give helpful answers. Ofttimes all we can do is to make suggestions. Not long ago a young man just married and starting a home of his own, wrote saying he noticed how many married people snarl and quarrel. How could this be avoided? It happened that during the same week a letter came from a man of 70 who speaks of his married life as follows:

"I suppose we had as nearly a perfectly happy life as could be in this world. We had three rules when first married.

"1. There were to be no secrets between us.

"2. We will not allow anyone, not even our parents, to interfere in our affairs.

"3. We will not speak unkindly of or to one another, not even in jest.

"These rules were kept during the more than 45 years of our married life; she never spoke a cross or angry word to me, and we never had a quarrel of any kind."

Tale of a Temperance Worker.

A young woman rushed up to a young man on Superior avenue the other day and shook hands with him cordially. "I have a confession to make to you," she gurgled. "You won't believe it, but I always thought you drank."

The young man fingered for a clove and tried not to blush.

"And now," she pursued, "I find that you are actually a temperance worker. Now I see you are trying to be modest and deny it, but you can never fool me again. I overheard my brother saying, in his slangy way, that you were a great booze fighter! Oh, he was in earnest. Why, he said that you had punished more of the stuff than any other ten men in Cleveland. I'm proud to know you; will you ever pardon me for misjudging you?"

She was gone before he got through choking.—Cleveland Plain Dealer.

Perfume.

If you are going to use perfume at all, try this way: Select the perfume which you like best and which you always intend to use—for there must be individuality about perfume—saturate tiny pieces of absorbent cotton with it and put these pieces in every bureau drawer and in every box. Even shirt waist boxes and hat boxes must receive their cotton balls of perfume if you wish to have a dainty odor about you and your belongings. These balls will need to re-saturated about once a month.

Getting a Line on Him.

Father—You want to marry young Quitter, eh? Well, what's his batting average.

Daughter—Why, pa, I didn't know he was a ball player.

Father—Oh! I don't mean that. How many days per month is he on the bench?

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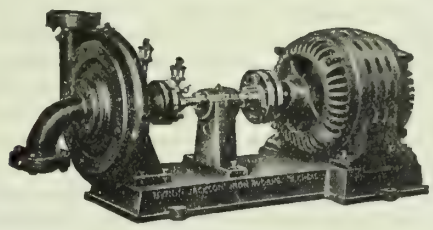
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ALFALFA AND ITS POOR RELATIONS.

Some very interesting comparisons between alfalfa and other forage plants, wild and cultivated, are given in the Denver Field and Farm. Perhaps some of our readers would like to figure a little on the basis of their own experience as to what alfalfa will do and give us the results to enforce or disprove the following claims for the plant.

Alfalfa in money value is worth 45% more than clover and 60% more than timothy. One acre will pasture 30 hogs for six months. Ten milk cows can be fed on less than two acres six months by soiling. Three pounds makes full feed for fattening lambs. Thirty-five pounds makes a full feed for fattening steers. A lamb will winter and thrive on two pounds a day. Sheep fed on alfalfa will gain from eight to fifteen pounds in 75 to 100 days and double that with small grain ration added. Steers will put on a pound to a pound and a half a day on straight alfalfa and if fed grain rations will put on double that amount. Lambs wintered on alfalfa will produce one to two pounds of wool more than when on range. Brood sows will do well all summer on alfalfa pasture alone and thrive on alfalfa hay in winter. Horses have been known to put on six pounds a day when grain rations were fed also. Alfalfa is a great poultry feed when cut fine and mixed with corn meal. This is also a good way to feed it to hogs in winter. One acre of irrigated alfalfa will produce 10,000 pounds; one acre in enclosed native pasture will produce 500 pounds, while one acre of range will average a production of 250 pounds. One acre of irrigated alfalfa will feed one steer 400 days; one acre of enclosed pasture will feed one steer 20 days; one acre of average range will feed one steer ten days. Putting it in the form of sheep it will show as follows: 160 acres of irrigated alfalfa will run 1600 sheep one year; 160 acres of enclosed pasture will run 80 sheep one year; 160 acres of range will run 40 sheep one year. Apply these figures to the stock growing in arid regions taking the proportions as given in round numbers and 160 acres of irrigated alfalfa will carry 146 steers for a year and it would require something over eight sections, 5120 acres, of dry range to carry the same number of cattle, or putting it briefly, one acre of irrigated alfalfa is worth as much as thirty-two acres of average dry range. And then what is its range value? A windmill which will irrigate one acre of alfalfa will add the equivalent of thirty-two acres of range to the farm ranch. An engine and pump that will irrigate ten acres of alfalfa will add a half section to the farm. That is, it will increase the productiveness as much as the acquisition of additional land. A pumping plant large enough to irrigate twenty acres will add the equivalent of a whole section of the range.

KILLING MORNING GLORY.

To the Editor: I have read with a great deal of interest such items as have appeared from time to time in your paper, and particularly during the last week, on the subject of the eradication of wild morning glory. In particular, I have noted the claims that it can be destroyed by means of oil—kerosene oil having been mentioned in this connection. I should very much like to know what the effect would be on the soil where oil is used in this manner; also, what kinds of oil are best suited for this purpose, and how often and when same should be applied.

In your last issue a brief mention was made of covering the surface of the ground with black building paper, so as to prevent the morning glory from reaching the light. Perhaps you could enlighten your readers (many of whom must be interested in this particular subject) with some more information regarding this particular method of coping with the best?

San Francisco. D. S.

[We hope those who have advocated the above methods will send in for publication such specific information as our correspondent desires. On our own part, we must say that we have little faith in such ways of fighting morning glory and believe the true method is the one fully set forth on page 436 of our issue of November 25.—EDITOR.]

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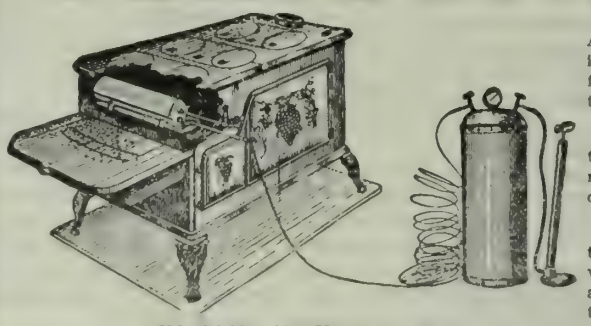
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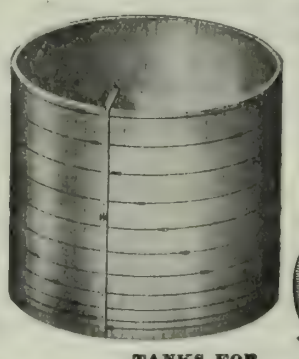
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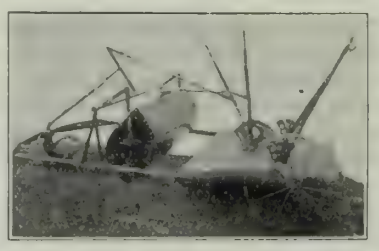
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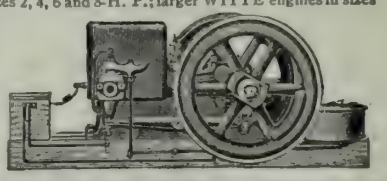
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If thinking of buying any kind of pipe, your best interests will be served by writing us for prices and particulars.

Pacific Pipe Co., Main and Howard Sts., San Francisco

AGRICULTURAL REVIEW.

(*Continued From Page 491.*)

At the annual election of the San Jose Grange, F. H. Babb was chosen Worthy Master for the third consecutive time. The officers elected will be installed in January. The Grange voted to endorse the teaching of agriculture in the country public schools, and elected delegates to the Country Life Conference, where this subject is to be discussed.

A producers' co-operative company has been organized at Live Oak, Sutter county

Entries for the Fresno County Poultry Association's show, which is to open next week, indicate that an exceptionally large number of fowls will be exhibited. At the last meeting of the Association ten new members were received.

J. Burns of Nicolaus, Yuba county, was unable to get the price he wanted for turkeys in Sacramento a few days before Thanksgiving, and with a permit from Mayor Beard sold on the street corners all his fowls in a few minutes at a higher price than he asked the poultry dealers.

The Ukiah Farmers' Club has been incorporated. Its work thus far has proved of great value to the members.

A bill providing for State industrial insurance has been introduced in the legislature by Senator Roseberry, the author of the present employers' liability law, which was discussed in a recent issue of the PACIFIC RURAL PRESS.

THE APRICOT: CALIFORNIA'S OWN.

(*Continued From Page 481.*)

$35 to $40 a ton. In 1907 there were only about 200 tons of these; in 1908, 4000 tons; in 1909, 3000 tons; in 1910, 3000 tons, and this year about 1700 tons.

That the price to the grower for his fruit might easily be greater than it is, is shown by an experience of G. H. Kingston of Vacaville. When dried apricots were bringing the grower only 6½ cents, he shipped his fruit to New Zealand, paying $16 per ton freight, and received 18 cents a pound in return. In this connection it may be said that Mr. Kingston is about the only rancher around Vacaville who is planting out more apricot trees, and that most of the others are working their trees over to other fruits.

Mr. Kingston states that his success in apricot growing is due mainly to his system of pruning, whereby he leaves much more bearing wood than is the practice elsewhere, and has it distributed all over the main branches, and claims that by this his trees bear larger crops and more consistently than under the other system. It might also be stated here that around Winters, a few miles from Vacaville, the growers have their trees shaped with a much wider and flatter top than the others, and little, if any, working over to other fruits is the practice.

Whether anything could be gained by changing cultural methods or not, the fact remains that the owners of apricot orchards that are well located are well satisfied with the returns they receive, and that in the two main apricot districts of the State, Santa Clara valley and Orange county, the planting is increasing, not falling off. There is no serious pest that attacks the trees or is in any way a great problem. The cost of handling the crop is somewhat larger than for peaches, but the returns justify it; other fruits meet with serious competition, and the market is limited. There is heavy planting being done with them, while there is a large market and a good one for this fruit.

CALIFORNIA FORAGE, COWS, AND DAIRYMEN.

H. A. Crafts writes for Hoard's Dairyman the following significant compliment to California alfalfa and cows and the men who bring the two together:

Under a specialized system of dairying and an increased supply of forage in the shape of alfalfa, California increased its annual butter product from 24,000,000 pounds in 1898 to 60,000,000 pounds in 1910. This increase was most noticeable in the irrigated districts of the San Joaquin and Sacramento valleys. There the annaul yield of alfalfa is six tons to the acre.

Analyses of California alfalfa show that an average acre will yield 1320 pounds of digestible protein, 4752 pounds of digestible carbohydrates, and a small amount of digestible fat. It is these digestible nutrients that count in milk production.

Reliable authorities in the science of feeding say that it requires 1.87 pounds of digestible protein and 12.35 pounds of digestible carbohydrates to produce one pound of butter-fat.

Therefore the 1320 pounds of digestible protein produced from an acre would have a butter-fat value of 120 pounds a year, which at 30 cents per pound would mean $216 per acre.

Says one authority: "As the same alfalfa furnishes in addition almost enough digestible carbohydrates, this need not be calculated separately.

"But the cow cannot transform these nutrients into milk without some loss. There must be some waste in the transformation. Her body must be nourished.

"The extent of the loss must depend upon the transforming efficiency of the cow. Herein lies the field for the special type of dairy cow and for the special well-trained and enterprising dairyman.

"He benefits by his special knowledge and experience; he must have cows of highest efficiency in transforming fodders and all the best appliances, machinery and methods that tend in this direction.

"This is the class that is producing the dairy products in California—dairymen in the full sense of the word."

EXPORTING CALIFORNIA BUTTER.

As a step in the development of a market for local butter, arrangements are being made by San Francisco dealers to take advantage of the high prices prevailing in the East and to ship back as much butter as can be disposed of to advantage there. This butter will be the storage product, not extras. At the date of writing, samples are on their way to Chicago dealers, and ordering will be done by telegraph, so that the shipments can be started at once. As there is an extremely large amount of butter in storage here at this time, all that can be exported will assist in preventing an oversupply remaining when production increases in the spring.

It can be noted that the local markets are from 2 to 3 to 8 and 9 cents lower than those of other parts of the country. Portland butter, for instance, at the beginning of the week was quoted at 36 cents, San Francisco at 31, Los Angeles at 33½, and Chicago and New York 38 and 39 cents. This difference cannot, however, be overcome by shipping extra butter from here, as the trade in each part of the country calls for local products as fancy stock, and other butter suffers somewhat both from shipment and differs slightly in quality from that produced nearby, so cannot be sold at fancy prices. In this way it is impossible to reduce, for instance, the 5-cent difference between Portland and San Francisco, except indirectly, by putting in good quality of what will sell as lower-grade butter, and this will be the case practically with all exports. The price of the fancy butter, therefore, will be determined largely by the local demand in every place, and Eastern quotations may often be as much above those made locally as at present.

Another thing affecting exports and prices is that the freight on butter between here and the East, where much of our butter will eventually go, is $2 per hundred, gross weight, or 2½ cents a pound net for the butter itself, which will make it impossible to ship at a profit until prices for the grade of butter shipped is 2½ cents or more higher there than here. Still another factor is that local butter is put up in cubes, while the Eastern butter is put up in tubs, and the trade demands tub butter as a result.

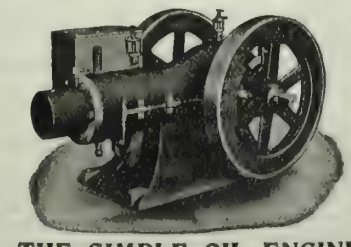
It may be noted here that prices are expected to remain at about the present figure for some time yet, as no surplus is likely to develop at these prices until the supply greatly increases. If, however, we have an open winter and sufficient rain to bring the grass along early, the increased production will result in lower prices. On the other hand, with the increased production the dairyman would profit more than with less butter and higher prices.

As another step in developing a market for California, Fred Hilmer, one of the San Francisco wholesale dairy produce dealers and supervisor-elect, has taken the matter up personally with the congressmen of this State, and by letters with many of the other representatives, to have the War Department make all its purchases of butter for the Philippine Islands here, instead of in Australia or New Zealand, where it now comes from. There are about 500,000 pounds of butter used per year by the War Department in the Philippines, and as this can be purchased as cheaply here as anywhere else, if not cheaper, the War Department can profit by the change and a new market opened for local trade. The contention is also made that such trade should be given to American producers wherever possible.

BEEKEEPERS' ASSOCIATION.

The sixth annual convention of the Northern California Beekeepers' Association will be held in Sacramento on December 27 and 28. Among the principal topics to be discussed will be the arranging and framing of a bill providing for a state inspector, the value of organization and the protection of the home market, and the handling of honey commercially. It is desired to have as large an attendance of beemen as is possible.

The Milpitas Ranch Co., owned by Brown & Eyre, located near the old Mission San Antonio at Jolon, Monterey county, is preparing about 1000 acres for irrigating. A weir is being built in Mission creek which will divert the water into the ditches and onto the land, which will be set out to alfalfa. Pumping may be resorted to late in the fall or during a dry season. Messrs. Kerns and Sessions are the engineers in charge of the work.



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FREE—20% in fresh package seeds, to introduce our goods, on all orders amounting to $2 and not over $5. Prices: Apples, 12½c; Pears, 30c; Roses, 30c; first-grade trees, No. 1 roses. We pay the freight. MEDFORD NURESRY CO., Medford, Ore.

MAMMOTH BLACKBERRY PLANTS—For Sale—Large, strong and well rooted, $15 per M or 2c each. Orders taken now for early delivery. L. E. BARLOW, Sebastopol, Cal.

RHODE ISLAND RED COCKERELS for sale. Original stock obtained direct from Rhode Island. Ranch raised, vigorous fowls. Granville Libby, Middletown, Lake County, Cal.

GAS ENGINES, incomplete, 5 to 25 H. P., cheap for cash. Will trade for seed drill, 2 or 4 horse, large feed-cutter or light-weight horse-fork. PAUL LEBOYD, Elk Grove, Cal.

MISSION OLIVE TREES in any quantities, guaranteed true to stock, for delivery in fall of 1912. Address MILLS & JORDAN, 410 14th St., Oakland Cal.

RING-NECKED PHEASANTS for sale. Pairs or pens of four; eggs in season for hatching. Address T. D. MORRIS, Agua Caliente, California.

BOURBON RED TURKEYS—A few pair for sale. Ella C. Underwood, R. 3, Turlock, Cal.

WANTED.

A young family from Nebraska, with four small children, desires to rent an improved fruit ranch in California. Both have good education and experience in fruit and garden culture. Will take an offer for not less than five years renting. As to honesty and satisfaction desired, can give references in several banks. If you want to retire and leave ranch in hands of honest people, write to FRANK BOHAC, Howells, Neb.

POSITIONS WANTED.

WANTED—By married man, position as foreman or manager of fruit or dairy ranch; experienced; references. Address Route 1, Box 23, Ceres, Cal.

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THE MARKETS.

San Francisco, Dec. 6, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The wheat market shows very little change, prices in the North being about on an export basis, while local trading is of a rather limited nature. Northern bluestem is a little lower, and some inferior Northern red is offered below quotations.

California Club	$1.50	@1.55
Sonora	Nominal	
White Australian	1.65	@1.70
Northern Club	1.50	@1.55
Northern Bluestem	1.65	@1.70
Northern Red	1.65	@1.70

BARLEY.

The demand for brewing barley continues strong, and prices are fully maintained, but the feed grain is lower and weak at the decline. While there is very little on the market, the recent high prices have greatly curtailed the demand for feed grades.

Brewing and Shipping	$2.05	@2.10
Choice Feed, per ctl	1.90	@1.95
Common Feed	1.75	@1.80

OATS.

There is a very fair movement of all lines, but offerings have increased materially, large shipments having arrived from the North of late. Prices have accordingly been reduced on several grades, though the market is steady at present quotations.

Red Feed	$1.75	@1.80
Gray	1.75	@1.80
White	1.75	@1.80
Black	1.75	@1.90
Red Seed	1.95	@2.00

CORN.

There is not enough California corn moving here to be worth quoting, though the nominal value is around $1.90. Eastern corn is quiet and unchanged.

Eastern Yellow	1.85
Eastern White	1.90

RYE.

Increased offerings have caused some decline in values, but this market is dull and featureless.

Rye, per ctl	$1.65	@1.75

BEANS.

The bean market has shown very little change in the last week. There is still a fairly active movement for this time of year, both here and in the country, and in most lines the situation is encouraging. A good many growers cleaned up their blackeyes at the advance of last week. The only change in prices this week is another advance in limas, the supply of which is steadily diminishing. There has been some excitement in the lima market, owing to efforts of brokers to buy up the remaining stock in the fields at about $6 cash. The demand is from all the Middle Western markets, which have not yet secured enough to cover their increased requirements. It is reported that the Association has had to buy outside beans to fill its December contracts. The arrival of a little Madagascar and Manchurian stock is reported at New York, but the prices are high and the goods offer little competition to the California product.

Bayos, per ctl	$3.75	@3.85
Blackeyes	3.90	@4.00
Cranberry Beans	4.15	@4.35
Garvanzos	3.00	@3.50
Horse Beans	2.75	@3.25
Small Whites	4.10	@4.15
Large Whites	4.00	@4.10
Limas	6.10	@6.20
Pea		4.25
Pink	3.10	@3.20
Red Kidneys	5.10	@5.25

SEEDS.

With showers the first of the week and continued threatening weather, inquiry for alfalfa and some other lines is increasing, though the movement is not yet very heavy. Prices stand as before.

Alfalfa	17	@18 c
Broomcorn Seed, per ton		$28.00
Brown Mustard, per lb		5½c
Canary		4½c
Hemp		4½c
Millet	3	@ 3½c
Timothy	Nominal	
Yellow Mustard		5¾c

FLOUR.

Prices are steady as for some time past. Local demand shows little variation, the export trade to South and Central America being fairly active.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.80	@5.00

Hay and Feedstuffs.

HAY.

The expected advance in local prices has taken place, involving everything but the choicest hay, the movement of which is limited. Arrivals are extremely light, and the situation is very strong throughout the State. The rain is too late to affect conditions materially for the present, and there is an unusually heavy demand through the country, where feeders are providing for their requirements for the next few weeks. The medium and inferior grades of hay, for which the present demand is greatest, are very hard to get, and the little offering is firmly held at quotations. Alfalfa, also, is advancing, and supplies are said to be comparatively light. There is now considerable inquiry from southern California, Nevada and other quarters. Notwithstanding the heavy production this year, supplies have been greatly reduced by the heavy movement of the last few months.

Choice Wheat	$18.00@20.00
Good Wheat Hay	16.00@17.50
Other Grade Wheat	12.00@15.00
Wheat and Oats	12.00@17.00
Tame Oats	12.00@18.00
Wild Oats	10.00@14.00
Alfalfa	11.00@15.00
Stock Hay	10.00@12.00
Straw, per bale	35@ 70c

FEEDSTUFFS.

An easier feeling than for some time past is noted in the leading descriptions, the recent extreme prices having curtailed the demand. Northern bran is offered freely at lower prices, and alfalfa meal is a little lower. Rolled barley is also easier, following the decline in the raw grain.

Alfalfa Meal, per ton	$17.00@18.00
Bran, per ton	26.00@27.00
Oil-cake Meal	Nominal
Cocoanut Cake or Meal	25.50@26.50
Cracked Corn	39.00@40.00
Middlings	34.00@36.00
Rolled Barley	39.00@40.00
Rolled Oats	38.00@39.00
Shorts	32.00@33.00

Garden Truck.

VEGETABLES.

Supplies of good onions are rapidly decreasing, and prices show quite a sharp advance. Garlic is steady, with plenty of stock for current needs. Celery is a little easier, with liberal arrivals from the San Joaquin, and local garden truck shows little change. Aside from a few winter vegetables, most lines now on the market are coming in from southern California. The demand for such goods is curtailed, both by the comparatively high prices and the poor appearance of much of the stock arriving at present, and as the shipments are rather large, the market is easy. String and lima beans, summer squash, bell peppers and eggplant are all lower, and the top price on southern cucumbers has been shaded. Tomatoes, however, are doing a little better.

Onions: Yellow, ctl	$1.05@	1.30
Garlic, per lb	3@	4c
Tomatoes, per crate	75c@	1.00
Cucumbers, per box	75c@	1.00
Cabbage	50@	60c
Carrots, per sack	50@	60c
Cauliflower, per doz	50@	75c
String Beans, lb	5@	8c
Lima Beans, lb	4@	6c
Summer Squash, per crate	75c@	1.25
Eggplant, per lb. (Southern)	3@	6c
Bell Peppers, per lb	3@	5c
Celery, per doz	30@	50c

POTATOES.

The potato market remains quiet, and as supplies of California stock are apparently ample for all present needs, the quarantine against Nevada potatoes has caused no shortage, and no Oregon stock is offered at the moment. Prices are unchanged.

River Whites	$ 1.10@	1.25
Sweet Potatoes, per ctl	1.65@	1.75
Salinas Burbanks	1.65@	1.85

Dairy Produce.

POULTRY.

Arrivals of Eastern stock are extremely heavy, resulting in a reduction from last week's prices on broilers, fryers and roosters, other lines of chickens being in fair demand as last quoted. Little local stock is coming in. Late arrivals of dressed turkeys for Thanksgiving proved far in excess of market requirements, and the market was badly demoralized just after the holiday, when prices ranged from 14c to 18c on ordinary offerings. Large shipments of storage stock have been sent to the Islands. Some recovery is noted at present, though prices are lower than last quoted.

Large Broilers, per lb	26	c
Small Broilers, per lb	29	c
Fryers, per lb	17	c
Hens, extra, per lb	15	c
Hens, large, per lb	14	c
Small Hens, per lb	15	c
Old Roosters, per lb	12½	c
Young Roosters, per lb	16	c
Young Roosters, full grown	16	c
Squabs, doz.	2.00@	3.25
Geese, per pair	2.50@	3.00
Ducks, doz.	4.00@	9.00
Turkeys, live, per lb	21@24	c
do dressed	22@25	c

BUTTER.

Storage and low-grade stock has remained steady for the last week, firsts and prime firsts being ½c higher than before. Extras show some fluctuation, being firm as now quoted.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed
Extras	—	31½	32	31	31	31½
Prime Firsts	—	28½	28½	28½	28½	28½
Firsts	—	27	27	27	27	27
Storage Extras	—	28	28	28	28	28

EGGS.

Storage eggs are unchanged, but increased supplies have caused a downward movement in all fresh grades.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	—	43½	46½	47	45	43
Firsts	—	42	42	42	42	42
Selected Pullets	—	39	42	42½	41	39
Storage Extras	—	28½	28½	28½	28½	28½

CHEESE.

Both storage and fresh first grades of flats are a little higher, while Y. A.s are weak as last quoted. Monterey cheese is arriving more freely, and is rather easy at a decline.

Fancy California Flats, per lb	17	c
Storage	15½c	
Firsts	15½c	
New Young Americas, fancy	17	c
Monterey or Jack Cheese	17@18½c	

Deciduous Fruits.

FRESH FRUITS.

Business in fresh fruits is gradually narrowing down to the usual winter lines. Strawberries and huckleberries are becoming scarce, and both are higher, while Eastern cranberries are steady and quiet. Coos Bay cranberries are now coming in, selling at $4 per box. Apples and pears are quiet, and pomegranates and persimmons move in a limited way only. The week opened with heavy offerings of poor grapes, causing a slump in prices, and while the worst of the surplus is now off the market, values are still unsatisfactory.

Strawberries, chest	$ 6.00@	8.00
Huckleberries, lb.	12½@	14c
Cranberries, per bbl	13.00@13.50	
Apples—		
Fancy, box	1.00@	1.75
Choice	60@	75c
Christmas apples	2.00@	2.25
Pears, Winter Nellis, box	1.50@	1.75
Other varieties	75c@	1.25
Grapes—		
Lug box	75c@	1.00
Crate	50@	75c
Pomegranates, box	1.25@	1.75
Persimmons, box	1.00@	1.50

Dried Fruits.

Prices show no change whatever, and the market in general is quiet, with little likelihood of renewed activity until after the holidays. There was some excitement in the raisin market a few days ago, owing to buying activity on the part of a few packers who found themselves short, but 3½c was about the best price paid, and quite a lot of raisins were purchased at that figure. At present neither packers nor dealers are taking much interest, and it is doubtful if better than 3¼c could be obtained for Muscatels in sweatbox. Supplies in growers' hands are still rather large, and there is little encouragement in the present situation. Some of the apple dryers are still operating, and the season's output will be larger than was at first anticipated, though prices are steadily held. In other fruits, stock in the hands of growers is limited to small scattered lots, practically all of which is held for better prices than are now obtainable. Prunes are in demand as quoted, but are practically cleaned up, while there is not much interest in apricots and peaches. Occasional small sales are reported, but most holders are very firm in their views. The New York Journal of Commerce says:

"Although the spot market for California prunes is still unsettled, there is a little better feeling based on recent export buying and hints that a speculative movement is developing. It is reported that some holders of spot stock recently arrived have been approached tentatively by brokers, who seem to be trying to get a line on the situation in the interest of speculative operators who have been influenced to take hold by the reported scarcity of Coast stocks, the comparatively low prices prevailing here and the possibilities of European outlets due to short crops over there. Local jobbers, as a rule, manifest little interest in the situation, nor are there any further export purchases reported with the exception of a car of 50s and another of 60s at prices not made public.

"California dried peaches are reported to be firmer on the Coast, as the bulk of the 1911 crop remaining is said to be in the hands of one strong holder, who has great confidence in the situation. There is, however, little or no demand for forward shipments from distributers in this part of the country, and the business in spot stock is of a light jobbing character. Apricots are dull in all positions, but as there is no pressure to sell, the tone of the market is steady.

"Coast seeded raisins are inactive. There are no sellers for forward shipment from the Coast on a lower basis than 6¼c f. o. b. for fancy in 16-ounce cartons. Loose Muscatels are firm, though dull. The seedless varieties, being in small compass, are held firm, with an upward tendency. Imported raisins are in rather small supply and firm, but are in comparatively light demand."

Evap. Apples, 1911, per lb	7	@ 8 c
Apricots	12	@12½c
Figs, new crop	4	c
Calimyrna figs	6	c
Peaches, new crop	9	@ 9½c
Pdunes, 4-size basis	6	@ 6½c
Pears, new crop	8	@ 9 c
Raisins—		
Loose Muscatels, in sweatbox	3	@ 3½c
Thompson's Seedless	6	@ 6¼c
Seedless Sultanas	4½	@ 5 c

Citrus Fruits.

The recent cool weather in the southern part of the State has colored the oranges, and now crews of fruit pickers and packers are busy getting cars on the road East for the Christmas trade. Nearly every district in the citrus section will ship oranges for the holiday trade, although not as many cars will be sent out for this business as last year.

At Los Angeles last Friday the first sales of the season were made by the Pacific Coast Fruit Auction Co. Five cars of navels and one car of lemons were sold at prices ranging from $1.85 to $2.20 per box. Shipments from the Tulare section are being rushed now in order to get them on the Christmas markets and also to avoid the rains. Up to December 1 the shipments of oranges had been 1305 cars, as against 1554 cars to the same date last year, from this district. From the Butte section 183 cars of oranges had been sent out, as against 271 cars to the same date last year. From southern California total citrus shipments to December 2 were 627 cars, as against 1065 last year.

At the New York auction, Monday, December 4, valencias reached the record price for the year of $10.35 per box, which was paid for Chapman's Old Mission fancy brand. Valencias averaged there that day from $2.85 up to $7.80. Navels brought $2.40 up to $3.80, and lemons sold for $3.75 up to $5.30 per box.

At Philadelphia on the 4th, Florida oranges brought $1.90 to $3.50 per box, and California lemons averaged from $2.35 to $3.50.

Practically all of the valencia oranges have been shipped from California.

While arrivals of all citrus lines in San Francisco are hardly as large as last week, and the oranges coming in are gradually improving in quality, the demand since the holiday has been light, and supplies are still quite plentiful. Grapefruit and the more ordinary lots of navel oranges are lower, other descriptions standing as before.

Oranges: Navels	$ 2.25@	3.00
Valencias, choice to fancy	$ 4.00@	4.50
Tangerines	1.25@	1.75

Grapefruit	2.50@ 3.00
Lemons	1.50@ 5.00

Nuts, Honey, Hops, Etc.

NUTS.

The movement of nuts is now mostly of a jobbing nature, sales of both almonds and walnuts from first hands being light. An increased demand is expected after the turn of the year, however, and the principal holdings are firmly held at full prices.

Almonds:	
Nonpareils	18½c
I X L	17¼c
Ne Plus Ultra	16½c
Drakes	14½c
Languedoc	14½c
Hardshells	8 @ 8½c
Walnuts, 1911 crop:	
Softshell, No. 1	13 @14 c
Hardshell, No. 1	12½@13½c
No. 2	11 c
Budded	16½c

HONEY.

Trading is limited at present, but the California output for the season is pretty well cleaned out of first hands. The lower grades, however, are plentiful and rather easy.

Comb, white	13 @15 c
Extracted, water white	8 @ 9 c
Amber	7 @ 7½c
Off grades	5 @ 6 c

BEESWAX.

Trading is confined to narrow limits, and the market remains featureless at unchanged prices.

The market continues quiet at unchanged quotations.

Light	28 @30 c
Dark	23 @26 c

HOPS.

Sales have been closed within the last few days at somewhat lower prices than those last quoted. There is very little movement, however, as the market is closely cleaned up and the few remaining lots are for the most part held at an advance.

1911 crop .....40@45c

Live Stock.

Local quotations on live stock show no change, though some lines of dressed meat are lower, and there is a feeling of easiness. Owing to the unusual expense of feeding, there is a tendency to market as much stock as possible. Veal and lambs are firm.

Gross weight:	
Steers: No. 1	5½@ 6 c
No. 2	5 @ 5¼c
Cows and Heifers: No. 1	4½@ 4¾c
No. 2	4 @ 4¼c
Bulls and Stags	2 @ 3 c
Calves: Light	6½@ 6¾c
Medium	6 @ 6¼c
Hogs: Grain-fed, heavy	6¼c
150 to 250 lbs	6½c
100 to 150 lbs	6½c
Small prime wethers	3¾@ 4 c
Large prime wethers	3¾@ 4 c
Ewes	3¼@ 3½c
Lambs	4½@ 5 c

DRESSED MEATS.

Steers	8½@ 9¼c
Cows	8 @ 8½c
Heifers	8 @ 8½c
Veal, large	10 @10½c
Mutton: Wethers	8 @ 9 c
Ewes	7 @ 8 c
Lambs	10 @11 c
Hogs, dressed	10 @10½c

WOOL.

The market remains nominal, as buyers are taking no interest whatever in California wool, and few sales of the fall clip have been closed.

Spring Clip—	
Choice Southern, Year's sta-	
Northern, year's staple	14 @16 c
ple	10 @12½c
7 months	8 @11 c
Lambs, spring	8 @10 c
Fall Clip	5 @10 c

HIDES.

The hide market continues fairly active and firm at the recent advance.

Heavy Steers, over 56 lbs	12 c
Medium	11½c
Light Steers, under 48 lbs	11 c
Heavy Cows, over 50 lbs	11 c
Light Cows, 30 to 50 lbs	10 c
Kip	12 c
Veal	16½c
Calf	16½c
Dry—	
Dry Hides	18 @19 c
Dry Bulls	16 c
Dry Kip, 10 to 15	18½@19 c
Dry Veal, 5 to 10	20 c
Dry Calf, 7 down	23½@24 c
Sheep Skins—	
Long Wools	$ 0.85@ 1.25
Medium Wool, 6 to 9 mos	50@ 75c
Short Wool, 3 to 6 mos	30@ 50c
Lambs	35@ 50c

HORSES.

The local horse market is beginning to show the effect of the high price of feed, though country prices are relatively higher than those prevailing here. Conditions are by no means up to the expectations of a month or two ago. Offerings, though rather large, have included some unusually attractive stock, but local buyers seem to be holding off, and the prices offered for practically everything except drafters are lower than for some time past. Dealers, however, anticipate an improvement within the next week or two.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	175@215
Wagon Horses, 1250 to 1350 lbs.	130@175
Delivery Horses, 1050 to 1250	110@130
Desirable Farm Mare	125
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

Deciduous Fruit Shipments.

Sacramento, Dec. 2, 1911.

The following gives the number of cars of deciduous fruit shipped from all points in California for the week (seven days) ending Friday morning, December 1, 1911, as reported by the California Fruit Distributors:

Grapes—38 cars. The movement of this fruit during the week has been about as expected. While it shows a total of 38 cars, a considerable portion of those had moved out before our last letter was written, but appeared in subsequent reports received from the railway companies. It is believed that the shipment is now entirely completed, although there are probably a few cars which will yet appear in the railway reports. The last car of Emperors left Vacaville on October 28, and the same day closed the shipment of this variety at Mills.

This is the last trade letter that will be issued by us during the present season. Reference to the table below, which has been brought up to date, will show the shipment, so far as reported, for the entire season. From this it will be seen that the movement has been much larger than last year when we consider that this season each car contains 13 tons, whereas in 1910 the minimum was 12 tons. The season has been an erratic one, ranging from the highest prices ever known in the California fruit business, and which continued well into August, to the lowest general range in the history of the business. We believe the trade this year has been more generally unsatisfactory to shipper and dealer than any other of which we have knowledge It is to be hoped that the same conditions will never again prevail.

Comparative statement of shipments:

Dec. 2:	1910	1911
Cherries	250½	216¼
Apricots	289¾	214½
Peaches	2,517¾	2,027
Plums	1,552½	1,366
Pears	2,361	2,324¾
Grapes	4,944½	6,369½
Sundry	17	16¼
Total	11,933	12,534¼

PUBLISHER'S DEPARTMENT.

AN INNOVATION IN IRRIGATION METHODS.

Originally all southern California (like other sections of the country) was using the open ditch for irrigation purposes, with the exception of isolated cases where water pipes or concrete ditches were being tried. About eight years ago, however, two practical ranchers at Covina, California, made some concrete pipe and formed it into a distributing system, with gates to control the flow of water, and outlets with valves to distribute it. This innovation in the manner of carrying and distributing water proved so practical, easy of operation, and economical, that it was at once adopted by ranchers generally, with the result that it practically revolutionized irrigation methods throughout southern California.

It saves water, land and labor, and will last a life-time—concrete pipe conduits that have been in use for twenty years being today absolutely as good as the day they were installed. This system is rapidly finding its way all over the Western country, resulting in the upbuilding of an immense industry at Los Angeles, Cal.—The Kellar-Thomason Mfg. Co.—of which the original inventors are still at the head.

THE FARMERS' MANUAL OF LAW.

A new book by Hugh Evander Willis. The Farmers' Manual of Law not only tells farmers how to settle their legal wrongs, but it tells them how not to commit any legal wrongs. It tells the farmer what are all his legal rights, natural and acquired, and how they may be acquired and lost. The book is adapted to private study as well as for use in the classroom. All of the fundamental principles are stated in rules easy to understand. Numerous illustrations further explain the application of such principles. A glossary and forms still further add to the utility of the book. Its author, Hugh Evander Willis, A.M., LL.M., is a member of the law faculty of the University of Minnesota. He is, therefore, both a teacher of law with years of experience, and a practical farmer; so that, knowing the law and understanding the needs of the farmer, he has produced a book which answers every purpose of the man on the farm. Armed with this book every farmer may be his own lawyer. This volume is printed on a high-grade paper, 470 pages, 6½x9 inches, and is handsomely bound in cloth with gold stamping. Price net $2. Orange Judd Company, 315-321 Fourth Ave., New York City, publishers. For sale at office of the PACIFIC RURAL PRESS.

Henry Wheatley has returned from England, where he went two months ago to purchase Shire stallions. Mr. Wheatley reports that he secured a very choice collection of sound, young horses, with plenty of bone and weight. The horses are now at the Salvador Stock Farm, Napa, where they can be seen by appointment at any time.

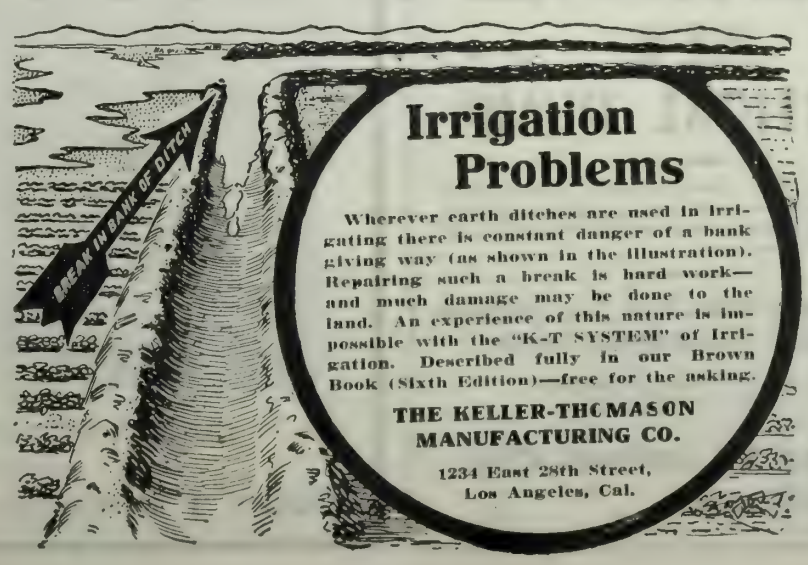
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California Fruit Growers

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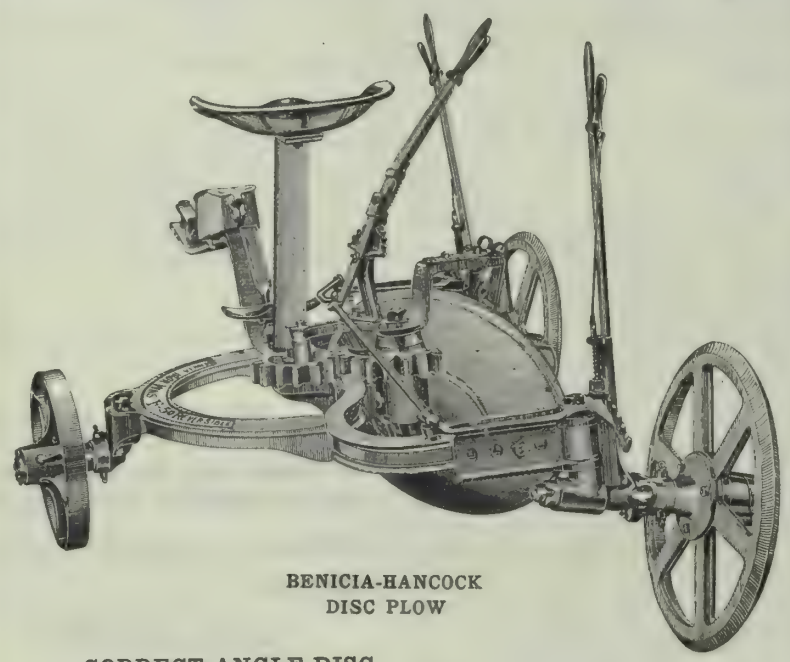
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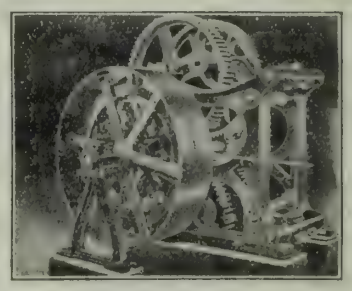
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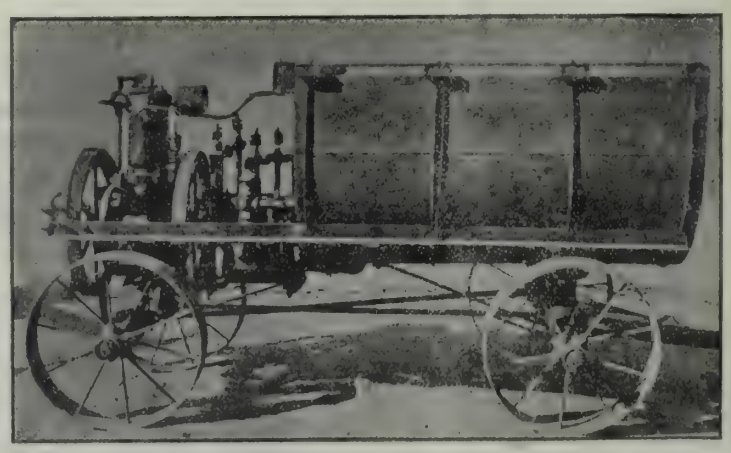
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THE PACIFIC RURAL PRESS

Vol. LXXXII. No. 25. SAN FRANCISCO, SATURDAY, DECEMBER 16, 1911. Forty-first Year.

Are We in the Tropical Fruit Zone?

By JOHN S. ARMSTRONG, of Ontario, at the First Annual Convention of the California Association of Nurserymen in Los Angeles.

To specifically answer this question implies a thorough knowledge not only of soil and climatic conditions as they exist in the thermal belts of southern California, but also of the requirements of such fruits as in a broad sense are termed tropical in their nature. This is, it is needless for me to add, a knowledge that I do not possess, much less lay any claim to. Nevertheless, in the light of the wide interest that has been awakened in goth fruiting and ornamental plants that are indigenous to the tropical regions of the world, it has become a question of commercial importance to the nursery industry. Indeed, there is at this moment no subject of wider interest to the plant grower, than the exploitation of tropical fruit culture under a southern California sun. It is still in the experimental stage, and though much of an encouraging nature has been accomplished, there is still much to learn. Hence, what I shall say must be considered with the proverbial grain of salt, and with the hope that it will excite you to a full and free discussion of the subject. And right here, let us not forget that most of our fruits, both of the temperate and tropic zones, seem to find their highest perfection at the dividing line between tropical and temperate conditions—thus the orange reaches a higher perfection with us than it does in the tropics; and the peach and plum do better than in the colder regions. The happy medium seems to add those elements that make for eating values. The factors to determine are climate, soil, altitude, humidity, and, of course, an enlightened horticultural practice that will stand for best results in growth of plant and product. Surely a subject calculated to bring the best thought of the nurseryman to the surface in a solution of the problem. This being conceded, we may refer briefly to what has already been accomplished.



Typical Pear Form of Avocado, Whence the Name Alligator Pear.

Olives and other fruits of the sime-tropics grow to perfection, brought here by the Franciscian Fathers, who realized California's adaptability to the fruits of warmer climates. A fruit which is destined to become an important industry in southern California is the avocado, commonly and incorrectly called the Alligator pear. While in an experimental stage in regard to varieties, there can be no doubt of its successful culture. It has heretofore been regarded by some as a strictly tropical fruit, although one may find thrifty specimens of fruiting trees growing at different points in southern California; for instance, a vigorous fruiting tree in the park at Santa Ana, and a number of trees in other parts of Orange county, notably at the place of Mr. Taft at Orange, who has quite a number of trees fruiting, of different types; in the southern part of Pomona two large trees are growing, one of which is a good specimen of the purple avocado; also the well-known Chappelow tree at Monrovia; other fine trees at Hollywood bearing splendid fruit, and still others at Pasadena and different parts of Los Angeles. They seem to be at home in southern California, but we must do considerable experimenting to get the best varieties; in fact, it is somewhat in the same position that the orange industry was thirty years ago, when we were all at sea and did not know what varieties to plant to obtain the best results.

Another important fruit is the Feijoa Sellowiana. All who have seen this fruit growing, and tasted it, are enthusiastic over its success. It will thrive in almost any situation in southern California. Other fruits that are better known, such as the loquat and guava, thrive in perfection. Further inland, the date is now cultivated with success.

Another tropical fruit tree to be commended is the Sapota Blanca (Casimiroa edulis). This tree bears a good fruit; specimens are growing in Santa Barbara and in the Cahuenga hills. Many myrtaceous fruiting shrubs and trees, even if native of the tropics, appear more readily adapted than plants of other orders. The Surinam cherry (Eugenia Michellii) is a notable example. Will stand moderate frosts.

Olives and other fruits of the semi-tropics grow to perfection, brought

(*Continued on Page 510.*)

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E. J. WICKSON - - - - - - - Editor
FRANK HONEYWELL - - - - - - - - Manager

California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Dec. 12, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.26	4 71	12.43	52	38
Red Bluff	.42	2.02	7.18	66	34
Sacramento	.32	.67	4.80	66	38
San Francisco	.47	1.79	5 34	70	46
San Jose	.26	1.82	4 02	66	32
Fresno	.34	.65	2.52	60	32
Independence	00	.80	2.44	62	16
San Luis Obispo	1.58	3.45	4.24	70	36
Los Angeles	.76	2.25	3 03	72	44
San Diego	.32	.85	1.80	72	48

The Week.

There is not much doing yet in soil-turning, as moisture is rather shy over large areas of the State, except where dry work is being done in preparation for irrigation, planting, etc. Naturally, there is much activity in valley subdivisions, where newcomers are beginning their home making and the warm, bright days are helping them along with these delightful and engrossing undertakings, and the result will be greater comfort for beginners when the heavy storms come along. The orchards and vineyards of older owners are also getting into good shape under the notably fine conditions for outdoor work: pruning, early spraying for fungi which attack the new wood, cleaning of corrals and spreading the richness therefrom—all these and similar seasonable things are being done swiftly and economically because the ground is firm and the skies bright. Citrus fruits and olives in early-maturing districts are being advantaged by the heat and by the better work which pickers can do in the clear than in the rains and mud. Still, in the time of such activities there is plenty of time for politics and these joys are keener in the sunshine of the fence corners than in the stifling heat of the stove of the country store with its aureole of soap boxes. It strikes us also that views of the political situation may even be clearer and more wholesome in the sunshine than in winter quarters to which subsidiary statesmen are forced to resort in stormy weather. And surely there is a depth of obscurity in this political situation which it requires the clearest light to penetrate to an understanding. We are evidently undergoing a revolution in our public affairs, possibly as far-reaching as the contention in China, but which, fortunately, will be carried out with a free flow of breath instead of blood and is surer to reach its desired end because the human animal has a greater content of wind than of blood—if for no other reason. Therefore we exhort our readers, if any of them have idle days, to consort with their fellows in patriotic political converse and thus do their part in saving the country from manifest perils. We exhort them also to participate for the joy of it. Last month in Ohio we heard a speaker deploring the loss of time in political discussion and maneuvering, claiming that the distraction from production thus engendered made for the higher cost of living. To him quickly replied another speaker: that politics were not only the duty of the American citizen, but his highest pleasure also, and, beyond that, politics aroused men and made them work better because politics taught them to think better. We incline to the latter view, and we are glad that the American people never have had more provocations to think and that there never has been a time when the free, individual thinker had such a chance to accomplish something with his franchise as at the present moment. California has already set the pace in the march of social and economic revolution. California is farther and freer from the personal interests of candidates and their retainers, and less likely to be selfishly moved, than other States. Therefore, we say to rural Californians as to politics, while the days are fine and perhaps idle: go to it!

What Kind of People Will Farmers Be?

Of course, we confess, we urge this duty or indulgence upon our readers because, if they get agile in politics, it will advance their social standing, their influence in public affairs, and, incidentally, bring them many advantages which they actually need in their business. Lest outsiders might take such words as we might write on that side of the question as selfish special pleading, we go to a man who stands prominently before the American people as one of broad, disinterested view and whose long and honorable life has, so far as we know, been wholly apart from agriculture. We refer to ex-President Eliot of Harvard University, who started around the world on a Carnegie peace errand and fell under the surgeon's knives in far-away Ceylon—from which, or through which, may God save him. Before going abroad President Eliot spoke, to agricultural students about farming, these words: "One of the most interesting questions which the country is asking today is what is the effect of the pursuit of agriculture on the population. Agriculture, like all the other pursuits, has been entirely made over in the United States within the last thirty years. Years ago agriculture was considered the lowest form of labor, but at the present time it is one of the most stimulating, inspiring and agreeable pursuits. Agriculture is a free mode of life, a life of comparative independence, highly individualistic, and is a pursuit which is highly intellectual and varied and requires a constant watchfulness. Farming is requiring more and more knowledge and skill, and farmers are realizing that agriculture is the fundamental industry, and that its operation supplies the world with food."

It may seem strange, but we really believe that politics is the avenue along which the greatest blessings from the foregoing facts are to be realized and unless farmers do approach through politics their attainment will be indefinitely postponed. Do farmers realize that agriculture is the fundamental industry? No: they have looked upon that as a lofty sentiment—to be worshipped but not to be laid hold upon. Let them grasp it now.

How Can One Be That Kind of a Farmer?

How new is this conception of a farmer's social and industrial standing, and yet how old? The old Greek general Xenophon, pupil of Socrates and leader under Cyrus, was not only a warrior, but a farmer and an agitator for improved farming. He set forth the fundamental character of agriculture in these words: "When agriculture flourishes, all other pursuits are in full vigor; but when the ground is forced to lie barren, other occupations are almost stopped, as well by land as by sea." A recent writer in the Atlantic Monthly, which periodical might have scorned a "farming article" thirty years ago as out of its class, brings us these remarks on Xenophon as a conscientious agricultural promoter: "Xenophon addresses himself to those who are not versed in agriculture but contemplate taking it up, and he makes it very clear that farming, to be successful, must be learned, like any other business—a truth which should be self-evident, but which, strangely enough, is seldom realized outside the farmer's ranks. It would be to the advantage of all who think that farming can be taken up without any special training to read what Xenophon has to say on the subject: 'Agriculture,' says he, 'is an art that renders those who understand it rich; but leaves those who do not understand it, however much they may labor in it, to live in poverty.' The term 'goods', he tells us, may be defined as 'something that is serviceable to the owner. The same things, therefore, are goods to him who knows how to make use of them, but not goods to him who does not know. Land certainly cannot be called a part of a man's good if, instead of supporting him, it brings him nothing but hunger.'"

The human race has had this proposition before it for more than two thousand years since Xenophon gave it out, and there is no telling whence it came to him or how much experience and observation lay behind it at that distant day. The question is will it be realized now or must it be embalmed sentiment for a couple of thousand years more? We have an idea that it will linger away from realization until farmers as a class become more masterful, and to be masterful they must be trained to mastery: first, of their farms as economic institutions; second, of themselves as men; third, of other men for the enforcement of that which is right. Do better farming; be better men; do good politics.

Which Will Arrive First?

There seems to be a question whether the farm-owner will arrive first at this beatific condition, or whether his hired man will beat him to it. In England they seem to have rather more hope of the hired man, but that may be because the chief owners of the land over there are already too high in a way—but we cannot stop to settle that question now. The announcement comes from Oxford that Ruskin College, where the working class students of England can come in touch with university culture, aims to produce a leader who will organize the rural workers of England. At present the agricultural laborers are almost entirely outside any trade-union movement, which exists only in a weak way in East Anglia, though at one time Joseph Arch, an agricultural laborer, who became member of parliament, was a labor-union hero for a time.

To meet the need, a scholarship is to be endowed at Ruskin College under the will of the late S. C. Buxton, son of the president of the Board of Trade, and only agricultural laborers will be eligible to compete for it. The first selection will be made in the new year. Ruskin College has a hard 'stent surely: if it does not turn out an agricultural Moses pretty quick, the English philanthropists will want to know the reason why.

California Butter for the Philippines.

California's claim to furnish a part of the food supplies of man and beast which Uncle Sam buys to maintain the status quo in his insular possessions, has always been difficult to get through. Californians have argued for barley against oats, for alfalfa and grain hay against timothy, and for other good substitutes for the traditional army

prescriptions. Some progress has been made in all these lines. It is interesting now to know that Congressman Kahn of San Francisco has succeeded in obtaining from the War Department an order which will result in the purchase of all butter needed for the Philippines between the months of April and September from the San Francisco dealers. Heretofore all butter needed for the army in the Philippines was purchased all the year round in Australia. This arrangement was not fair to American dealers, as butter could be purchased as cheaply and shipped as easily from San Francisco. Mr. Kahn induced the War Department to make the arrangements that will give the business to San Francisco during the months specified. The dependencies have large appetites and are expected to stow away a million and a half pounds of butter annually. This ought to relieve the early summer low prices to some extent.

An Enemy for the White Fly.

Those who know that the white fly was not completely stamped out of California, as has been claimed, will hope that a pest of the pest has been secured by Mr. Woglum of the Bureau of Entomology at Washington. Mr. Woglum has been around the world and has given over a year to the search, and the report is that he has reached Washington with his capture in good condition. He found it in India and brings back six orange trees well set with the parasites. Naturally they will find their best field in Florida, where white-fly injuries are counted in millions—as, if we mistake not, the worst pest they have.

Christmas Trees from Above.

Although it may hurt our self-sufficiency as a producing State, it is otherwise satisfactory that California will not rob her own forests for Christmas trees. They seem, on the other hand, quite pleased to cut them in the Puget Sound forests and are sending down two carloads by steamer from Tacoma to San Francisco. The local report is that the shipment marks the opening of a new industry on Puget Sound. They say: "Puget Sound Christmas trees have always given good satisfaction at home, but they now bid fair to become a profitable article of export, for it is as Christmas trees that the young cedars are going south. California has plenty of evergreens for holiday use, but few cedars, and these beautiful trees bring high prices in the San Francisco market."

We have always believed that Christmas trees should be grown as a crop and ought to be more profitable than the eucalyptus plantations are likely to be. It will come to that, if Santa Claus lives, for supplies are not likely always to come from the forests unless Uncle Sam and private owners should undertake to sell trees from desirable thinnings in their reforestation work.

Queries and Replies.

Dwarf Milo.

To the Editor: In the PRESS of October 28 you have an editorial on Imperial valley and mention the success of "dwarf milo" there. I am taking up mesa land about two miles from the Colorado river; have a limited supply of water from wells. Can I grow dwarf milo on virgin soil? If so, when shall I plant and where can I get the seed? Does it require much water? —Farmer, Calzona.

It is a non-saccharine sorghum, and all of our advertising seedsmen ought to be able to furnish you the seed. There must be trainloads of it in the Imperial valley. It will grow on any land which does not carry too much alkali, and will give you more growth for less water than any other cultivated plant known to us, but of course most growth will come with enough moisture. Plant as soon as frost danger is over.

Re-Grafting Silver Prunes.

To the Editor: On my Saratoga ranch are five acres of silver prunes which produce very little fruit. The trees are strong and healthy. In the spring they are covered with blossoms and later with fruit which, when half grown, turns yellow and drops. This has been the "habit" for several years. French prune trees adjoining bear regularly and heavily. I have been thinking of grafting French prunes on the silver trees. What do you think of it? Will silver prune trees take other grafts, such as apricots or apples?—Grower, San Francisco.

The silver prune is often unsatisfactory for reason of shy bearing. It is perfectly feasible to graft over the tree to the French prune and this has been done for years by different growers. Apricots will usually take on the plum stock, but are apt to over-grow it or else be dwarfed themselves, and there is a general sentiment against working the apricot in that way, although there seems to be no reason why it should not succeed, based upon European experience where the apricot is generally worked upon a plum stock. It might be interesting for you to try a part of your acreage with the apricot. Apples have no grafting affinity whatever for the plum.

Barnyard Manure—Alkali—Stock Beets.

To the Editor: I have a ranch two miles from Salton sea. In spots the land is hard and has some black alkali. Will you tell me if barnyard manure will help the hard land if cultivated in? Also, is there anything that can be done to counteract the alkali? Will sorghum grow on rather hard land, and, if so, does soil need to be plowed deep or will double discing answer, and how soon can it be put in in the spring? What kind of beets are good for hog feed, and would beets grow on such soil and when would you put them in? How are sugar beets for hogs, also Golden Tankard?—Owner, Los Angeles.

Barnyard manure frequently benefits hard alkali land by increasing the friability of it, and in that way reducing the rapidity of evaporation and accumulation of alkali near the surface. Alkali may be washed out with an abundance of fresh water if you put in deep underdrains or if there is free soil below with natural drainage. Sorghum will not stand much alkali. In free soil it will take hold almost any way—even to volunteering freely. It must be sown after frost danger is over. All kinds of beets are good for hog feed, but the large stock beets like the Golden Tankard are better for stock feeding, because they are larger and grow a considerable part of the root out of the ground and are therefore much more cheaply handled.

Growing Horse Beans.

To the Editor: Will you please let me know whether the soil needs to be inoculated for horse beans? I intend to plant five acres about January 1, on the valley border in Placer county and they get heavy frost in the morning. Does frost hurt them? I would also like to know how to plant them.—Enquirer, San Francisco.

California experience is that horse beans grow readily without inoculation of the seed. Quite a good growth of the plant is being secured in many parts of the State, particularly in the coast region where the plant seems to thrive best. It is one of the hardiest of the bean family and will endure light frost. How hardy it will prove in your place could be told only by a local experiment, and unless you know from experience that the plant will make a good winter growth in that region, do not think for a moment of planting five acres at first. Whether it can be planted after frost danger is over, as corn is, and make satisfactory growth and product in the dry heat of the interior summer must also be determined by experience.

The horse bean is a tall growing, upright plant which is successfully grown in rows far enough apart for cultivation, say about 2½ feet, the seed dropped thinly so that the plants will stand from 6 inches to 1 foot apart in the row.

Working Almonds and Walnuts.

To the Editor: Will you kindly inform me, through your columns, whether it will be better to bud or graft, on bitter almond seedlings of one year's growth, and as they must be transplanted, would it be proper to do the work this season or defer it for another year's growth? Would it be proper to graft one-year California black walnut seedlings that must also be transplanted.—H., Paradise.

Your almond seedlings should have been budded last July or August, which would have fitted them for planting in orchard this winter as dormant buds, as they cannot stay where they are another season. Now you can transplant to nursery rows in another place: cut back and graft as the buds are swelling, allowing a good single shoot to grow from below on those which do not start the grafts into which you can bud in June, and cut back the stock to force growth as soon as the buds have taken. In this way you will get the whole stock into trees for planting out next winter. Some will be large and some small, but all will come through if planted in good soil and cared for properly. Of course you can plant out the seedlings in orchard now and graft and bud in the orchard, but it will be a lot of trouble, you will get very irregular results, and we do not advise it except to people who have few trees and plenty of time and patience.

If the walnut seedlings have to be moved, we would plant in orchard and graft as two or three-year-olds, according to the size which they attain.

Strawberries With Perfect Flowers.

To the Editor: Has Longworth Prolific an imperfect bloom? I have about 12 acres in Longworths in bearing which apparently are perfect. Is there another strain of Longworth that are not self-fertilizing?—Suburban, Redwood City.

The Longworth Prolific strawberry has a perfect bloom with both staminate and pistillate elements. We are not aware of any strain of this variety which is otherwise, although it is quite possible that some other variety, because of its resemblance to Longworth and the popularity of it, may have been wrongly given its name. Presumably any such variety which might come to your attention is not a Longworth at all. Most of the varieties which are largely grown in California are perfect in blossom; therefore very little attention has been given in this State to planting pollinizers for pistillate varieties, which is, of course, necessary when pistillate varieties are grown.

Rape as a Forage Plant.

To the Editor: Will you please advise me about planting rape here. I am a stranger to the country, but I want something for hogs. My land has quite a lot of alkali and grows fine salt grass. Will rape stand frost? What time of year should I plant it?—Farmer, Merced.

The plant is hardy and should be a winter grower in this State and should be sown at the beginning of the rainy season. Although the plant has been talked about for some years no considerable acreage of it has been grown. This probably is due to the fact that though rape will grow during our rainy season, vetches and peas, which are better forage and better for the land, will also grow very freely. We would like to know who has grown rape and with what results.

Cherries Commercially.

Written for the PACIFIC RURAL PRESS by D. J. WHITNEY.

Cherry growing occupies a very peculiar position in this State. Cherries are one of the most luscious fruits grown here, they reach an exceptionally high standard of excellence, bear well and consistently, and cherry growers are making big money, yet nearly every other kind of fruit is being set out in greater numbers than are cherries.

The reason for this condition is rather simple. Cherry growers when asked the question, "Why are more cherry trees not planted?" will reply, "Because there is no more good cherry land left around here?" wherever the "here" may be. Another answer is "They are planting them all on the good land." Yet there is no doubt that in many places there is good land for cherries and that they could be raised to advantage, even though in the main cherry districts most of the suitable land has been appropriated for that purpose or is occupied by mature trees of other kinds, which it is not thought advisable to remove.

Although the land where this fruit will do well is limited in extent, it is amazing how widely they are distributed throughout the State. In practically every country where other deciduous fruits are grown some cherry orchards can be found that are thriving and bringing in good returns to the growers. In such cases it is the rule that the cherry trees bring greater returns to the owners than the same amount of other orchard lands.

In spite of the wide distribution cherries enjoy, the competition they meet is not serious. It is true that cherries of a kind can be found in nearly all parts of the country, but the Eastern cherries are usually the sour, or soft sweet kinds, while the California varieties are Hearts and Bigarreau, excellent for canning and fresh eating. The cherries of the Pacific Northwest are similiar to those grown here, but their later ripening and the difficulties met with in the more strenuous climate, give California fruit the advantage. Cherries are the first fruit of the spring and summer, and gain greatly in value from early ripening, and the value goes into the pockets of the California grower.

Conditions for Cherries.—Before starting a cherry orchard the grower must be sure that he is right in two essentials, a proper soil and a suitable climate. Usually the best soil for cherries is a sediment, by the side of a former or present watercourse, and unless the soil and moisture conditions are right the tree is sure to utterly fail.

In this the cherry is radically different from the apricot, peach and several other fruits, which will make good wood where they will not bear. The cherry will pretty surely bear if the tree can live and do well. Unlike the other fruits, crops are spoiled as a rule, nto by frosts, but by too much rain in blossoming season, so that plantings can be made in places where the frosts might utterly ruin, for instance, all hopes of success with apricots.

Another thing that affects production and discourages planting is the number of trees that are dying back in all parts of the State, with a few exceptions. In most of the older, well established districts, the older trees are dying here and there, and the young trees are not reaching the age of their predecessors, while in other places the old trees remain healthy while the younger do not. Cultural reasons doubtless exist for this state of affairs, and it is claimed that this trouble can be avoided by choosing good stock, and giving the trees the proper treatment.

Another explanation for the lack of planting and the way a prospective grower has to choose his location is the way a slight difference in location will affect prospects. For instance, along the Sacramento river near Courtland, where some of the finest orchards in the State are, trees do very well in one place, and a little above it, where the river curves in the opposite direction, are not not successful at all. Close to the levee they thrive, farther back they do not, and the same condition exists in nearly all places.

Aside from the physiological crankiness of the cherry tree, which can be provided for by good soil, care, roots, and so on, there are no insect pests or diseases that the grower need greatly fear. Spraying usually has to be done in fall and spring, but that is the case with most fruit trees. The pear thrips, however, which has recently developed the ability to seriously injure the pear and prune crops, also affects the cherry blossoms, and if it continues to increase in virulence may be a big problem for the cherry grower and an additional expense to him.

Marketing Cherries.—Although the tree is excessively particular about its comfort and convenience, its bearing is very consistent as compared with most of the other California fruits, with the possible exception of pears, and where the tree will thrive the fruit will generally set and mature well under the average weather conditions.

In 1904, 209 cars were sent East; in 1905, 79 cars; in 1906, 150 cars; in 1907, 98 cars; in 1908, 208 cars; in 1909, 250 cars; in 1910, 250 cars, and in 1911, 216 cars.

The amount canned is far below the amount disposed of in this way for other fruits. The last three years there have been put up an average of about 185,000 cases of 2½ and 3-pound cans of cherries, and about 12,000 cases of gallon cans, while peaches will run about eight times this amount, roughly speaking, and pears and apricots three times as great.

Whether a person should raise cherries for fresh shipment or for the canner will depend largely upon his location, which will affect the earliness, quality of his fruit and convenience of shipping. The earlier the fruit ripens, of course, the better it is for shipping, and in the Vaca valley, for instance, practically all the cherries are shipped, while in many of the later districts the canner gets a large amount of the crop.

The highest returns will come from sending the fruit to the market, when that is possible, but big returns can be received from raising the fruit for canning, and any one who could raise cherries for the canner will be more than justified in doing so. There is no excess supply, by any means, and little chance for any developing. The northern cherries are excellent for that purpose, but there is little danger from an oversupply from that source that the buyer for one of the large canning companies of the State announced this summer that he would be glad to make ten-year contracts for Royal Anns at 5 cents a pound, $100 per ton.

Cost of Production.—Aside from the cost of caring for an orchard, the expense of picking will make large inroads into this sum, as the picking usually will cost a cent or a cent and a half a pound, though it will vary greatly with the size of the crop and the purpose to which the fruit is put. For canning, the trees may have to be gone over but once, while for sending to the market it may be necessary to go over them three or four times. In the latter case, however, the selling price will more than justify the additional expense.

The expense of picking and the difficulty of securing sufficient help in a large orchard makes it advisable to have several varieties of the fruit, that will ripen at different times, so that the same pickers can work over a long period and cover much orchard. In the Vaca valley, for instance, the growers start out with the earliest ripening cherry that there is, and keep on until the latest is harvested. Since the qualities one variety lack will be made up by another, each variety is about as profitable as another. For instance, the Royal Ann, though generally cheaper than the Black Tartarian and similar varieties in the market, bears better, is easier picked, and in case of a bad market will command a premium of half a cent or so above the Tartarian. For canning purposes they always command a higher price, and there is always a fair demand for them for fresh eating. The soft white cherries, on the other hand, though bringing still less than the black cherries from the canners are very consistent bearers and in fair demand in the markets. Thus an orchard of mixed varieties will permit the owner to use a smaller crew of pickers for a longer time, give him a variety of ways to market his fruit, and, though not stated before, make his trees bear more consistently.

Investment Required.—One disadvantage to cherry growing is the large investment needed. Only the best and most valuable land can as a rule be used, and this will ordinarily be suitable for growing other things. The cost of the young trees, if on the proper roots, is high, though this is partly offset by a greater distance between the trees, as cherry trees will need to be about 30 feet apart, while many others are planted only 20 feet. While many other trees bear at four or five years of age, cherry trees do practically nothing until the sixth year, and then not a great deal. Not until close to the tenth year are they in full bearing, or close to it, and this makes a long time to wait for returns on one's money.

All of these apparent disadvantages are possible advantages for the man who will overcome them, as they leave a fine market open by preventing excessive competition. Most growers see this, which is one reason why a great deal of good cherry land is not left. If cherries could be raised as easily as most other fruits, and on almost any land, everybody might be planting them, and there would soon be but little money in the business.

GETTING INTO THE CITRUS GAME.

To the Editor: I wish to ask you about the citrus fruit industry in Los Angeles county. I am at present employed in an office in New York city, but am thinking seriously of entering the agricultural field in Los Angeles county. I have had no experience, but intend to begin on a very small scale, and with experience, hard work, and study, I hope to succeed. Would you advise my taking this step? And what are the prospects in this field? Is the growing of oranges and lemons overcrowded, and is this industry controlled by large interests, or has the "little" man a chance?

Hoboken, N. J. H. W. L.

[Los Angeles county is only one of the several counties which are producing citrus fruits in large quantities. There are several counties in southern California which are participating in this production and the fruits are also successfully grown on suitable soils and in proper situations at various points in central and northern California. Citrus soils and water for growth of the trees are to be had at varying prices in different districts—naturally the newer districts offering better opportunities for beginners to secure a start with less outlay. It is an interesting fact that some of our most successful citrus fruit growers did begin without previous knowledge of agriculture and did make themselves wise by the process you outline. At the same time, we are not advising this course, because unless one has the personal qualities which are essential to success with such a handicap, disappointment is likely to result, especially if one lacks capital enough to maintain himself and his experimental work until it reaches the point of profitable production.

Owing to the cost of land, trees, water and labor required to bring the trees to a bearing age, considerable capital is required, although one having knowledge of how to do things and willing to work with his own hands can win a part, at least, of his maintenance cost while the trees are growing. This he can do by inter-cropping to a limited extent, or by working for others, and in most of our citrus districts there is a demand for the right kind of labor at very satisfactory wages.

We do not anticipate an overproduction of these fruits, considering the relatively small territory of the United States which is naturally fitted to produce them and because of the increasing population which will call for all the citrus fruits California can produce, providing the industry is not laid open to competition with the cheap labor of foreign countries. In the production of fruits the small grower has a fair chance if he does good work and participates in the associations for the handling of fruits which are found in all our citrus districts.—EDITOR.]

Some Points on Field-Grown Roses.

By John Gill, West Berkeley, at the Convention of California Nurserymen, Los Angeles.

Rooting Roses.—The cultivation of field-grown roses in California has assumed very large proportions within the past few years. This refers not only to plants grown on their own roots, but to budded stock as well, and it is only within a comparatively short time that the latter sort has become so popular that many hundreds of acres are devoted to it. Many roses are of very satisfactory growth when raised on their own roots. By this statement is meant that they root easily, grow strongly, and transplant readily. These are ideal conditions when they exist, and are the only things to be considered if we would make a success handling stock after this method. Unfortunately, a majority of our best sorts only fill one or two of these essentials, and unless all points are correlated, the effort with that particular variety connot be deemed a good risk.

Some roses root readily, but the quality of the roots is not such that they are to be recommended for transplanting purposes. This is a serious point, and one that has caused great annoyance, and it might be well to qualify here and state that this is controlled largely by the quality of the soil, the plan of irrigation pursued, and the amount of cultivation given. Each contention listed here has a direct bearing on all the others, and even under the best possible conditions many kinds will not make sufficient growth of either top or root to make salable plants in a reasonable time. Many pages might be written on any of the phases mentioned, and as one thought leads to another, we will now turn our attention to budded stock.

Roses for Budding.—First of all, let us consider the proper time for planting wild stocks. This is so dependent on climatic conditions for the ripening, heeling in when necessary, and lining out, that every location is a law unto itself, and local conditions cannot be handled in a general way. Presuming, then, that the stock is made into cuttings of usual length and caliber of well ripened wood, and free from borers or other pests, we will next note the soil. Roses, as we all know, prefer stiff, heavy loam, with good drainage. An excess of sand means that an excess of water must be used, followed always by an excess of young growth which is not prone to ripen, and an excess of dead roses after transplanting. This is the reason why so many growers have not been successful in the warm, dry parts of California where good stock cannot be grown without lots of water; the lack thereof being always followed by the train of necessary disasters just mentioned.

Cultivation first, last and all the time during the spring and summer is the key to successful rose growing in this State, and by no other method has any grower achieved anything except pecuniary loss. When the cuttings, climate and soil are right, we may next devote our attention to the planting. Always place the stocks deeply in the ground and see that the soil is packed around them firmly. Commence cultivating thoroughly as soon as the weather permits.

Choosing Stock.—As to the choice of stocks there is quite a diversity of opinion in what should be used for the various sorts to be worked on them. Many varieties absolutely refuse to make a union with certain wild roses. Others make a half-hearted connection, and wait patiently for a good windstorm when they may sever their irksome bonds. Some are very discriminating in one locality and not in another. Others work well on several sorts, and some apparently will not grow on anything. So on down the line, a constant study with the end always in view of finding out what is best for your particular purpose. It will be seen from this that to make a success in this division of rose growing many particulars must be kept constantly in mind, and "eternal vigilance" your watchword.

Budding.—After the stocks are planted and growing strongly the budding season comes around. This is another important season. The cutting of buds must be done with great care and precision, and woe to the grower who relaxes his vigilance at this time. Careless help has driven many a nurseryman to distraction when he deserved a better fate. The selection of varieties and the quantity of each to be worked is another perplexing problem. The fickle public change their wants often and without notice. The sort that is popular this season may not be given away next year, and vice versa. We are supposed to know all of this ahead of time and act accordingly. There are quite a number of the so-called standard varieties for which there is always call in limited or fair quantity, but with the bulk of the different kinds it is somewhat of a gamble.

Mistakes in Budding.—About budding itself there is little to argue on, but about the mistakes made after the bud has been inserted, a book might be written. Presuming that scions are properly cut and handled and the choice of tying material right, we must pay attention to the man who ties the strings. Too few wraps, too loose wrapping or carelessness in making a knot ruins many thousands of good stock yearly. Then the growing of stocks must not be allowed to stop. Too much stress cannot be laid on this point. Then whether the young stocks are to be encouraged by artificial means to shoot out quickly or not, is to be settled. Then the effect of a possible cold snap or a heavy windstorm taken into consideration and the young wood pruned accordingly. These two latter conditions cannot be entirely forestalled, and he is indeed lucky who does not lose a goodly portion of his crop occasionally by some of those happenings. But barring accidents, and under usual conditions, the buds are ready for inspection in a few weeks after budding. If all points are right there should be no failure greater than 1%, and this has been our record for many years. Occasionally we get poor scions of some new variety from a distance and the loss is much heavier.

Later Problems.—In topping the stocks the rose grower has another good chance to distinguish himself. Whether to do it early or wait until later is often an enigma, and if one was always sure of the weather much extra work could be avoided and less danger from wind and rain. Heavily irrigated roses show little inclination to become dormant, and when dug in the fall while covered with young foliage are in anything but satisfactory condition for transplanting. On the other hand, when there has been no irrigation and the stock allowed to dry off naturally there is no difficulty in digging, no danger of heating during transit, no dying back when replanting, and no kick from the purchaser.

Another point should be mentioned here. Non-irrigated roses can be dug with perfect safety as early as October, and from that time on there is no difficulty in handling them until the first of April. This gives the grower a splendid chance to dispose of his stock at such times as best please his customers in the many parts of the country. Digging, when possible, should always be done with a tree-digger, as the public have become quite as particular in the matter of roots as they always have been with tops.

One might ramble on indefinitely about the varieties of roses, both new and old, and the peculiar conditions favorable to certain kinds and classes, but it is not the intention to go into details along these phases, and in concluding, I will remind you that the demand for properly grown field-grown roses was never greater than it is at the present moment in California, and although quite a few growers have "gone broke" to use a common expression in our State, it was because invariably they had overlooked or did not consider the importance of one of the points we have endeavored to impress on you.

ROADSIDE FRUIT CROPS.

Consul R. J. Thompson writes from Hanover, Germany, to the State Department these interesting facts: The auction sales of native fruit grown on the trees bordering the country roads in the township of Linden, adjoining the city of Hanover, yielded this autumn $4906. Along certain stretches of these roads the yield has been at the rate of $595 per mile. The Province of Hanover has some 7000 miles of country highways bordered with fruit trees, the profit of which is appropriated toward the upkeep of the roads. These roads, which are commoplace to the native resident, are the delight of the American tourist, who often wonders why roadsides in the United States are not thus planted to fruit.

This application of the beautiful, practical, and economic possibilities embraced in the control of such public property as roads is a fine illustration of the community thrift of the German. During the three or four weeks' period of ripening, sharp-eyed old watchmen on bicycles patrol the roads, being particularly active on Sundays, when the people are out in large numbers. It is forbidden to pick up fruit from the ground, and to knock it from the trees is subject to a fine of $23.80 or more for each offense.

THE CITRUS OUTLOOK.

There will be 50,000 carloads of oranges and lemons shipped out of California the coming season, according to preliminary estimates by the California Fruit Growers' Exchange, as reported by C. H. Matson for the Los Angeles Express.

The exact figures of the estimate are 49,200, but it is yet too early to make an exact estimate, and the forecast therefore is given in round numbers.

It may run higher than this, and it may be less, depending on the number of oranges that drop in the next few weeks and the size which the fruit attains. A slight difference in size, caused by rains at the proper time, makes considerable difference in the number of carloads, but in general the estimate can be regarded as fairly accurate. It is not final, however.

This includes the shipments from the North as well as from southern California alone. Last year the territory north of the Tehachapi, principally Tulare and Butte counties, shipped about 3000 cars. The prospect this year is for about 25 per cent more—partly due to increased bearing acreage and partly to a better crop.

Increased Production Each Year.—This would leave about 46,000 cars to come from southern California, compared with 43,585 for the season just closed; 30,113 for the preceding year; 38,091 for the year ending October 31, 1909; and 29,500 cars for the year ending October 31, 1908.

The crop is going East now at a lively rate from the Northern districts, and the prices are very gratifying. The fruit is said to be of good quality and the demand for the Thanksgiving market was brisk. Nearly all of the Thanksgiving oranges have come from the northern districts.

The average price received for the fruit last week was about 60 cents a box better than it has been for the same week in either of the last two years—and that 60 cents a box represents additional profit.

Growers are inclined to credit the better quality of the Thanksgiving fruit to the ruling made by the United States Department of Agriculture against shipping immature fruit which is colored by sweating en route to market. As a result of this ruling, shippers have been more careful than heretofore about picking unripe fruit, even though it might become colored and of good appearance before reaching the markets.

Ruling Expected to Aid Market.—The result, it is believed, will be beneficial to the orange markets generally, and especially to the Thanksgiving demand in the future. When consumers in the East have purchased sour and unripe fruit for Thanksgiving, it has given them a bad opinion of California oranges generally, and therefore has decreased the demand.

At the same time, some growers do not believe there should be a hard and fast rule against shipping fruit which may have a green appearance, for it is pointed out that late valencias become a greenish hue when their flavor is at its best. It is believed, however, that both the industry itself and the Department should discourage shipping immature fruit, which may be deceptive in appearance and detrimental to widening orange markets.

ARE WE IN THE TROPICAL FRUIT ZONE?

(Continued From Page 504.)

desirable as the former, is still worthy of attention, while the plant is one of the most ornamental arborescent shrubs or small trees.

The Choco or Chayote (Sechium edule) is one of the most productive cururbitaceous plants. The fruit is very desirable as a vegetable, while the roots attain an enormous size and are valuable for feeding stock. Only recommended for the mildest regions, as, like many soft-wooded plants, it easily succumbs to frost.

Anona cherimolia, or Peruvian custard apple, can be highly commended for further trial, provided plants of the true species (Anona reticulata) can be obtained. There are a number of other species much esteemed in tropical countries, notably the Sour Sop (A. muricata) and the sugar apple or Sweet Sop (A. squamosa). The last two are, however, decidedly more tender than the cherimolia, which will bear light frosts if infrequent. The fruit should be picked green when it appears to have reached its ultimate size, laid away until it turns a uniform dull brown, when it will be found a highly aromatic, sweet, juicy mass of custard-like consistence. Complaint has been made that the tree bears sparingly, failing to set from a generous flush of bloom but very little fruit. We are of the opinion that if a number of trees are planted together, this will be largely overcome, and as the trees gain in size and strength the relative percentage of fruit to blossoms will be much larger.

Probably there is no more characteristic plant in the gardens of southern California than the banana, and yet we seldom hear of any fruit being produced worthy of the name. In warm, sheltered places, in light, rich soil, with abundance of water for irrigating, quite large bunches are produced and ripen well enough, but the flavor and aroma of the fruit sent to us from the tropics seems almost wholly lacking. Extended observations and research seem to prove that the kind generally grown is practically a worthless variety introduced by the early Mexicans, and while it may have been a desirable variety once, it certainly has degenerated. In the Far East many different varieties are grown having as much varietal difference as our apples, some more highly flavored than others, and, within certain limitations, possessing varying degrees of hardiness. In spite of these experiments, it has always seemed doubtful to me if banana culture will ever prove feasible excepting in an amateur way and in gardens where collections of plants are desirable. The same is true of the pineapple, to which our cool nights are fatal, and the dry, warm days are equally objectionable. This fruit, like the banana, requires a warm moist temperature and frequent summer showers, which are hardly characteristic of our condition.

And this brings me back to the query, "Are we in the tropical fruit zone?" the answer to which I hope will be in a measure solved by the discussion that I hope will follow these few remarks.



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(CALIFORNIA BLACK)

Will contract to graft where standing or will deliver in small or large lots.

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Maple	**Poplar** (Carolina)
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G. E. AMES, Live Oak, Cal.

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Sweet Peas are our Specialty. We were among the first to grow the seed in California and we are now the largest growers in the world.

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Mary Garden—the beautiful new double or duplex type, light buff pink, **sealed packet 25c.**
Duplex Crimson King—the giant flowered double or duplex crimson—scarlet, **sealed packet 25c.**
Rainbow Spencer—the new flaked crimson rose on ivory, **sealed packet 25c.**
Irish Belle or "Dream"—lovely rich lilac, flushed with pink, **sealed packet 25c.**

One packet of each of the above novelties known as

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Our complete Sweet Pea Booklet entitled "Sweet Pea Culture"—mailed on request.

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Pedigree Fruit Trees
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MORGANHILL, CALIFORNIA

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OF

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In development of root, stalk and branch.

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POLLARD BROS.

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Consult us as to

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We can save you money

GOTSHALL & NOURSE

RIPON, CALIFORNIA

An English View of Apple Selling.

Our apple growing neighbors up the coast are getting rapped on the knuckles for their ways of selling fruit abroad. Californians should have a chance to think over their experience.

Consul Albert W. Swalm, Southampton, England, writes to the State Department as follows: Imports of apples in cases at Southampton have greatly increased in the past two years, a growth to which the orchardists of the State of Washington have contributed largely. Oregon wrapped and selected case apples have been on the English market for years and have won an enviable place. The Washington fruit has closed its third season, with the quality all that could be desired and the packing excellent.

The financial results of the second year of this fruit in the Southampton market led a number of Washington growers to do their own shipping and consigning with a view to direct trading. The demoralizing effect of these indiscriminate shipments can best be shown by concrete examples. The season's first consignment of choice Washington Jonathans sold quickly at $3 per case at quayside, with a demand booked that would have taken the entire Jonathan crop from that State; but between the arrival at Southampton of the first and second consignment one of 3000 cases of extra fancy Jonathans was sent to Covent Garden, in London, and sold at auction at $1.50 or $2 per case, thus naturally demoralizing the local market. The result was that instead of a well-regulated sale of that apple at good prices throughout the season, the early buyers found themselves in competition with dealers whose fruit had cost them much less. A consignment of Spitzenbergs netted its Washington grower $2.75; soon afterward the same variety was auctioned off at Covent Garden at $2 per case, netting the grower of that shipment about $1. Another species was sold at Southampton at $1.80 net, but Covent Garden auctioned a consignment of the same kind of apples at $1.50 and less, freight and commission to be deducted.

A somewhat different result was obtained by the Washington apple known in Southampton as the "Winter Banana." Control of this variety fell into the hands of one man, do judiciously fed the consignment to the market at constantly advancing prices, the actual sales in lots being at $4 to $6 net to the producer.

England's purchases of apples from the West are of vast importance to the American orchardist. If the grower is rightly advised and follows a good business policy, he can be sure of profitable returns in the Southampton market, but he must keep control of his shipments, never allowing the Covent Garden auction to make him a victim. The producer has an unquestioned right to protect himself in the line of fair profit. To secure this protection, he must regulate his shipments to avoid glutting an otherwise profitable market.

BARLEY AFTER BEETS AND BEANS.

We have called attention to sugar beets as a factor in rotation, and we hope our readers in sections where all these can be profitably grown are taking notice. Something rather surprising in this line is the following:

Mr. Edwin Nichol, of Snape, writes to the East Anglian Daily Times: I thought it might interest some of your readers to know the results of growing barley after sugar beets. I have a field of nearly eight acres, half of which last year was sugar beet and half spring beans; the land was manured well both for the beans and sugar beet, and no manure was put on this spring, when the whole piece was sown with barley. It is a good, lightish, mixed soil, and equal all through. When the barley was threshed the results are: sugar-beet plot, 42 coombs; bean plot, 23 coombs. This difference is surely remarkable. There is a slight difference in the size of the plots of about one-eighth of an acre in favor of sugar beet, but, allowing for this, the figures are: 10½ coombs per acre after sugar beet, and six coombs per acre after beans. The quality, too, of the sugar-beet barley is better than the bean barley by about 1s. per coomb, and as the sugar-beet barley has been bought for Messrs. Bass, it is evident the quality is all right. The tops of the sugar beet (about fourteen tons per acre) were ploughed in last autumn, and it is to this I attribute the extraordinary difference in results, as on our light soils the vegetable mould seems to be the best of manure. One gentleman has stated that fourteen tons of tops was impossible with sugar beet, but anyone who has seen sugar beet topped knows it is cut through at a point which the top and the root will balance on the finger; hence a crop of fourteen tons means fourteen tons tops, and so on.

THE GREAT LAND AND IRRIGATION SHOW.

The third great annual Land and Irrigation Show, which has been holding the boards at the Coliseum in Chicago for the past month, closed December 9th after the most interesting and successful season thus far inaugurated. More than 200,000 persons passed through the gates of the Exposition this year, totally eclipsing all former records of attendance. Of these over 150,000, or 75%, were interested auditors in the lecture halls maintained by the Southern Pacific railroad lines, where they were entertained with descriptions, moving pictures and stereopticon views of the vast territory covered by these lines.

Twenty thousand dollars was spent by the transportation company in the construction and equipment of free lecture halls, in which thirty-minute talks were given by representatives of different California communities. In all, 473 lectures were given—many of them illustrated—and the amount of literature distributed is estimated to have been close to two million pieces. The attendance at the lectures exceeded that of last year by fifty thousand.

California elicited more interest, inquiry and enthusiasm than any other section, though liberal time was devoted to Nevada, Utah, Colorado, Washington, Oregon, Texas and other Western States. On "Texas Day," for instance, one of the leading speakers was Judge Robert S. Lovett, chairman of the executive board of the Southern Pacific, who described his recent "swing round the circle" to an immense crowd assembled in one of the lecture rooms. Other speakers—railroad men, chamber of commerce officials, farmers and merchants—pointed out the advantages of the West.

Fifty-five thousand visitors passed through the turnstiles on "California Day" at the Land Show. Once inside, they were presented with liberal samples of California products—fruits, berries, wines, nuts, raisins, etc.—together with many pieces of attractive literature, describing the Golden State. All of this material was transported to Chicago free of charge, the railroads making this a part of their contribution toward the success of the big show.

RAIN

A glorious rain has drenched the State, making prospects excellent for a banner year.

Before long we will be swamped with orders for nursery stock of every description. There is already an unprecedented demand for fruit trees, so it will pay you to

Place Your Orders Now!

We have a magnificent stock on hand and are prepared to fill your orders for any quantity.

TREES

Every Variety
Fruit and Ornamental
Shrubbery
Plants and Vines
Roses, Palms, Etc.

We are authorized propagators of Luther Burbank's fruit introductions. Our stock of the 1911-12 novelties is limited and we urge your immediate reservation of trees for this season's planting. Among the new novelties offered for the first time this season, are the "Goldridge" Apple, "Abundance" Cherry, "Leader" Peach, "National" Peach and the "Conquest" new stoneless Prune. We will be glad to tell you further particulars and prices.

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Price 25c postpaid. An invaluable book to growers of all classes of trees and plants. Contains 120 pages. Illustrated in colors. Write for it today.



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Briefly describes and prices all stock carried by us.

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How Our Foreign Competitors Handle Oranges.

From a Report by Consul ROBERT FRAZER, Jr., Valencia, Spain, to the U. S. State Department.

PACKING VALENCIA FRUIT.—American manufacturers, attracted by the importance of the export trade of this region, frequently offer for sale a great variety of box-making and wiring machinery, veneer knife machines, and similar appliances destined to supplant to a great extent the hand labor now employed in every department of Valencia fruit packing. A study of the methods and cost of packing and the labor conditions prevailing here will explain why the demand for box preparing and packing machinery is still so limited.

The total number of boxes required for the export trade alone of the principal fruit and vegetable products of this coast, including oranges, onions, mandarins, raisins, almonds, melons, and tomatoes, exceeds 14,000,000 annually. To supply material, the pine forests that formerly covered the watersheds of the rivers Turia and Jucar have been used for 40 years, and as practically no replanting was effected to replace the felled timber, there is scarcely an available forest tree now standing within 150 miles of this city.

A standard orange case of three compartments, measuring 39.37 inches in length, 12.2 inches high, and 15.35 inches wide, costs about 22 cents retail, and has not varied more than 3 cents in value during the past 20 years. When increasing scarcity of timber in the locality or higher transportation rates for haulage from greater distance overland produced increase of prices, supplies have been brought from sea, first from the Balearic Islands, then from higher Catalonia and the Spanish Pyrenees, and later in the form of shooks from sawmills on both banks of the river Minho, which separates Portugal from Spanish Galicia, supplemented by the importation of pine logs from Corsica.

With the sole exception of the sawmills where band saws prepare box shooks, no machinery is employed in harvesting, grading, papering, boxing, transportation, or shipping of Valencia oranges, onions, or other vegetable products exported in a natural state from this district.

BUYING AND PICKING ORANGES.—The gathering of oranges for export usually begins about the 25th of October when the fruit is only partly colored. The few days it is held in the packing stores and the 8 to 10 days of the voyage to British markets are generally sufficient to complete the pale yellow tint which characterizes first shipments of immature fruit. Oranges are purchased by packers from the growers by weight or count, according to the custom prevailing in different localities. The standard fruit weight is the Valencia arroba of about 28 pounds, and the count for oranges is per 1000.

Another system of purchase is by sight, a traditional form of contract in which there is much speculation and guesswork, as the success of the purchase, from the packer's point of view, depends on the accuracy of a trained eye in estimating the probable number and weight of oranges hanging on the trees in a whole orchard, which the purchaser buys for a lump sum in cash, taking all the risks of wind and weather until it suits him to pick the fruit. The chances, however, of taking advantage of the grower are usually very small, as the latter spends the greater part of his time in his orchard and frequently actually counts the oranges on each tree before closing a contract of this nature.

Oranges are gathered in flexible baskets of palm leaf or esparto and are transported to the packing store in carts of three stories. The lowest is a suspended floor between the wheels, reaching to within one foot of the ground, and each floor accommodates about 16 baskets, each containing 30 to 35 pounds of oranges. In the store the fruit is piled in heaps 2 to 3 feet high and left to "purge" two or three days, according to the relative moisture or dryness of the weather conditions at time of harvesting. The purging is really incipient fermentation, in which the excess of moisture in the skin of the orange exudes through the pores, leaving it dryer, more flexible, and better adapted to the very tight packing in Valencia standard cases, which average about 165 pounds of fruit each.

GRADING AND PAPERING.—Both grading and papering of oranges are done by hand, by women earning 16 to 18 cents a day. Attempts to introduce machines into these departments have not been successful, as they were not considered compatible with the extreme care with which fruit showing the smallest damage or tendency to decay must be eliminated in handling. In the great importing markets of Valencia oranges, such as Liverpool, London and Hamburg, 1% of waste fruit in a box is sufficient to have it classified as seconds, which means a depreciation in market value of at least 25 cents per case.

Silk paper for wrapping, formerly imported from France, is now produced altogether in this country, mostly at Alcoy, in this consular district. The cost at present averages about $12.50 per bale of 30 reams, which supply sufficient paper for 250 cases of oranges. The practice, now very general, of having the paper stamped by lithographic printing in gold and colors, with the name and brand of the packer on each orange, adds materially to the expense of packing, not only owing to the cost of printing, amounting to $6 to $13.50 per bale, according to the size of stamp and number of colors required, but also to the additional time necessary to box the fruit, as the rows have to be arranged with almost mathematical precision so as to show the stamps of one row in symmetrical relation to those of the opposite row.

COST OF MARKETING 100 CASES OF ORANGES.—The total average cost of labor, packing materials, transportation and shipping charges, and all other expenses incurred, exclusive of the value of fruit, to place daily 100 case of Valencia oranges f. o. b. this port are as follows:

100 box shooks	135.00
4 carpenters	12.00
8 women graders	8.00
16 paperers	16.00
8 packers	11.00
4 girls to supply packers with fruit	.75
2 girls to carry baskets of papered fruit to boxing department	.75
Gold-stamped paper	42.00
Nails	8.00
Cordage to bind ends of boxes	5.00
Esparto ropes for tying boxes	12.00
25 fruit pickers	35.00
Carting fruit to packing stores	25.00
Transportation to shipping wharves	50.00
Shipping charges	32.00
Total	392.50

At current exchange the cost is equal to about $70.65 United States currency.

The usual proportion of the two different grades of Valencia oranges is 60% of the 420 size and 40% of the 714 size. The latter, which is a smaller sized fruit, is packed in a bigger case measuring 108

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That's the QUESTION

Make your WANTS Known to us—and We Do the Rest. We Suggest As MONEY-MAKERS:

FIG TREES—Either Calimyrna, White Adriatic or Black Mission.
PEAR TREES—BARTLETT, "the Get Rich Quick Variety."
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GRAPE VINES—Table, Raisin, and Wine Varieties.

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LILLY'S "NEW WHITE QUEEN" ONION. A very early small round variety of fine, crisp flesh with deliciously mild flavor. A great favorite for the home garden, easily grown and matured.

The above three varieties are all regular 10 cent packages. We offer the three for 10 cents **to introduce.** Send money order or stamps.

Catalogue Ready for Mailing, Free.

Send for a copy of Lilly's Annual Seed Book, 126 pages, fully illustrated, with cultural directions.

Lilly's Seeds are the Standard of the West. They have given satisfaction to farmers for over a decade. They are particularly adapted to the climatic and soil conditions of the West. Our seeds are tested by us before being offered for sale. We have an expert seed tester, a government graduate.

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J AND KERN STREETS, FRESNO, CAL.

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Specialty in

BARTLETT PEARS, YELLOW NEWTOWN and GRAVENSTEIN APPLES.

A full line of

COMMERCIAL ORCHARD TREES

Send list of wants for special prices. Send for Illustrated, Descriptive Catalog, free if this paper is mentioned.

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EUCALYPTUS PINES, CYPRESS

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Two Grain Drills for sale—cheap.

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Acetylene Lime in putty form in iron drums
275 lbs. including drum 65 cents
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by 36 by 41 centimeters (42.52 by 14.17 by 16.14 inches), and the average net weight or oranges packed in the proportions given is about 165 pounds per case.

BINDING MATERIALS USED.—Exports of oranges from Valencia reached last year about 6,000,000 cases, equivalent to about 14,000,000 California boxes. Esparto grass, for which no substitute has yet been found for tying friut boxes so economically and effectively, is a spontaneous growth on the forest wastes and arid mountain lands of Murcia, Jaen, Alicante and Valencia. It is boiled or steamed or steeped in water and afterward dried in preparing it for ropes or the soles of sandals, and it is remarkably tough and resilient. The rope is put up in bales of 72 ties, each tie furnishing sufficient rope for two orange cases or about 150 cases per bale, at a cost of $3.25. This type of rope is also considered a valuable auxiliary in protecting fruit boxes from the jolts and friction of transportation over bad roads to the port, as well as from the rough handling they experience in shipping and unshipping. Orange and onion boxes are passed from the wharf to lighters by means of hand derricks or cranes, each box being hooked by the rope and swung on to the lighter separately.

While Calcutta and similar dry hides were obtainable here at 40 cents or less per kilo, strips of such hides were invariably used for binding the ends of fruit boxes, but since prices have advanced, plaits of jute cordage are substituted for hide. Sufficient cordage to bind 100 boxes costs only 90 cents.

FANCY BOXES FOR MANDARINS.—Another form of fruit package for which there is a steadily growing demand on British and central European markets is the fancy box of Valencia mandarins containing 25 fruits put up in tinfoil, with laced or embossed paper edging and lithographic chromos. The demand is principally for Christmas markets and New Year gifts, the number of boxes shipped or railed overland to France amounting to 1,200,000 annually. The mandarin is a much smaller and more delicate fruit than the orange, and as the tree is smaller and the crop more precarious, the first cost of the fruit is usually 50% higher. The principal markets for fancy packed mandarins are Paris, London, Liverpool, Glasgow and Hamburg. Twenty small boxes are inclosed in a slatted crate for shipping purposes, and in the calculation of freight three mandarin crates are equivalent to two orange cases.

The mandarin box is square, each side being 9.84 to 11.8 inches in length and 15.7 to 17.7 inches high, according to the size of the fruit, which is graded to a millimeter. The tops and bottoms of the boxes are 0.157 inch thick, the two ends 0.43 to 0.47 inch, and the sides 0.197 inch thick. The material of these boxes is imported pine planks, formerly from the United States or Canada, but lately mostly from Austria and Russia, as American spruce has advanced in price about 30% during the last ten years.

It is customary for the packer of fancy mandarin boxes to purchase the planks at a lumber yard and contract with the sawmill to prepare the shooks at a fixed rate per 1000 shooks. At present 1000 planks of 3 by 9 inches standard measurement and 4 meters long cost $830 and yield about 40,000 mandarin box shooks, which the sawmill delivers at a cost of $5.40 per 1000 for the labor of preparation. An experienced carpenter can put together in a day of 10 hours 1300 boxes, driving in by hand about 20,000 nails and earning 55 cents.

To pack an average of 3000 boxes daily some 70 women and young girls are employed at wages of 14 to 22 cents, according to capabilities and experience. The workers are distributed in groups of 8 to 12 each under an overseer and take charge respectively of grading the fruit, dressing the boxes with laced papers, chromos and artificial flowers, silver papering the mandarins and boxing them. Carpenters can be found to contract the whole carpenter work of the 20 mandarin boxes and the covering crate at the rate of 5 cents per crate complete. Crates in shooks cost 15 cents and are simply two square end boards 0.63 inch thick and 8 slats 0.7 inch wide and 0.7 inch thick. The total cost of the materials and labor of a crate of 20 boxes of mandarins placed on the shipping wharf, exclusive of fruit, is about $1.75 each.

Tin foil is the most expnsive of the materials employed in mandarin packing and the fluctuations of the tin market are so extreme that of late manufacturers refuse to contract for tin foil for future delivery. The chief source of supply at present is the Netherlands and the curcent wholesale price is about 49 cents per pound, which supplies sufficient tin foil for some 2000 mandarins of the 1.97 inch diameter size. The imports of tin foil, cut into squares for the special trade of fancy mandarin packing, amounted last season to 33,069 pounds, which would cover about 30,000,000 mandarins.

POMEGRANATES.—Pomegranates, grown largely among the palm trees of Elche in the Province of Alicante, have been exported from this district for over 50 years, but have never been widely appreciated by the fruit-consuming public of importing countries, and the demand for them is still very limited. A pomegranate box is about the size of an orange case, but has only two compartments and is completely closed to prevent the loss of the rice hulls in which the fruit is packed. The fruit is graded for packing in three classifications, which count, respectively, 120, 240 and 360 pomegranates to the box, with a net weight of about 130 pounds. The cost of box, packing and shipment is 38 cents per box.

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A trial will convince you.

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We take no chances of incurring the orchardist's displeasure by filling orders with Eastern stock, thereby risking our growing reputation.

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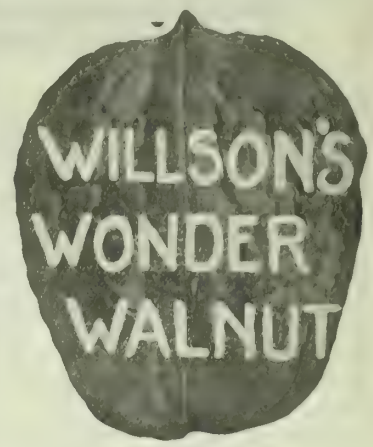
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Bears EARLIEST and most CONTINUOUSLY heavy crops of any walnut in existence. It has the size, kernel, thin shell and QUALITY to command the highest price and hold it. Even the smallest are "FANCY GRADE" among other varieties.

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Bartletts, Gravensteins, Peaches, Walnuts, Royal Annes, French Prunes, Late Apples, etc. Resistant Cuttings, Bench Grafts, Resistant Vines. Stock all true to name and free from disease. Selling rapidly.

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PASADENA, CAL. R. F. D.

AGRICULTURAL REVIEW.

With the Fruit Men.

Horticultural Commissioner Earle Mills of Butte county reports that the fumigating outfit purchased by the supervisors is kept at work. Prices for its use run from 25 cents per tree for 30 trees or less, to 10 cents per tree for 120 trees or over.

The first full car of oranges sent from Ducor, Tulare county, went out December 8.

The first car of apples shipped direct from Hollister, San Benito county, to London, went out this fall.

Meetings have been called by J. W. Jeffrey at Lodi, Winters and Gridley to discuss the new Deciduous Protective League.

It is announced that R. S. Woglum of the U. S. Bureau of Entomology will return to California to continue his fumigation investigations. He has succeeded in bringing to this country some parasites of the white fly, which are now at Washington.

George Roup of Porterville is planting out 125 acres to olives.

The Santa Fe is enlarging its precooling plant at San Bernardino.

The California Almond Growers' Exchange states that all their almonds have been sold.

The Sanger Chamber of Commerce has taken up the work of promoting the Raisin Exchange, and many growers in the vicinity have become members.

Horticultural Commissioner Gallaway of Sonoma county reports that more planting will be done in the county this year than last. It is stated that a number of insect and fungus pests are present in the county that the growers are not combating sufficiently. Fertilizing is being done quite extensively this year.

Receiver W. R. Williams of the defunct Raisin Growers' Association reports that he has on hand for distribution to members $126,811.81 and has asked the court for permission to make distribution of the same.

The committee on agriculture at the legislature has asked that Congress be memoralized to assist in combating the Mediterranean fruit fly in Hawaii.

The grapes sent East in redwood sawdust have been found to be in fine condition.

The fruit trees of San Joaquin county are in first-class condition, according to the report of Horticultural Commissioner William Garden.

The monthly report of Commissioner C W. Beers of Santa Barbara county states that the increase in the walnut crop this year is due largely to better care of the trees, and that the same is true of the lemon industry, where the production is double what it was the previous year. The olive crop will be average. The sugar campaign for 1911 amounted to 15,000 tons of sugar from 295,000 tons of beets.

Owing to the large amount of second crop Muscats harvested the output of Fresno county wineries was up to average this year.

Recent frosts in the San Joaquin are said to have been very light in the citrus belts of the valley.

Dr. F. P. Ainsworth of San Francisco is stated in papers of Tulare county to be transplanting a large number of eight-year olive trees to a tract of land recently purchased near Strathmore.

One hundred acres of oranges on Arlington Heights, Riverside county, have been sold to F. R. Yerxa of Sierra Madre for approximately $1500 per acre.

Examinations for positions as Horticultural Commissioner of four counties will be held in January. These examinations are open to all citizens of the State and are not limited to residents of the counties in which the positions are open. The examinations are as follows: For Ventura county, at Ventura, January 5; for Kern county, at Bakersfield, January 12; for Nevada county, at Nevada City, January 18; for Humboldt county, at Eureka, January 23.

The Interstate Commerce Commission has ordered the proposed increase in freight rates on lemons to the Middle West suspended until April 3.

A meeting of Placer and Nevada counties was recently held to discuss methods of improving fruit conditions in the district.

A packing-house at Fresno is reported to have made greater shipments of raisins during last week than any other single week for five years. The market for raisins is strong as a result of the demand for them.

General Agriculture.

A. E. Wishon of Bakersfield has started the irrigation of 100 acres of alfalfa near Coalinga from a well, making the first irrigating work in that vicinity.

The Cascioni brothers of San Ardo, Monterey county, are spending about $6000 on a private pumping and irrigating system.

About seven cars a day of celery have been leaving Antioch, Contra Costa county, recently. The crops are in good condition.

In the Tahoe National Forest a large amount of land is being re-forested. Over 15,000 seedlings have been set out and many seeds put in.

The rice crop of the Balfour-Guthrie Company at Biggs, Butte county, amounted to 1800 sacks this year. The Japanese rice made a larger crop than the other varieties.

The price of potatoes at Portland recently reached the highest mark for this time of the year ever received.

The Russian hop crop, according to a Government report, is as follows: First grade, 55% of full crop; second grade, 30%. third grade, 15%. The high prices are giving the growers more than average returns.

The latest report of the International Crop Reporting Board gives the wheat crop of countries of the Northern Hemisphere as 100.2, as compared with that of 1910; rye, 93.4; barley, 99.5; oats, 90.8: corn, 89.1; and rice, 109.6.

Miscellaneous.

Arrangements are being made by the directors of the Fresno County Agricultural Fair Association to extend the scope of the fair so that it will include exhibits from several other counties of the San Joaquin valley.

The Oro Electric Company is reported to be planning to build ditches to furnish water to about 10,000 acres of land near Oroville.

Large shipments have recently been received in San Bernardino of apairies which have been spending the summer in other places. They will remain in the county over winter and be shipped out again in spring.

Nine hundred bales of the Radford Peterson crop of hops were recently sold in Santa Rosa to the Uhlmanns of New York.

W. E. Stanfield, an Eastern poultry raiser and licensed judge of the American Poultry Association, is to move to the Livermore valley to raise fancy fowls. In the East he makes a specialty of White and Buff Orpingtons.

The appointment of a horticultural commission for Nevada county is being



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THE BEST SPRAYER MADE

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held up by the supervisors until an examination can be given a number of candidates for the position.

Through the erection of an alfalfa warehouse at Salida by an association of ranchers and the rise in price of alfalfa hay, sufficient money has been saved the builders to pay the cost of the structure, according to reports from local papers.

The Farmers' Union of Los Molinos, Tehama county, will establish a small cannery at that place next year to care for the surplus fruit produced in the vicinity. The new officers of the union were elected last week.

New officers were elected at the last meeting of the Tulare Grange, Mrs. Flora Sayer being chosen master and Mrs. Elsie B. Lawson overseer.

A tract of land containing 6000 acres, most of which is delta land, extending nine miles along the Sacramento river above Rio Vista, has been sold to San Francisco capitalists.

The bulletin on insect pests by the Horticultural Commission will be ready for distribution early next week.

According to a Montana exchange, all eggs sold in that State after January 1 must be classified according to age, as fresh eggs, ranch eggs, and case eggs. The first named must be less than seven days old, the second may be older, and case eggs are those that have been in cold storage or preserved in other ways.

Drilling for artesian water on the Parker Whitney ranch in Placer county is going on, the well being down over 1000 feet. Unless water is struck sooner the drilling will continue till the well is down 1500 or more feet.

The Western Apple Vinegar Company of Petaluma will have a branch factory at Sebastopol next season.

The Cloverdale Citrus Association held its annual election last week and work was begun on the citrus fair to be held next February.

J. H. Swann of Chico has installed a new incubating system at his hatchery which will give the plant a capacity of 6500 eggs. Enlargements will continue until a 20,000 capacity is reached.

Horticultural Commissioner Schell of Fresno county has completed the inspection of 27,000 trees received from other counties, all being accepted. W. H. Puleston has been appointed inspector.

Coyotes are reported to be pretty well cleared out on the west side of the San Joaquin.

The first annual show given by the Escondido Valley Poultry Association was held last week and brought out some exceptionally fine fowls.

RANCHERS HAVE FEAST.

On Thanksgiving day the new settlers of Merced Colony No. 2 joined in holding a picnic and dinner. The Co-operative Land & Trust Co. of San Francisco, which handles the Merced colonies, furnished the turkeys and many of the other edibles, and a point was made to have products grown in Merced county on the bill of fare whenever possible. Among such edibles were figs and grapes, peach and apricot preserves, pumpkin pies, pomegranates. The tract eight months ago was a large wheat field and is now the home of 46 families, coming from all parts of this State and from several others.

PETALUMA'S POULTRY SHOW.

Petaluma's poultry show was the best staged of any we visited this season. The commodious skating rink afforded ample room, fine light, and pure air. To say that the show was a good one would be superfluous, because Petaluma always has good poultry shows. Those who are in the habit of visiting shows there say, however, that the one this year was the best ever, more birds and better birds than ever before. These are the two good signs we have noted in the poultry shows all over the State, namely, a steady increase in the number of fanciers and higher standard of excellence in the stock produced.

The Patriarchs Militant band was employed to help out the fowls in furnishing music for the occasion. A goodly crowd was in attendance throughout the week.

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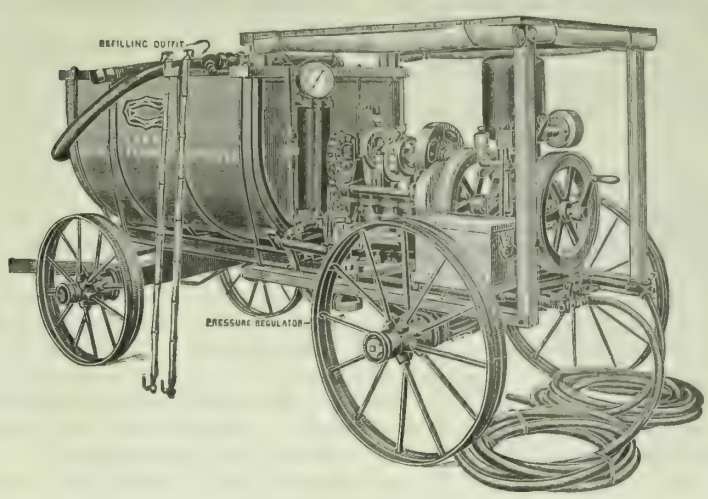
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Market Value of Concentrates for Stock Feeding.

Written for the PACIFIC RURAL PRESS
By D. J. WHITNEY.

As the dairyman or the poultry raiser finds it necessary to buy concentrated foods to supplement his alfalfa or other hay for his cows, or grain for his poultry, he is confronted by a large number of foods which it is possible for him to buy at greatly varying prices.

The purpose of purchasing such foods is to get a large amount of nourishing food in a small space, as it is known that most animals do better when they have some concentrates, besides their roughage, whether that be alfalfa, oat hay or pasturage.

The problem before the dairyman in this State in feeding is radically different from that of the Eastern dairyman. There the difficulty is to get sufficient protein in the feed, the protein being the muscle building food, that part that contains nitrogen and its compounds.

In this State alfalfa contains almost double the protein that is required, much more than it was once thought that cattle could stand without injury, and the problem is more to get concentrates that are nourishing and acceptable to the cows rather than simply a lot of protein. In fact, a big deficiency of protein in the concentrates is just as good as a whole lot, perhaps a little better, provided much alfalfa is fed and the other nutrients are present. As far as the poultry is concerned there is also a fair margin in the amount of protein that may be given and by making an appetizing mixture of concentrated foods along with the grain there is little danger of giving an unbalanced ration.

As is probably known by all dairymen, the two main parts of cattle food are protein and carbohydrates, the latter being composed of starch, sugars and similar compounds. Fats and oils are in the same class, though not coming under the same designation, and are more concentrated. Thus one pound of fat or oil is figured to be worth in feed 2.25 pounds of carbohydrates. By knowing the composition of various foods and their prices, we can thus calculate easily the amount of nutrients one gets for his money. This will, however, be affected by the appetizing qualities of the food and its digestibility, as unless animals relish the food it is not the value it should be. In the calculations given below, the wholesale price in San Francisco on a recent date is taken.

Bran, one of the most common concentrated foods, is quoted at $26 per ton. It is composed of 11.9% protein, 42% carbohydrates and 2.5% crude fat, the latter corresponding to 5.625% carbohydrates. These and others percentages of foods are taken from Henry's "Feeds and Feeding.' The percentage unaccounted for is composed of crude fibre, which has no food value, minerals, and so on. On working this out, it is seen that in a ton of bran there are about 238 pounds of protein, and the equivalent of 295.5 pounds of carbohydrates, or, taking protein at the same value as carbohydrates, 1290.5 pounds of actual nourishment. These figures, of course, are only approximate, as food of any kind will vary somewhat in composition in different places.

Middlings, at $34 per ton, are composed of 16.9% of protein, 53.6% of carbohydrates and 4.1% of fat. This will give the buyer for his money 338 pounds of protein, 1072 pounds of carbohydrates and 82 pounds of fat to the ton, or, giving fat the value of 2.25 pounds of carbohydrates as usual, 1574.5 pounds of nourishment. If the buyer desires a lot of protein in the food, this would be very good, and as a good percentage of fat is also always desirable, the middlings are further of value.

Shorts are composed of about 13% protein, 45.7 carbohydrates and 4.5% fat. This is 260 pounds of protein to the ton, 940 pounds of carbohydrates, and 90 pounds of fat, or, calculating on the system used above, for $28 per ton the buyer would get 1374.5 pounds of nourishment.

Oilcake meal, or linseed meal, is much desired in the East to furnish protein. It is also in demand by California poultrymen. It is quoted at $43 per ton and contains 31.5% of protein, 35.7% of carbohydrates, and 2.4% of fat, which will amount to 630 pounds of protein; 714 pounds of carbohydrates and 48 pounds of fat to the ton, or 1432 pounds of nourishment.

Barley, which is quoted at $40 per ton, has 8.4% protein, 65.3% carbohydrates, and 1.6% fat, equal to 1546 pounds of nourishment to the ton. Oats at $38 per ton contain 8.8% protein, 49.2% carbohydrates, and 4.3% fat, equal to 1353.5 pounds of actual nourishment to the ton. The composition of ground oats appears to be a little different, containing 10.1% protein, 52.5% carbohydrates, and 3.7% fats. This comes to 1418.5 pounds of nourishment, and the quoted price is $28 to $30 per ton. Cracked corn at about $39 per ton contains 7.8% protein, 66.8% carbohydrates, and 4.3% fat, or the big total of 1685.5 pounds of nourishment.

Alfalfa hay, to which all of these must be compared in this State, contains 10.5% protein, 40.5% carbohydrates, and 0.9% fat. This comes to 210 pounds of protein per ton, 810 pounds of carbohydrates and 18 pounds of fat, or, being calculated out, 1060.5 pounds of nourishment to the ton. The composition of the alfalfa meal, which is used as a concentrate the same as several of the other foods named above, is approximately the same as this, and at a wholesale price of $16 or so compares well with any of the others. Its great advantage as to price would, however, be somewhat offset by the fact that it is overloaded with protein for feeding in alfalfa districts, and the cows would do better if their diet contained a fair amount of non-alfalfa products.

An extremely valuable concentrate that is available for a small price in this State is cocoanut cake. The composition of this may vary with different lots, and the thoroughness with which the oil has been removed. The average composition is given as 15.4% protein, 41.2% carbohydrates, and 10.7% fat, making it desirable for the high protein content, when this is required, and the high fat content under almost all conditions. Calculating these values out on the same basis as the other foods, there will be 1613.5 pounds of nourishment to the ton, while the price is quoted at only $16.50 wholesale.

Putting the prices of the various concentrates named with the amount of nutrients they contained, we have the following: Bran at $26 per ton, 49.7 pounds of nutrients for a dollar; middlings at $34 per ton, 46.3 pounds for a dollar; shorts at $28 per ton, 48.3 pounds for a dollar; linseed oil cake at $43 per ton, 33.3 pounds for a dollar; barley at $40 per ton, 38.6 pounds of nourishment for a dollar; oats at $38 per ton, 35.6 pounds for a dollar; ground oats at $28 per ton, 50.7 pounds for a dollar; cracked corn at $39 per ton, 43.2 pounds for a dollar; cocoanut cake at $16.50 per ton, 97.8 pounds for a dollar, and alfalfa meal at $16 per ton, 66.3 pounds.

With any variation in the above, or in the retail prices, the amount of the nutrients received for a given amount of money would also vary, and as chemical composition is not the only thing to be considered, this system of figuring can hardly be used as an accurate basis for buying, unless in connection with the knowledge of how the cattle would relish the feed. If simply furnishing food were the problem, nothing could be cheaper than the alfalfa hay or fresh alfalfa, but cheap food with a favorable composition chemically will be of little vaue unless relished by the stock.

The choice of a concentrate, as referred to in the beginning, must in this State be chosen not so much as to obtain protein as to furnish the cattle with a nourishing and attractive feed, and in the alfalfa districts a small proportion of protein is perhaps better than a large proportion. In the coast region, where natural pasture and hay from grain provide the roughage, the Eastern method ot supplying a large amount of protein should be followed, and a different selection of food made than in the alfalfa districts.

The proposition of establishing a condensary at Willows, Glenn county, is being discussed.

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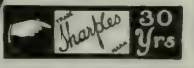
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The Fresno Scraper



Send for Raisin Machinery Catalogue.

FRESNO AGRICULTURAL WORKS,

FRESNO, CALIFORNIA.

Rational Plan for Protection for Wool Growers.

The following resolutions were aodpted by the California Sheep and Wool Growers' Association at their Fourth Annual Convention, held in San Francisco, Cal., November 27, 1911, as outlined in the PACIFIC RURAL PRESS of December 2:

Whereas, The skeleton of schedule "K" was framed more than forty years ago, when the shrinkage on Merino wools imported into this country was estimated to be 66⅔%.

Whereas, A duty of eleven (11) cents per pound in the grease has been imposed on wools of the Merino cross, and thirty-three (33) cents per pound on scoured wools of the same class, on the assumption that it takes three pounds of wool in the grease to make one pound of scoured wool.

Whereas, The percentage of shrinkage, by careful breeding, selecting, sorting and skirting, has been so changed that for many years the wools which have been imported have had an average shrinkage of about thirty-nine (39) per cent, instead of sixty-six and two-thirds per cent, giving the importer sixty-one pounds of scoured wool, instead of thirty-three and one-third, for the $11.00 duty he pays on one hundred pounds of wool in the grease; thus making duty cost to importer eighteen (18) cents instead of thirty-three (33) cents per scoured pound.

Whereas, It is assumed and claimed that the American grower is protected to the amount of eleven (11) cents per pound, he is, as a matter of fact, only protected to half this amount, or less.

Whereas, Seventy-five per cent of our total wool production is grown west of the Mississippi river, thereby taking a freight rate of about two cents per pound in the grease to transport it to the Eastern market, as compared with a freight rate of about three-quarters of a cent per pound from the foreign ports to our market, thus making a freight differential of one and one-quarter cents per pound in the grease, or five cents per scoured pound, in favor of the foreign wool grower, which freight differential, when deducted from out tariff protection, leaves the American grower an actual protection of but four and one-quarter cents per grease pound, or thirteen cents per scoured pound.

Whereas, Without adequate protection to the American flockmaster against the cheap ranges and cheap labor of foreign countries, his business must go to the wall and his flocks to the slaughter houses, thus turning the industry over to foreign flockmasters, thereby sacrificing a business which, once destroyed, cannot be built up again in less than an ordinary lifetime.

Whereas, The consumer is entitled to know what he is buying, therefore we favor the enactment of a law providing that all goods made wholly or in part of wool shall be so marked as to indicate the percentage of wool and wool products used in their manufacture; therefore, be it

Resolved, by the California Sheep and Wool Growers' Association in convention assembled, that, to save our business from destruction and utter ruin, we must have protection covering the difference in cost of production and marketing here and abroad, which protection can only be secured by arranging a specific duty on the scoured pound basis.

BUTTERMILK PAINT.

G. E. Frevert, Acting Dairyman, Idaho University Experiment Station, writes the following:

Among the many uses that buttermilk may be put to is the manufacture of buttermilk paint. The adhesive qualities of the casein in buttermilk render it very useful in the making of paint for fences and outbuildings.

The following formula has been found to give very good results at a very low cost: one gallon of buttermilk, three pounds of portland cement, and sufficient coloring matter to give the desired color. The paint should be applied soon after it is made and should be stirred a great deal while painting. One difficulty is that the cement has a tendency to settle to the bottom of the bucket unless it is stirred considerably. The paint requires about six hours for drying, after which time it will shed water very successfully.

A coat of this paint will not only help to preserve the wood, but will greatly improve the looks of fences, and outbuildings. Venetian red or almost any other color may be used. The paint does not give a very glossy surface, so would not be very good for painting anything on which a fine finish is desired.

Buttermilk paint has been found to be good in covering injuries on trees after pruning. In this case, however, the amount of cement should be increased so as to make the paint quite thick.

RAISING A MILK-LESS CALF.

Now that we have wire-less telegraphs, dust-less dusters, the milk-less calf comes along naturally—except that there is nothing new about it except to determine whether it is worth what it costs or not. A writer for the Breeder's Gazette has this about it:

An excellent way to feed young calves where the amount of skim-milk available is limited is to mix together in equal parts linseed meal and wheat or oat shorts—preferably the latter. Each day a pound of this mixture may be thoroughly soaked with warm water and stirred into a thin gruel. At feeding time half of the gruel should be mixed with half of the available skim-milk. To this should be added a teaspoonful of soluble blood flour and the whole fed to the calf.

Every few days of each week the mixture of linseed meal and shorts may be increased slightly by adding a tablespoonful in making the gruel, so long as the calf drinks the milk substitute with avidity. Bright clover hay should at all times be available. In addition to this, at each feeding period as well as at noon the calf should be offered a handful of a grain mixture composed of equal parts of cracked corn, whole oats, bran, and oil-meal. It is surprising how readily young calves learn to eat hay and grain in addition to drinking the fluid food offered them.

If the milk-pails and the feed-boxes are kept sweet and clean at all times, and the calf's stall is always clean and dry and well bedded, and feed is supplied at regular intervals, the youngster will thrive exceedingly well.

FOR SALE

Solid colored bull calf sired by Raleigh's King, a son of Raleigh's Fairy Boy 83767, who sold for $8200 in T. S. Cooper's 1910 sale, and undefeated champion in the show ring the same year—out of Blue Fox's Golden Rosebay, half-sister of the famous $15,000 bull, Noble of Oaklands.

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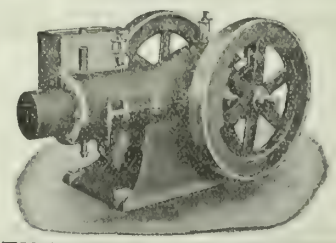
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THE BUTTER TRADE.

The prospects for exporting butter referred to in the last issue of the PACIFIC RURAL PRESS have shown no great change during the week. In spite of the great difference in the quotations for butter between here and the Eastern markets, no great movement is expected for at least some time, and until the scarcity of butter and high prices promise to continue to protect the shipper, little will probably be done. This is due to two things: first, the fact that no regular movement of butter has been going on and a special deal has to be made for each shipment sent, and, secondly, that the Eastern traders are not in the habit of receiving butter from here and do not consider California butter in fixing the price and will not have to bear any loss through the fall of price between time of shipping and receipt.

Next year conditions are expected to improve, as the increase in local production will be such as to make large exports an absolute necessity and large Eastern dealers will find it profitable to have agents or trade connections here that will supply them with butter whenever the price will justify it. By being responsible for this they will see that the price does not fall so that they will lose by the shipments, look to this State for a regular supply of butter, and buy it whenever the difference of 2½ cents or more per pound in price is justified by demand and supply. This will prevent a difference of the 6 cents or so that exists at the present time, except for occasional short intervals.

There passed through San Francisco last week about 480,000 pounds of New Zealand butter, which was bound for Vancouver, and this will probably be put down as receipts by the San Francisco Wholesale Dairy Produce Exchange, although not sold here. The Canadian tariff is a barrier to the California butter, which would otherwise be sent there, as it is now to the Pacific Northwest.

The present difference in quotations between Portland and here for extras is said to be due to the desire of Portland dealers to get rid of storage butter and their refusal to allow extras from other places to come in and lower the prices. This is keeping the shipments from here to the lower grades, or storage.

PENNANT STRAIN
BARRED AND BUFF PLYMOUTH ROCKS
At Oakland won 1st Cockerel, 1st Hen, 1st Pullet, 3 entries on Buffs.
On Barred, won 2nd Cock, 4th Cockerel, 1st, 2nd, 3rd, 4th and 5th Pullets, making a clean sweep on Pullets.
Do you want some of these kind? A few choice cockerels for sale. Now booking egg orders.
Mating List now ready for mailing. Write for one; it's free.
JAS. M. MONTGOMERY,
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FOR SALE
Seven Hundred two-year-old Hens. THOROUGHBRED S. C. WHITE LEGHORNS. Will sell in lots to suit customers. Address
SPRING VALLEY POULTRY FARM
Rocklin, California.

WHO WANTS A NEW SHEEP OR GOAT?

Consul Alfred A. Winslow, of Valparaiso, Chile, writes to the State Department: "Attention is called to what might be a profitable industry in the United States, that of raising guanacos for the most excellent wool they produce. In speaking of this matter the South Pacific Mail of this city says:

"Steps are under way for the establishment of a new industry in Belgium, the initial move having been made at Brussels of breeding the guanaco for its wool, and with such marked success that a young male guanaco was recently sold there for 380 francs ($73). The animal produces a fine soft wool, 4 to 6 inches long, and by careful methods a herd of guanacos can be made more profitable to the farmer than a flock of sheep. As they are indigenous to Argentina, Chile, and Peru, it is not improbable that thousands of guanacos that roam in a wild state in flocks on the South American pampas and which are very easily tamed may be captured and cared for as sheep, as their wool is three times as valuable as that of the latter, and it may become an important export from the west coast of south America.'

"These animals are hardy and should stand the climate in most parts of the United States. Guanaco-fur rugs are considered quite valuable in this part of the world and would be a luxury in American homes."

[California should have an eye on the wan-a-co: it ought to work in the Waukeen!—EDITOR.]

VALUE OF DRIED MILK.

Concerning the rather new dairy product known as powdered milk, which is being produced on a large scale in Humboldt county, Dr. L. L. Van Slyke, at a New York conference on milk problems, said: In the production of powdered milk several processes are being employed. The product which is familiar to the speaker comes into market as a very fine, dry, cream-colored powder. It has a slight odor, suggesting the smell of buttered popcorn when first-class butter is used. One pound of powder makes four quarts of milk, containing about 3½% of fat and 12.5% or more of solids. When put upon the surface of cold water and stirred with a rotary egg-beater, the powder goes into solution rapidly. The dissolved milk has a very slight (but not unpleasant) taste not present in fresh milk. If the milk is very cold this taste does not appear to be so noticeable. Without the addition of any foreign substance, the process permits the milk to retain its fundamental properties; the fat globules retain their individuality and rise to form cream; the casein is precipitated by the action of rennet; the albumen is not coagulated by heat; the milk-sugar does not appear to be changed in any way; enzymes present in the milk are not destroyed. The degree of heat employed is sufficient to insure practical destruction of all living micro-organisms. It is said that the product is good only when made from clean, fresh milk. The present retail cost is such as to make milk prepared from it cost about 10 cents per quart. Without further mention of details, it is obvious that milk powder promises to furnish a solution of some of the vexing problems of milk supply in large cities.

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S. C. WHITE LEGHORNS a specialty. If you want large, strong, healthy chicks; CHICKS THAT ARE WELL HATCHED from mature, healthy, and strong stock which has been bred for utility purposes for years, write to me. I want your order, for I know I can satisfy your wants, if you want the best CHICKS THAT WILL GROW, for I have satisfied hundreds of others. I am now booking orders for future delivery. Capacity of over 30,000, which is an increase of over 200% in the last two years.
THE THOMAS HATCHERY, Petaluma, Cal., Rural Rt. 2.
Mention Pacific Rural Press.

LIVE STOCK NOTES.

The Tesla Cattle Company has been adding more stock to its ranges in lower Alameda county. The cattle were purchased from Kern county ranges.

The Livermore Valley Percheron Horse Company has purchased the Percheron stallion Jean Bart from J. Crouch & Son. The stallion weighs 2150 pounds and took first prize in the State Fair in the aged class. He is coal black in color.

Dr. D. B. Mazza, live stock inspector of San Luis Obispo county, in his annual report states that within the year he has found nine cases of glanders, seven cases of black leg, 30 of anthrax, six of lumpy jaw, two of pyameic infection, 30 of infectious pneumonia, eight of fileria bronchitis, and four of Texas fever. In the year, 239 herds of cattle were dipped, representing 27,187 head.

That the importing of some stock has unfortunate drawbacks was shown when Stewart C. Cambpell of San Jose was arraigned in court for maintaining a public nuisance in the shape of a number of imported jacks which disturbed the neighbors' slumbers by braying at all hours of the night.

The Oregon Agricultural College is bringing to a conclusion a series of experiments concerning the value of shorts and middlings, which are the cheapest concentrates in eastern Oregon, as foods for fattening hogs. A carload of steers for fattening experiments has also been received recently.

The American Shropshire Association, by an overwhelming vote, decided to reorganize from a stock to a membership association.

A new association, the American Romney Marsh Breeders, was formed at the International Live Stock Show, by owners of registered sheep of this breed. At the same show a number of meetings of other live stock associations were held, including the Aberdeen-Angus Cattle Breeders' Association, the American Rambouillet Sheep Breeders, the American Oxford Down Record Association, the Berkshire Association, and the Clydsdale Breeders' Association.

DAIRY NOTES

San Francisco dairy inspectors have been making an investigation of the quality of milk sold in the restaurants, and as a result haled more than a dozen into court, one day last week, to explain why their milk should contain a surplus of water and a deficiency of butter-fat.

The Holtville, Imperial county, creamery is paying out about $2000 to $2200 per month, according to the Holtville Tribune, and 2250 pounds of butter per day is being sent to Los Angeles, besides local sales.

At the meeting of the Tulare County Dairymen's Association it was voted that first-grade cream should contain 30% or more of fat, be delivered at a temperature of 75 degrees or less in sanitary containers, and be otherwise in good condition. The Creamerymen's Association will take up the proposition of basing prices on graded cream later.

The dairy of H. A. Sawyer of Riverside has been granted the privilege of producing certified milk by the Riverside County Medical Society.

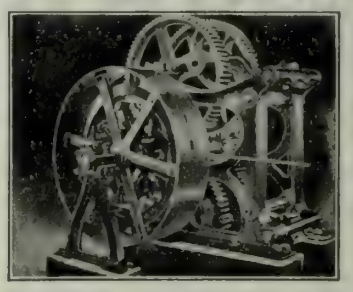
The directors of the Ferndale Fair Association are to begin work upon the next annual fair shortly. After paying all expenses on the fair recently held, a surplus of about a thousand dollars is reported in the treasury.

Several thousand dollars are said to have been subscribed for the establishment of a co-operative creamery at Red Bluff, Tehama county. Several months ago a private creamery company was formed, but nothing done, and the co-operative concern was started in its place.

The milk rates for San Diego consumers have been raised about 20 per cent. The milk men claim that the raise in price is the result of restrictions placed upon them through a recent dairy ordinance.

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we will illustrate the Dow Non-Pulsating Pump. Its simplicity and economy are unequalled.
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Lupine or Poison Pea.

To the Editor: I understood, from an old subscriber, that you published an article on lupine poisoning some four or five years ago. Would it be asking too much to publish it again in the near future? I believe it would do a lot of good, as there has been a great deal of trouble here lately attributed to it.

Lower Lake, Cal. R. M. Dow.

POISONOUS PLANTS.—Our subscribers apparently refer to a long article published in our issue of December 5 and December 12, 1908, in which a northern breeder gives in detail his experience with poisonous plants found on the Pacific coast. We select the paragraph describing the particular plant Mr. Dow mentions, as follows: "One of the most poisonous plants is the Lupine or wild pea. This plant is ordinarily not looked upon as poisonous; and, in fact, I know of districts where sheep range among it constantly, and where it is largely used for hay, and does not occasion any loss of consequence, but should sheep unacquainted and unaccustomed to consuming this plant be turned upon such range the result would be appalling. I recall a train load of Oregon sheep unloaded at a point in Montana where there grew immense quantites of Lupine, and something like three thousand sheep died within a few hours. These sheep, of course, were very hungry, were not used to eating Lupine, and consequently under these conditions it was very fatal. Lupine grows throughout the entire mountain country and is extremely abundant in the foothills. The plant is probably poisonous at all seasons of the year, but more especially when the peas are ripening in the pods. I believe it is the one plant that occasions more loss in Oregon than all others combined except the Death Camas."

WHAT DR. HALL THINKS OF IT.—Dr. H. M. Hall, botanist of the University Experiment Station, in answer to a request of ours, sends this note: "In again looking over this account of the Lupine or 'poison pea,' it seems to me that the writer missed the main point, which is that the poisonous property resides in the seeds. This is the reason why lupine hay is often fed to stock without danger, while occasionally it is exceedingly poisonous. If it happens to be cut before the seed forms, or after the seed has shattered from the pods, it is, of course, entirely harmless.

"If you will pardon another suggestion, it would be that since the season for Lupine poisoning is now practically over, it might be well to defer printing very much about it until next summer, when, if you like, I shall be glad to prepare a statement for you in regard to Lupine poisoning which might be illustrated with one or two figures bringing out the characters by which Lupines may be known." [We shall, of course, be glad to have Dr. Hall's account at the time when it will be of most good.—EDITOR.]

SYMPTOMS, REMEDIES AND PREVENTIVES.—Possibly our readers are looking as much for treatments as for plant descriptions in the article which we are pleased to find so well remembered. Therefore we add the paragraphs on symptoms, remedies and preventives:

"With all the plants above mentioned, except the Loco, the symptoms of poisoning are exhibited within a few minutes to several hours after the plants have been consumed, and while the symptoms occasioned by the eating of different plants are to a slight extent different, yet in general they may be summed up as follows:

"Probably the first symptoms to attract attention is the aimless walking of the sheep through the herd with the head thrown up and slightly drawn backward; the animal froths more or less at the mouth, and some bloating may be noticed. As the disease progresses, we see more or less evidence of convulsions, the animal trembling, and finally falling into a spasm, from which it may apparently recover, only to develop again in a more violent form. These intermittent spasms may continue several hours, the animal finally becoming very weak and exhausted, lies flat upon its side until complete paralysis ensues. The length of time required for the animal to die depends upon the amount and kinds of the plant eaten, as well as the amount of food that was contained in the stomach at the time the poison was eaten. The treatment for affected animals is fairly satisfactory, and where any considerable number are affected it should always be resorted to. In the event that the animal is much bloated it may be necessary to puncture the left side at a point between the hip and the ribs, thus allowing the gas to escape. This is particularly necessary for cattle and may be resorted to in the case of sheep.

REMEDY FOR ALL PLANT POISONS.—"It is probable that the one great remedy for all of these cases of plant poisoning is permanganate of potash. This should be given to sheep in about 6 to 8 grain doses, and may be repeated in 30 minutes if relief is not obtained. Eight grains of this substance should be dissolved in about one-half pint of water, and given as a drench, and may be repeated two or three times, 30 minutes apart. It is seldom, however, that more than two doses are required. In the case of cattle, the dose should be about three times this size.

"Many of our sheepmen annually expect considerable loss when their sheep are first started upon the trail. Permanganate of potash is an effective remedy. It can be obtained from any drug store, put up in doses of eight grains, in gelatin capsules. These can be carried by the herder without any inconvenience, and administered by him to all animals that get poisoned. I have seen the antidote administered even after the sheep had become exhausted and was unable to rise from the ground, and within an hour they had entirely recovered. Not long since, in eastern Oregon, a flockmaster changed his sheep from level lands to the foothills, and in less than 24 hours lost 250 head. As usual, he attributed this loss to poisoning by saltpeter, which was out of the question, and had he only been supplied with the proper medicine, two-thirds of these sheep could have been saved.

TO AVERT TROUBLE.—"While treatment is fairly satisfactory, it seems essential that great care should be taken to prevent plant poisoning. This may be accomplished by not allowing the sheep to range among poisonous plants when they are first turned out in the spring, or when they have moved from one range to another. It is also well to see that the sheep are fairly well filled on feed before they are permitted to range in these poisonous districts. By experience many sheepmen have learned of certain sections in the country where they have had annual loss from this cause, and they are therefore, able to obviate this by avoiding these districts when the sheep are hungry. Plant poisoning is usually more frequent in wet weather than in dry, and it is probable that atmospheric conditions may exert an influence over the amount of poison contained in these plants. I believe that it is almost impossible to poison sheep maliciously by placing any substance upon the range for them to consume, and in ninety-nine cases out of every hundred the loss which we hear of everywhere between April and August is occasioned by poisonous plants, and can largely be avoided if the owner would but give the matter his attention."

At the International Live Stock Show in Chicago a grade Aberdeen Angus steer of the Iowa State Agricultural College was made grand champion of the show, with one of the same breed from the Nebraska College reserve, champion. Both animals occupied the same places a year ago. A Hereford calf from Missouri was third.

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PETALUMA, CAL.

Are Sparrows Disease Breeders?

Written for the PACIFIC RURAL PRESS
By Mrs. SUSAN SWAYSGOOD, Pomona.

For some time now there have been complaints from all parts of the State of the mischief done by the English sparrow. J. H. Davis, of Mills, declares that they eat his poultry feed to the extent of a third, at least. In fact, he says that unless he stays out in his yards while the chickens feed, the wily sparrows, being in such numbers, drive his fowls away and eat up the whole of it. Nor is Mr. Davis alone in his cry against the sparrows, for they are beginning to encroach on the farmers' grainfields. If they are allowed to increase and multiply, the farmer and the orchardist will soon be compelled to join the poultrymen and demand the destruction of the sparrows.

But it has been left for a prominent poultry breeder in Colorado to accuse the sparrow of breeding and carrying disease germs into his flock. He says: "They have brought fowl diphtheria into a flock of between two and three hundred matured pullets. If I find one ailing, with short respiration and partly open mouth, I can handle it every time with Germozone and a mixture of lard, kerosene, and turpentine. The trouble is they go to roost in good shape, as far as I can tell, and in the morning one or two be dead under the roosts. Post-mortem shows, every time, the diphtheretic membrane in the larynx and sometimes an inch down in the windpipe, producing suffocation. Disinfection of drinking vessels, premises, etc., has been attended to, and I shall plow up the ground at once."

This is the worst charge yet against the sparrows, but it is undoubtedly true. For, six years ago, I had a similar experience with one yard of poultry. With the exception that I did not know what birds brought it, as I was not aware that we had sparrows in the locality. But birds do carry disease, of that I am sure. Whether the sparrows are more guilty than other birds, I do not know. Most birds are omnivorous, and many times when feeding on some diseased animal or bird, they take wing with food yet in their bill, and of course drop it somewhere—why not where fowls can reach it? There ought to be such an outcry raised against the sparrow that he would not have time to carry on the business of disease breeder very long. He is of no earthly use, and why anyone ever brought such nuisances to this country beats me. It is on a par with the Russian settlers who emigrated to Dakota years ago. In order to have something that reminded them of home, they brought some seeds of that lovely (?) plant called Russian thistle. Some of our professors say it is not a thistle, but a tumble-weed. Well, we admit that it is of the nature of a rolling or tumble-weed, but if it is not a thistle also, I want to be shown why horses had to be encased in leather stockings, and men who worked on a thresher had to wear leather gloves and sleeves? [Simply because there are many plants with sharp spines which do not belong to the thistle family.—EDITOR.] The Russian thistle set the two Dakotas back twenty-five years and ruined more farmers than any other form of pest ever known, because the country was new and men were not prepared to fight it.

In the case of the sparrow, it only needs a general knowledge of the mischief it is doing to wake up our people. The poultrymen have registered their kick and are ready to do their part, now let the farmer and orchardist join in. If nothing is done soon, the State will be over-run with these pests, as is Colorado and a great many Eastern States.

Giving the small boy a bounty of one or two cents per scalp would soon bring them down in numbers, especially as they make a good stew.

Diphtheria in fowls is not so uncommon as one would suppose. A great many birds are lost from this cause before the owner suspects anything serious. Whenever a fowl is noticed breathing through the mouth, it should be caught and examined. It may simply be clogged up with dirt at the nostrils, in which case a soft rag dipped in coal oil will clean the gummy substance and give the bird freedom. But even dirt will work mischief if allowed to remain, and when fowls run where there is decaying fruit or vegetable matter the nostrils are always liable to get clogged up.

A little watchfulness may save a serious loss in the poultry yard. It requires a keen eye to detect every little trouble, but it pays, for a little trouble soon magnifies itself where conditions are just right for it.

Feeding time is the time to watch for these little troubles. A bird that has any kind of an ailment always acts differently than the healthy, vigorous bird, and you can almost tell just what ails a bird by noting its movements. There may be nothing to warrant you in removing it from the flock, but it is always safer to do so. In diphtheretic roup, isolation is the only hope of saving the flock. An afflicted bird should be removed at once, and the only sure cure is to kill it and cremate the body. Never bury a fowl that dies or is killed with this terrible disease, for cats and dogs are almost sure to dig it up and spread the disease. A little fire does the trick nicely, so that neither sparrows nor any other birds can carry it to your other yards or to your neighbors. If not possible to burn them, put a good shovelful of quick lime over and around the carcass and bury deep.

A great many disease are spread from yard to yard that could be prevented with a little forethought. Sometimes, such things as roup, or diphtheretic roup are noticed by the attendant. It takes a practiced eye to take in a case of either in its first stages, and if allowed to run even one day there can be germs enough disseminated to inoculate the entire flock. One of the easiest ways to spread such things is by water. If there is a spring or a pipe system that starts in yard 1, say, and is carried through to several yards, whatever happens to the fowls in yard 1 that is of a contagious character, will have a clean sweep of the other yards. So, taking all things into consideration, I prefer individual watering systems, even though it makes a little more work. By guarding against the spreading of contagious diseases we can reduce the danger of losing any that do not suffer the first attack.

The poultryman referred to in Colorado probably had his yards in close proximity to each other, and most likely his watering system went the entire length of his yards. Of course, this is only surmise, as I have no actual knowledge of the facts. But in my own case some years ago, I was convinced that the disease was brought to the yards by birds, because that was the only yard that was ever affected, and it was the only yard where birds were in the habit of going to feed with the chickens.

Being quite a distance from all other yards, I did not follow my usual custom of killing the first victim. I wanted to experiment, and before I was through I did experiment with several remedies.

At first I tried to be as humane as possible, so went at it with peroxide of hydrogen, swabbing the throat out several times a day and dosing the fowl with



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olive oil. This treatment gave relief, for the fowl breathed much better, and even at mash food, but it did not seem to cut the membrane, and I lost two fine hens. Then I tried burnt alum, with no better result, and several patent remedies, but no cure. As a final resort, I powdered up some bluestone, made it just as fine as possible, then holding the head of the bird so that I could see well into the throat, I dropped the powdered bluestone right on the membrane. And about two applications were all that was necessary.

This was done merely as an experiment, for even though a cure is effected, such birds are never safe to breed from, though when cured they are safe enough to market for table uses, for it is seldom that such things ever come back, once the poison is out of the system. The mechanism of a fowl is not very complicated, hence any poison that is prevented from spreading is soon cast out of the system. A little nourishing food and the fowl is as bright as ever, but it should be marked for the block.

Bluestone is a remedy that it at once cheap and effective in the hands of the careful poultryman. As an alterative, a piece about the size of a pea in two gallons of water will be found good.. In cases of canker, which is simply in the nature of a coldsore, caused in poultry mostly from eating on dirty ground, a little bluestone powdered fine and applied once or twice will take it away. Mind I am not speaking of roup, but simple canker that is found on the inside of the beak, and sometimes on the outside, in the form of little sore spots. And while these are simple to look at, one bird can, through the water, give it to one hundred, if they can reach the same drinking vessel. Water, like sparrows, has a good deal to answer for.

EGGS FOR EUROPE.

Consul Felix S. S. Johnson, Kingston, Canada, writes to the State Department:

"The first week in October 250 cases of Canadian eggs were forwarded to England, the first shipment in about two years. At one time Canadian shipments to England were very large; for instance, in 1901 over 231,500 cases were exported from Montreal. Since then the Canadian export trade in eggs with Great Britain has gradually decreased and a year or so ago ceased entirely.

"The decrease in shipments was due to the fact that eggs brought better prices in Canada than in England, owing to the increased home consumption and a falling off in production. However, the English market offers splendid opportunitnes not only for American eggs but for poultry."

[Just wait until California gets her poultry temperature up and the Canal open!—EDITOR.]

DIRTY EGGS ON THE FARM.

While there are a few egg producers who take the best of care of their product, the average farmer considers the eggs produced on the farm a by-product and makes very little provision for their care, aside from gathering them. A large loss is caused by dirty eggs, the number being enormous, and according to the estimate of Secretary Wilson of the Department of Agriculture this money loss to the farmers in the United States amounts to about $5,000,000 annually.

This loss is very largely brought about by not gathering the eggs often enough. In wet weather more dirty eggs are found than at any other time. This is caused by the fact that the hen's feet are often covered with mud or other filth, and in going on the lest to lay she soils the eggs already in the nest.

An insufficient number of nests is often the cause of many of the dirty eggs found. Eggs are laid on the ground and around the hay and straw stacks, and becoming stained, are classed as "dirties." Again, when too many eggs are allowed to remain in a nest some are broken and many others become smeared with broken yolks. This condition is often brought about by allowing the broody hens to use the same nests with the layers. On a farm where one nest to every four hens is provided and the nests are kept clean and well bedded, it is found that very few dirty eggs are produced.

After gathering the eggs, care should be taken not to put them where they will become heated, or near oil, onions, or other vegetables, as they readily absorb odors.

Although dirty eggs may be perfectly fresh, they invariably sell as "seconds," and when but a few dirty eggs are mixed with an otherwise fresh, clean lot, they materially decrease the price of the clean eggs.

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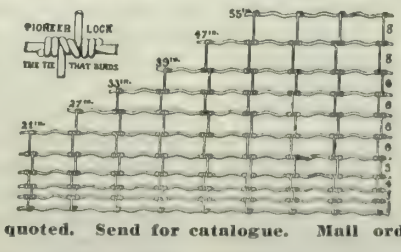
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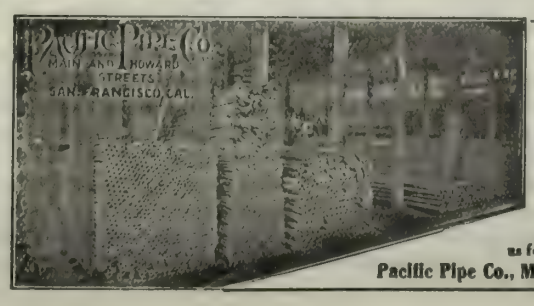
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The Home Circle.

Coming Christmas.

I know where things are tucked away in
closet and in drawer,
And 'though I did not put them there, I
know what they are for.
Away up in the attic is a hobby-horse and
sled,
And there's a great big bundle hid be-
neath the parlor bed.

About the house, most every day, I spy
out, here and there,
Strange objects that till recently I know
have not been there.
My folks don't know I know it, but all
through the house I see
Just lots of things they've gathered for
our pretty Christmas tree.

It's sad to think of homes wherein poor
little children stay
Who haven't got a single thing for Christ-
mas hid away!
Oh, girls and boys! Let's try to share our
books and sleds and drums,
This golden year, with those who dwell
where Christmas never comes.

The Afterday.

She turned from the piano as he came in, a radiant vision, her sweet face lit up with a smile of exquisite tenderness.

"The interview is over, Gerald," she added softly, her color deepening as she looked at her handsome young lover. "And father was glad?"

"Alas no, sweetheart," sadly. "He was very angry."

"Angry?" the girl grew white as the dress she wore. "But why? You are a gentleman. Your family—"

"Matters nothing to your father, Vera. I am poor—you are rich."

"Well,' her breath coming in short quick gasps, "and is not that quite right? Why should you have money when I have enough and more?"

"I shall never have much beyond my pay, Vera, beloved. And Lord Carlton, your father says—"

Her face flamed, her sweet lips quivered.

"I will have nothing to do with Lord Carlton. And as for money, it is of no value in my eyes if I cannot give it to the man I love."

The door opened and an elderly man, gray-haired and severe, entered the room.

"Father" —Vera caught his hand—"you—"

"I know what you would say, child," looking at her with softening eyes, "and I will not forbid you to marry Gerald Lester. In three years time—you will then be 21 and know your own mind better than you do now—"

"Three years!" Vera gasped. "Oh, father, what an eternity!"

"It will pass quickly," turning away. "Gerald goes to India next week. During these three years you must neither meet nor write. At the end of that time, if you wish you may marry Mr. Lester. No, not another word," raising his hand. "That is my ultimatum." And he strode out of the room.

The color rose, then fell, in the girl's soft cheek, leaving her as white as marble.

"The separation—the dark days without you," she moaned. "Oh, Gerald, I cannot bear it! All those years without a word! 'Tis cruel—I—"

"Think of afterwards—the day when I return." He threw his arms around her, and drew her head upon his breast.

The next day Gerald Lester joined his regiment. Before the end of the week he set sail for India, and, weary and sad at heart, Vera tried her best to take up her old life and look forward, with all the patience and hope she could muster, to wait and watch for his return.

Thus two years passed. In a few months the time for waiting would be over; the thought brought the color to her cheeks, the light to her eyes.

* * *

"Vera," Lord Carlton said softly in her ear, as he found her alone in the rose garden one day in June. "I have a word to say to you. I may say it now?"

"Yes," she sighed, and absently pulled a moss rosebud and stuck it in her belt, "if you like."

"May I have a rose?"

"Oh, yes," with a wave of her hand, "as many as you please."

"I mean one from your dear fingers—to keep. Vera, will you marry me—now?"

"Now?" she raised her head and looked at him with big wondering eyes, the bright color rising in her cheeks. "Oh, why now, Lord Carlton? Don't you know that father and I have come down here, to our dear Warwickshire home, to prepare for the celebration of my twenty-first birthday, and that then"—her bosom rose and fell tumultuously, her face shone with happiness—"Gerald Lester"—in a low voice—"returns to claim—"

"Vera," he went close to her side, "I have heard news of Gerald Lester."

"News?" trembling and agitated. "Gerald is not dead?"

"No. But—oh, it pains me to tell you. He is married—has been secretely married for years. And his wife has come—"

"I do not believe it. It is a lie. Gerald was never married."

"But if you find—if this woman proves that her story is true? Will you marry me?"

She raised her head, and drew herself up proudly. "Yes," she said, with a scornful, contemptuous laugh.

The door opened and a footman came in.

"There's a lady, Miss Kesterton, wishes particularly to see you."

"Show her in." Vera clenched her fists and set her teeth.

A slight, frail little woman, with pretty brown hair and dark, sad eyes, came slowly in, and looked up, nervous and trembling, into Vera's lovely young face.

"I will not keep you long, Miss Kesterton," she said, in a sweet low voice. "I—I only want Captain Gerald Lester's address. Because I am in want—deadly want," clasping and unclasping her hands. "I have not heard from him for years. I—I am his wife."

"Prove that—" Vera was now white to the lips, and her words were inaudible—"if you can."

The woman grew crimson, and her eyes flashed angrily. "You are cruel, unkind, to doubt my word. But, see," drawing a paper quickly from her pocket, "here is our certificate. Captain Gerald Lester married me four years ago, in St. Mary Abbott's, Kensington. At first we were happy. Then he left me. He is India. But surely. Oh! surely you believe me? I am really, as you see, Gerald's wife."

Vera clutched the back of a chair. "Pray leave me. Take this money."

Alarmed, the visitor slipped the money into her pocket, and rushed away to look for a servant. In the hall she ran against Mr. Kesterton, who looked at her with wondering, questioning eyes.

"Miss Kesterton is ill. Go to her."

"Vera! My child!" Her father hurried to her side and caught her hand. It was cold as stone. "What is wrong, dear? Did that person—"

"I have broken with Gerald Lester, father. He is dead to me forever, and you may tell Lord Carlton that I am convinced, and that I will be his wife six months from now. I—"

"Father," Vera said one morning suddenly, just three months after her never-to-be-forgotten interview with Gerald Lester's wife, "take me out of town. I'm heart-sick of balls and entertainments, and I hate everyone I meet."

"You are changeable, child; but I'll go anywhere you please. Lord Carlton—"

"Must not know where we go. Father, I hate," almost choking with emotion, "that man."

"You future husband. Vera—"

"I'll never marry him. I have written and told him so. I love Gerald in spite of all. With that love in my heart it would be wicked to marry anyone else. Come, father," clasping her hands around his arm, "let us run away together. I've taken a cottage in Kent for six weeks, and no one will guess where we are. Do come."

"Vera"—her father came hurrying along the path from the side gate. He was pale and troubled and looked at his daughter with clouded, anxious eyes. "My child, there has been a motor accident just up the road. A man has been injured. How much I don't know. They are bringing him here, as it is the nearest house.

"Father! Vera sprang to her feet. "The poor fellow! He is a stranger."

"No—my dear—oh! How shall I tell you? Vera, it is," hoarsely, "Gerald Lester."

Vera staggered and clutched the chair. Every vestige of color left her face.

A tall soldierly man came out of the cottage and walked quickly toward them.

"I'm going to wire for a nurse," he said. "Meanwhile, your maid," glancing at Vera, "has made Captain Lester fairly comfortable."

"Please wire also for his wife," Mr. Kesterton said. "My daughter—"

"But," smiling, "he is not married."

"You are mistaken," Vera flushed painfully. "I saw—spoke to his wife."

"Excuse me. 'Tis you who are mistaken. His cousin, Captain Gerald St. John Lester, has a wife. Go d help her, for he is a thorough scamp. But my friend, Gerald Lester, just returned from India, is not married, and will never marry now. The girl he loved, preferring rank and title, threw him over for Lord Carlton. 'Tis a dismal story. A better fellow than Gerald Lester never breathed.

* * *

For some hours Gerald Lester lay unconscious in the guest chamber at the Hawthorns.

"He is only stunned," the nurse whispered, as Vera crept in and fell upon her knees by the bed. "He will be better by and by."

As she spoke he sighed and, looking up, met the girl's sweet eyes fixed upon him with love and longing.

"Forgive me, Gerald," she said, softly, as the nurse having left the room, she told him all that had happened since their last good-bye. "I should not have doubted you—and I should have never promised to marry any other man."

"'Twas that—the papers were full of it—broke my heart. But, darling, we are together now—all doubts at rest. Let us forget the past—think only of the future—the happy afterday of our darksome time of anguish."

"Yes, dear one, yes," and raising his hand, Vera pressed it to her lips.—Ex.

Gift Distribution.

WASH LINE.—String a wash line in the sitting room and pin the presents for the family on the line with clothes pins.

SPIDER WEB.—Much amusement can be caused by using the spider-web plan. Fasten cords to ends of different colored ribbons or strings. Mark on each card the name of the one who is to receive the gift. Then hide card and gift in some part of the house; the other end of each ribbon is given to the different members of the family, who take the end, following the ribbon in and out about the house until they find their Christmas presents.



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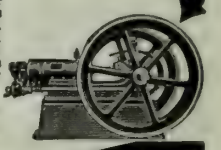
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Decoration for the Christmas Dining Table.

Many housekeepers, while they aim to have a dainty and appetizing bill of fare for the Christmas dinner, fail to arrange their table with taste and elegance, and regard decoratives as mere things entirely beyond their means. Such is an error, for a table may be made lovely without expensive flowers or novelties. Pressed autumn leaves, dried ferns, mingled with the scarlet hues of the bittersweet, or Indian turnip berries, make very effective floral designs for the Christmas table. Little moss-covered trays filled with dried grass and straw and then piled with chocolates are very pretty. Tiny rustic baskets, filled with pressed leaves and hung between slender bark poles, are receptacles for candies and sugar plums. A Christmas bell cut out of pasteboard or light wood, covered with evergreens and then decorated with mistletoe, may be hung high over the table. Beautiful wreaths and centerpieces are formed entirely of mistletoe, which can be gathered in all of our forests and preserved until Christmas. Holly wreaths are also beautiful and suggestive of the season. In a recent current publication a pretty design is given for the Christmas table:

"Make a cone of cardboard, and arrange holly berries and leaves over it, so they will appear to be growing. Set it on a round dish or in a flat basket, which is filled with bonbons, flowers and pretty little trifles. This charming centerpiece may ornament the table during dinner, and when the dessert comes on, the cone may be raised by means of a wire attached and pulled from one side and disclose the fruit to the astonished children."

Fruits and nuts tastily arranged make very handsome ornaments for the Christmas dinner table.

To have everything on the table present an attractive appearance, and will give as much pleasure to the family as the daintiness of the many Christmas dishes, and no mother of a home and family should fail to give as much attention to one as the other, thus making Christmas not only a feast for the palate, but as well for the mind and heart.

Decorating Hints.

CHRISTMAS-TREE DECORATIONS.—A nice way to trim a Christmas tree is to fasten string on English walnuts with sealing wax. Heat the wax over a candle, put a drop of it on the end of the nut on the string, and press down tight with the thumb. Gold paint will make them glitter. Bits of cotton put on the tree imitates flakes of snow. Strings of popcorn and cranberries look pretty. Stars and bells cut out of cardboard, over which gold paper has been pasted, can also be added to the decorations. Little colored bags made out of cheese cloth can be filled with nuts and candies and placed on the tree.

Christmas Fun.

Huge, thin paper bags may be filled with candies, tied up in secure paper parcels, these bags are suspended between the folding doors. The children are blindfolded in turn, and each one tries with a stick to hit the bag. When one succeeds there is a wild scramble for the candy which is scattered over the floor. The hostess is recommended to spread a sheet over her carpet.

Of the same character is the "Scissors Present" game. The coveted present is tied to the chandelier or door by a long string which brings it near the floor. The blindfolded children are let, each in turn, to try with a pair of scissors to cut the string. The lucky one who succeeds is allowed to claim the present he has cut down.

A JACK HORNER PIE.—A nice thing to introduce at the Christmas dinner is a "Jack Horner pie." This is a large round tin filled with small and inexpensive articles. A cover of crimped paper is placed over the receptacle, adorned with the following motto, "Put in your thumb and pull out a plum." No one is permitted to make a hole except with his thumb and forefinger, and he is permitted to extract one article.

The pie may be covered with white cornmeal and decorated with cranberries, and the presents drawn by means of a string, one end tied to the present, the other hanging out of the pie.

A Hint to a Christmas Shopper.

If you have not commenced until now to look for Christmas presents, do not put it off another minute. A splendid idea is to buy articles of the same kind, say pretty handkerchiefs, and give to your friends. Or make all your gifts to your lady friends in pretty aprons or bags. You can save by buying in quantities, as well as save you worrying trying to get a variety of gifts.

Fashion Notes.

Both cream white and dead white are fashinoable for evening hats.

The pump bow is seen yet at the back of the girdle.

Very large buttons and very small ones will both be used.

Willow plumes are considered passe by the ultra-fashionable.

Little vests are trimmed with buttons of black or colored velvet.

New black patent leather shoes have snow-white tops of calfskin.

As far as Paris is concerned, the large hat is the one in fashion now.

Three things must match your dress—your shoes, bag and hat.

Mr. Brown made his little boy a present of two bantam hens and other fowl.

The eggs of the bantam were so small compared with the others that Tommy hit upon a bright idea.

He hung an ostrich egg inside the fowl-house, and to it was attached a card bearing the words:

"Keep your eye on this, and do your best."

A Give-Away.

"Ma, I didn't know the Swift's kept horses."

"They don't, my dear, what made you think so?"

"I heard pa telling a man on the street yesterday that Mrs. Swift has the finest carriage of any woman he knows."

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Dean and Professor of Agriculture in the College of Agriculture of the University of California; Director and Horticulturist of the University Experiment Station; Author of "California Vegetables in Garden and Field"; Editor PACIFIC RURAL PRESS; member National Council Horticulture, etc.

CONTENTS BY CHAPTER HEADINGS:

The Climate of California and its Local Modifications.
Why the California Climate Specially Favors Fruits.
The Fruit Soils of California.
The Wild Fruits of California.
California Mission Fruits.
Introduction of Improved Fruit Varieties.
Clearing Land for Fruit.
The Nursery.
Budding and Grafting.
Preparation for Planting.
Planting Trees and Vines.
Pruning Orchard Trees and Thinning Fruit.
Cultivation.
Fertilizers for Fruit Trees and Vines.
Irrigation for Fruit Trees and Vines.
Commercial Fruit Varieties.
The Apple.
The Apricot.
The Cherry.
The Peach.
The Nectarine.
The Pear.
Plums and Prunes
The Quince.
Vine Propagating and Planting.
Pruning and Care of the Vine.
Grape Varieties in California.
The Date.
The Fig.
The Olive.
The Orange.
The Lemon, Lime, etc., Persimmon, Pineapple, Avocado, etc.
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The Pacific Rural Press

PUBLISHERS

420 MARKET ST., SAN FRANCISCO.

A Preacher-Farmer in the Sacramento Valley.

[Written for the PACIFIC RURAL PRESS.]

After having preached for thirty years, Rev. S. C. Davis and his wife started out to build a home in the Sacramento valley, where they intend to establish themselves, with their gardens, fruits, and stock around them. The couple formerly lived in the Arkansas valley of Colorado, but decided they preferred a milder climate. They are now at work developing a thirty-acre tract on the Jacinto unit of the Sacramento Valley Irrigation Co.

Last year Mr. Davis built his modest home and the stable, but did not do anything with the land. This year, however, he started the development in earnest. His progress has been so rapid that other settlers come from considerable distance in order to question him regarding the methods that have brought such interesting results.

Being naturally fond of working among plants and trees, Mr. Davis has been able to devise ways to start things himself for which considerable money is usually paid. In this way he has not only saved money, but has succeeded in growing things that are remarkably fine specimens. As regards achieving large results with little expenditure of cash, his place is a model. It is not planned on an ambitious scale, but it promises to yield abundant returns, and it is becoming more homelike every day.

Practical features of farming receive careful attention on the Davis place, but they do not receive all the care that the owner has to bestow on his growing things, for there are ornamental trees so located that they will add to the attractiveness of the grounds, and there are many flowers and sweet-scented things to gladden the eye and perfume the air. The flowers are laid out in beds in front of the house, and at the side, and they are doing so well that the front yard presented a bright spot when contrasted with the stretch of raw land on every side.

Everything on this ranch is multiplying. It is the young trees and flowers, the seeds, buds and shoots that receive the most attention. Every one of these is saved and planted, and in this way there will soon be an abundance of everything secured at little cost.

Sundays Mr. Davis preaches. He has organized a congregation, and there are services, at which he presides, every Sunday in the Ord schoolhouse, four miles to the northeast, on the river road.

"I built the house myself and have not paid out a cent for labor," said Mr. Davis. "All of the development that you see around you has taken place this year. The soil is wonderfully productive and yields so abundantly that I am now stumped to know where to put all of the stuff that must be harvested. It is evident that I will have to plan for another and larger barn.

"There are a great many things that can be grown from cuttings and from seed, if one is not in a hurry for quick results. It is too early, as yet, for me to attempt to give figures on the returns from my land, but I know that the yield is good and am pleased. The soil is remarkably productive and works up as well as any clay soil that I have ever seen.

"My stock consists of two cows, three heifers, twenty-four hogs, a team of horses, farm implements, and twenty-five chickens. There is enough growing on the place to supply feed for the stock. I cut thirty-five tons of volunteer hay on the place this summer and stacked it myself. It will not be necessary for me to buy any feed.

"This is my test year. The conditions here were new to me, and it has been necessary for me to build up. All of the increase and the profits are turned back into the place. We are far enough along, however, to know that everything is coming out well. One thing that I have found out is that it will not do to rely on others to do all the work; one must work himself if he wants the best results. That is the only safe way.

"In the garden you will find beans, peas, onions, radishes, lettuce, potatoes, turnips, cabbage Swiss chard, kohlrabi, squash, cucumbers, cantaloupes, watermelons, and many other things. I am trying a little of everything and will be able to report results later. Of course, I want to find out what will do best and how the crops should be handled.

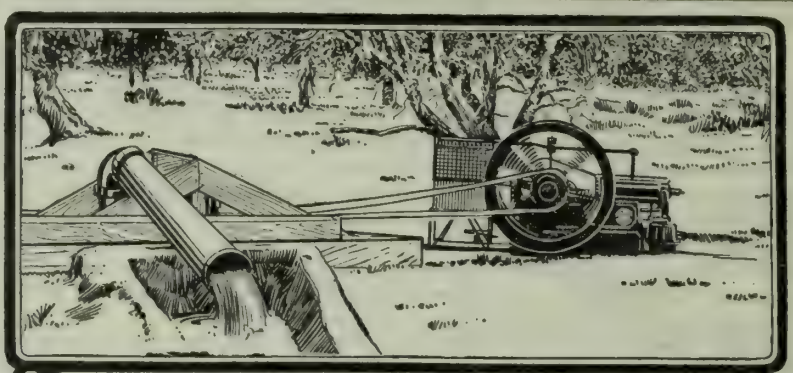
"In another place there are half an acre of sugar beets, pumpkins, Indian and Egyptian corn, and some sorghum that is ten feet tall. The Egyptian corn has run twenty-five sacks to the acre. So far I have plowed eighteen acres and there are twelve that remain to be broken. The whole place will be fenced this year.

"Some day I shall set out a commercial orchard. But before attempting that I shall test out a lot of various fruits and study market and other conditions. I have set out figs, oranges, lemons, grapes, Mammoth blackberry and loganberry bushes, loquats, eucalyptus, and other things. The only thing for which I have paid out any money are the citrus fruits, the olive and the loquat.

"There is a young family orchard in which are planted peaches, pears, apples, and the various other fruits that we will want for the table and preserving. Between the trees are some strawberries. The young pepper trees in the front yard are about five feet tall, and were started last spring from seed. Figs set out at the same time as cuttings have grown more than four feet during the summer and have borne figs, too.

"I have never been in better health than since I came here and got to work in the field. We have plenty to eat and grow our own corn, in addition to vegetables of every description. We are producing our own milk and butter. I am perfectly satisfied to get back to the soil and to see things growing around me."

The place owned by the Rev. Mr. Davis is considered by his neighbors as being a fine example of what can be accomplished by an industrious, resourceful man, with little means. The prediction is freely made that within a year or two he will have built up a show place that will be a model for others who are starting on the Jacinto unit, and that it will be a nucleus from which many valuable ideas will be distributed for the benefit of other farmers.



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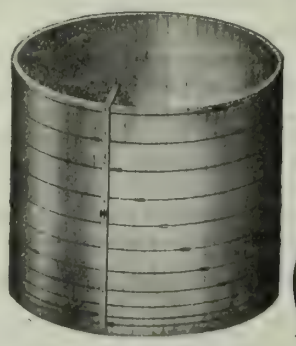
I H C Service Bureau

The Bureau is a clearing house for agricultural data. It aims to learn the best ways of doing things on the farm, and then distribute the information. Your individual experience may help others. Send your problems to the I H C Service Bureau.



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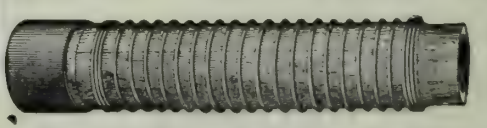
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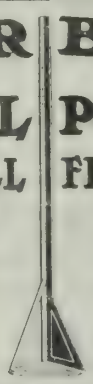
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CHANCES ON RECLAMATION PROJECTS.

To the Editor: W. H. Heilman, who for many years has been connected with large irrigation affairs in the West, and who is now in charge of the maintenance and operation of one of Uncle Sam's big projects, was recently in Washington for a brief visit. To your correspondent he said:

"There have never been better opportunities for acquiring land in the West than are at present being offered in the irrigated districts. It is true that irrigation farming is high-class farming, and that capital and thrift are necessary for the early development of the home. The returns are, however, commensurate with the energies expended. Primary safeguards against failure rest in the selection of the best soils in districts having an assured water supply and in localities contiguous to markets. As knowledge regarding the possibilities of production, the rapid increase in the value of the land, and the assurance of making a satisfactory home, becomes general, the occupancy of the land or settlement on the farm will be only a matter of time.

"It is not all a matter of settlement or numerical increase on the land, however. The new country demands the introduction of new crops or products, the establishment of new enterprises, and the bringing forth of conveniences and commodities which farming districts demand. Herein lies almost every inducement to the investor or the specialist. Take, for example, the Klamath country in southern Oregon and northern California, which is rapidly coming under irrigation, and which is specially suited to general farming and live stock production. In this entire district, comprising nearly half a million acres of land of all descriptions, there is not a single established breeder of pure-bred live stock. The district is suited for dairying, yet there is not a breeder of dairy stock within about 300 miles. The same is true for hogs, cattle, and general live stock breeding. There is a demand and good markets for live stock products, and this district must turn to general live stock production and products, yet every dairy animal, every pure-bred hog, every sire for breeding purposes, must be shipped in, often from the middle West, or imported direct.

"Not long since we practically scoured the entire States of Oregon and California for a carload of pure-bred dairy cows, and had to give up the effort. Our farmers are actually clubbing together and sending representatives into the middle West to purchase the right breeds of cattle for the establishment of industries which must be assured in order that the district may be started in the right direction. Our entire district was enthusiastic for the establishment of the creamery and the cheese factory, yet when we looked about we could not get the stock. To re-establish a general interest in an industry once having failed is difficult.

"In the older parts of the country there are many breeders of live stock. Most of them have capital and are, in fact, seeking new fields.

PREMIUM FOR NEW ZEALAND FLAX MACHINERY.

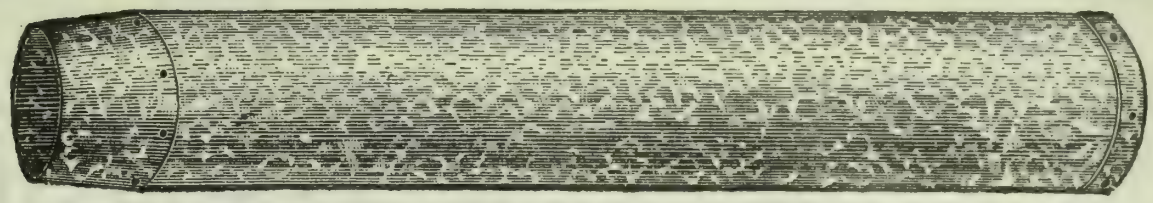
To the Editor: The Department of Agriculture has received a message from Minister of Agriculture Mackenzie of New Zealand stating his Government has announced an offer of a bonus of £12,000 for improved methods to be used in connection with the preparation and utilization of New Zealand hemp. Minister Mackenzie requested Secretary Wilson to give the offer publicity, as the circulation of this information will be for the benefit of American inventors and others in the United States. The offer is open to applicants until November 30, 1913. The conditions of the offer are "the extraction and dressing of fiber from the New Zealand hemp-plant; the utilization of the by-products obtained during the processes of extracting of the fiber, on condition that the machine or process in regard to which the whole or any part of the bonus is to be paid shall be recommended by the New Zealand Flax-Miller's Association and approved by the Government."

Minister Mackenzie has furnished Secretary Wilson with a leaflet giving full particulars on the subject. Are there supplies of the plant available in California?

Washington, D. C. CORRESPONDENT.

[The plant (phormium tenax) commonly known as New Zealand flax, has been successfully grown in the coast region of California and at some points in the interior for the last forty or fifty years. It is chiefly grown as an ornamental plant in gardens and parks, both public and private, and is handled in whatever quantities are desirable by our local nurserymen, for it is easily propagated by division of the roots as well as by seed. There is, however, no compact acreage of it, and so far as we know no supplies of the fiber now available for manufacturing purposes.—EDITOR.]

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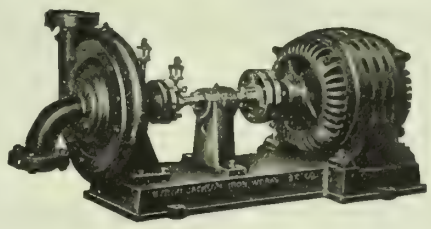
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THE MARKETS.

San Francisco, Dec. 13, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

A little more demand is noted in the local market, but trading here is mostly confined to a small jobbing business. The Northern market is quiet, but a heavier export movement is expected after the first of the year. Prices stand as before.

California Club	$1.50	@1.55
Sonora	Nominal	
White Australian	1.65	@1.70
Northern Club	1.50	@1.55
Northern Bluestem	1.65	@1.70
Northern Red	1.65	@1.70

BARLEY.

While spot supplies are extremely scarce, the prices quoted of late have been almost prohibitive, and all grades are now quoted considerably lower. Trading, however, is still confined to narrow limits, and values are largely nominal.

Brewing and Shipping	$1.95	@2.05
Choice Feed, per ctl	1.75	@1.85
Common Feed	1.65	@1.70

OATS.

Prices show no change, but oats are coming in freely from the North, and there is no particular firmness to the market. The demand is fairly active, preventing any large accumulations here.

Red Feed	$1.75	@1.80
Gray	1.75	@1.80
White	1.75	@1.80
Black	1.75	@1.90
Red Seed	1.95	@2.00

CORN.

Eastern quotations are for good, dry, sweet corn. Some new corn is offered at lower figures, but is not fit for storing. California corn is moving in a limited way, being shelled only in small lots.

Cal. Small Yellow	$1.80	@1.85
Eastern Yellow		1.85
Eastern White		1.90

RYE.

Prices remain steady as last quoted, with fair supplies and little demand.

Rye, per ctl	$1.65	@1.75

BEANS.

The market is quieting down somewhat with the approach of the holidays, and no heavy movement is expected until the first of the year, though there is a very fair inquiry for this season. Except for a slight decline in pinks, prices stand as before, and a fairly firm feeling is noted in all other lines. Pinks are still rather easy, but have been moving off well, and if the expected resumption of demand occurs next month there should be little further decline in prices. White and lima beans are especially firm. New York interests have recently purchased quite a lot of limas at top prices, and buyers in the Middle West have been trying to double or triple their orders. The Association, however, has advised its brokers that it has absolutely nothing to sell, and has. The various foreign substitutes for limas are higher, and are not likely to figure prominently in the market as long as there are any limas to be had. A campaign is now under way to increase the sale of this variety in Canada.

Bayos, per ctl	$3.75	@3.85
Blackeyes	3.90	@4.00
Cranberry Beans	4.15	@4.35
Garvanzos	3.00	@3.50
Horse Beans	2.75	@3.25
Small Whites	4.10	@4.15
Large Whites	4.00	@4.10
Limas	6.10	@6.20
Pea		4.25
Pink	3.00	@3.10
Red Kidneys	5.10	@5.25

SEEDS.

The movement of alfalfa seed has so far been very limited, and unless a marked change in the weather occurs soon, there will be very little sold. Other lines are unchanged, and are moving in a small way only.

Alfalfa	17	@18 c
Broomcorn Seed, per ton		$28.00
Brown Mustard, per lb		5½c
Canary		4½c
Hemp		4½c
Millet	3	@ 3½c
Timothy	Nominal	
Yellow Mustard		5¾c

FLOUR.

Mills all over the Coast are finding a good export market, while the local trade is of the usual moderate proportions, prices standing as before.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.80	@5.00

Hay and Feedstuffs.

HAY.

Arrivals are larger than last week, but the demand is steadily increasing both here and in the country, and another general advance has been made in prices. Choice wheat hay, in fact, is hard to get at top quotation. The local demand, although fairly active, is of less importance in the general situation than in former years, owing to the large tonnage required for feeding through the country. The few growers who have hay on hand refuse to sell except at a further advance, and few have any surplus above their own needs. Alfalfa is also higher, the better grades being very scarce.

Choice Wheat	$19.00@21.00
Good Wheat Hay	16.00@18.50
Other Grade Wheat	13.00@15.50
Wheat and Oats	13.00@18.00
Tame Oats	13.00@18.50
Wild Oats	11.00@14.50
Alfalfa	11.00@15.50
Stock Hay	10.00@12.00
Straw, per bale	35@ 75c

FEEDSTUFFS.

Rolled barley and oats have again declined, the former finding but little demand at present prices. Bran is fairly plentiful, but steady as now quoted, and most descriptions are in good demand.

Alfalfa Meal, per ton	$17.00@18.00
Bran, per ton	26.00@27.00
Oil-cake Meal	Nominal
Cocoanut Cake or Meal	25.50@26.50
Cracked Corn	39.00@40.00
Middlings	34.00@36.00
Rolled Barley	38.00@39.00
Rolled Oats	37.00@38.00
Shorts	32.00@33.00

Garden Truck.

VEGETABLES.

Prices in the local market show a considerable range, owing to the great variation in quality of the goods now arriving from the South. Choice garden truck of most descriptions is scarce, and commands a fairly high price, though a large amount of unattractive stock is coming in, and such offerings are hard to clean up. Winter rhubarb is beginning to come in, both from southern California and Sonoma county, and increased arrivals are expected. It finds a ready market as quoted. Celery and local winter vegetables show little change, but the ruling quotations on good southern vegetables are all higher than last week. Onions are rather quiet, but firm and rather closely held at the recent advance, good stock being scarce.

Onions: Yellow, ctl	$ 1.10@	1.30
Garlic, per lb	3@	4c
Tomatoes, per crate	1.00@	1.15
Cucumbers, per box	75@	85c
Cabbage	50@	60c
Carrots, per sack	50@	60c
Cauliflower, per doz	60@	75c
String Beans, lb	5@	10c
Lima Beans, lb	5@	8c
Summer Squash, per crate	75c@	1.50
Eggplant, per lb (Southern)	4@	7c
Bell Peppers, per lb	3@	6c
Celery, per doz	30@	50c
Rhubarb, per lb	5@	6c

POTATOES.

Arrivals from the river district have been rather light of late, and with diminishing stocks here the market has a stronger tone than for some time past. River stock is firmly held at an advance, and Salinas Burbanks are also firm, although prices stand as before. The increasing strength will probably bring in more Oregon potatoes. Sweet potatoes are quiet and unchanged.

River Whites	$ 1.15@	1.35
Sweet Potatoes, per ctl	1.65@	1.75
Salinas Burbanks	1.65@	1.85

Dairy Produce.

POULTRY.

Large supplies of Eastern chickens were carried over from last week, and with liberal arrivals in the last few days the market is weak for general offerings, though the best hens and roosters are doing a little better as to prices. Fancy dressed turkeys are higher, but values for the Christmas market are not expected to be very attractive, as there is a great deal of stock awaiting shipment in the country. Dressed turkeys for Christmas should arrive here Thursday or Friday.

Large Broilers, per lb	26 c
Small Broilers, per lb	29 c
Fryers, per lb	17 c
Hens, extra, per lb	16 c
Hens, large, per lb	15 c
Small Hens, per lb	15 c
Old Roosters, per lb	12½c
Young Roosters, per lb	18 c
Young Roosters, full grown	17 c
Squabs, doz.	2.00@ 3.25
Geese, per pair	2.50@ 3.00
Ducks, doz.	4.00@ 9.00
Turkeys, live, per lb	21@24 c
do dressed	22@28 c

BUTTER.

The general situation shows little change, though extras and firsts are quoted slightly higher than last week, and arrivals of fresh stock are kept well cleaned up. Prime firsts and storage stock is quoted as before.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed
Extras	32½	33	32½	32	32	32
Prime Firsts	28½	28½	28½	28½	28½	28½
Firsts	27	27	27	27	27	27½
Storage Extras	28	28	28	28	28	28

EGGS.

Arrivals have increased greatly of late, and as larger production is anticipated, large buyers are acting with caution, and prices on extras and pullets have been dropping steadily. At present prices the local demand is taking up all arrivals, but prices here are lower than at Los Angeles. Firsts are no longer quoted, and storage stock is cleaning up.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	42	40½	40½	41½	39	38
Firsts	40	—	—	—	—	—
Selected Pullets	38	36	35½	36½	34	32
Storage Extras	28½	—	—	—	—	—

CHEESE.

Fancy flats have declined rather sharply, and firsts and Y. A.s are also lower, though the latter are firm. Arrivals of Monterey cheese are smaller, and values have gone up again.

Fancy California Flats, per lb	15½c
Storage	15½c
Firsts	15 c
New Young Americas, fancy	16½c
Monterey or Jack Cheese	18@19 c

Deciduous Fruits.

FRESH FRUITS.

There is little movement in fresh fruits at present. Huckleberries art out of the market, and the few strawberries offered receive little attention. Cranberries find some demand, but no large movement is expected until next week. Eastern stock is lower, with liberal offerings. Persimmons and pomegranates are moving only in a limited way, and apples and pears are wanted only in small lots, though a better demand is expected next week. There is little shipping demand. Grapes find no great demand, but are higher, with supplies steadily diminishing.

Strawberries, chest	$ 3.00@ 6.00
Cranberries—	
Eastern, bbl.	11.00@11.50
Coos Bay, box	4.00
Apples—	
Fancy, box	1.00@ 1.75
Choice	60@ 75c
Christmas apples	2.00@ 2.25
Pears, Winter Nellis, box	1.50@ 1.75
Other varieties	1.00@ 1.25
Grapes—	
Box	50@ 60c
Crate	60@ 85c
Pomegranates, box	1.25@ 1.75
Persimmons, box	1.00@ 1.50

Dried Fruits.

The market has settled down to the usual quiet condition preceding the holidays, though there is still a little inquiry from some quarters, and a renewed demand is expected with the beginning of spring, if not before. Stocks of everything except raisins have been worked down to very small proportions, and most of the stock now in growers' hands is firmly held, though occasional odd lots are closed out at about the present quotations. Peaches find little demand at the moment, and packers report some purchases at a reduction, though the apple situation is improving. There is scarcely any movement of apricots, but the few holders expect to clean up at high prices before the new crop comes in. The movement of prunes for the last two months has been extremely heavy both to the East and to Europe, and there is little left in the State. Raisins are reported firmer in some quarters, but Muscatels are quoted at the same old prices, while packers are offering less than before for the seedless varieties. The New York Journal of Commerce says: "Certain large operators at this end who are said to represent Coast packing interests are reported to be quietly buying where they can California prunes in transit as deliveries on contracts to New York buyers, notably East Side merchants. These purchases, the reports say, are being made partly to cover sales, particularly for export, and partly to hold against spring requirements of Eastern trade. Particulars of the transactions are kept very quiet, but it is understood that prices paid by the speculative buyers are little if anything under the current spot market quotations.

"There is little demand for spot California seeded raisins of Coast or city seeding just now, and the tone of the spot market is rather easy in spite of the strong reports coming from California. There are no offerings of fancy seeded for shipment from the Coast below 6¼c f. o. b., so far as can be learned, and choice are held at proportionate figures. Buyers in this part of the country are not looking to California just now for additional supplies. Seedless varieties seem to be in a strong position, especially on the Coast, from which come few offerings. The local trade, however, does not seem to show much interest in forward shipments.

"Peaches are inactive so far as buying by the trade in this section is concerned. The stock remaining on the Coast is said to be concentrated in strong hands. Apricots are quiet in all positions, and prices are unchanged, the tone of the market being steady."

Evap. Apples, 1911, per lb	8	@ 8½c
Apricots	12	@12½c
Figs		4 c
Calimyrna figs		6 c
Peaches	8½	@ 9 c
Prunes, 4-size basis	6	@ 6½c
Pears	8	@ 9 c
Raisins—		
Loose Muscatels, in sweatbox	3	@ 3½c
Thompson's Seedless	5¼	@ 5¾c
Seedless Sultanas	4	@ 4½c

Citrus Fruits.

The season for California navel oranges is starting out nicely. Markets are in good shape, and the grade of fruit being shipped is good, which will command good prices. While less fruit was sent East at the commencement of the season than is usual, yet growers feel that they will soon make up the deficiency, barring bad weather, and prices are better.

At the Los Angeles auction, Monday, December 11, fancy navels brought $1.60 to $1.80 per box; standards sold for $1.42 and $1.35. In the East at New York, on the same day, navels averaged from $2.80 to $3.90 per box, and lemons brought from $2.60 to $3.85. No valencias were offered. Auctions at other points averaged about the same as New York. The markets were reported strong at all points. Florida oranges at Philadelphia averaged from $2.10 to $4.30.

Shipments from southern California are averaging 50 cars of oranges and 16 of lemons daily. From Tulare county the reports are that growers and shippers are elated over prospects. Good fruit, better than ever before, is being sent forward, and prices are running about $3.50 a box in the East. Shipments from this section have passed the record to the same date last season. From Butte county the shipments have been some less, but prices are good.

At San Francisco, valencia oranges are no longer quoted, being about out of the market. Navels and tangerines are arriving in constantly increasing quantities and are quoted lower, though there is a fair demand for choice fruit for export. The local demand is still comparatively light, but more activity is expected next week, when dealers will provide for their holiday requirements. Large grapefruit is in demand, but ordinary offerings are quiet. Lemons are lower.

Oranges: Navels	$ 2.00@	2.75
Tangerines	1.00@	1.50
Grapefruit	2.50@	3.00
Lemons	1.25@	3.75

Nuts, Honey, Hops, Etc.

NUTS.

The holiday demands have been filled, and little more trading is expected before spring. There are still a good many wal nuts on hand, but everything will prob-

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ably be cleaned up at good prices before next fall. Almonds are already pretty well sold out, the Growers' Exchange reporting its stock cleaned up at opening prices.

Almonds:	
Nonpareils	18½c
I X L	17¼c
Ne Plus Ultra	16½c
Drakes	14½c
Languedoc	14½c
Hardshells	8 @ 8½c
Walnuts, 1911 crop:	
Softshell, No. 1	13 @14 c
Hardshell, No. 1	12½@13½c
No. 2	11 c
Budded	16½c

HONEY.

Fancy comb honey is scarce and very firm, and the better grades of extracted are also in strong demand, ordinary grades being quiet as for some time past. There is little desirable stock left in the country.

Comb, white	13 @15 c
Extracted, water white	8 @ 9 c
Amber	7 @ 7½c
Off grades	5 @ 6 c

BEESWAX.

There is little demand for beeswax here, and no great quantity is coming in. Prices are unchanged.

The market continues quiet at unchanged quotations.

Light	28 @30 c
Dark	23 @26 c

HOPS.

There has been considerable buying by exporters and Eastern interests, both in California and Oregon, the Oregon prices being around 43c, while a few small lots have been sold in this State at a slightly lower figure. Stocks are light all over the Coast, the amount in this State being estimated by some dealers at about 7000 bales.

1911 crop .....40@45c

Live Stock.

Prices show no quotable change. There is a very fair demand for sheep and lambs, and quite a lot have been shipped in recently from southern Oregon. Hogs have been in demand for some time, but local packers are less anxious to buy than for the last few weeks, and more small hogs are coming in than can be readily used.

Gross weight:	
Steers: No. 1	5½@ 6 c
No. 2	5 @ 5¼c
Cows and Heifers: No. 1	4½@ 4¾c
No. 2	4 @ 4¼c
Bulls and Stags	2 @ 3 c
Calves: Light	6½@ 6¾c
Medium	6 @ 6¼c
Hogs: Grain-fed, heavy	6¼c
150 to 250 lbs	6½c
100 to 150 lbs	6½c
Small prime wethers	3¾@ 4 c
Large prime wethers	3¾@ 4 c
Ewes	3¼@ 3½c
Lambs	4½@ 5 c

DRESSED MEATS.

Steers	8½@ 9¼c
Cows	8 @ 8½c
Heifers	8 @ 8½c
Veal, large	9½@10½c
Mutton: Wethers	8 @ 9 c
Ewes	7 @ 8 c
Lambs	10 @11 c
Hogs, dressed	10 @10½c

WOOL.

The market for California wool remains dull and featureless, as buyers show no interest, and prices are little more than nominal.

Spring Clip—	
Choice Southern, Year's sta-	
Northern, year's staple	14 @16 c
ple	10 @12½c
7 months	8 @11 c
Lambs, spring	8 @10 c
Fall Clip	5 @10 c

HIDES.

Hides are rather unsettled at present, as there is some accumulation locally, though the general market is still rather firm. The arrival of grubby hides in the market next month may cause some drop in prices.

Heavy Steers, over 56 lbs.	12 c
Medium	11½c
Light Steers, under 48 lbs.	11 c
Heavy Cows, over 50 lbs.	11 c
Light Cows, 30 to 50 lbs.	10 c
Kip	12 c
Veal	16½c
Calf	16½c
Dry—	
Dry Hides	18 @19 c
Dry Bulls	16 c
Dry Kip, 10 to 15	18½@19 c
Dry Veal, 5 to 10	20 c
Dry Calf, 7 down	23½@24 c
Sheep Skins—	
Long Wools	$ 0.85@ 1.25
Medium Wool, 6 to 9 mos	50@ 75c
Short Wool, 3 to 6 mos	30@ 50c
Lambs	35@ 50c

HORSES.

The local market has been rather quiet of late, and prices in general are lower than those prevailing at country sales. Offerings of desirable stock are accordingly light. The high price of feed is causing some pressure to sell blemished or otherwise unattractive horses, which cannot be sold here for as high prices as prevailed a year ago. Dealers are not altogether satisfied with present conditions, and business is likely to drag until after the holidays at least.

Desirable Drafters, 1700 lb. up	$300@350
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	175@215
Wagon Horses, 1250 to 1350 lbs.	130@175
Delivery Horses, 1050 to 1250	110@130
Desirable Farm Mare	125
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

BUTTER SCULPTURE.

Probably many of our readers are too young to know of an achievement in butter sculpture at the Philadelphia World's Fair of 1876 which was widely heralded over the country and of which the PACIFIC RURAL PRESS had at the time an appreciative sketch. Lacking the consolation of this memory, they may find comfort in the following, which is telegraphed from Georgia:

"Visitors to the recent Brooks County Fair at Quitman are convinced that they have discovered a genius in the person of Miss Lucy Emerson, daughter of H. E. Emerson, a well-to-do farmer of the county. Miss Emerson exhibited several pounds of butter, modeled into a group—a cow and a calf recumbent—as perfect and expressive as life itself. The horns of the mother cow, the ears set forward in a listening attitude; the sleeping calf with its ears laid back—even in these details the work was true to life.

"The girl was churning when neighbors suggested that she take her butter to the fair. Taking it out of the churn she worked the water out of it and molded it in thirty minutes. To her was awarded first prize.

"A number of philanthropic women have arranged to give the girl—she is only 16—a chance to develop her remarkable talent."

[We call the attention of the 1915 Directors to this artist. Perhaps by that time she would be able to sculpture a whole herd.—EDITOR.]

PUBLISHER'S DEPARTMENT.

As the year 1911 draws near the end, we have been getting together the totals of business done in the several departments of the PACIFIC RURAL PRESS. We cannot tell just what these totals will be, but we can make a fairly close guess, and we do know that our net gain in number of subscribers will be over 2,500 for the year. Pretty good, we think, and we are feeling fine over the prospects for next year. Our advertising and book departments also show a decided increase of business for the year.

Our best book seller is "California Fruits" by Prof. E. J. Wickson, and at the rate sales are now made, the fifth edition will soon be exhausted. "California Vegetables" also is in good demand, and other books which we handle, such as Coburn's Alfalfa, Swine Husbandry, Feeds and Feeding, Home Pork Making, and others, find ready sale. Look up our book list in this issue.

Several new nursery and poultry advertisers have announcements in this issue. Among them are W. A. T. Stratton of Petaluma, Marshall Nurseries of Fresno, Western Hatchery and Ahrenberg's Brooder, both of Petaluma. Read the advertisements—it will pay you.

The Fancher Creek Nurseries have a striking half-page ad. in this issue. Read it carefully, as it contains valuable suggestions.

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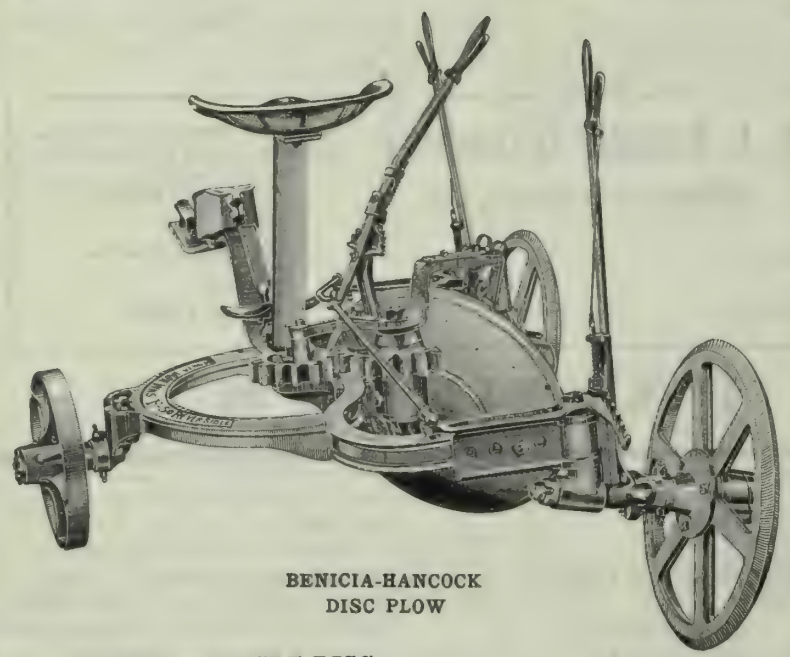
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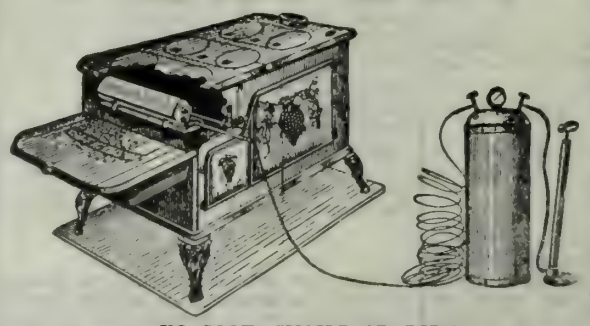
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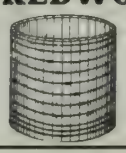
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THE PACIFIC RURAL PRESS

Vol. LXXXII. No. 26 SAN FRANCISCO, SATURDAY, DECEMBER 23, 1911. Forty-first Year.

Citrus Outlook and Its Safeguarding.

Written for the PACIFIC RURAL PRESS by the Editor.

Our columns constantly reflect the growth of the California citrus industry. It is growing in all parts of the State where favoring conditions have been demonstrated to exist, and the disposition to determine the suitability of untried regions was never more active. It seems to be manifest that the commercial production of citrus fruits will continue to increase, for we certainly have proper combinations of soil, temperature and moisture which can be developed and arranged over a much greater area than has yet been planted to this group of fruits. It is probably true that whatever limitations may throw themselves upon the citrus industry will not proceed from lack of natural or cultural adaptations, but from commercial conditions. The United States is rich in the fact that one of its States, which stands second in its whole list in area, should have such great producing capacity in a line of products from which its whole territory, except small fractions of two or three other States, is naturally precluded. Really, Uncle Sam came pretty near getting into the list of nations which have no citrus resources within their continental borders and are forced to pay tribute to other nations for citrus delights or to undertake great colonization conquests to secure them. Manifestly, therefore, the whole nation should properly appreciate its own contiguous semi-tropical property and take the same delight in its development that any farm owner does in a fraction of his farm which responds most readily and abundantly in distinctive elegant and valuable products. So far as one can now see, the limitations of citrus fruit growing in California, if any should ultimately appear, will proceed from consuming ability of all northern States, and countries with which increased transportation facilities will each year more closely and more cheaply connect us; or may arise if a change in national attitude should place it at the mercy of unequal competition with foreign cheap labor. We have the conviction that neither of these contingencies will arise, and that anyone who refrains from investment in good citrus climate, soil, water and trees is too timid to deserve success. We believe that such good properties intelligently administered will be increasingly valuable and productive. Take a world map and lay your flat hands upon the non-citrus land and estimate the teeming population there of present and prospective; then with the tip of the finger cover the citrus regions here and there. Such an exercise will, it seems to us, banish any fright which may come from contemplation of present millions or carloads which may seem large because of the rate of progress during recent years, but who can tell how small they will really appear a decade or a generation hence? It clearly appears to us that we have nothing in the fruit line so destructive and so destined to endure and to grow as our citrus fruit industry. Although citrus planting is proceeding in all parts of the State which show demonstrations or promise of adaptation, the planting in central and northern districts is increasing relatively faster than in the southern counties where the great achievements of the industry during the last three decades have been wrought. We choose illustrations this week from one of the districts which has gone farthest in the more recent upbuilding of the citrus industry—the east side of Tulare county. The region leads in the increasing output of early maturing fruit, which Mr. Watson points out in his letter upon another page of this issue. The pictures show the general aspect of the citrus country in that part of the State, the width of the mesas, or higher levels of the valley where most planting is done, the proximity to the foothills, reflectors of sun heat during the long dry summer which determines the distinctive quality of California oranges; the suggestion of the distant snow-clad mountains whence come the ample water supply which is essential; the characteristic beauty of the citrus landscape, with its well-kept areas of uniformly grown trees, the charm of the homes and the suggestion of prosperity and comfort which embodies the spirit of California and proceed from the confident activities which it inspires.



Citrus Landscape in Eastern Tulare County—Lindsay and Its Environment.

But the greatest factor in the upbuilding of the California citrus industry is not the natural or commercial conditions which exist, but in the men and women who have developed it. It is the inherent force of the citrus growers which will qualify the industry to live and will foster and protect its life. This is also, of course, a safeguard and surety of wise and intelligent investment. An instance of the protective work which is being done for the industry is found in an outline of efforts which have been in progress at the national capital during the last two months, of which G. Harold Powell, manager of the Citrus Protective League of California, gives the following outline:

"We have just completed two comprehensive reports, one of them on the lemon industry of Italy and one on the lemon industry of California. In these reports we have fully set forth all of the official data relating to the international movement of lemons, transportation, costs, tariff, histories, custom revenues and other similar data. These reports also treat in detail the cultural practices surrounding the industry in each country and the costs of production as well as the cost of handling the fruit from the groves and cars or boats. These data have been placed in the hands of those who will look after the interests of the California citrus industry, and they will form one of the chief or leading means by which a tariff duty representing the difference in the cost of production can be determined.

"I do not care to give any details at this time except to say that in so far as the present duties are concerned they square fully with the prin-

(*Continued on Page 549.*)

Pacific Rural Press

Issued Every Week at 420 Market Street, San Francisco.

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Dec. 19, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	1.04	5 75	14.00	54	32
Red Bluff	.26	2.28	8.24	66	34
Sacramento	.26	.93	5.57	66	34
San Francisco	.36	2.15	6 33	70	44
San Jose	.18	2.00	4.73	70	32
Fresno	.08	.73	2.84	62	34
Independence	00	.80	2.75	54	20
San Luis Obispo	.12	3 60	4.73	64	36
Los Angeles	.02	2.27	3 74	68	44
San Diego	.04	.89	2.25	64	40

The Week.

As we go to press the State Fruit Growers' Convention is in progress at Santa Rosa with all the horticultural, economic, scientific, and social problems and joys thereunto pertaining. It is the fortieth such assembly in which the California fruit growers have participated, but not the fortieth year—for sometimes there are two such events in a year. The first such assembly was held December 6, 1881. This series of conventions differs from all other horticultural meetings in California, of which there are many, in that they have direct connection with the executive horticulture of the State through the State Horticultural Commissioner, who plans, conducts, and pays for them from State funds. They have grown to be, by an evolutionary process, the connecting link between the official State promotion of the fruit industries and the people whose industries the State intends to serve and protect. They give the officials a chance to explain the work they undertake and to win support for it in popular will and sentiment, be duly impressed upon the attention of the legislators from whom protective and promotive laws, and the money to enforce them, are expected. In a way, also, it is a referendum of the acts and policies of the State officials to the representatives of the industry they are appointed to serve. In this way the conventions have developed into power and influence which was not at all contemplated at their inception. The executive horticultural work of California is more elaborate and far-reaching than that of any other State, and the great supporting and promotive force which the growers exert through their semi-official assemblies is the foundation of it. This makes the conventions unique, influential, profitable, and enjoyable, and explains their earnest maintenance and the considerable expenditures which growers from all parts of the State are willing to make to participate in their transactions.

We begin in this issue the publication of the most significant things in these transactions, as is our custom. Much space is given to an exposition of the thrips named for the pear, but destructive of several other deciduous fruits. Mr. Merrill has prepared what seems to us to be the clearest account yet written of the ways of this pest and the means of repressing it—so far as now known. We haste, therefore, to bring the matter to the attention of our readers in its entirety, that they may master its details for their own advantage. The insect is not distributed as widely as some others, but no one should rest in fancied local security. To know exactly what the intruder is, where it lives and works, and how to find it, though its size be insignificant, are just what is most needed. We believe Mr. Merrill's paper will be found satisfactory in all these respects, as well as in prescriptions of treatments and estimates of what has been secured by them. Next week we shall have many more significant things prepared for the Fruit Growers' Convention.

Our Notion of Bankers.

More showers have fallen here and there—sufficient to assure waiting people that the skies have not forgotten their cunning and that great expectations are warranted. Meantime, the days have been golden with warm sunshine and the delights of the open air beyond description. In some way these joys suggest to us our delight in bankers: there is a buoyancy of spirit induced by December sunshine falling upon newly-started grass which suggests to us the elevation of emotion which a verdant one experiences as he steps forth from a bank with a pocket full of cash from a new loan or has in his ears the cheery assurance of the banker that he really does not want the money on that overdue note and is very content to have a new note—which makes accrued interest a part of the principal. Such a fullness of feeling follows such a declaration of confidence by the banker that relief can only come through buying a cigar and basking in the sunshine among the other solid men of the community. For such lofty joys we thank the bankers. We cannot exactly remember how much fun we have had with their money. It is true they always want it all back again and then some more—but one gets used to that trivial requirement: it counts for naught while the feeling lasts. And then we like a banker because he has money in sight. Men of invisible riches do not affect us in the same way. Rockefeller, with his check-book and fifty cents in his pocket, does not appeal to us as does a country banker with a few lug-boxes of double eagles on the bench behind him, out of which he will throw you careless handfuls when you have signed up right. For all these reasons we count bankers among the joys of life.

Possibly we enjoy bankers more than some others do because we are not haunted by thought of the day of reckoning as some people are—people who lose all delight in the running time of a note through fear of the day it will fall due: people to whom the warmth of this December sunshine may suggest the heat of the crematory rather than the gladness of living. But surely the banker is not to blame for that. Of course, there may be good and bad bankers, just as we are told there are good and bad trusts—but of that we have nothing to say now. We desire to record our personal enjoyment of all of them, lest what we have to say later might be taken as a sign of grievance. We have never asked a banker for money without receiving it, and it has been the same the other way around. Personally, then, we have nothing against bankers: from our point of view they are a good lot. And this is a purely editorial opinion and has nothing to do with the business of this journal. The publisher probably has so much money that he uses banks only as warehouses, so he is not concerned in this discussion, which relates to use and not to storage.

The Agricultural Attitude of Bankers.

We shall overlook the sins of bankers in the past, committed through their lack of conceptio of the fundamental relation of agriculture to th world's prosperity, and their inappreciation o the security of agricultural collateral. This igno ance and dullness resulted in free money to urba undertakings and high-priced money, or the r fusal of it on any terms, to rural undertaking Where money was given on rural security, th rate of interest precluded the repayment of th loan, or money was poured out without judgmen or discrimination on rural gambling ventures i land or produce which any sensible man shoul have known were not likely to pay in. The re sult was that capital, with its proverbial timidity shivered when rural loans were asked—throug fear born of ignorance, as fear usually is. Th typical city lender of a few years ago preferre to sink his money in a suburban mudhole of brickyard rather than roll it out in the sunshin upon rich agricultural lands. The country lende did not follow exactly the same policy, but usuall loaned so little at so high a rate that proper im provements could not be made and consequentl productive profit fell below the interest payment —and the banker got the land; against his wil perhaps, but usually through his ignorance of me and of what men needed to succeed. We re cently saw the statement that more than one third of the bankers of Illinois, representing 9 of the 102 counties, own or directly represen over a million acres of farm lands, and the col lector of these figures held himself conservative in saying that the banker-farmers of the State are specifically responsible for the farming of perhaps a million and a half acres of Illinois land. We do not know how it would turn about. It migh be that real farmers own just as large a fractio of the bank stock of Illinois as the real bankers do of the farming land, but that does not matter we wish they owned more of it. The fact remains that, aside from the acreage which bankers own as they have as much right as anyone has to own very much of the acreage they own or represent is in their hands because their loans were at such rate and terms that borrowers could not pay out and lost the land—as they almost never should have done.

But suppose that was an old attitude and that it has largely passed. What is the present attitude? The following is from a report of a meeting of the Illinois Bankers' Association:

"Our meeting as a whole was the most successful in the history of the association. In order to provide for our Wednesday's programme, which was devoted almost entirely to the subject of agriculture, we found it necessary to secure the State Arsenal. The attendance at that meeting, especially in the afternoon, when James J. Hill spoke, was over 2,000 of as representative a body of men as it would be possible to get together in the State. J. A. S. Pollard of Iowa delivered a magnificent oration on 'The A, B, C of Prosperity,' which interpreted means agriculture, banking and commerce. Two-thirds of his address was devoted to the agricultural situation in this country, and the crying necessity for better methods. Other addresses practically covered the agricultural problem from every angle. The State Supreme Court showed its interest in the cause of agriculture and its respect for the distinguished speakers by adjourning and attending the meeting in a body."

Well! well! Does not that fill you with joy—agriculture is certainly going some in high places, and we do not object to that; it ought to: it ought to have gone long ago. But we innocently ask, how much of this big-wig interest was due to ownership of those Illinois lands aforesaid which bankers, as such, ought never to have

owned, and how much also to hunger for big business in the way of farming the farmers who are now becoming more productive soil for the process? It is too bad to mention such ill-natured things, but a preceding paragraph seems to have exhausted our politeness. Some reader may ask, "Why do you go so far away as Illinois for illustration?" It is safer that way. We like to borrow money ourselves, as we have feelingly described in an earlier paragraph. Besides, California bankers are relatively a very good lot. They have for years been gaining knowledge of the value of agricultural security and confidence in it. In faith and practice they are years ahead of the bankers in any other State known to us: therefore we illustrate by reference to the wicked bankers of Illinois.

But Agriculture Should Bank Iself.

There can be no doubt but that, for the prosperity of agriculture and for the economical feeding of the world, agriculture should do its own banking. The high cost of living, so far as food prices go, is due to the exactions by those between the grower and the consumer; the hight cost of money is due to the exactions of those between the production of surplus wealth and the users thereof. There can never be the advancement of agriculture, which those orators at the meeting cited above proclaimed for, until the use of money is had at what may be called the first cost thereof. The fundamental trouble, as it seems to us, is that those who dispense capital are dealers in money, and neither owners nor users thereof: that there is intervention which adds greatly to cost without increasing the owners' reward. Surplus money of one producer is loaned to another producer at considerably greater charge for use than the owner of the surplus money receives, unless he gets it through owning bank stock. The money accumulated in agricultural production could go for use in agricultural production without loss to the depositor and with only the cost of handling added to the borrower's charge. To secure this desirable result it is only necessary for farmers to organize and employ experts to handle the money. But when one begins to think of what the agricultural producer is entitled to, it clearly appears that he has a right to use the accumlated capital of all the people he feeds—at least as good a right as anyone else has. This means, of course, that his financial organizations, or agricultural banks if the term is clearer, has as good a right to borrow national accumulations, for security, or for use when secured by acceptable collateral, as has any other organization with similar security. Agricultural banks would then become nationalized and those entitled to borrow from them would get the money at first cost plus handling, which they cannot claim, nor do they receive, from any existing system of banking institutions. Existing national banks and all other schemes of financial improvement on them and their policies, so far as we know them, plan to put money in the hands of money dealers and not money users, and therefore levy tribute upon borrowers, not for the advantage of the nation which gives them its name and the use of its money, in a way, but for the advantage of the dealers in money, which bankers really are.

European Precedents.

All this brings us to the fact that agriculture in the United States, in spite of its advanced intelligence and masterly enterprises, is still crude so far as financial self-help and government help are involved. There are plenty of frenzied propositions to change this condition, of which we know little and have nothing to say. But there are also demonstrated ways to supply agriculture capital at a cost which the industry can thrive and advance upon. We hope readers will be attracted by the striking statements which Hon. David Lubin, our national representative at the International Institute of Agriculture, sends us, and which are published upon another page of this issue. He does not write of financial dreams, but rather of stupendous facts established upon more than a half-century's experience and now advancing at a wonderful speed in the enhancement of agricultural prosperity. And what are we doing in the United States of progress? Oh, well—

"Can you let me have a few hundred dollars for sixty days, and at what rate?"

"I guess we can accommodate you—the rate will be the same as before: your mortgage was written to include an increase in the loan which I expected you would call for."

Queries and Replies.

Globe Artichokes.

To the Editor: I have land that will grow magnificent artichokes. Two plants last year (variety unknown) produced heavy crops of buds, but the scales opened too wide and allowed the center to become fibrous and were unsalable. Is this due to climate, lack of sufficient water, or to not having the right variety? I have some fine plants of Henderson's French Globe variety, but they have not yet borne.—Reader, Visalia.

Probably the unsatisfactory character of your artichokes is due to the poorness of the variety from a cultural point of view. Your new plants should be better. Many artichokes which are planted should really be put in the ornamental class—they are either a reversion from a wilder type in plants grown from the seed or they never have been good. In order to determine which varieties you had better grow on a large scale, it is desirable to get a few plants of the different varieties as offered by our seedsmen in San Francisco and Los Angeles. In this way you would find out just what are considered best in different parts of the State, and propagate largely the ones which are best worth to you. By subdivision of the roots you get exactly the same type in any quantity you desire—ruling out undesirable variations likely to appear in seedlings.

Woolly Aphis Host Plants.

To the Editor: I have removed some apple trees whose roots were badly affected with woolly aphis. Will it be safe to plant other varieties of trees, nuts, for instance, where these infested apple trees stood?—Planter, San Francisco.

Although the woolly aphis of the apple does live upon some other plants, temporarily, at least, it does not seriously infest other fruit trees. Some varieties of pears are sometimes affected to a limited extent. Other fruits and nuts are not in danger from it. There are, of course, other woolly aphids, but not, as we remember, of serious account on other fruits.

Irrigated or Non-Irrigated Trees.

To the Editor: Is there any difference between the same kind of fruit trees grown without irrigation and with it? If so, which is to be preferred?—Subscriber, Patterson.

It does not make a particle of difference, if the trees are grown well and matured well. Over-irrigated trees or trees growing on land naturally moist may be equally bad. Excessively large trees and stunted trees are both bad; with irrigation you may be more likely to get the first kind; without it you are more likely to get the latter. There is, however, a difference between a stunted tree and a well-grown small tree, and as a rule small trees are more desirable than overgrown trees. The mere fact of irrigation does not make either good trees or bad trees: it is the man at the ditch.

What Will the Sucker Be?

To the Editor: I have in my little garden a Japanese plum tree which bears splendidly of choice plums. Three years ago I noticed a strong young shoot that had come up from the root of the parent tree. I found the young one to have separate rootlets, so dug it out and planted it in a sunny location where it has made vigorous growth and is very shapely. It is now 3½ feet high and 1½ inches through the stem, and what I want to know is, will it make a bearing tree in time and be of like quality with the parent?—M. A. K., Berkeley.

It will certainly bear something when it gets ready. Whether it will be like the parent tree depends upon the wood from which the sucker broke out. If the young tree was budded very low, or if it was planted low, or if the ground has been shifted so as to bring the wood above the bud in a place to root a sucker, the fruit will be that of the parent tree. If the shoot came from the root below the bud, you will get a duplication of whatever stock the plum was budded on in the nursery. It might be a peach or an almond or a cherry plum. Of course you distinguish something by studying the foliage and wood growth of the sucker, and thus get an idea of what you may expect.

Siloing First Crop Alfalfa.

To the Editor: Will you please publish in your valuable paper any information you may have on putting first cutting of alfalfa and foxtail into the silo? Do you think there is any danger of fire in a wooden silo, and do you add salt and water when filling, and how long after it is cut would you advise putting it into the silo?—Subscriber, Newman.

Put it through the silo cutter as soon as you can get it from the field. Do not let it cure at all, and be sure to cut and pack well. If at all dry, use water at the time of filling, and some salt then also, if you desire. There is no danger of firing if you put it in with good moisture, and by short cutting and hard packing you exclude the air. If you do not do this you will get a silo full of manure, and possibly have a fire while it is rotting.

About Seed Potatoes.

To the Editor: Is it advisable to use potatoes for seed from vines that were totally destroyed by frost when the crop was about two-thirds grown? The seed used for the crop mentioned was carefully selected, and the growth of vines was strong and healthy and the yield very good; indeed, considering, going about 5 sacks to the acre.—W. E. O., Monterey.

Theoretically the tubers for seed should be perfectly matured, and that requires the full service of the tops, and on that ground the potatoes you have ought to be inferior. Practically, we should test their growing disposition by sunning and keeping in a heat favoring sprouting, and if they showed up strongly we should use them for seed: otherwise not.

Moles.

To the Editor: What is the best way to get rid of ground moles? They are the greatest pest we have to contend with.—Subscriber, Los Gatos.

We have either killed or driven them away by opening the runway and pumping it full of straw and sulphur smoke with a squirrel smoker. The smoke comes up here and there through the soil rods away sometimes. We have killed them by watching for the movement of the earth as they are extending their surface burrows and striking in hard with a hatchet. If the ground is soft, they can be thrown out with a spading fork and killed on the surface. You can kill them with a mole trap after you learn how to use it.

The Pear Thrips in California.

By G. E. Merrill, Chief Deputy State Commissioner of Horticulture, Sacramento, at the State Fruit Growers' Convention at Santa Rosa.

History.—In the spring of 1904 some of the orchardists of Santa Clara valley noticed that the blossoms on their fruit trees did not open as they should. A closer inspection showed that the failure of the blossoms was due to the ravages of a minute insect, many specimens of which could be observed by shaking the infested twigs against the hand. This insect was later described by Miss Daniel, of the University of California, in Entomological News, and was named by her the pear thrips (Euthrips pyri), as her specimens were taken from pear trees. Although our earliest authentic records of the insect date only from 1904, we have reliable reports from orchardists and others that the phenomena of the blasted buds had been observed in some sections of the valley several years prior to the date named. Just how long the pest has been present in California and how it came to be here are matters of conjecture. There are strong reasons for believing it to be a native species. On the other hand, there are other reasons, probably equilly as strong, for the belief that it is an introduced pest. Personally, the writer is inclined to the opinion that the insect is a native form, the marvelous prosperity of which during the past few years can be accounted for by an abundant food supply, and other conditions favorable for its rapid development.

Distribution.—The pear thrips is at present generally distributed throughout the fruit-growing districts of the Santa Clara valley, the counties around the San Francisco bay region, and parts of Yolo, Sacramento, and San Joaquin counties. The insect is spreading rapidly, and it is probably only a question of time before it will become generally distributed throughout the deciduous orchards of northern California. The pear thrips has also been found in England and in New York State, where it promises to become a serious pest of the pear tree.

Damage.—The damage done by the pear thrips is caused by its eating and egg-laying ravages on the tender tissues of the expanding flower and leaf buds, and later by the attacks of the larvae, or "white thrips," on the young fruit. In badly infested orchards, the work of the pest is so thoroughly done that the buds have no chance to open. At the time when the blossoms of these orchards should be at the height of their beauty, a brown, fire-swept appearance is presented, and not until the larvae have disappeared beneath the surface of the ground do the trees appear in their customary spring-time garb of green. Under these conditions practically no fruit is matured. In orchards less badly affected, much fruit persists on the tree, but does not come to a normal maturity. In the case of prunes and plums, a large percentage of the fruit will present a scabbed appearance when matured. With pears the fruit may be scabbed and curled, or otherwise badly deformed. Although the pear thrips attacks nearly all of the deciduous fruits, most of its damage is done to prunes, pears and cherries. There are but few cases on record of serious damage to peaches, apricots or almonds. The hairy surface of these last named fruits seems to protect them to a certain extent from the voracious appetites and injurious egg-laying habits of the species.

The amount of damage done by the pear thrips during the past seven years has been conservatively estimated by agents of the U. S. Department of Agriculture at $7,000,000. In this estimate no account is taken of the cost of spraying operations and other means exercised for the control of this insect pest, probably the most serious one that today confronts the deciduous fruit grower of our State.

Life History.—Before any insect pest can be fought intelligently knowledge of its life history is of prime importance. Early in the spring, just when the buds are beginning to swell, the adult thrips make their first appearance on the twigs and buds. In the Santa Clara valley the thrips are usually first noticed about the middle of February. From the time of their first appearance, the number of adult thrips in evidence rapidly increases, until late February or early March, when a rapid decrease is noted. However, the latest thrips may not leave the ground until early April. As many as 400 individuals have been taken at one time from a single cluster bud of cherries or prunes. From 50 to 100 thrips per bud are frequently present throughout a badly infested orchard. By the time the scales on the buds have separated enough for the thrips to squeeze in, in they go, to feed on and otherwise injure the tender tissues within.

Kipling's line, "for the female of the species is more deadly than the male," is incontestably true of the pear thrips, for they are all "lady" bugs. No males have yet been found.

Just as soon as an entrance is forced into the bud, the insect begins to feed. Now, thrips do not feed like cows, by biting off and chewing their food, instead, they rasp an opening through the skin of the leaf or blossom tissue, insert their beak and partake of the life juices of the plant. After a few hearty meals, the thrips are ready to begin another branch of their life activity, that of egg-laying. To lay an egg, a thrip rasps a hole through the skin of the tender plant tissues with her saw-like ovipositor, which is then inserted in the opening as deeply as possible. An egg is then passed through the ovipositor and imbedded in the growing tissue. A great deal of the damage caused by the thrips is due to the effects of ovipositing, especially in the case of cherries and other fruits with long, tender stems. A few thrips eggs placed in a cherry stem will so weaken it that the fruit is caused to drop. Thrips lay better than Petaluma chickens. From 25 to 50 eggs per thrips are laid during the active adult stage of three or four weeks' duration, a record of which any hen might well be proud.

The eggs themselves are small, bean-shaped objects, from which the young thrips, the so-called "white thrips" emerge in from four to fifteen days. Usually about eight days are required The larvae feed on the blossoms, opening buds and young fruit in much the same way as the adults. They increase rapidly in size, and at the end of three weeks they become full grown and fall to the ground. Here they penetrate the soft layers of soil and enter the compact sub-soil or plow pan, to the depth of 3 or 4 inches. The depth at which the larvae come to rest depends largely upon soil conditions. In loose, sandy or gravelly soil, a depth of 2 or 3 feet is sometimes attained, but in heavier, more compact soils, the majority of the thrips are found within 12 or 14 inches of the surface. As soon as the thrips have come to rest, they form a little cell about themselves and remain quiescent throughout the rest of their larval and pupal stages. Pupation takes place in September, and pupae are most abundant in the ground during October and November. Throughout the latter months, and in December, the pupae transform to adults, which gradually become more active, as the season advances, until they are ready to emerge at the first indication of spring. The number of adult thrips per square foot of soil varies, of course, with the intensity of the infestation. As many as 4000 thrips per square foot have been taken from badly infested ground. From 200 to 500 thrips per square foot are enough to create a serious amount of injury.

Control Methods.—The control of the pear thrips was one of the most difficult problems ever presented to economic entomologists for solution. Ever since 1905 a large part of the time of from one to seven experts of the U. S. Department of Agriculture, besides the time of several other economic geologists, has been devoted to a study of this pest, and the means of controlling it. As a result of the work of these investigators, have come two methods of control, or rather, spray formulas: (1) the government formula; (2) the lime spray; both of which seem to give good results under certain conditions.

Soil Fumigants and Cultivation.—As the greater part of the thrips life is passed in the ground, it was at first thought that the insect could be best attacked there. To this end, soil fumigants, fertilizers and the flooding of the ground for various periods was resorted to, with but little encouragement. Any fumigant that would kill the thrips was either too difficult of application or too expensive to be practicable. The thrips seemed to thrive in water-soaked ground, and complete immersion for periods of six days or more had absolutely no effect on their subsequent activities. The results attending cultivation experiments were more pronounced, and by thorough plowing and cross-plowing the number of thrips in the soil of some of the orchards in the Santa Clara valley was reduced from 50 to 70%. Plowing to be at all effective must be done when the thrips are in the pupal stage as they are then very easily injured and the slightest disturbance will kill them. The plow must also be set deep enough to break up the first 3 or 4 inches of the hard soil or plow-pan. To do this in most orchards in the Santa Clara valley, the furrows turned must be at least 8 or 10 inches in thickness. The difficulties attending this depth of plowing are obvious to any practiced orchardist. After the land is plowed and cross-plowed, it must be well harrowed, in order thoroughly to break up and pulverize the clods and lumps. In soils where a large proportion of the thrips are found at a depth of 16 inches or more, the futility of this treatment is apparent. Even where more than half the thrips present are killed, enough survivors may be left to cause a total failure of the crop. Thorough cultivation can do no harm, and in many cases the orchard will be benefited both from the direct effects of the cultivation and indirectly from the thrips killed. In badly infested orchards, however, plowing and cultivation can be relied on at best only as a supplement to a more efficient control by spraying.

Spraying.—In the early experiments of the Department, a large number of different insecticidal sprays were tried out. All poison sprays were failures, because of the peculiar feeding methods of the thrips. Sticky sprays were difficult of application, and did not long retain their sticky character after application. Dust sprays failed to kill. Sprays whose insecticidal properties depend on caustic soda, carbolic acid and other caustic materials, were a success in so far as killing the thrips went, but their use was inhibited because of their harmful effects on the blossoms, foliage and fruit. Distillate oil emulsions, when sufficiently strong, were effective in killing the thrips. They also injured the foliage. Early in the work the efficacy of various tobacco washes was noted, but the insecticidal powers of these washes soon dissipated by evaporation, and at best they lack the quality of penetration, that is, to force them into the expanding buds was difficult. Finally came the idea of combining a weak distillate oil emulsion and a tobacco wash. From this idea was developed the government formula which is today giving good success when applied in the right way under favorable conditions.

Government Formula.—The formula which has given the best results is made up of 3% distillate oil emulsion, to which is added from 1 to 1⅔% of tobacco extract No. 1 (blackleaf containing 2.75% nicotine), or tobacco extract No. 2 (sulphate of nicotine or blackleaf 40), which is 40% nicotine, at the rate of one part to from 1500 to 2000 parts of the spray mixture. The distillate oil emulsion may be obtained from several dealers in chemical and spray supplies, or may be made at home. By the use of the home-made emulsion, a considerable proportion of the cost of spraying is saved, and, what is more important, the quality of the emulsion is above reproach when good materials are properly used in its manufacture. The stock emulsion can be made several weeks previous to the time of spraying if necessary. The first step in the manufacture of the emulsion is the making of the soap according to the following formula, which will give, when properly mixed, about 40 pounds of fairly firm soap.

Water	6	gal.
Lye, 98%	2	lbs.
Fish-oil	1½	gal.

To make the soap: place the water in the kettle or cauldron, and add the lye. When the lye has been dissolved and the water is boiling hot, add the fish-oil. Boil the mixture gently for one and one-half or two hours, or until it presents a ropy,

stringly effect when allowed to drip from the ladle. One of the secrets of success in the making of this soap is the use of genuine fish or whale-oil. A mixture of fish and vegetable oil will not do. This fact should be impressed on the mind of the dealer from whom the oil is purchased, so that no attempt at substitution will be made. With oil at 35 cents per gallon the cost of the soap should be about 1⅔ cents per pound.

To make the distillate oil stock emulsion, the following formula, or some multiple thereof, is used:

Hot water	12 gal.
Fish or whale-oil soap	30 lbs.
Distillate oil	20 gal.

No one should attempt to make this emulsion without the use of a power sprayer, with a good agitator. For a 200-gallon tank, five times the amount of ingredients named above are necessary, if a full 200 gallons of stock is to be made. The water should be boiling hot when put into the tank. As soon as the water is in, the agitator must be started and the soap immediately added. Just as soon as the soap is dissolved, the oil must be slowly added, in the meantime keeping the agitator at work. After the oil is well mixed with the soap and water, the contents of the tank should be passed through the nozzles at a good pressure (175 to 200 lbs.) into storage tanks or barrels. The passage through the nozzles is very essential for the securing of a good emulsion. Other essential points are, reasonably exact measurements, boiling heat for the water, and the right kind of distillate. In fact good results in the orchard depend absolutely on the quality of the distillate. The oil should test 32 to 34° (Beaume) and sould be the raw, untreated distillate, comparatively free from naptha and with a high flash point. Indeed, the best results are derived from the use of a raw, short cut distillate, that is, a distillate from which the lighter hydrocarbons, gasoline, naptha, etc. have been removed. Oils of this character are put out particularly by some of the Bakersfield and Coalinga oil companies.

Where the water is unusually hard, the use of caustic soda or more soap than the formula calls for may be necessary in order to soften it.

The stock emulsion made according to the foregoing formula contains about 55% of oil, and should cost the maker about 5 cents per gallon. To make a 3% emulsion for use in the rochard, about 5½ gallons of stock emulsion should be used for each 100 gallon tank. The stock emulsion should be first placed in the tank, and the water should be added under constant agitation. The tobacco extract should be the last ingredient added to the mixture.

Interior Valley Sprays.—Owing probably to different climatic conditions, the use of a larger amount of tobacco extract is necessary in the interior valleys than in the Santa Clara valley. in the interior valleys, extract No. 1 should be used at the rate of one part to 60. No. 2 is used at the rate of one part to 1500, or a little more than a pint of extract to a 200-gallon tank full of spray mixture. In the Santa Clara valley, good results are assured by the use of smaller amounts. No. 1 may be diluted 1 to 75, and No. 2, 1 to 2000.

Treatment Advocated. — Where the orchards are badly infested but three applications are necessary except in the case of pear orchards, where more may be advisable. The first two treatments are for the adult, the second for the larvae. The first application should be made just as the thrips begin to enter the separating buds. In this treatment, as in all others, a rather coarse, driving spray should be used, at a pressure of not less than 175 pounds to the square inch. Particular pains should be taken to shoot the spray into the expanding buds. To do this the nozzle must be held rather closer than usual to the twigs and buds. Except with very small trees, a tower on the spray outfit and a third lead of hose are absolutely necessary.

The second application should be made from 4 to 10 days later, when the tips of the petals begin to appear. This treatment should be made in the same thorough manner as the first. The third treatment for the larvae should be made after the petals have fallen, and particular pains should be taken to reach the under side of the young leaves before the upper sides are touched. If the upper side is hit first by the spray, the larger part of the larvae will be knocked to the ground without coming in contact with the spray. A somewhat finer spray may be used in this treatment than in the first two. So far as possible, spraying when the trees are in full bloom should be avoided.

The treatment above outlined is particularly applicable to prunes, cherries, and pears, when the bloom is fairly uniform in its development. In orchards where the bloom is irregular in making its appearance, or is spread over a long time, some modification in the outlined schedule may be necessary, that is, more spraying may be required, or it may be impossible not to spray when some of the bloom is in evidence. Good results from this treatment have been obtained upon cherries, pears, and prunes. However, the pest is more difficult to control on pears than on prunes, and on prunes than on cherries.

Results of Treatment.—Early in the Government investigations, the fact became plain to the men in charge of the work that not all the shortage in the Santa Clara valley was due to the thrips, poor physical condition of the trees, caused by a lack of plant food or water, was responsible for much of the damage laid to the thrips. The ravages of the thrips were also more pronounced on these poorly nourished trees. Accordingly the application of fertilizers to some of the thrips-infested orchards seemed desirable. Such applications were made in much of the demonstration work in the Santa Clara valley.

The writer of this paper is greatly indebted to Paul R. Jones of the U. S. Department of Agriculture for the following facts and figures relating to the demonstration work for the season of 1911:

In connection with this work, it is only fair to state that the thrips conditions in the Santa Clara valley this year were not as bad as in some previous years. This state of affairs may be accounted for by the heavy rains at blossoming time in 1910, which probably washed many immature thrips to the ground, where they undoubtedly perished, and by the abnormally dry fall which may have interfered with the proper development of the insect at the time of pupation and change to the adult form. In consequence of these conditions, the results of the demonstration here detailed are not so pronounced as they would have been had the thrips infestations been as severe as was anticipated.

In the prune orchard of H. Curry, three plats were laid off. Plat No. 1 was sprayed twice and fertilized. Plat No. 2 was sprayed twice. Plat No. 3 received no treatment. The cost of the two spray applications was $13 per acre, and $20 worth of fertilizer was used on Plat 1. The yield of this plat was at the rate of 635 boxes of green prunes per acre. Making proper allowance for shrinkage in curing and figuring on a 5.75% basis price per pound for the dried fruit, the product of this plat was worth $513 per acre. The yield from Plat 2, sprayed only, was 593 boxes per acre, worth $471; from Plat 3, the check, 486 boxes per acre were obtained, valued at $391. The gain due to spraying in Plat 2 was $67 per acre, and on Plat 1 after making allowance for the $20 worth of fertilizer used, $89. The foregoing figures may not sound very impressive, but it should be remembered that the effect of the treatment is cumulative, and the next year the sprayed portion of Mr. Curry's orchard ought to be comparatively free from thrips. On the other hand, the unsprayed portion will probably be badly affected, unless all signs of an abundant crop of thrips next year fail.

Mr. Fellows, of the Quito ranch, is also an earnest believer in the efficacy of the spray in his prune orchard. During the past season he sprayed his entire prune orchard of 250 acres twice, and 195 acres of it three times. The total cost of his spraying operation on 195 acres was $2577.87, divided as follows:

Labor, 235 days, $2 per day	$ 470.00
Horses, 210 days, $1 per horse	210.00
Commercial emulsion, 89½ bbls. at $6.10	581.75
Blackleaf, 55½ 5-gal. cans at 90c	249.79
Blackleaf 40, 45.2 gals. at $12.50 per gal.	565.00
Gasoline, 144 gals. at 15½c	22.32
Lubricating oil, 20 gallons at 45c	9.00
Cartage	45.00
Interest and depreciation of outfit	425.00
Total	$2577.87

The blackleaf was used at the rate of 1 to 100. Blackleaf 40 was used at the rate of 1 to 2000. There were 90 trees to the acre. Each application cost nearly 5 cents per tree, or about $13.50 per acre for the season's spraying of three applications.

The yield of the 195 acres for the year 1910 was 222 tons of green fruit, a large part of which was scabby. The yield from the same 195 acres in 1911 was 648 tons green fruit of good quality. Figured on a 5% basis, making an allowance of 2½ to 1, the 1910 crop was worth $11,800, or about $60 per acre. The 1911 crop was worth $34,450, or about $176 per acre. Mr. Fellows attributes this net gain of $11 per acre almost entirely to spraying. He is going to purchase two more spray outfits, making six in all, so that if necessary he will be able to make timely applications on the entire orchard the coming spring.

Even more decisive results on pears than on prunes in the county of Santa Clara could be shown were there time to do so.

T. W. Dean, Courtland, Cal., is another grower who has made use of the Government formula. He made good, thorough applications on pears, peaches, plums, and cherries. He does not fear the pests in plums, peaches, or cherries, and is confident that he can control it on the pears when the buds open uniformly. He notes that his crop from the tops of the pear trees (he did not have a tower on his spray outfit) was inferior in quality and quantity to that of the lower limbs, which received a thorough application of the spray.

Instances of the sort given in the foregoing could be multiplied indefinitely. In this connection, however, it is only fair to state that some men who have sprayed conscientiously and thoroughly have not obtained the desired results during the past season, particularly on pears. However, these individuals and others should bear in mind that the results are cumulative, and that another year of spraying will probably place the pest under control in their orchards.

Lime Spray.—Earl Morris, the county horticultural commissioner of Santa Clara county, reports that he has had excellent results on pears with a simple whitewash spray. His solution is made by slaking lime in water, using as concentrated a solution as it is possible to supply, from 75 to 100 pounds of lime to each 100 gallons of water. Care should be taken to secure first-class lime and to slack it well. The cost of this spray, all made up, should not exceed one cent per gallon.

The spray should be applied just as the buds begin to separate, and the entire surface of the tree should be covered. One application is sufficient. Although Mr. Morris gives no exact statement of the results, he assures me that eight times as many pears per tree were taken from the sprayed trees as from the unsprayed trees.

Testing for Thrips.—Many growers are puzzled to know whether or not their ground is infested with thrips. For the benefit of these and others who wish to know just how badly their soil is infested, the Government method of determining the intensity of the infestation will be demonstrated.

To secure a sample of the soil, the loose layer, to a depth of 3 or 4 inches, is scraped away, and a 5-gallon oil can, from which the top has been removed, is inverted on the hard soil thus exposed. The soil is then removed from the edges of the can, which is sunk to its full capacity over a section of soil. When the can is sunk as deeply as possible, the enclosed section of soil is cut off at the bottom, the can turned right side up, and transported with its contents to the place of examination. A section of the soil six inches square is then examined by passing small quantities through a screen. If the thrips are in the larval or pupal stage, black paper is used to collect the soil particles passed through the screen. If the insect is in the adult stage, white paper is better.

A record is kept of the number found from each inch of soil examined, from which an estimate of the number of thrips per square foot may be obtained.

Summary.—If your orchard is badly infested, you ought to spray early, thoroughly and late. The results of the first year may not be decisive, but at the end of two years of intelligent spraying, the pest will be under control.

CITRUS FRUIT NOTES.

Written for the PACIFIC RURAL PRESS
By C. H. MATSON, Los Angeles.

Fumigation Troubles.—So great has become the dissatisfaction among citrus and other fruit growers over the manner in which the State law relative to fumigating and spraying is enforced in Los Angeles county by the county horticultural commissioner, that a reorganization of the system has been ordered by the county board of supervisors.

The new system will be worked out jointly by the district attorney and the horticultural commissioner along lines intended to do away with causes for complaints in the past.

These complaints have arisen from a lack of proper inspection and from bad methods used by commercial sprayers and fumigators. In a county the size of Los Angeles it is impossible for the county horticultural commissioner, or even his deputies, to give personal supervision to fumigating the large area of citrus orchards and spraying other trees, but the work is necessarily left to inspectors employed by the commissioner.

These inspectors notify owners of trees to have them sprayed or fumigated within five or ten days, and if not done, the inspector authorizes a commercial sprayer or fumigator to do the work, which is paid for by the county, and the county then collects the bill, with extra costs, from the property owner.

Much work has been collected for by the fumigator immediately after it has been done and before it is possible to ascertain if the work has been effective. In fact, in many cases there has been no inspection at all after the work has been done. The result has been that citrus growers have been compelled to pay large bills for fumigating that has been not only worthless, but in some instances has actually damaged trees and crops to a serious extent.

The Remedy.—The details of the new method to be employed have not yet been worked out, but it will aim to have outfits of sprayers and fumigators employed directly by the county to do the work required under the State law, and not leave it to be done by commercial outfits. Citrus growers will be free to do the work themselves or employ commercial outfits to do it for them, but when it is done at the expense of the county it will be by the county's own workmen, and it will be certain that a proper job has been done before the property owner will be required to reimburse the county for it.

The new system will hardly be put into working order in time to govern the winter fumigating, but the supervisors aim to have it in force in time to prevent fumigating when the trees are in bloom next spring. Fumigating at the wrong time, just when the bloom has been at the stage when most affected by the fumes, has been a cause of much complaint.

Early Sales.—With this week practically all of the Christmas oranges will have started for Eastern markets. A few more cars may go to Middle Western cities which can be reached within a minimum time, but the Christmas rush is practically over.

Northern oranges, those from Tulare and Butte counties, have had a splendid season, but the early shipments from south of the Tehachapi have been light. Although lemon shipments from the south this season have exceeded last year, the shipments of Christmas oranges have been less than one-third as heavy as they were a year ago.

Prices, however, have been excellent, and this has brought back from the East a golden flood, particularly to Porterville and adjacent districts, from which the bulk of the Christmas fruit has come.

Fruit of Good Quality.—There has been very little green or immature fruit shipped, and the result has been exceedingly beneficial to the industry as a whole. Unripe or sour fruit, although fine in outward appearance, has the effect of disgusting consumers and depreciating markets, but fine-flavored fruit, such as has been shipped this year, stimulates the demand. As a result, the outlook is fine for a good season in the coming months for the entire industry. A record-breaking crop is now on the trees, and unless some unexpected calamity, such as a severe freeze or a visitation of black rot, comes along within the next few weeks, the coming season's shipments will exceed those of last year by several thousand carloads. And the demand is such at present that it is believed, with proper care in the distribution of the fruit in the markets, prices will continue to be extremely good.

Thus far there has been little complaint of the black rot which puzzled growers in the early part of last season.

The Northern Product.—It is estimated that the crop of the northern districts will be 25 per cent larger than last year, partly caused by the increased acreage and partly by the better crop on the trees; so it is not improbable that Tulare and Butte counties this season will ship 4000 cars. It has not been very many years since all of southern California shipped no more than that amount. Yet such have been the developments in the industry, and new markets have been created to such an extent, that 50,000 carloads can be marketed more readily now than 4,000 carloads were back in the eighties.

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A few carloads of fancy white Sonora.

How German Farmers Do Their Own Banking.

To the Editor: I take the liberty of calling your attention to the enclosure, and am forwarding you the proof-sheet mentioned therein.

Could you not set the ball rolling and pioneer the way toward the establishment of the first co-operative group on the Raiffeisen plan?

By doing so you will place the people of your section and of the United States under obligations.

As American delegate to the Institute, I can supply you with official information on the working of this system in Europe.

I should be pleased to hear from you at your earliest convenience.

Yours very truly,

DAVID LUBIN,

Delegate of the United States, International Institute of Agriculture.
Rome, Italy.

The inclosure to which Mr. Lubin alludes is a letter of his addressed to A. D. Wilson, Director Farmers' Institutes, University Farm, St. Paul, Minn., as follows:

"In your article, 'Farmers' Co-operative Movement in the North Central State,' in the issue for September, 1910, of the Bulletin of the Bureau of Economic and Social Intelligence of the International Institute of Agriculture, you say, on page 238: 'One of the great needs of Northwestern farmers is some kind of a co-operative system of banks by which they may secure loans at reasonable rates, thus enabling them to make use of opportunities which they now lose for lack of working capital.'

"In response to your suggestion, I have by this mail sent you proof-sheets of a work by the Institute, now in press, on co-operative banking in Germany. The Institute has dealt with this subject in some nine volumes already published, copies of which you have doubtless received. On page 37 of the proof-sheets I have marked the space showing the volume of business done in Germany by one of the great co-operative agricultural credit institutions, known as the Raiffeisen banks. You will see that the business done for 1909 amounted to 6,537,075,959 marks—something over one billion six hundred million dollars. When you come to consider that this great volume of business was done without mortgages and at an interest rate of 5% a year and less, and done by the farmers themselves, it will show that it is of sufficient importance to be studied and taken up by the farmers of the United States.

"I have also turned down pages 51-54 of the proof-sheets, where a phase of the credit loan bank systems of Germany is discussed, which might lend itself to adaptation and adoption in the United States, with a view to forming a system of co-operative credit banks which would bring them under the classification of 'National' banks. Under such a system the agricultural co-operative institutions would be able to obtain their circulating capital from the United States Government free of interest.

"As this is a matter of general interest, I am taking the liberty of sending a copy of this letter to other important leaders of the agricultural industry in the United States.—DAVID LUBIN, Delegate of the United States, International Institute of Agriculture, Rome, Italy."

THE RAIFFEISEN BANKS.—The publication by the International Institute to which Mr. Lubin specifically alludes is before us. It gives the history of co-operative efforts leading up to the establishment of industrial banking institutions, the wonderful development of support and available capital which they have realized, and the vast work which they are doing in the promotion of producers' prosperity. These details are beyond our printing capacity. Mr. Lubin states pointedly the commanding facts in his letter to Mr. Wilson. We are sure that those deeply interested in the subject can secure from Mr. Lubin copies of these publications of the Institute of Agriculture so far as they are available for distribution. Manifestly, our agricultural societies should, through their proper officers or committees, make a careful study of the important data which the Institute is bringing to public notice.

We have to content ourselves with detailed account of the constitution and operation of the Raiffeisen banks to which Mr. Lubin calls particular attention in his letter to us. We take it from the Institute bulletin as follows:

The Raiffeisen banks (named for their founder, Frederick William Raiffeisen, who laid their foundation in 1847) now number 15,476 and form the basis of the great edifice of co-operation in Germany.

The Raiffeisen Bank (*Spar-und Darlehenskasse*) is a registered co-operative society with unlimited liability. Its operations extend over a district defined in its rules, which must be more or less limited, a parish, often even a single village. For legal constitution the society must consist of at least seven members. The society consists exclusively of inhabitants of the district of full age, and in enjoyment of all civil rights. The management of affairs is entrusted to an elected committee (Vorstand) composed, in the majority of cases, of four or five members. This committee has a president, a vice-president, and two or three committeemen, of whom one generally has the office of treasurer or accountant. The Raiffeisen banks of the old type choose their accountant from persons not included in this committee, at the sittings of which the accountant has a right to be present, but without voting. As we have just said, this committee manages all business, deciding as to the admission of new members, upon the loans to be granted, and also upon the purchase of agricultural requirements. The committee must put itself in touch with the tribunal, in the chancery of which the society is registered; the members of this committee are inscribed as such in the same registry office.

The committee advises the registry office of the admission of new members, as well as of the names of the members who withdraw from the society; it also keeps the registry informed of any changes that take place in the composition of the committee itself. Every year before the expiration of six months from date of closing accounts, the committee transmits to the registry the balance sheet, a statement showing the number of members of the society and an auditor's certificate given by the auditor of the federation (Verband) to which the society belongs.

Besides the committee, there is a Council of Supervision; the number of its members is unlimited, but at least three. Generally this Council has six to nine members, chosen from the inhabitants of the different villages, which allows of the council being always well informed as to the circumstances of the inhabitants of its district. The Council of Supervision controls the acts of the committee (Vorstand), seeing, for example, that loans are granted in a regular manner, that the admission of new members, as well as the purchase of feeds and manure take place in virtue of decisions arrived at in the meetings of the committee and duly recorded in the minutes. The Council of Supervision must, as often as possible—at least once in the course of every three months—proceed, without previous warning, to inspect the cash, to see if the cashier fulfills his charge conscientiously. The acts of the Council of Supervision are also recorded in the minutes.

The services of the members of the committee and of the Council of Supervision are gratuitous; the members of these bodies have only a right to the reimbursement of their expenses.

Only the cashier or accountant is paid; his emoluments are fixed by the committee in consultation with the Council of Supervision, taking into account the amount of work he has to do.

The supreme authority in the society is the general assembly of members which meets once a year; for the Raiffeisen socleties of the old type the general assembly meets twice a year.

The general assembly approves the accounts and the annual balance sheet duly passed by the Council of Supervision, confirms the work of the committee, and decides as to the division of the net profits.

The general assembly, in which each member, be he rich or poor, be he of exalted or of humble position, be he president, member of the Council of Supervision, or a mere private member, has only one vote, deliberates upon every question, general or special, that concerns the society.

The working capital of the society is composed, in the first place, of the member's shares; each of the members must buy one. The value of these shares varies according to the economic condition of the different regions, oscillating between 10 and 500 marks. Nowadays, we observe a general tendency not to fix the value of these shares too low. If so provided by the rules, the society may admit payments by annual instalments.

The principal working capital, however, consists of the savings book deposits (Spareinlagen), which the society accepts from anyone; it is enough that these deposits come in abundantly for the Raiffeisen bank to be in a position to fulfill its mission efficiently. With regard to the available surplus, first a sum is set aside for a small dividend on the members' shares, calculated at a moderate interest (from 3 to 4%); then a certain amount is placed to the reserve fund; this sum, as we have said above, according to the rules, must remain inalienable. The remaining amount is generally assigned, by decision of the general assembly, to some work of common utility.

With very few exceptions, all the German agricultural co-operative credit societies are organized in this simple way, which has permitted of their becoming a continually increasing source of prosperity for the farming population. The societies are to be counted by hundreds, which, with cautious, intelligent and active men at the head of their committees and councils of supervision, reap truly "golden harvests" in the form of constantly increasing reserve funds, but their chief merit consists in their being true nuclei of that spirit of solidarity which stimulates healthy support of whatever is most nobly philanthropic.

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Our stock of the new 1911-1912 novelties is limited, so we suggest that you write at once for further information and make immediate reservation for your requirements.

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"California Horticulture

The Fruit Growers' Guide?"

It is a veritable cyclopedia of information on planting, pruning, planning, etc., and should be in the hands of every grower of trees or plants. It contains 120 pages—beautifully illustrated in colors. Sent postpaid for 25 cents in coin or stamps.

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Ornamentals (Medium to heavy grades)
Special prices to clear leased land.

Elm	Umbrella
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Free Tests of Seeds.

We recently alluded to the installation at the University Experiment Station at Berkeley of a free seed-testing division in co-operation with the U. S. Department of Agriculture, which furnishes a qualified expert for the work.

This seed-testing laboratory is maintained for the purpose of furnishing information as to the quality of agricultural seeds.

Samples of seeds will be identified, examined, or tested, according to the request accompanying them, for the following purposes:

1. Identification of seeds of weeds and crop plants.
2. Examination for the presence of adulterants or dodder.

All samples sent for these purposes will be examined at once and a report sent by mail (or by telegraph at the expense of the receiver).

3. Test for mechanical purity. This involves the determination of the percentage by weight of:

a. Pure seed (the kind being examined).

b. Foreign seed (all seeds not of the kind being examined).

c. Sticks, stones, dirt, and chaff, and the identification of the weed seeds present.

These tests require considerable time, and can be made only by experts. The facilities of the seed laboratory will permit not more than five such tests to be made for any one firm or individual in any one calendar month. These tests will be made and reports sent as promptly as possible and in the order in which the samples are received, it is promised.

4. Test for germination. This test is made to determine the percentage of seed which will germinate under favorable conditions. The seed of cereals, clovers, and many vegetables can be easily tested without the use of special apparatus. Some seeds, however, including a number of the grasses, are more difficult to test, requiring exact conditions of temperature and moisture.

Samples will be tested for germination in the order in which they are received, and not more than ten tests for germination will be made for any one firm or individual in any one calendar month.

These laboratories are expected to be of great advantage to the busy farmer, as thorough seed inspection will insure him against a poor stand through having, unknowingly, planted weak or inferior seed and from infestation of his fields with weeds.

Correspondence and prepaid samples should be addressed to the Director of the Experiment Station, Berkeley, Cal.

SOYA BEAN-CAKE AND BRAN.

The large importation of soya bean cake for feeding purposes in this State makes a report on the comparative value of the cake, as reported by Consul General J. L. Griffiths, of London, locally interesting. He writes to the State Department:

Experiments conducted by the East Scotland College of Agriculture during the winter of 1910, to ascertain the relative value of soya bean-cake and linseed cake for the feed of cattle are now concluded. For a generation or more linseed cake has been used in the United Kingdom for fattening bullocks, but the increase in price has directed attention to the desirability of securing some substitute. It was thought that the soya bean-cake would most completely answer this purpose, and the earlier trials indicated that "although it is not quite so effective, its lower price makes it about equally economical."

The soya bean-cake and the linseed cake were used in combination with the same quantities of turnips, straw, hay, Bombay cotton cake and dried grains. The experiment showed that the feeding value of soya bean-cake was about three-quarters that of linseed cake. The experiments included allowance for the higher manurial value of soya bean-cake, which is estimated at about one-fifth higher than the older food.

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The supply of **good trees** is very, very short—

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Raised on non-irrigated land, most vigorous and of highest germination. No foul or noxious seeds, no weevil. Price low for the best.

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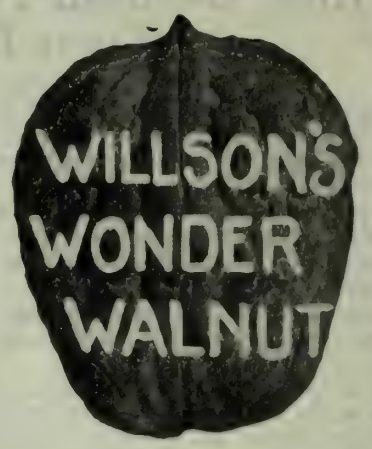
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Also a good stock of **Cherries, Plums, Peaches,** and other **Fruit Trees; Palms, Roses,** and other Ornamental Stock.

Send for Price List.

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BERRY PLANTS

SPHAGNUM MOSS For Sale
Wholesale and Retail

LOUIS F. SCRIBNER
PASADENA, CAL. R. F. D.

Foul Brood in California.

E. M. Gibson, of Jamul, San Diego county, writes to the American Bee Journal as follows:

It has come to the breaking point with me, and I am going to write some truths about foul brood, and if some one's feelings are hurt, I hope others may be benefited.

There is not the flimsiest thread of consistency in keeping foul brood year after year to menace those who keep their apiaries clean. One would not be allowed to keep any other infectious disease in a neighborhood—why foul brood? We hear of bee-keepers whose bees get the disease, but that is the last we hear about it—they get rid of it without an inspector having to come and make them do so. Nearly every issue of our bee papers has one or more articles about foul brood and its cure, and I believe a great majority of them ought never to have been published. If I were inspector I would be lenient with the beginner, but the old transgressor would have to "gest busy" and clean up.

In the first place, I would see to it that every owner of bees received a circular explaining the McEvoy treatment, and giving explicit instructions about being careful in the manipulation of the same. The McEvoy treatment will cure foul brood, either American or European. When I refer to the McEvoy treatment, it is to be understood that I mean with starters or with whole sheets of foundation. I used full sheets, and if I had used only that treatment instead of trying everything else I had read about, I would have gotten rid of it one year sooner than I did. If there is a sure cure for foul brood, why not confine one's self to that process?

There need be no trouble about diagnosing the disease; the rawest beginner would not be misled, for if his eyesight failed, and his olfactory nerve was in tune, he could make no mistake.

Some districts of the inspectors are so large that it is impossible for them to do all the work, and the law in this State does not require them to do so. The owners of bees should be instructed as to the method of cure, and then it is the duty of the inspector to see that instructions are followed.

Are some of our inspectors too lenient with old offenders? It is not for me to judge, but I have read in the bee papers that foul brood is on the increase in some of their districts. There is such a thing as being overzealous to do justice to a few that injustice may be done to others.

The year 1904 was the poorest season I have ever known. I fed my bees from May, 1904, to May, 1905. Honey being the natural food for bees, and never having heard of foul brood in this section, I bought honey to feed them. I afterward learned that the honey I had fed was taken from an apiary that had foul brood, and had been broken up, the honey extracted and sold to the merchant from whom I bought. Imagine the condition the bees were in by 1905. Several told me it was impossible ever to cure such a mess, but I produced 17 tons of honey that year, and nearly all the bees that I put on foundation that year were cured, and the next year I cleaned it out.

The first year I tried to save the brood by piling up hives filled with brood and a few bees to protect it, but I think this a great mistake. It seems like a great sacrifice to cut out those solid sheets of hatching brood with but a few cells showing any disease, but when one stops to consider that by keeping them other colonies may be infected, and the same process gone over again, it seems to me to be "penny wise and pound foolish." Desperate cases need desperate remedies, and the sooner we get rid of every vestige of foul stuff the sooner will we be rid of the disease. One cannot be too careful while doing the work.

I was told many times that the disease would show up again as bad as ever in a year or two, and I have refrained from writing, thinking I might laugh too soon; but six years is long enough, and I am sure if the disease reappears it will be from outside causes.

Another reason for not writing on this subject sooner is, that I thought possibly the disease might be more easily gotten rid of in this dry and mild climate, or perhaps it might be in a milder form, but I know of those whose bees contracted the disease the same year that mine did, and from the same cause, and their bees have it today as bad as ever.

If each one did his duty, foul brood would be wiped out, and we would hear but little about it. It is unreasonable to suppose every one will try, and this is the time for the inspector to do his duty; he, being armed with authority, should see to it that all delinquents do their part. It seems to me it is up to the inspectors whether we keep on threshing old straw through the medium of the bee papers, or whether they get at it and clean the country up.

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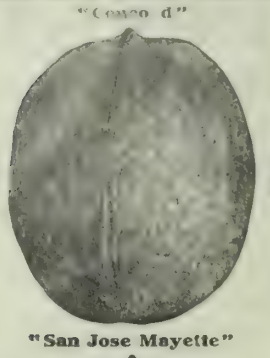
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Acetylene Lime in putty form in iron drums
275 lbs. including drum 65 cents
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Will accept future contracts on Citrus Stock. also Apricots.

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Globulus, Rostrata and Tereticornis. Ornamental Trees and Burbank Spineless Cactus. Well-grown stock. Address

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IN USE ALL OVER THE STATE.
For sale by all the largest groceries, or
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AGRICULTURAL REVIEW.

With the Fruit Men.

A meeting of the Board of Horticultural Commissioners of Humboldt county was held last week to arrange plans for improving conditions in the fruit districts of the county.

Big returns from olives are reported from various parts of the State. F. C. Balaam, of Exeter, Tulare county, reports the sale of a crop on 160 acres for $17,600. At Lindsay G. S. Berry sold from 157 trees 28,353 pounds of the berries.

It is stated that only half of the raisin crop, or about 24,000 tons, is left in the hands of the growers, and that much of the raisins already sold have been consumed.

South Australian fruit journals state that the apricot prospects are extremely good this season. Advance sales at £90 per ton, duty paid, London, have been made. The ruling price per pound for export is 5½ pence.

It is reported that the Southern Pacific will establish a pre-cooling plant at Elmira, where fruit from Winters, Vacaville, and Suisun can be treated.

From one walnut tree at the home of C H. Lewis, Escondido, San Diego county, 275 pounds of nuts were secured this year.

The first carload of oranges shipped from Anaheim, Orange county, this year left December 2.

According to the Lindsay, Tulare county, Gazette, the number of cars of oranges shipped increased from 351 in 1902, to 1208 in 1910, and the estimate this year is 1400. Only in 1908 was there a decrease from the previous year, when 52 cars less went out than in 1907.

A very large amount of apples from the Pajaro valley are reported to be in cold storage this year. In the East also many apples have been put away for the spring.

Horticultural Commissioner H. H. Bowman, of Placer county, has just issued his first biennial report to the supervisors in the form of a 40-page bulletin. In this is given a description of the most important insect pests and plant diseases found in the county, with their control. The report shows that the fruit crop of the county in 1911 amounted to 1476 cars for interstate shipment and 450 cars for local use, exclusive of grapes.

Through quiet buying, it is reported that a number of sales of raisins in the sweatbox have been made at 3½ to 3¾ cents, with layers at 4¾ cents.

The Bixby ranch of 240 acres near Temescal, south of Corona, Riverside county, has been sold for $75,000, the owner intending to plant 100 more acres of it to oranges.

H. G. Johnson, sales manager of the Farmers' Union, sold 25,430 pounds of pickled olives from three acres of olives near Clovis, receiving $70 per ton for them.

The Kerman Commercial Association has endorsed the California Raisin Exchange and will call a mass meeting of the raisin growers of the vicinity to obtain members and support for it.

The annual social meeting of the fruit men of Placer county was held in Newcastle December 14.

General Agriculture.

The Lompoc Seed Growers' Association has just made the largest sale of mustard seed ever negotiated in this State. The amount received was about $60,000.

R. C. Musgrove, a prominent cotton man of the East, and judge at the American Land and Irrigation Exposition this



THE OLD RELIABLE
SAN DIMAS CITRUS NURSERIES, San Dimas, California
ESTABLISHED 1890

We have to offer for planting season of 1912 an excellent stock of strictly first-class Citrus Trees in all varieties.
Prices submitted on application.
REMEMBER, MR. PLANTER, we have had twenty-one years of experience in the successful propagating of Citrus Trees, and while our prices might be a little higher than our competitors, we absolutely guarantee our trees true to name. We are in the business to stay, hence can back up what we say.
THINK WHAT THIS MEANS TO YOU—The average nursery is in business today and out tomorrow, so you have no recourse should anything go wrong. In addition to guaranteeing our trees true to name, we select our buds only from best individual fruiting trees, which would eliminate the possibility of having non-fruiting trees, or poor bearers in your grove. We follow the same plan of bud selection as the Government experimental work.
CONSIDER THIS FULLY. One tree that will not produce after five years of work and attention will have cost you fully TWENTY TIMES its original purchase price. YOU CANNOT AFFORD TO TAKE CHANCES.
Write us today in regard to your wants. All correspondence most cheerfully answered.
Our booklet entitled "Citrus Fruits" mailed to any address on receipt of 25c.; credit given for this amount on first order.

THE ACAMPO NURSERY

We grow all kinds of high grade deciduous fruit trees, leading varieties of Peach, Plum, Prune, Cherry, Almond and Apricot.

Write us for special prices.

WILDER & FERGUSON, Acampo, California

ORANGE AND LEMON TREES

The best that Expert Horticulture can produce.
Write today for our 1912 Announcement.

250,000 SOUR SEED BED STOCK

Big stock in rows—The McMillan grown kind.

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CITRUS TREES EXCLUSIVELY
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For Fertilizing Purposes Good For Any Growing Crop.

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year, has written to San Diego urging the planting of sea island cotton near the coast.

The cotton crop of Imperial county will amount to approximately 11,000 bales this season, as compared with 5986 bales last year.

According to the American Beet Sugar Company, Peter Loubet, of Pomona, holds the record for beet production in the United States, getting 40 tons from one acre of land this year. The beets averaged 15 pounds each.

Night farming with searchlights is being done by E. W. Fowler, who is farming 2000 acres of delta land on the Brack tract near Lodi. The rush is due to the necessity of getting the land seeded to barley before rains prevent. Two traction engines are engaged which haul five gang-plows with harrows and drills, the land being seeded with one going over.

A strong flow of artesian water has been struck on the Witcher ranch, near Newman, Stanislaus county.

Celery is being shipped from San Joaquin county in large quantities, and the crops are in good condition.

More dry-plowing than usual has been done in the big valley this year, owing to the fact that rains in many places were too light to loosen up the soil properly.

The Sacramento Valley Sugar Co. is running three tractors in Yolo county preparing the land for beets. The Alameda Sugar Co. has been running later than usual and will also increase planting this season.

The Balfour-Guthrie Co. will plant out 160 acres to rice the coming season, owing to the success that has been achieved in the experimental plots this year.

The Board of Trade of Stanislaus country is offering a prize of $2 for the largest pumpin raised in the county, $2 for the largest squash, and $1 for the biggest gourd. The vegetables are to be used for exhibition purposes.

The onion crop of the State is reported to have been "cornered" by a large wholesale company of San Francisco and Los Angeles, and prices are expected to rise as a consequence.

Miscellaneous.

The annual report of the director of the Reclamation Service shows that 210 farms in the Orland reclamation project were supplied with water this season. The year previous only 100 farms were supplied.

At the Fresno poultry show this year 800 fowls were displayed.

A committee of the Santa Clara Valley Poultry Association has reported in favor of joining the California State Federation of Poultry Clubs, and a delegate will be sent to the Association meeting in Los Angeles.

The Armsby cannery at Yuba City is being enlarged for next year's run.

At the Fresno poultry show eight roosters, each with a tail nearly 12 feet long, were exhibited by G. Allen of San Francisco, who recently brought the fowls from China. Two hens of the same breed were also exhibited.

A suit against the members of the defunct Petaluma Egg Exchange has been started by J. W. Horn, assignee, of the Sonoma County National Bank, on notes amounting to $35,000.

The Farmers' Club and Poultry Association of Ukiah are to hold a joint meeting and banquet this Saturday, at which time J. W. Jeffrey, of the Deciduous Protective League, will address those present.

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Dairy Quality of Short-Horns.

California began cattle improvement by the crossing of Short-horns on the Mexicans and made great dairy progress thereby. California has always had some breeders who never gave up the idea that Short-horns of the right strains are among the best dairy cattle still. California has gone after the distinctively dairy breeds for many years, beginning with the Jersey, then going strongly after Holsteins and others—the Holstein passion being on, and the Jersey still strongly in the race. They had a show down in Vermont recently which all who hang to the Short-horn escutcheon, at least, will be glad to read about, and it will show that California and Vermont are not unlike in their dairy history, so far as breeds are involved. We find in a letter to the Breeder's Gazette this interesting account, evidently written by a Short-horn man:

The American Dairy Short-horn Association was formed a year ago at the Vermont State Fair of 1910. This year at that State fair the Dairy Short-horn met the Jersey upon the question of which was the better butter cow, and came off victorious. The conditions of the contest given in the premium list of the fair called for three cows giving, during the two middle days of the fair, the greatest milk yield, measured by its money value as shown by the yield of butter-fat.

There were originally five contestants from each of the two breeds, making the splendid entry of fifteen Dairy Short-horns against fifteen Jerseys, but one by one the entries dropped out, leaving for the actual competition, one entry of Short-horns and two of Jerseys. The Short-horns were represented by Doris Clay, Nancy Lee 2d and Red Rose, owned by May & Otis, Granville Center, Pa., and Willoughby, Ohio. H. M. Tucker of Maine owned one of the Jersey team, their names being Belle's Golden Girl, Maxime's Golden Girl and Rosette's Miss Golden. The other Jersey entry belong to Fred F. Dow of Vermont, and the three cows were Lady Eminent Buttercup, Warder's Crown and LaChasse's Belle.

The contest was one of great interest to Vermonters. The original settlers of the State were mostly of English stock, and when they came up the Connecticut river they brought with them Short-horns. Until forty or fifty years ago they were the stock found on Vermont farms, and it was nothing unusual to see great red and white cows which would give 50 to 60 pounds of milk a day, and when too old for milk, dress off 800 to 1000 pounds. There was hardly a farm which did not have a yoke or more of Short-horn steers. These splendid cattle have been nearly supplanted by the Jerseys, which somehow the farmers of Vermont were persuaded to believe were better, upon the theory that a dual-purpose cow which made both good beef and good butter must—for some reason never clearly stated—be inferior to a cow which made butter alone and was worthless for beef.

Some of Vermont's farmers have, however, stuck to the old breed, just as they have stuck to the Morgan horse, and it certainly did them good to see at the fair the Short-horns of May & Otis. One was red, one was red and white, and the other was roan—the three great colors of the breed. Two were five and the third was seven years old, and on a safe estimate the smallest would turn the scales at 1250 pounds and the largest at 1400 pounds, great nice cows full of Short-horn quality, with magnificent udders and well-placed teats.

The Jerseys were fine specimens, being perhaps as good representatives of their breed as were the Short-horns. The contest was carefully conducted, all the cows entered being milked out the night before by those in charge of the trials. The weighing of the milk and the determination of the percentage of butter-fat were done under the supervision of Prof. Hills of the Agricultural College at Burlington, Vermont.

In the final figures furnished by the Agricultural College the result was summed up as follows:

SHORT-HORNS OWNED BY MAY & OTIS.

Name.	Pounds of butter.
Red Rose	4.043
Doris	4.359
Nancy Lee 2d	3.291
Total	11.693

JERSEYS OWNED BY F. F. DOW.

Name.	Pounds of butter.
Lady Eminent Buttercup	4.32
Warder's Crown	2.368
La Chasse's Belle	2.49
Total	9.178

JERSEYS OWNED BY H. M. TUCKER.

Name.	Pounds of butter.
Belle's Golden Girl	3.026
Maxime's Golden Girl	3.328
Rosette's Miss Golden	3.6
Total	9.954

The victory of the Short-horns was decisive and places them where they should be, namely, in the ranks of the great dairy breeds.

CALIFORNIA LIVE STOCK SANITARY ASSOCIATION MEETING.

The semi-annual meeting of the California Live Stock Sanitary Association will be held in the Chamber of Commerce building, Los Angeles, Tuesday, December 19, 1911. The following papers will be read: "Municipal Milk Inspection," by George H. Hart, chief milk inspector of Los Angeles; "The Preparation and Application of Anti-Hog Cholera Serum," by F. M. Hayes, University of California; "The Inter-dermal Tuberculin Test," by Otis A. Longley, Fresno; "Municipal Market Inspection, C. L. Megowan, market, milk and meat inspector of Sacramento; "The Eradication of Bovine Tuberculosis," by R. A. Archibald, city veterinarian of Oakland; "Eradication of Glanders, by J. P. Iverson, deputy State veterinarian; "Co-operation," by John L. Tyler, Pomona Board of Health; "Methods Employed by Pasadena in the Inspection of Dairies, by W. A. Boucher, dairy and milk inspector of Pasadena; "Supervision and Inspection of Municipal Abattoirs, by John Nelson, chief meat inspector of Los Angeles. One and one-third round trip rates are to be allowed to those who wish to attend the meeting.

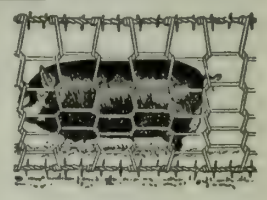
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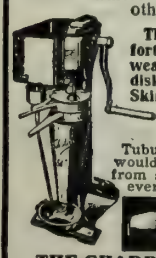
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Progress in Eradicating Scabbies.

That the eradication of scabbies in sheep would soon be accomplished in this State and that Federal support in its control would soon be withdrawn were indicated in an address by Dr. Charles Keane, State Veterinarian, at the woolgrowers' convention recently held in San Francisco. A number of important recommendations to sheep men in preparation for that time were made.

Dr. Keane said in part: "When the Federal and State governments first took up the work of eradicating scabbies in sheep this trouble existed in 80% of the flocks in California. Now it can be found only in a few scattered bunches, and by the end of the year all of these will have been dipped. Probably by the time the next regular session of the legislature meets the disease will be eradicated and the expenditure permitted now in controlling it will be stopped. It will then be necessary to see that the State is not left often to the re-introduction of the disease and that it be not permitted to get a foothold here.

"The State authorities will make such recommendations to the legislature as seem advisable to prevent the introduction of this trouble, but that alone will not be as effective as if the sheep men themselves took an active interest in getting the laws they wanted. It is possible that if this is not done the matter will be left in the hands of the State Veterinarian to make what regulations may seem necessary, but the regulations of on official or a board are never as effective as the same rules in the form of a law,

"If this is not done it will be possible for a bunch of scabby bucks to get in, and before the disease is discovered the scabbies will be established among large flocks.

"Another thing that deserve attention is he keeping up of the dipping cats. If they are not used, they are likely to run down, and before they can be used again it will take much time and expense to put them in condition.

"Only recently a band of sheep was found that had the scabbies and it took a lot of time and trouble to find a vat that could be used. When one was at last ready it was time to move the flock to another place, and they could not be dipped there after all, and the dipping had to be done in another place. If the vats in the vicinity with a little care had been kept in condition, they could have been dipped at once at a great saving of time and trouble and much danger in in spreading the trouble would have been avoided."

Dr. Keane told of seeing one of the finest dipping plants in the State that had not been used for two years owing to the eradication of scabbies on the ranch, and not until he spoke of it to the owner did he think of keeping it in good condition, but saw the need of it at once when pointed out.

Another thing Dr. Keane wished to have done was the reporting of the diseases in the neighbors' flocks when found, as there have been delays in this owing to a dislike to interfere in anothers' business, to the injury of everybody concerned.

THE ETHICS OF HIRING MILKERS.

G. E. Frevert, of the Missouri Experiment Station, discusses the relations of the dairy owner to the hired man, introducing conditions which are not so prevalent in California as in the older parts of the country, and still are worth considering carefully.

When the farmer is asked why he does not milk more cows, the answer almost invariably comes that hired help is too scarce, or that it is almost impossible to hire a man if he is expected to do the milking.

The hired man seems to have a hatred toward the dairy business. The question comes at once: "Why is this true?" Is milking harder than other work? I think that most hired men will agree that milking is not such hard work, but that the farmer figures on having the hand do a day's work in the field and then do the milking in the morning and evening besides, without any extra pay. Certainly if the dairy business is worth while, as I thoroughly believe that it is, the farmer should be willing to pay for the extra labor involved.

I have worked for several years as a hired hand on the farm and find that the work of milking the cows is not harder than other farm work, but that the tendency of the farmer is always to do the milking after a hard day's work has been done in the field. Often the milking was begun at five or earlier in the morning, and in the evening when the milking was done, the milk separated, and the calves all fed, it was from 8 to 9 o'clock.

The demands of the hired man of today are not so much for higher wages as they are for shorter days. That is all right, and if the farmer will cut a few hours off the day's work in the field, and use them in the dairy business he will make just as much money and enjoy life a great deal more. Cows, in order to do their best, should be milked at equal intervals. If they are milked at 5 in the morning, they should be milked at 5 in the evening. If this plan is followed I am sure that the hired man question will not be so difficult a one.

A hired man should be paid according to his ability and willingness to work. If he is a sluggard and still receives the same wages as the alert man, the man with higher ambition is discouraged because he does not receive pay in proportion to the amount of work he does. In many cases the farmer is condemning the hired man when the farmer himself is doing about all he can to discourage the man's ability.

Human interest and kindness are perhaps the best means of getting the most out of the hired man. If he is greeted in a cheerful way in the morning when he meets his boss at the barn, and is treated as a man, he feels that there is something in this old world besides hard work and will feel more like trying to please his employer. On the other hand, if the man is greeted in a grouchy way in the morning or receives no greeting at all, he feels that the man for whom he is working is interested in him only so far as he wishes to get work out of him.

If some of the foregoing hints are carried out, the dairy business will not be dreaded to so great an extent by the hired man, and in the long run the farmer will be money ahead. The dairy business is certainly worth while.



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BERKSHIRE AND POLAND-CHINA HOGS. Both sexes. C. A. Stowe, Stockton, Cal.

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CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroughbred Berkshires.

LIVE STOCK NOTES.

Market cattle exhibited in the International at Chicago brought fancy prices when sold at auction after the show. The grand champion carload of Matador yearlings brought $6.75 per hundred, and a bunch of Colorado yearlings, that were reserve champions, sold for $44.25 per head.

At the meeting of the new directorate of the Percheron Society of America at Chicago recently, H. G. McMillan was unanimously re-elected president of the organization, but declined to serve for another term, and A. P. Nave, of Attica, Indiana, was chosen in his stead.

At the meeting of the American Association of Breeders of Belgian Draft Horses $2500 in cash and gold medals and ribbons was appropriated for special prizes in 1912.

At the second annual meeting of the National Association of State Stallion Boards in Chicago recently, 14 States were represented by delegates. The California and Michigan Boards, which were formed since the first meeting, are to apply for membership.

H. A. Jastro of Bakersfield, Cal., has been elected president of the American National Live Stock Association. At the meeting at Denver a resolution was adopted requesting a restoration of the duty on hides, and asking for protection on live stock and farm products equal to the protection on other products. The next meeting will be held in Arizona.

Dr. W. S. McFarlane, veterinarian of Orange-county, in a report to the supervisors, states that the infection of the Texas fever tick in the county is confined to two large ranches. Ten ranches have been released from quarantine during the year and fifteen are under suspicion.

At the quarterly meeting of the California State Veterinary Medical Association, held in San Francisco last week, the following officers were elected to serve for the ensuing year: President, O. A. Longley, of Fresno; vice-president, J. J. Hogarty, of Oakland; secretary, J. J. McKenna, of San Francisco; treasurer, C. L. Roadhouse, of the University of California. The following papers were read at the convention: "The Future of Veterinarian," Dr. P. H. Browning, San Jose; "Nuclein: Its Action," Dr. R. A. Archibald, Oakland; "The Treatment of Tetanus," Dr. H. A. Spencer, San Jose; "Bacteriology of Contagious Abortion," Dr. F. E. Twining, Fresno.

Cahill, Taylor & Pond, of San Luis Obispo county, have received a large shipment of cattle from Nogales, Arizona, the latter part of this week. Fifteen hundred head of stock steers were received at the Sacramento ranch at the same time.

The prevalence of hog cholera in the East is driving the hogs to market at a much less age than is customary, and a shortage is promised later on. The lack of pasture on Eastern ranges and a corn shortage is also the cause of less fattening of sheep and cattle than is customary.

Fred H. Guldager, deputy State Veterinarian, was in Patterson last week testing the cows of members of the Farmers' Association there for tuberculosis.

J. F. Campbell, manager of the Pacific Coast branch of the Lafayette Stock Farm, has just returned from the East bringing sixteen Belgian and Percheron stallions.

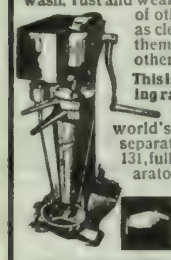
The paper of Fred A. Ellenwood of Red Bluff upon the tariff on wool, which was delivered at the meeting of the State Wool Growers' Association in San Francisco recently, was repeated at the National Wool Growers' meeting in Denver. Magnus Brown, of the Minnesota Association, outlined the plan for a factory to be run by the growers, so that they could get what they should for their wool.

The proposition of holding a large live stock show at the Panama-Pacific Exposition in 1915 was brought before the various live stock associations at their

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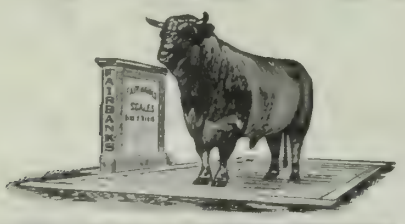
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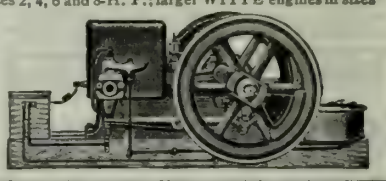
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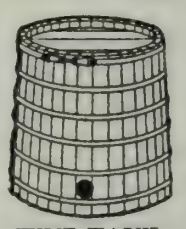
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meetings in Chicago at the International, and, without exception, enthusiastic support, both moral and financial, was promised.

Owing to a growing shortage of feed in the San Joaquin, a number of herds have been moved into the Sacramento valley counties, although the grass there is not in as good condition as the stockmen desire.

Owing to the large number of cases of rabies occurring in Kings county recently, Dr. George Gordon, live stock inspector, has recommended to the supervisors that a temporary ordinance be adopted to prevent any dogs from running loose in the county for three months. He states that no new outbreaks of hog cholera have occurred during the month. The use of the new hog cholera serum on one large ranch was rather unsatisfactory, as 50 hogs died out of 150 vaccinated, 40 of which were apparently perfectly healthy when vaccinated. Only two arrests under the State Dairy law were made during the month, owing to the general good condition of the dairies.

It is announced by Dr. E. F. Pernot, State bacteriologist of Oregon, that the "walking disease" which has caused considerable loss to horses and cattle, is a malignant form of hydrophobia.

The grand champion car of hogs at the International at Chicago averaged 263 pounds and sold at $6.50. They were Poland-Chinas and were raised in Minnesota.

DAIRY NOTES.

C. W. Brown of Tulare is building a new dairy barn on his ranch five miles north of town, which will accommodate 40 head of cattle. Arrangements are being made so that the dairy will be enabled to furnish certified milk later on, and the barn and equipment are models of convenience.

C. L. Thornton of Visalia has recently purchased eight head of registered Holstein-Friesian cows and a registered bull, for which he paid $1150.

The city council of Los Angeles has adopted an ordinance prohibiting the selling of milk from cows that have not been tested and found free from tuberculosis. This and shipments from the Imperial valley are making serious competition for the dairymen in the southern San Joaquin, who supply a large part of the milk now sent to Los Angeles.

The dairy herd of polled Durhams of William Pierce of Solano county has been given its annual tuberculin testing and not a cow was found that reacted to the treatment.

The herd of 45 Holstein cows of F. Jamison of Empire, Stanislaus county, has been sold to Charles Geer of Turlock for $100 each. The cream check last month was $519. Another recent auction sale in the county brought an average of $80 per cow. In contrast to this, the Chicago Livestock World quotes Eastern prices as $70 for fancy Holsteins, although few sales over $60 are made, and in the good to very good class, where most sales are reported, the price is between $50 and $60.

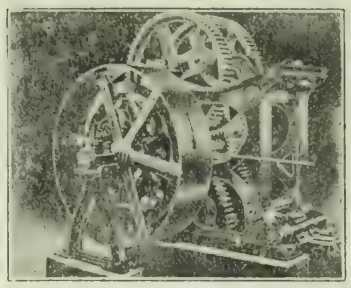
Professor Leroy Anderson, of the University of California, is to organize a cow-testing association at Modesto in the near future, so that dairymen of the vicinity may easily determine the amount of butter-fat that each cow they possess is producing.

The condensed-milk plant at Hughson, Stanislaus county, is nearly completed and will begin operations within a few weeks.

A co-operative creamery is being organized at Bakersfield, Kern county, by Charles Fippen of Visalia, and about 150 dairymen are said to have promised their support to the undertaking.

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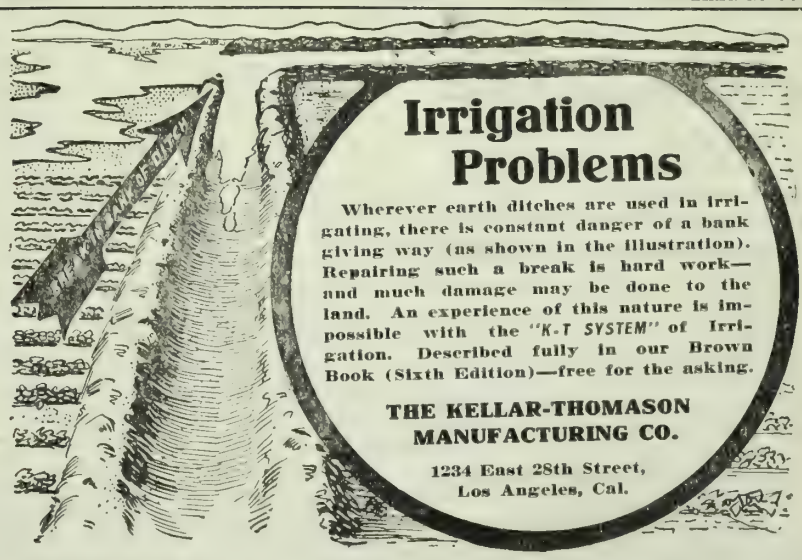
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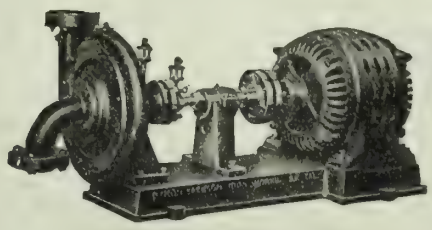
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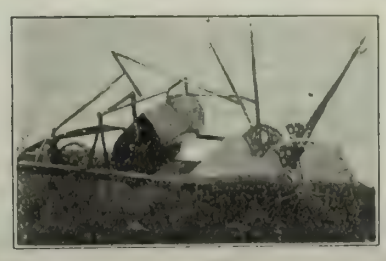
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DIXON IRON WORKS,
DIXON, CAL.

Poultry Droppings for Garden and Orchard.

Written for the PACIFIC RURAL PRESS
By Mrs. S. SWAYSGOOD, Pomona, Cal.

For years the United States has been considered the most wasteful of all nations in all kinds of agriculture. The whole country has been so rich in its resources that farmers came to the conclusion that there was no need to be careful or provident in regard to the land. When one piece of land showed signs of poverty, turn around and buy more. But land is getting scarcer, consequently higher priced and harder to buy. Some of the waste must now be turned to use to restore the land to its original strength.

FOR GARDENS.—As a fertilizer for garden truck and fruit trees, the droppings from the poultry yards stand first. Rich in lime and phosphates, they contain the very elements needed for vegetable growth and for the size and sweetness in fruit. Writers have told in nearly every farm paper in the country that poultry, bees and fruit were the right combination to bring prosperity to the farmer. But many of those that wrote had not experienced the result of such a combination, hence their words fell on dull ears.

The price of prunes and hops this year will prove a bonanza to the fertilizer companies, as most of the growers are reminded that the ground really needs something to restore it. But the man with a good flock of poultry that has taken care to spread the droppings on his land at the right time, need not delve into his pockets for a high-priced fertilizer. He need not fear that his land is getting impoverished; the dark green of the leaves on his trees in spring will tell him that the trees are well fed and healthy.

FOR ORCHARDS.—Ten or twelve years ago my prune orchard in Sonoma county was fast deteriorating. For two or three years the prunes were so small that it was hard to sell them; they ran all the way from 60 to 90, with the 70 to 80 size dominating. Orchardists said the trees were getting old and naturally would yield a crop of smaller prunes. But investigation proved that the trees were not old, so we naturally concluded that the land had stood about all it could of the one-sided process in vogue—that of taking off and putting nothing back.

Having a good-sized flock of poultry, we commenced to experiment with a few trees, and the result was so gratifying that the whole orchard has been treated with a generous coating of the by-products of the poultry houses. This last year our trees bore a heavy crop of prunes, a larger crop than any of our neighbors, and the quality was as good as the best. The size, too, was very good for such a large crop, as they averaged 50 to 60. And the ground is just as mellow and rich as it could possibly be, without a dollar of extra expenditure. In fact, if the land receives no more droppings for two or three years, there is enough lime and prosphates in it now to assure a good crop for each season.

HANDLING THE MANURE.—In Eastern papers we read of elaborate methods of preserving the droppings for future use, but in our dry climate I do not think any of these are necessary. At least, we never went to any trouble over it. Up to the time that the land is put in good condition for prune picking we just carried it out in a box and scattered it between the rows. After the land was worked for the last time we kept the droppings in barrels or boxes until prune harvest was over, then took them out on a wagon and scattered where needed. When the early rains come and the grass commences to grow, we get the full benefit in a good grass crop. When the grass is turned under in the springtime it is like getting compound interest on your money—you get two benefits.

On most all farms where a few chickens are kept there are droppings left lying around, breeding filth and mites, that could be turned to good account in the orchard or garden. A shovelful of hen droppings mixed well with the soil where squash is planted will more than double the crop. And wherever a young orchard is planted the ground should be enriched with droppings from the poultry yard in preference to any other fertilizer. It can't be beat when it comes to growth. Stable manure is a back number to it; the latter very often starts weeds that are foreign to the soil, thus causing more work and trouble than it does good.

For those that prefer the lesser trouble, colony houses that can be moved from place to place are to be recommended. These houses should be built on runners like sleds, then when it is desired to move them from one place to another, simply fasten a log chain to the runners and hitch a horse to it. Chickens that are used to this method rarely wander far away.

There is, however, one thing to remember when moving houses: always face the door or outlet in one direction, if it is turned around, some fowls are so stubborn they will not look any farther than the direction they have been used to going in for the night, preferring to stay outdoors to making extra effort. Of all times of the year to get droppings on the land this is the best, so that the winter rains will carry it into the ground ready to be assimilated by plant growth.

BEES.—Bees in the orchard are another source of profit; in fact, bees, like hens, work for the orchardist in more ways than one. A few hives of bees kept among fruit trees gather the sweets for the family and at the same time fertilize the blossoms. Clinging to the feet of bees as they fly from blossom to blossom is the pollen that means sex to the blossoms. The fruit always sets better and stronger in an orchard where bees are kept than that in orchards not keeping them. Besides this, think of the waste of all that honey in the cups of flower blossoms that could be saved to the children.

There is no State in the Union where economy of all fruit and farm products can be so easily practised as in California. The seasons are always open and work can be carried on at all times. If the weather forbids one kind of work the farmer ought to be able to turn to something else equally as useful and necessary.

And the time is not far distant when we shall be forced to look after the by-products and stop the waste—just as well to do it before we are forced to it.

FEATHERS.—Before we can ever hope to make all the profit due us from poultry, we must learn to utilize everything connected with them. There is annually a great waste in feathers. Somehow the idea got around that chicken feathers were not good for pillows. This was because a few people made pillows with chicken feathers just as they were plucked from the chickens. These were insanitary, had a bad odor, and consequently got a bad repute.

If washed carefully in soap and water, well rinsed and hung up in the shade to dry, there is no reason why chicken feathers should not make just as good pillows as goose feathers. The larger feathers,

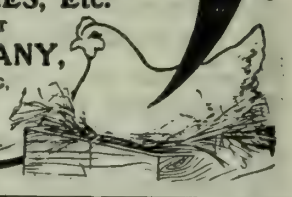


This Metal Hen hatches in nature's way

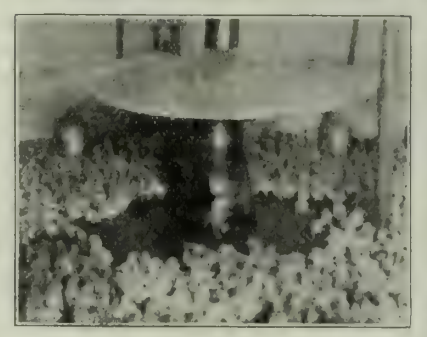
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S. C. WHITE LEGHORNS a specialty. If you want large, strong, healthy chicks; CHICKS THAT ARE WELL HATCHED from mature, healthy, and strong stock which has been bred for utility purposes for years, write to me. I want your order, for I know I can satisfy your wants, if you want the best CHICKS THAT WILL GROW, for I have satisfied hundreds of others. I am now booking orders for future delivery. Capacity of over 30,000, which is an increase of over 200% in the last two years.

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Mention Pacific Rural Press.

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HOPLAND STOCK FARM,
HOPLAND, CAL.

such as wing and tail feathers, can be put on the ground as fertilizers, or if of good colorings sold to milliners as hat trimmings.

I fancy the Eastern poultrymen are wider awake to these things than we are, for a milliner tells me that nearly all the feathers used in the business are chicken feathers, either natural or dyed.

This feature of utilizing feathers in the millinery trade ought to encourage farmers' wives and daughters to keep a flock of pure-bred fowls, for surely the feathers of mongrels will not do for hat gear.

EVEN THE COMBS.—A friend, who has lived in France, tells me that cock's combs are pickled and sold as a great delicacy in that country. So we see how many ways there are to economize and make profit on things that we have hitherto wasted without a thought. Even chicken legs and feet, when properly cleaned and cooked, make a very fine soup, that can not be distinguished from that made from the whole chicken, yet the ordinary method of doing is to kill the chicken by chopping off its head, leaving same on the ground, scald and pull feathers, leaving an unsightly mess to be blown around when dry, anywhere and everywhere; chop off the legs and throw to the dog, and by the time we get through there is very little left of the chicken if it was a small one to commence with.

We get these extravagant habits from the very atmosphere of a great country, whose resources we imagined had no end or limit. But the quicker we change the trend of thought and recognize that nature abhors a vacuum, the better for all of us.

Give back to the land a tithe of what you take from it, and thus keep an even balance by utilizing all by-products of the poultry yards, and you will be doing your share in the great work of conservation.

If the man who makes two blades of grass grow where only one grew, is worthy of honor, so is the man who enriches the world by utilizing waste products.

THE STATE CAPITOL PARK.

To the Editor: Many of your readers are familiar with the Capitol Park, and whenever they visited the same and admired the many large ornamental trees and shrubs, must have wondered at the strange condition they found many of these plants in from a horticultural point of view.

The citrus trees were full of dead wood and diseased limbs and sickly-looking foliage, and some infested with yellow scale. The cutting of limbs had been done against all knowledge of arboricultural treatment. Large trees from which limbs 4 to 12 inches in diameter were sawed or broken off, had unprotected wounds where the decay could plainly be seen, and many stumps of limbs left so long that it was impossible for the tree to protect itself by callousing over the wound.

Shrubs were of curious shape—ugly naked branches unprotected from the hot sun. The result was pealed-off bark and wood full of borer holes.

Why were the plants in such condition?

The park is well laid out and has mostly good planting. It was the vicious way of appointing the help for the grounds. The head gardeners for the last 16 or 20 years were not gardeners. One was a bartender, another a wheelwright. Is it a wonder in what condition the valuable plants were?

The present administration secured the passage of a law by the last legislature to have the appointment of a Superintendent of Buildings and Grounds, and the Governor appointed the right man in George C. Radcliff from Watsonville, who has seen enough in that famous fruit region to know when a tree is healthy or not, and is competent to judge if a landscape gardener knows his business or not, and whether to trust him with such important grounds. He was very careful to select the men under the head gardener so that there is a good prospect that the plants of the grounds will soon be in flourishing condition inside of a year.

We are now painting sound wounds, recutting badly sawed branches, cleaning out rot and decay, and using strong bordeaux, carbolic acid emulsions, and crude oil; filling cavities with concrete—in some as much as a ton and a half in one tree. We cut out all dead branches and then spray against fungi or insects, as the plants need it.

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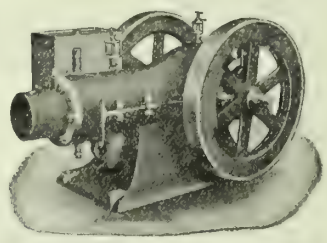
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The Home Circle.

Christmas Bells.

I heard the bells on Christmas day
Their old familiar carols play,
And wild and sweet
The words repeat
Of peace on earth, good-will to men!
And thought how, as the day had come,
The belfries of all Christendom
Had rolled along
The unbroken song
Of peace on earth, good-will to men!

Till ringing, singing on its way,
The world revolved from night to day,
A voice, a chime,
A chant sublime,
Of peace on earth, good-will to men!

But in despair I bowed my head—
"There is no peace on earth," I said;
For hate is strong,
And mocks the song
Of peace on earth, good-will to men.

Then pealed the bells more loud and deep,
"God is not dead nor doth He sleep!
The wrong shall fail,
The right prevail,
With peace on earth, good-will to men!"

—Henry W. Longfellow.

A Perfect Christmas.

There was not a bigger house in all the valley than that of Grandfather Vrooman. It was old, cozy, and comfortable, and it seemed to lie sound asleep, with a snow blanket all over its roof.

Nothing short of a real old-fashioned Christmas could wake up such a house as that.

Christmas was coming!

Unless Santa Claus and the Simpsons and the Hopkinses should forget the day of the month, they would all be there at waking-up time tomorrow morning.

"Jane," said Grandmother Vrooman, that afternoon, to her daughter, Mrs. Hardy, who lived with her—"Jane, I've got 'em all fixed now just where they're going to sleep, and I've made up a bed on the floor in the storeroom."

"Why, mother, who's that for?"

"You wait and see, after they get here, and we've counted 'em."

"Anyhow, there's cookies enough, and doughnuts."

"And the pies, Jane."

"And I'm glad Liph gathered such piles of butternuts."

"Oh, mother," exclaimed little Sue, "I gathered as many as he did, "and beechnuts and hickory nuts, and—"

"So you did, Sue; but I wonder if two turkeys'll go around with only only one pair of chickens?"

"Mother," said Mrs. Hardy, "the plum pudding?"

"Yes, but all those children! I do hope they'll get here tonight in time for me to know where I'm going to put 'em."

At that very minute, away up the north road, two miles nearer town, there was a sort of dot on the white road. If you were far enough away from it, it looked like a black dot, and did not seem to move. The nearer you came to it the funnier it looked, and the more it seemed to be trudging along with an immense amount of small energy. Very small, indeed, for anybody close up to it would have seen that it was a five-year-old boy in a queer little suit of gray, trimmed with red. He had on a warm gray cap, and right in the middle of the front of it were worked a pair of letters—"O. A."—but there was nobody with the gray dot to explain that those two letters stood for "Orphan Asylum." No, nor to tell how easy it was for a boy of five years old, with all the head under his gray cap full of Christmas ideas, to turn the wrong corner where the roads crossed, south of the great Orphan Asylum building. That was what he had done, and he had walked on and on, wondering why the big building did not come in sight, until his small legs were getting tired, and his brave, bright little black eyes were all but ready for a crying spell.

Just as he got thoroughly discouraged he came to the edge of the woods, where there stood a wood sleigh with two horses in front of it, drawn close to the roadside, and heaped with great green boughs and branches.

"The sleigh's pretty nigh full, grandfather," sang out a clear, boyish voice beyond the fence, and a very much older one seemed to go right on talking.

"Your grandmother, Liph, she always did make the best mince pies, and she can stuff a turkey better'n anyone I know."

"Grandfather, do you s'pose they'll all come?"

"Guess they will. That there spruce'll do for the Christmas tree. Your grandmother said we must fetch a big one."

"That's a whopper. But will Joe Simpson and Bob Hopkins be bigger'n they were last summer."

"Guess they've grown a little. They'll grow this time, if they eat all their grandmother'll want 'em to. Hello, Liph, who's that out there in the road?"

"Guess it's a boy."

"I declare if it isn't one of them little gray mites from the 'sylum. 'Way out here! I say, bub!"

"I'm Bijah."

There was a scared look in the black eyes, for they had never seen anything quite like Grandfather Vrooman, when he pushed his face out between the branches.

The trees all looked as if they had beards of snow, but none had a longer or whiter one than Liph's grandfather.

"Bijah," said he, "did you know Christmas was coming?"

"Be here tomorrow," piped the dot in gray, "and we're going to have turkey."

"You don't say! Just wait until I cut a tree down, and I'll come out and hear all about it."

"Is your name Santa Claus?"

"Did you hear that, Liph?" The little chap's miles from home, and I don't believe he knows it."

"Is that your sleigh?"

"Yes, Bijah, that's my sleigh."

"Them ain't reindeers, and you're bigger'n you used to be."

"Hear that, Liph?"

Bijah had not the least doubt in the world but that he had discovered Santa Claus in the very act of gretting ready for Christmas, and his black eyes were growing bigger every minute, until Liph began to climb over the fence. Then he set off on a run as fast as his legs could carry him.

"Hold on," shouted Liph. "We won't hurt you."

"Let him go," said Grandfather Vrooman. "He's on the road to our house. We'll pick him up."

"Took me for Santa Claus, I declare! Liph, this here tree'll just suit your grandmother."

It was a splendid young spruce tree, with wide-spreading boughs at less than two feet from the snow level. Grandfather Vrooman worked his way carefully in until he could reach the trunk with saw and ax, and then there was a sharp bit of work for him and Liph to get that "Christmas tree' stowed safely on top of the sleigh load.

"Now for home, Liph. Your grandmother'll cut into one of them new pies for you when you get there."

"Look!" shouted Liph, "that little fellow's waiting for us at the top of the hill."

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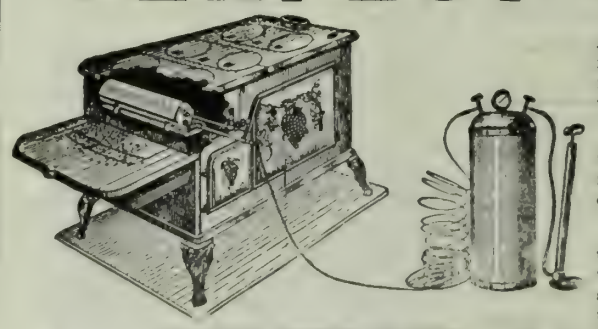
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The hill was not a high one, and the road led right over it, and there on the summit stood Bijah.

"I'm so tired and hungry," he said to himself, "and there comes old Santa Claus, sleigh and all."

He was getting colder, too, now he was standing still, and when Grandfather Vrooman came along the road, walking in front of the sleigh, there seemed to be something warm about him.

It was not so much his high fur hat, or his tremendous overcoat, or his long white beard, or the way he smiled, but something in the sound of his voice almost drove the frost out of Bijah's nose.

"Well, my little man, don't you want to come to my house and get some pie?"

"Yes, sir."

Bijah could not think of one other word he wanted to say, and he mustered all the courage he had not to cry when Grandfather Vrooman picked him up, as if he had been a kitten, and perched him by the side of Liph among the evergreens.

On he went, and Bijah did not answer a single one of Liph's questions for five long minutes. Then he turned his black eyes full on his driver and asked, "Do you live with Santa Claus in his own house?"

"Yes, sir-ee," responded Liph, with a great chuckle of fun; but all he had to do the rest of the way home was to spin yarns for Bijah about the way they lived at the house where all the Christmas came from. When they got there, Liph's father and the hired man and Grandfather Vrooman were ready to lift off that Christmas tree and carry it through the front door and hall, and set it up in the "dark room" at the end of the hall. That ought to have been the nicest room in the house, for it was right in the middle, but there were no windows in it. There were doors in every direction, however, and in the center of the ceiling was a "scuttle-hole" more than two feet square, with a wooden lid on it.

"John," said Grandfather Vrooman to Mr. Hardy, "we'll hoist the top of the tree through the hole. You go up and open the scuttle. Hitch the top good and strong. There'll be lots of things to hang on them branches."

Liph's father hurried upstairs to open the scuttle, and that gave Grandfather Vrooman a chance to think of Bijah. "Where is he, Liph?"

"Oh, he's all right; grandmother's got him. She and mother caught him before he got into the house. He tried to run away, too."

Bijah's short legs had been too tired to carry him very fast, and Grandmother Vrooman and Mrs. Hardy had caught him before he got back to the gate.

The way they laughed about it gave him a great deal of courage, and he never cried when they took him by his red, little hands, one on each side, and walked him into the house.

"Jane," said grandmother, "what will we do with him? The house'll be choke, jam, packed full, and there isn't an extra bed?"

"Father found him in the snow somewhere. Just like him. But what a rosy little dot he is."

"Are you Santa Claus' wives?" asked Bijah, with a quiver of his lip in spite of himself.

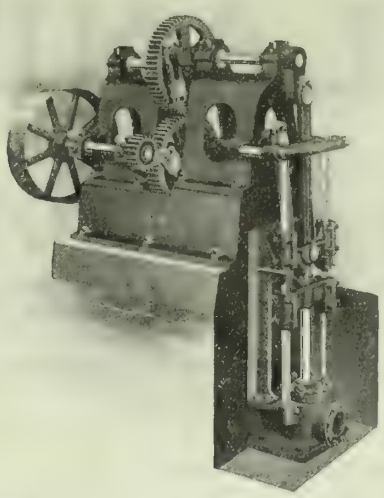
How they did chuckle while they tried to answer the question! All they made clear to Bijah was that the place for him was in a big chair before the sitting-room fireplace, with a piece of mince pie in his lap, and Bush, the hig house-dog, sitting beside him.

"It's Santa Claus' dog," said Bijah to himself; "but his house isn't as big as the 'sylum."

There were fireplaces in every room on the ground floor of Grandfather Vrooman's house, and some kind of stove in more than half the rooms upstairs.

There were blazing fires on every hearth downstairs, and Liph got hold of Bijah after a while and made him and Bush go around with him to help poke them up. Bijah had never seen a fireplace before, and it was a great wonder to him, but Bush sat down in front of each fire and barked at it.

(To Be Continued.)



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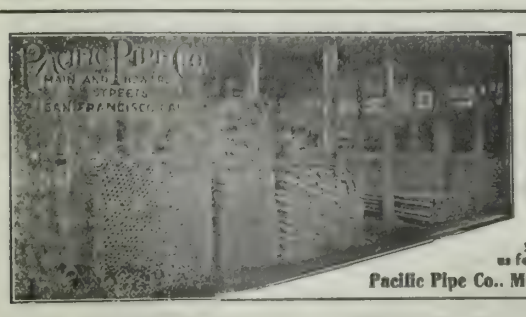
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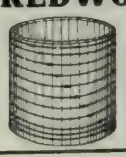
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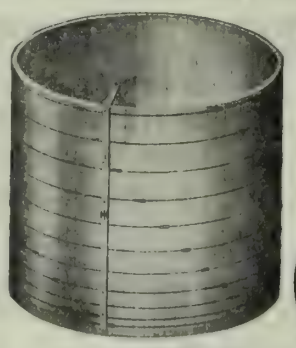
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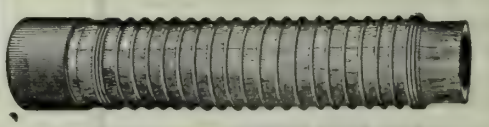
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CITRUS OUTLOOK AND ITS SAFEGUARDING.

(*Continued From Page 529.*)

ciple that a duty should be based on the difference in the cost of production in this country and abroad. Labor costs about one-fourth as much in Italy as in California. The investment in groves is very low, and all of the costs surrounding the industry are such as go with a peasant type of agriculture. The Italians have a difference in freight of 66 cents a box in their favor to New York, in addition to the difference in the cost of production, 41 cents to Pittsburgh and 32 cents to Cincinnati and Chicago. If the difference in freight rates were added to the difference in the cost of production, the California product would be entitled to a tariff of more than 2 cents per pound.

"We have learned that during the two years preceding July 1, the Government paid back to the importers nearly 10 per cent of the duty paid by them on lemons. In some months the rebates reached nearly 20 per cent. These rebates have been largely eliminated through a better system of determining decay, and California does not now have to face this unfair competition.

"It does not look as though the California industry was in any serious immediate danger of radical tariff legislation. The lemon item is an asset which is not likely to be cashed in immediately. So long as it can be used for political purposes, and so long as the funds now being used to create public sentiment have to pass through several different hands, there is not much danger of the fight being closed. However, we look to see the lemon item brought out from time to time, and the California industry must be prepared to take up a hard fight whenever the present tariff status is threatened. California Senators and Representatives have made a careful study of the lemon industry and have data regarding its status."

Horticultural Commissioner A. G. Shultz of Tulare county has sent out a warning to property owners of Porterville and vicinity advising the eradication of mistletoe, which is becoming a serious pest.

EPIZOOTIC INFLUENZA AMONG HORSES.

Dr. H. A. Spencer of San Jose gives the Mercury an outline of this disease, which may be helpful in other parts of the State. We select these paragraphs:

The prevalence of an epizootic of influenza, or, more technically, adynamic catarrhal fever; among the horses of this city and county is the cause of no little uneasiness among horseowners, and is the subject of much inquiry, so perhaps a description of the malady and its attendant dangers may prove of interest to some of your readers.

Every fact connected with the spread of this disease points to its contagious character—the introduction of horses already victims among non-infected animals, the placing of the latter in stables where the disease has recently existed, the conveyance of the infection upon the clothes of the attendants and various other methods of transmission all point to its being due to the presence of a bacteria.

This equine influenza is not uniform in the organs attacked, but is manifest in a catarrhal form, a thoracic form, an abdominal form, a bilious form, a rheumatic form, which latter form is popularly known as "pink eye."

Certain prominent and striking symptoms are so persistent in the initiative form that they may be taken as diagnostic. There is a suddenness to the attack; sometimes the animal which an hour or two previous had been in excellent fettle will be found with his head hanging, ears lopped, eyelids swollen and tears coursing down the cheek, and the eye itself of a buff color or even red, while he shifts his feet as though his limbs pained him. When compelled to move he does so with a languid air, evincing great weakness. The appetite is materially lessened or gone altogether, the throat sore, and the nostlis running mucous. There is often a cough, and the animal frequently sneezes, and a rise in temperature is noticed. These symptoms may subside in a few days under careful nursing and proper hygiene, and again they may result in pneumonia, inflammation of the bowels, liver or kidneys. The temperature at first may be only a little above normal, and may increase to an alarming degree. When the disease runs its course without complications, we expect to see a decided improvement upon about the sixth day. During the progress of the disease one singular feature is observable; the pulse does not increase with the the ratio of the temperature, although of course if important organs become involved this condition will undoubtedly change. There is, however, a singular irregularity in the pulsebeats, and they lack the forcibility that one would expect with the accompanying fever.

Mild catarrhal symptoms of the nose and throat are usually present; the discharge from the nose, at first watery, becomes thicker, and a bronchial cough which at first is apparently paroxysmal, after the nasal discharge becomes established becomes looser and more modified; it is liable, however, to be accelerated by cold draughts of water or by giving medicine or inhaling dust. The glands of the throat may or may not be swollen.



Orange Picking at McLees Brothers' Grove, Lindsay.

PROMINENT FRUIT GROWER DEAD.

Homer A. Craig, president-elect of the California Farmers' Union, and one of the most prominent horticulturalists of Santa Clara county, was suddenly stricken with apoplexy at the afternoon session of the Fruit Growers' Convention on the opening day and died a few minutes later. He had just finished an address upon the fixing of vacations so as to permit the children to have the healthful and profitable orchard work that justly belonged to them, when the attack came.

The convention at once adjourned, and after a short evening session, heartfelt resolutions were passed in his memory.

SPECIAL SESSION OF LEGISLATURE FOR FRUIT INDUSTRY.

At the first session of the Fruit Growers' Convention Santa Rosa, a resolution was unanimously passed requesting Governor Hiram Johnson to call a special session of the legislature to provide for adequate quarantine laws which will permit the State horticultural officers to have greater power in preventing the introduction of plant diseases or insect pests.

The resolution is as follows:

"Whereas, The Fruit Growers of the State of California, in convention assembled, are of the unanimous opinion that the present and future welfare of our fruit industry rests with the efficiency of the quarantine department of the State Commission of Horticulture; and,

"Whereas, We are advised that the present laws are inadequate to carry out the most perfect system of protection to our industry; therefore, be it

"Resolved, That we, the Fruit Growers of this State, earnestly solicit and urge His Excellency, Governor Hiram Johnson, to call an extra session of the legislature of this State for the purpose of passing a law that will meet all the requirements of the present situation."

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THE MARKETS.

San Francisco, Dec. 20, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

This market is quiet, as usual around the holidays, and local buyers are taking little interest in the Northern market at present. There is a little firmer feeling in regard to prices, but no quotable advance. A renewed export demand is expected after the first of the year.

California Club	$1.50	@1.55
Sonora	Nominal	
White Australian	1.65	@1.70
Northern Club	1.50	@1.55
Northern Bluestem	1.65	@1.70
Northern Red	1.65	@1.70

BARLEY.

A little barley is still going East from some parts of the State, but for the most part supplies are pretty closely held, supplies being hardly adequate for local needs. The movement here is a little more active, and prices are steady as last quoted.

Brewing and Shipping	$1.95	@2.05
Choice Feed, per ctl	1.75	@1.85
Common Feed	1.65	@1.70

OATS.

There is less demand than for some time past, though a very fair movement is still in progress. Supplies are still coming in from the North, and prices on most descriptions have been marked down a little.

Red Feed	$1.70	@1.75
Gray	1.70	@1.75
White	1.70	@1.75
Black	1.70	@1.80
Red Seed	1.95	@2.00

CORN.

Considerable new Eastern corn is offered below quotations, but is not yet well cured, and good old stock is steady as before. New California corn is coming out more freely.

Cal. Small Yellow	$1.80	@1.85
Eastern Yellow		1.85
Eastern White		1.90

RYE.

This grain is largely nominal, both supply and demand being light. Prices are unchanged.

Rye, per ctl	$1.65	@1.75

BEANS.

While there is less activity in a shipping way than for some time past, the demand is keeping up extremely well, considering the time of year, and the outlook is for continued firmness in practically all descriptions. Pinks are the weakest article on the list, but are not quotably lower. Local dealers are quoting limas a little lower, but the general situation is extremely strong. Recent arrivals of California limas at New York have been heavy, but have had no material effect on the spot market there, the only shading of prices being by a few dealers who have bought in excess of their immediate requirements. Arrivals at New York up to the middle of the month are said to be in excess of 45,000 bags. Eastern interests are also buying Madagascar beans for delayed shipment, evidently counting on a further advance of California stock, as the present cost of imported beans is higher. Local buyers are rapidly cleaning up the beans still held by growers in the San Joaquin district.

Bayos, per ctl	$3.75	@3.85
Blackeyes	3.90	@4.00
Cranberry Beans	4.15	@4.35
Garvanzos	3.00	@3.50
Horse Beans	2.75	@3.25
Small Whites	4.10	@4.15
Large Whites	4.00	@4.10
Limas	6.00	@6.10
Pea		4.25
Pink	3.00	@3.10
Red Kidneys	5.10	@5.25

SEEDS.

Continued dullness prevails in all lines, prices being as before, but largely nominal.

Alfalfa	17	@18 c
Broomcorn Seed, per ton		$28.00
Brown Mustard, per lb		5½c
Canary		4½c
Hemp		4½c
Millet	3	@ 3½c
Timothy	Nominal	
Yellow Mustard		5¾c

FLOUR.

Flour exports from San Francisco are larger than usual for this season. The local trade shows little change, prices standing as for some time past.

Cal. Family Extras	$5.40	@5.80
Bakers' Extras	5.40	@5.80
Superfine	4.50	@4.70
Oregon and Washington	4.80	@5.00

Hay and Feedstuffs.

HAY.

No further price changes are noted this week, but all descriptions of hay remain very firm. Arrivals here have dropped off again, but the local trade is not especially active, most consumers being supplied for the holiday season. The country demand, however, continues strong, and holders are asking high prices, being sure of a ready market. Sales in the country at present are mainly of the cheaper grades, as such stock finds the widest demand and few are willing to pay the prices asked for the better grades.

Choice Wheat	$19.00@21.00
Good Wheat Hay	16.00@18.50
Other Grade Wheat	13.00@15.50
Wheat and Oats	13.00@18.00
Tame Oats	13.00@18.50
Wild Oats	11.00@14.50
Alfalfa	11.00@15.50
Stock Hay	10.00@12.00
Straw, per bale	35@ 75c

FEEDSTUFFS.

Local business is a little quiet at the moment, but there is a heavy consuming demand through the country, and some of the most favored descriptions are scarce. Bran is fairly plentiful, but steady as now quoted, other lines being firm.

Alfalfa Meal, per ton	$17.00@18.00
Bran, per ton	26.00@27.00
Oil-cake Meal	Nominal
Cocoanut Cake or Meal	25.50@26.50
Cracked Corn	39.00@40.00
Middlings	34.00@36.00
Rolled Barley	38.00@39.00
Rolled Oats	37.00@38.00
Shorts	32.00@33.00

Garden Truck.

VEGETABLES.

With the exception of cauliflower, cabbage, celery, and a little rhubarb, the great bulk of the present supplies is now coming from southern California. Recent arrivals of all descriptions are ample for local requirements, but the situation is rather better than last week. The retail trade shows no hesitation in paying full quotations for attractive stock, and as the vegetables now arriving are in very fair condition, they move off at better prices than before. Tomatoes and local winter vegetables, however, are a little lower. Celery is in good demand for the holidays, but has been coming in quite freely, and ordinary stock is a little lower. Rhubarb is also a little easy, with increasing supplies. Onions are quiet, but steady as last quoted.

Onions: Yellow, ctl	$ 1.10@	1.30
Garlic, per lb	3@	4c
Tomatoes, per crate	75c@	1.00
Cucumbers, per doz	25c@	1.00
Cabbage	40@	50c
Carrots, per sack	50@	60c
Cauliflower, per doz	40@	50c
String Beans, lb	7@	12½
Lima Beans, lb	4@	7c
Summer Squash, per crate	1.00@	1.50
Eggplant, per lb (Southern)	4@	7c
Bell Peppers, per lb	5@	7c
Celery, per doz	25@	50c
Rhubarb, per lb	5@	6c

POTATOES.

The trade requirements for the holiday season are pretty well filled, and very little business is expected for the next week or two. The market, however, is rather firmer than before, and Oregon stock is again coming in. Sweet potatoes are becoming scarce, and have sharply advanced.

River Whites	$ 1.15@	1.35
Sweet Potatoes, per ctl	1.75@	2.00
Salinas Burbanks	1.65@	1.90
Oregon Burbanks	1.50@	1.65

Dairy Produce.

POULTRY.

Offerings of Eastern chickens, though fairly large, are less excessive than last week, and the extra holiday demand has cleaned the market up pretty closely. Little local stock is coming in. Prices are higher on young roosters, large hens and fryers. The turkey market is in poor shape. So far little holiday buying has been done, but arrivals are expected to be very heavy, and prices are low, with little prospect of improvement.

Large Broilers, per lb	26	c
Small Broilers, per lb	29	c
Fryers, per lb	20	c
Hens, extra, per lb	16	c
Hens, large, per lb	16	c
Small Hens, per lb	15	c
Old Roosters, per lb	12½	c
Young Roosters, per lb	19	c
Young Roosters, full grown	17	c
Squabs, doz.	2.00@	3.25
Geese, per pair	2.50@	3.00
Ducks, doz.	4.00@	9.00
Turkeys, live, per lb	21@24	c
do dressed	22@26	c

BUTTER.

The lower grades show no change whatever, but the demand for extras for holiday requirements has been quite lively, and with moderate arrivals has caused a little advance in the last two days. In general, however, the market remains in about the same shape as last week.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed
Extras	32	32	32	32	32½	33½
Prime						
Firsts	28½	28½	28½	28½	28½	28½
Firsts	27½	27½	27½	27½	27½	27½
Storage						
Extras	28	28	28	28	28	28

EGGS.

Nothing is now quoted on the Exchange but extras and selected pullets, though a few storage and Eastern eggs are moving in the bakery trade. Prices have fluctuated considerably this week, though the general range is lower than before. The holiday demand, however, has caused some advance over previous figures.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	35½	36	39½	38	39	40½
Selected						
Pullets	28½	28	30	30	30	30

CHEESE.

All descriptions are quiet at present, both flats and Y. A.s being lower, though Monterey cheese remains scarce and firm as before.

Fancy California Flats, per lb	15	c
Storage	15	c
Firsts	14	c
New Young Americas, fancy	16	c
Monterey or Jack Cheese	19	c

Deciduous Fruits.

FRESH FRUITS.

Offerings of strawberries are too small to be worth quoting. The trade is now buying for the holidays, and most lines of fruit are accordingly more active than for some time past. Apples receive more attention than anything else, the large sizes getting the preference, and while $1.50 is about the top price, the general range is higher than last week. Ordinary apples are also moving a little better, and are held at an advance. Pears, pomegranates, and persimmons are moving in a limited way only. Grapes are still fairly plentiful, and as most offerings are in very good condition, they are figuring more largely than usual in the holiday trade, and bring very good prices.

Cranberries—		
Eastern, bbl.	11.00@	12.00
Coos Bay, box		4.00
Apples—		
Fancy, box	1.15@	1.50
Choice	75c@	1.00
Christmas apples	2.00@	2.25
Pears, Winter Nellis, box	1.50@	1.75
Other varieties	1.00@	1.25
Grapes—		
Box	60@	65c
Crate	65@	85c
Pomegranates, box	1.50@	2.00
Persimmons, box	1.00@	1.50

Dried Fruits.

Up to this time the movement has been unusually active for the season immediately before the holidays, but little more business is expected before the turn of the year. There is some indication, however, of an early revival of demand in many parts of the country, and in view of the recognized scarcity, high prices should prevail. The present quotations on most fruits are largely nominal, as the little stock remaining in growers' hands is mostly held for an advance, and packers are buying only in a very limited way. Prunes still receive more attention than anything else, and European buyers, who are said to have taken about 100,000,000 lbs. already this season, are still in the market for all counts. Peaches and apricots are firm as now quoted, with supplies closely held, though there is little demand. Raisins are steady, and while there is little demand, packers seem willing to buy at present figures. The New York Journal of Commerce says:

"The situation in California prunes is decidedly strong. According to prominent authorities, the stock now available on the Coast is about the smallest ever known at this time of the year and is controlled by a few packers. One estimate makes the stock unsold there about 25,000 lbs.

"Although the trade here is, as usual at this time of the year, manifesting no interest in peaches on the spot or for shipment from the primary sources of supply, advices from the Coast report a stronger feeling among holders there, and hint of a possible speculative movement having for its object the closer concentration of the comparatively small remaining portion of the 1911 crop.

"Apricots are dull, but as holders are not trying to force the relatively small stock on a reluctant market, the tone is firm on both spot and forward Coast shipment fruit.

"California loose Muscatel raisins are offered sparingly, and are firmly held, but the market for seeded stock in the absence of important demand seems to be a little easy, though there has been no quotable decline in prices on spot stock or goods for forward shipment from the Coast."

Evap. Apples, 1911, per lb	8	@ 8½c
Apricots	12	@12½c
Figs		4 c
Calimyrna figs		6 c
Peaches	8½	@ 9 c
Prunes, 4-size basis	6	@ 6½c
Pears	8	@ 9 c
Raisins—		
Loose Muscatels, in sweatbox	3	@ 3½c
Thompson's Seedless	5¼	@ 5¾c
Seedless Sultanas	4	@ 4½c

Citrus Fruits.

Eastern auction markets are steady on both oranges and lemons, the average prices for navels in these markets being from $2.40 up to $3.55 per box for navels, and from $2.20 to $3.20 for lemons. Florida fruit is showing up well in the markets and is bringing an average of $2.50 for oranges and $4.40 for grapefruit.

The rush to get holiday fruit to market from California has passed, and for some time to come work in the packing-houses in the various districts will be comparatively quiet. The season for the Tulare growers has so far been a very good one, as shipments were heavy, the quality of fruit good, and prices fair. Southern California has sent much less fruit than usual for the holiday trade, but the quality shipped has been above the average. Up to December 18th, there had been shipped from that section 768 cars of oranges and 661 cars of lemons.

At the Los Angeles auction held on Monday, December 18th, 5 cars of navels were sold, the prices averaging $1.87½ for fancy, $1.62 for choice, $1.40 for standards; and these prices subject to modification for off sizes.

At San Francisco holiday buying has brought out a much heavier demand for oranges than has been noted for some time, and large fancy navels in particular are moving off in good shape. Offerings, however, are very large, and ordinary stock is a little lower. Other lines of citrus fruits are rather quiet locally, and prices are steady as last quoted.

Oranges: Navels	$ 1.75@	2.75
Tangerines	1.00@	1.50
Grapefruit	2.50@	3.00
Lemons	1.25@	3.75

Nuts, Honey, Hops, Etc.

NUTS.

Almonds are now pretty well cleaned out of growers' hands. Jobbing prices have been advanced, and the consuming demand has been fully up to the average for this season. Walnuts are still rather quiet, and various reports have been circulated in the effort to bear the market. Stock offered by independent growers seems to be pretty well cleaned up, and the greater part of the Association nuts is said to be sold, though a considerable tonnage is still on hand. A good many foreign nuts are moving below the Association prices, but are said to be far below the California product in grade.

Almonds:		
Nonpareils		18½c
I X L		17¼c
Ne Plus Ultra		16½c
Drakes		14½c
Languedoc		14½c
Hardshells	8	@ 8½c
Walnuts, 1911 crop:		
Softshell, No. 1	13	@14 c
Hardshell, No. 1	12½	@13½c
No. 2		11 c
Budded		16½c

HONEY.

The situation remains as before, though fancy grades receive a little more attention, and are firmly held. Lower grades remain dull.

Comb, white	13	@15	c
Extracted, water white	8	@ 9	c
Amber	7	@ 7½	c
Off grades	5	@ 6	c

BEESWAX.

There is no great demand, and considerable stock is now held by local dealers, but prices remain steady as before.

The market continues quiet at unchanged quotations.

Light	28	@30	c
Dark	23	@26	c

HOPS.

This year's crop on the Coast is pretty well cleaned up, but some stock is still moving at the prices formerly quoted. Buyers are offering to contract for the 1912 crop at 25c.

1911 crop .....40@45c

Live Stock.

A slight advance is noted in beef cattle, covering practically all grades, and lambs are also a little stronger. Hogs find no great demand at present, and are in ample supply, but prices are fairly steady as last quoted.

Gross weight:

Steers: No. 1	5⅔	@ 6	c
No. 2	5	@ 5¼	c
Cows and Heifers: No. 1	4¾	@ 5	c
No. 2	4¼	@ 4½	c
Bulls and Stags	2½	@ 3½	c
Calves: Light	6½	@ 6¾	c
Medium	6	@ 6¼	c
Hogs: Grain-fed, heavy			6¼c
150 to 250 lbs			6½c
100 to 150 lbs			6½c
Small prime wethers	3¾	@ 4	c
Large prime wethers	3¾	@ 4	c
Ewes	3¼	@ 3½	c
Lambs			5 c

DRESSED MEATS.

Steers	8½	@ 9¼	c
Cows	8	@ 8½	c
Heifers	8	@ 8½	c
Veal, large	9½	@10½	c
Mutton: Wethers	8	@ 9	c
Ewes	7	@ 8	c
Lambs	10	@11	c
Hogs, dressed	10	@10½	c

WOOL.

California wool is still neglected, and prices are largely nominal in the absence of business.

Spring Clip—			
Choice Southern, Year's sta			
Northern, year's staple	14	@16	c
ple	10	@12½	c
7 months	8	@11	c
Lambs, spring	8	@10	c
Fall Clip	5	@10	c

HIDES.

The hide market has weakened somewhat, and several descriptions are lower. The local demand is limited at present.

Heavy Steers, over 56 lbs			11 c
Medium			10½c
Light Steers, under 48 lbs			10 c
Heavy Cows, over 50 lbs			11 c
Light Cows, 30 to 50 lbs			10 c
Kip			13 c
Veal			16½c
Calf			16½c
Dry—			
Dry Hides	18	@19	c
Dry Bulls			16 c
Dry Kip, 10 to 15	18½	@19	c
Dry Veal, 5 to 10			20 c
Dry Calf, 7 down	23½	@24	c
Sheep Skins—			
Long Wools	$ 0.85	@ 1.25	
Medium Wool, 6 to 9 mos	50	@ 75c	
Short Wool, 3 to 6 mos	30	@ 50c	
Lambs	35	@ 50c	

HORSES.

The local demand is still quiet, and the market is rather weak, as indicated by a reduction of prices in several lines. While many dealers are not anxious to sell in this market at present, there is apparently some pressure to sell in other quarters, and quite a lot of stock is offered at auction, including some desirable horses, but consisting for the most part of animals which are being closed out by stables and contracting firms.

Desirable Drafters, 1700 lb. up	$290@335
Light Drafters, 1500 to 1650	200@225
Chunks, 1350 to 1500 lbs	175@200
Wagon Horses, 1250 to 1350 lbs	125@175
Delivery Horses, 1050 to 1250	110@125
Desirable Farm Mares	95@110
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

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The trees in the orchard on the left in this illustration are starving to death for lack of nourishment in the soil around their roots. The orchard on the right has been fertilized and is bearing a bounteous crop.

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PUBLISHER'S DEPARTMENT.

This office was visited by several prominent fruit men and county horticultural commissioners while on their way to and from the fruit growers' convention at Santa Rosa this week. Among them were County Entomologist Morris, of San Jose, and F. C. Willson of Sunnyvale. Mr. Morris is especially interested in his work along the line of spraying for thrips, both with the tobacco and oil emulsion and the lime and crude carbolic acid methods. In speaking of the latter, he stated that results of spraying prunes last season were not conclusive, but the pear spraying had been much more successful. We trust that Mr. Morris will soon give us the details of his work, that our readers may have the benefit of his experience. Mr. Willson was taking with him a glass jar filled with his new Willson Wonder walnuts to show the fruit growers some real, life-size nuts from his trees. Unless one has seen them, it is hard to believe the story of these walnuts. These new variety trees produce early, heavily, and wonderfully large, sweet meat.

California industries are multiplying very fast these days, and old established institutions are keeping pace in growth with the State. One of the latest industries to be placed upon a business as well as scientific basis is hog breeding and raising. Our readers will notice the advertisement on another page of "Swineland," the newly established ranch at Yuba City. Here is found the very best and latest methods put into practice, and we hope soon to give in our columns a full account of how swine are handled under ideal conditions.

Did you read the statement in this department last week that we expected the final count this year would show the net increase in the paid circulation of the PACIFIC RURAL PRESS to be around 2,500 for 1911? Well, that statement goes; in fact it more than goes. We now know that the increase will run over that number, which means that the oldest farm paper on the Coast is keeping ahead of the procession.

The attention of our readers is called to the advertisement of the Dow Pumping Engine Co., on another page, wherein they announce a new non-pulsating type of pump. Engineers who have examined this pump remark on its simplicity and high efficiency. The Dow company have refused for years to market a non-pulsating pump because they did not believe such a machine could be built with the quality they demand in their standard pumps and compressors. The fact that they are now announcing such a machine would indicate that at last their engineers have developed a type of deep-well pump that reaches the high standard set for all Dow pumps and compressors. Those of our readers who are interested in deep-well pumping should investigate the merits of this machine.

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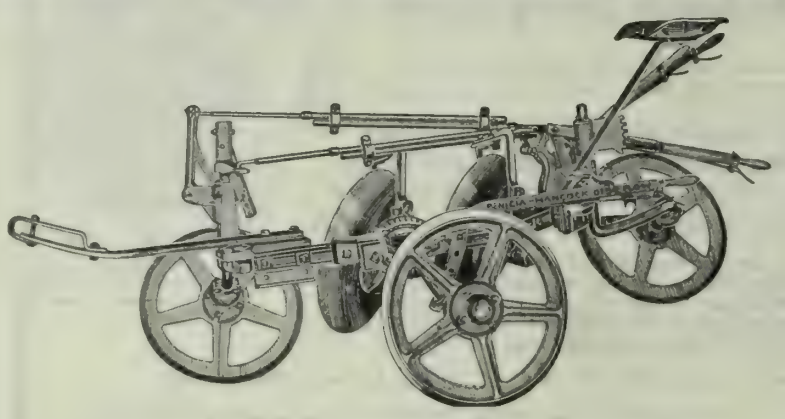
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The pump can be seen in operation at our place of business.

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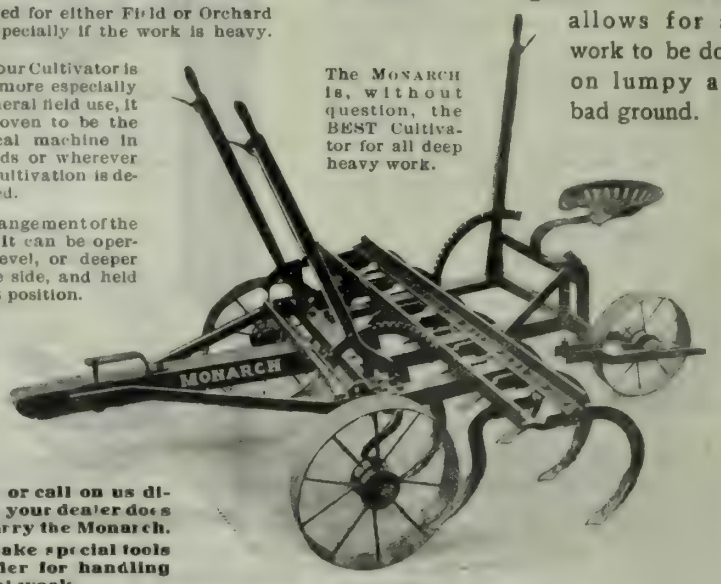
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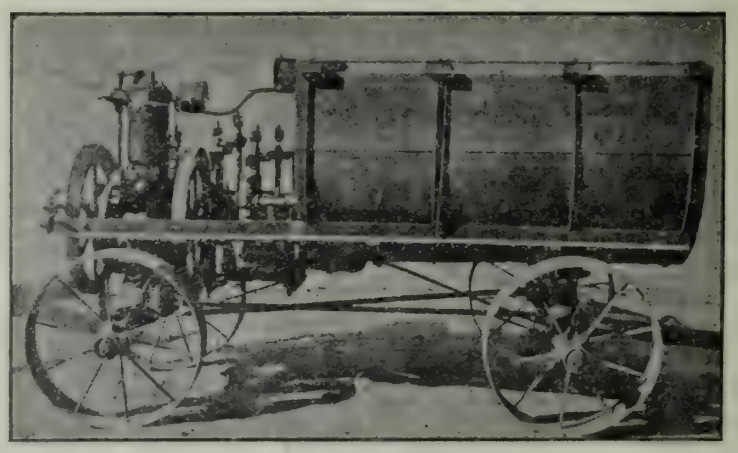
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THE PACIFIC RURAL PRESS

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The Law and the County Horticultural Commissioner.

[By H. P. STABLER, Horticultural Commissioner of Sutter County, at the State Fruit Growers' Convention.]

Enforce the law. If the law is a good one there is no reason for its non-enforcement. If it is a poor law, or ineffective, its enforcement will soon disclose its weak features and it can be supplanted with better legislative enactment. A good law not enforced accomplishes nothing. As all County Horticultural Commissioners are now under bonds to properly perform their duties, what excuse can be given for not enforcing the law?

Strict enforcement of the horticultural quarantine laws of the State is better for the fruit grower, better for the nurseryman, and better for the consumer. It is better for the grower because it simply requires him to eradicate the pests and diseases which, if allowed to continue on their wayward course, would ultimately ruin his property. It is better for the nurseryman because it requires him to sell clean stock, which saves him the expense of disinfection and rejection at the point of destination. It is better for the consumer because it makes it possible for him to buy clean fruit, which increases consumption.

If the foregoing is true—and I maintain that it is—why is there any question about the advisability of enforcing the law? In the first place, the lot of the County Horticultural Commissioner is a hard one. He not only has to fight the pests, but too often the grower and nurseryman whom he is trying to help. In too many instances we find growers careless, prejudiced and ignorant, while the consumer is indifferent, and we all realize the stubbornness of some nurserymen. Again we find County Commissioners who are peace loving and believers in the doctrine of moral suasion, missionary work, and publicity. While these means of accomplishment are not to be entirely disregarded they cannot be depended on to eradicate pests and diseases. They are effective only when accompanied by a final enforcement of the law.



A Suggestion of Springtime.

The writer tried moral suasion, missionary work and demonstration in pear blight control, with indifferent results. Pear blight appeared in the Sacramento valley in 1904. Prof. Pierce was notified, and sent directions for its control. This was published in the local papers and bulletins distributed among the pear and apple growers. Some work was done. The next year, Prof. Waite of Washington and Prof. Smith of the University demonstrated, with their assistants, a successful means of pear blight eradication. We published their method as a bulletin, and it was widely distributed. One of Prof. Smith's assistants was employed as an inspector, and demonstrated pear blight work to growers. Personal solicitation and entreaty followed. Some growers did the work properly and secured results. Others did it in a careless way, or neglected it, and the result is that we still have some pear blight in Sutter county. It is the intention of the Commission to enforce the law in Sutter county this season. Remember, this work was carried on in an important pear and apple growing district.

Contrast the manner of handling the outbreak of the white fly in Marysville. In the spring of 1907 the Aleyrodes citri was discovered in Marysville, a city not in a citrus district, and in the door yards of people who were not growing oranges commercially. Moral suasion was invoked, and resulted in some denudation. Missionary work was tried, followed by more denudation. Even demonstration failed to convince the owners of orange trees of the importance of the work in hand. As a last resort, it was decided that the law should be strictly enforced. Legal notices were regularly served, and more trees were treated, but still some owners persisted in their do-nothing policy. A suit was brought, and the Commissioner was not only upheld, but the decision of the court was so sweeping that every tree was immediately denuded of foliage. The result was that A. citri was absolutely controlled in Marysville. If there have been two or three suspicious cases since, no one has objected to the enforcement of the law. How much better to follow this method than to worry along for several years under moral suasion, to find in the end that enough growers have been careless and the pest or disease has been spread to other districts.

Other public officials do not depend on moral suasion and missionary work. Let me cite the county tax collector. What percentage of the public funds could he collect if he simply asked the taxpayer to please pay his taxes? He might say, "Mr. Jones, the county really needs the money, and I have been appointed by the people to attend to this matter. The law requires it, and I am under bonds to do my duty." Mr. Jones might reply: "I don't know whether I will pay my taxes or not. I hear so much about this every year that I am tired of it. I don't believe in taxes, anyway." But the tax gatherer simply enforces the law. Mr. Jones expects nothing else, with the result that the delinquents are very few. Even they are provided for, and their taxes are paid and the State takes a lien on the property.

All of which goes to prove that the County Commissioner is justified in strictly enforcing the law. The grower will soon learn that there is nothing else to do but clean up, and he will do it, or it will be done for him and he will pay for it. The nurseryman will learn that he can only ship clean stock, and he will do it. The consumer will learn that all fruit offered for sale is clean, and he will buy more of it.

Discretionary power is given the commissioner, but not the grower.

(*Continued on Page 575.*)

Pacific Rural Press

Issued Every Week at 420 Market Street, San Francisco.

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Entered at S. F. Postoffice as second-class mail matter.

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California Weather Record.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture, Weather Bureau, at San Francisco, for the week ending at 5 P. M., Dec. 26, 1911:

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.46	6.21	15.62	50	32
Red Bluff	00	2.28	9.32	58	28
Sacramento	00	.93	6.57	56	32
San Francisco	.02	2.17	7.58	58	40
San Jose	.02	2.02	5.70	64	26
Fresno	00	.73	3.22	54	28
Independence	00	.80	3.16	62	12
San Luis Obispo	00	3.60	5.26	64	32
Los Angeles	00	2.27	4.64	66	40
San Diego	.56	1.45	2.80	60	36

The Week.

The weather is still scoring on the side of the tourists and the local holiday makers, and these classes do not hesitate to voice their appreciation. The shortest day passed almost unnoted, because it covered its brevity with such a bright sky and because a young moon broke away from the embrace of the sun and threw the light of his love upon the darkening world. Thus ever, youth springs from age to achieve longevity for humanity. But though the joys of leisure were perhaps never better environed than this Christmas time; and though the people apparently never had more money to throw to the birds of sentiment, causing city trade to unbuckle its belt unwontedly; and though prime donne poured forth their bird-like notes upon the open evening air, as a token of its salubrity, while bird-men circled like eagles around the summits of our beautiful, bay-district mountains upon the flanks of which flocks of children hovered the early wild flowers—all these manifestations of delight in the California holiday climate would be more keenly enjoyed by the experienced California resident if the rains hitherto had thrown upon the waiting soil about three times as much water as they have this year. We learned long ago, however, that though a rainy season well begun declares a crop half-won, it is also true that many a bad beginning has a good ending—much more often in California meteorology than in morals, perhaps. Therefore, holiday joys are warranted, and expectation should be as warm and bright as the skies, which, by such qualities, have betokened strength and confidence in men since the world began.

Of one thing we are assured: it has been a great year in the development of the PACIFIC RURAL PRESS, and there is promise of a greater year in the new volume which will open with the next issue. From the publisher's chat with his patrons printed last week we learn that we are addressing upward of ten thousand more readers than sat under our tripod ministrations at the beginning of the year which is now closing. It is inspiring to think of all these new thousands who are welcoming us to work with them toward higher living, toward more effective effort, toward manhood and womanhood more worth while, and toward the ultimate greatness of the State which such higher citizenship will achieve. The breadth of the work and its appeal to individual needs as well, can be learned from the classification of the contents of the closing volume which occupies the last page of this issue. In all these things our strenuous effort is for more wisdom—inspiring to the mind, warming to the heart, and helpful to the hand. But as we strive for wisdom, we desire to remind these ten thousand new readers of their obligation—"in the multitude of counsellors there is safety."

Cactus Complexity.

Formerly it might have been claimed that cactus would be rather a thorny subject for holiday musings, but Burbank has effectually taken that quality out of it, for he has made cactus smooth as a baby's cheek—smoother, in fact, for there is not even down upon it. But, for all that, the world seems to be vexed over the plant. Burbank, for instance, is doing things which may make cactus cover the earth, and Robertson is doing things which may show how to clear the earth of it—and both men are doing these things in California, as one might naturally expect. At the Santa Rosa Fruit Growers' Convention, Luther Burbank, by special invitation, gave his convictions on the beneficence of cactus—food for man and beast; its juice for mixed paint, the best pigment-vehicle known to man; its fibre a substitute for rubber in pneumatic tires and a substitute for everything else in paper-making. About the same time, Dr. Robertson of the University of California is said by the reporters of the daily papers to have found "a fluid which will reduce to powder large cactus plants at a small cost for the manufacture of the fluid"—not gun powder, of course, but a powder which will be invaluable in making the highest class leather. On this basis, it is said a leather manufacturer will go to Australia, gather in a contract to clear land of cactus, which the government is desiring to make at a cost not above $100 per acre, and create such a demand for leather-making that the Australian beast will be bright if he can keep his hide on his back. The more you think of it, the less thorny the subject appears. Burbank will cover the earth with smooth cactus, just keeping in the wake of Robertson, who will chase the thorny cactus off from it—and then there will dawn upon human intelligence the beneficence of cactus; castus dying that cactus may live, and mankind making a living both ways around. It is not so bad a Christmas subject, after all.

Employers' Liability.

We are inclined to admit that, properly administered, this may be an embodiment of good will to men, and therefore a Christmas topic, even if we have tried to thrust a few sharp points into it recently. We have invited Mr. Pillsbury, chairman of the new State Commission on the subject, to discuss the California law on the subject in our columns, so that we can all see what can be said in favor of it. It is a fashinoable subject, and farmers do not care to be wholly out of fashion, although it is rather hard to milk a cow with a stovepipe hat on. But we will see what Mr. Pillsbury will make of it. Not only the State, but the country seems to be in for it. In one of his messages last week, President Taft said:

"It is hoped and expected that the commission on employers' liability and workmen's compensation will suggest legislation which will enable us to put in the place of the present wasteful and sometimes unjust system of employers' liability a plan of compensation which will afford some certain and definite relief to all employes who are injured in the course of their employment in those industries which are subject to the regulating power of Congress."

We do not know which particular industries are subject to the regulating power of Congress, but they probably all will be, more or less, before long. Then if Congress will provide help for the injured on the pension plan, the burden will be distributed over the whole population, and it will be fair as well as beneficent. We see no other way without the danger of stinging individual farmers to death—but Mr. Pillsbury has the floor.

And yet no matter how desirable Mr. Pillsbury may show the legislation about employers' liability to be, we have to remind our readers that our contentions have been justified by the action of the Assembly in the special session of the legislature last week. An amendment introduced by Assemblyman George H. Harlon of Sausalito exempting farmers, dairymen, agriculturists, poultrymen and domestic laborers from the operation of the law, was adopted by a vote of 37 to 34. It was pretty close, but it shows clearly enough that if the agricultural point of view had been properly occupied in the legislature last winter, farmers would have been exempted until the experiments, which other classes desired to make, had demonstrated value and practicability in the movement.

The Tariff on Wool.

Wool growing is certainly one of the industries which has been regulated by the government, or, rather, irregulated, for the grower's actual interests have not been directly served, though everything in the tariff has been done in his name, except perhaps the Cleveland-Wilson bill of hateful memory—if that had lasted long, every sheep would have died in the wool. The fact is, of course, that the wool grower has held the tariff umbrella over the woollen manufacturer until the former got soaked to the skin by the downpour of protection which did not protect him. Those who read the statement on this subject by the California wool growers, which was printed in our issue of December 16, can see exactly how this thing has worked, and why our growers called for a duty on a scoured-pound basis. In his message to Congress last week alluding to a report by the Tariff Commission, President Taft said:

"Another method of meeting the difficulty of taxing the grease pound is to assess a specific duty on grease wool in terms of its scoured content. This obviates the chief evil of the present system, namely, the discrimination due to different percentages, and thereby tends greatly to equalize the duty. The board reports that this method is feasible in practice and could be administered without great expense. The scoured content of the wool is the basis on which users of wool make their calculations, and a duty of this kind would fit the usages of the trade. One effect of this method of assessment would be that, regardless of the rate of duty, there would be an increase in the supply and variety of wool, by making available to the American market wools of both low and fine quality now excluded."

And another effect which President Taft probably considered it indelicate to mention, is that though the tariff on the scoured pound might be lowered somewhat, the grower would get his protection just the same, although the manufacturer might be out in the wet because some of the acute figuring which he has been doing so long would no longer work. It is a way of revising the tariff downward and still protecting the grower. We have to wait and see whether Congress likes the grower better than the manufacturer, or vice versa, or whether it prefers to kill both in another experiment with free trade.

The California Fruit Growers' Exchange.

Of course, no reader will overlook the clear de-

scription of the operation of our leading co-operative organization, which General Manager Woodford gives on another page of this issue. We take particular pride in presenting the facts about the California Fruit Growers' Exchange, because of all our efforts at co-operative selling by growers, many of which are still on their way to success, this one has really arrived, definitely and largely. Naturally it is attracting much attention throughout the world. We are constantly rereiving inquiries about its work from farmers' associations and from students of economics in foreign countries, as well as from different States of this country. It is clear that, in addition to all the influence the organization is exerting toward widely effective organization in this State, it is also doing a world work.

Pioneering Not a Picnic.

Complaint is sometimes made that too rosy a view is given to the public of pioneering on the new reclamation projects of the government. There is some truth in the complaint, but it should be lodged against the free writers for the non-agricultural press, who see visions and dream dreams. Those who actually know the requirements of success are not making public any such illusory phenomena—to give them a very gentle name. What, for instance, could be clearer and more frank than a written statement which Director F. H. Newell of the Reclamation Service recently made for the Smithsonian Institution:

"Awakening to the fact that irrigation has its thorny side, sometimes comes as a startling shock sufficient to discourage all but the most enthusiastic, and the more faint-hearted seek for the promised land. Those who remain soon learn that success must be secured by subduing the soil, getting it in good condition, applying water day and night, and perhaps all night, wading around in the mud, or enduring the heat of the long days of brilliant sunshine and the accompanying dust of the arid regions; the troubles with neighbors over division of water, the possible seepage followed by crop losses or ruin from alkali. As a consequence, a considerable part of the first settlers on every irrigation system sell out or relinquish their homsteads and seek other fields."

It is the old test which has always made successful pioneers worthy of admiration. Let no one deceive himself by thinking that it is anything less than that.

Queries and Replies.

Interesting Facts About Olives.

To the Editor: We have 100 acres in olives about six miles northeast of Rialto in San Bernardino county. In 1908 we got about five tons from the 100 acres. We began fertilizing and cultivating in 1909, and have put on the hundred acres about the same amount of fertilizer each year. In 1909 we got 15 tons; in 1910, 115 tons, and 1911 is estimated at 325 to 350 tons.

We notice on quite a few of our trees little bunches of very small olives. They are in small clusters, and the olives are perhaps a little more than an eighth of an inch in diameter. We have endeavored to secure some information as to the cause of these small olives. One of our men at the ranch explains that these small olives are the second bloom, or what would be on some vines a "second crop." We do not know whether he is right or not, and would be glad to have your opinion.—Owner, San Francisco.

We are glad to hear that your olive trees are responding to good treatment and fertilization. Unfortunately that does not seem to be always the case and a good many olive trees have been made into firewood because nothing seemed to bring them into satisfactory bearing. Good bearing olive trees are now among the very best of our horticultural properties, while non-bearing olive trees are worth about $7 a cord for fire wood.

We cannot give you any satisfactory demonstration of the occurrence of small olives of which you speak. They may possibly be the result of secondary blooming; rather more probably are the result of non-pollination, which prevents the development of the fruit, although it may stick and make slow growth. We have always thought these undeveloped fruits did not resemble the second crop of grapes so much as they do the occurrence of small seedless berries on a standard Muscat cluster where the undevelopment of the fruit seems to be clearly due to non-pollination. On the whole, it is sometimes desirable that not all of the blossom on the tree should set fruit, for the size of that which is properly pollinated is doubtless increased by the larger sap flow which comes to it because of the natural thinning through non-pollination. We have never noticed these imperfect fruits occurring to any notable extent. What is the observation of others?

Overgrowth of Eucalyptus.

To the Editor: Two years ago last spring I planted a grove of eucalyptus globulus for ornament and windbreak. I drove an ordinary three-foot grape stake by each tree. I cultivated and irrigated like a garden, and the trees made magnificent growth. After the first soaking rain in the fall, most of them blew down. I then used five-foot stakes and they still blew down. I next got eight-foot stakes, which did much better, but still some blew down and many pulled over on a slant. The trees are now from four to eight inches in diameter and from twenty to forty feet high. I have planned to saw them all off at the ground and get a straight and unscarred grove. Not having any experience in this line, I would thank you for an opinion in regard to cutting off.—Grower, San Joaquin county.

You certainly are in a fix with your eucalyptus trees. Why did you not stop irrigation and cultivation when you saw your trees were growing too fast and avoid all the expense of stakes and staking, and escape the situation in which you now find yourself? Unless you can count that the wind will blow the other way during the winter and thus straighten up many of the trees which are now out of plumb, probably cutting back will be your only recourse. This, of course, can be safely done, but you will probably have to follow it up by suckering the plants for a year at least, training up the best shoots and removing all others. This will occasion continual expense unless you decide to let the thing go, producing a great number of poles and allowing the main shoots to strive for the mastery, which they will undoubtedly ultimately attain. We see no easy way out of your present situation except in the let-alone policy which we have indicated.

Row-Planting of Fruit Trees.

To the Editor: I am planning to plant about six acres to Muir, Lovell, and Elberta peaches, and have plenty of water for irrigation. I wish to use the land between the rows for annual crops for several years and then possibly to seed to alfalfa. For these reasons it would be advantageous to make the rows farther apart and the trees closer in the row than usual, as 16 by 32, giving 85 trees to the acre. Would it be practicable to change a peach orchard planted as above to another variety of fruit, by planting in ten years or more the rows of young trees midway between the rows of peaches, and cut out the peach trees the year before the new trees would come into bearing? Please inform me concerning the disadvantages of this plan of planting and state if you believe they would offset the advantages.—Planter, Sutter county.

Such discussion as you invite must be largely upon theoretical grounds, because, although such planting of trees and vines has been proposed and advocated by individuals now and then for more than forty years, we are not aware that anyone had strength enough of conviction to practice his preaching to any extent. Therefore, we do not know of any demonstration of desirability or otherwise to which we can refer. We take it the chief objections would be the unequal division of the ground, the restriction against working both ways with equal facility, and the unequal distribution of sunshine. The advantage would be the use of the wide centers for other cropping, and it is rather doubtful whether that is any advantage in the long run. We have at the moment no doubt at all that the practical disregard of all such bright propositions for half a century is the right way to treat them unless we should undertake intensive culture of the conditions of life which prevail in the south of Europe and in China, and we are still a long way from those conditions. Your ingenious plan for renewal of the orchard by alternate planting and digging out on 16-ft. centers is theoretically feasible, but practically you would find it difficult to start your young trees at 16 feet from old ones, and you probably could not bring yourself to cutting out the old trees until the young ones began to bear, and therefore you would be trying to grow trees at 16-ft. intervals with all the handicaps which pertain to that effort. It seems to us more reasonable to start all the trees in 16-ft. squares and cut alternate rows afterward—but we cannot recommend even that. All we can say is: if you are strongly possessed of your idea, try it out, and help to make the next generation wiser than this one is.

Poultry Manure.

To the Editor: Would you kindly give me directions for using chicken maure? For use of young fruit trees, is there any difference in treatment of deciduous and citrus trees? For use in the vegetable garden and the flower garden, what should be mixed with it and in what proportions? So many people say poultry manure is so strong, I am afraid to use it.—Suburban, Pasadena.

It is a fact that poultry manure, free from earth, contains even as high as four times as much plant food as ordinary stable manure. It is therefore to be used with proportional care, so that the plants shall not receive too much, and particularly so that there may not be too much collected in one place. Probably the best way to guard against this is to thoroughly mix the manure with three or four times its bulk of ordinary garden soil and then use this mixture at about the same rate you would stable manure. If you do not desire to go to all this trouble, make an even scattering of the manure and work it into the soil by spading or plowing, according to the area you are treating. There is no reason to fear the material; simply guard against the unwise use of it. It is good for all the plants which you mention; in fact, for any plant grown, provided it is sparingly and evenly distributed.

Confident About Citrus Fruits.

To the Editor: I have taken great pleasure in reading your paper during the year, and believe it to be more nearly scientific than any of the others I have read. Now I am going to propound a question that you very likely will put in the "tenderfoot class." It is: "With your knowledge of the orange business, and considering the vast plantings that are being made and likely to be made in the future, would the bugbear of possible overproduction scare you out, if you thought you could raise first-class fruit in a locality where all conditions seem to favor the early ripening and economical production of it?—Subscriber, Oakland.

We do not have a single tremor of fear about it.

The California Fruit Growers' Exchange and Its Relation to the Citrus Fruit Industry.

[By B. A. Woodford, Los Angeles, General Manager, at the State Fruit Growers' Convention.]

The organization of the California Fruit Growers' Exchange nearly twenty years ago by the citrus fruit growers was due wholly to the failure of the speculative shippers, who had sole charge of the packing and marketing business up to that time, to return to the growers a living price for their fruits. In the early days of the industry, when the output was small, there was no difficulty in getting enough money for California oranges under the old methods to satisfy the growers and at the same time to give the shippers a very large remuneration for their services. When the output began to increase rapidly, making necessary the development of new markets of consumption and continuous distribution to successfully sell the crop, the citrus fruit growers immedately found themselves involved in difficulties. It became evident that if they were to be successful and if the industry was to grow, the cost of packing and selling would have to be reduced to a minimum, and that new customers must be found in new markets, so that all the people in this country and Canada might have the opportunity to become consumers of these fruits all the time at reasonable prices.

The growers wisely determined at the beginning of the organized co-operative movement that they would themselves control both the packing and selling of their fruit, with no profit, from the operations at the California end of the line, to any but themselves. In attempting to establish their co-operative organizations on this basis, great difficulties were necessarily encountered at the start. The growers were new to the packing and selling business and naturally made mistakes, while the speculative shippers who had previously handled all the crop, had an advantage in the experience they had acquired during many years. As a result the volume of fruit marketed through the Exchange steadily declined during the first few years of its history, until at one time only about 20 per cent of the crop was sold through the growers' organization.

Profiting by the experience acquired, and avoiding a repetition of the mistakes made in those early years, the results obtained through the Exchange gradually improved so that seven years ago some 40 per cent of the citrus fruit crop was sold through it, and at the present time its business has increased to about 60 per cent of the total California output.

The Exchange organization today has by far the most efficient and best equipped packing and selling force engaged in the fruit business in California; or, in fact, anywhere else, and this is proven by the increasing confidence the growers show in operating through it. A brief review or comparison of conditions as they existed just prior to the formation of the Exchange, and as they exist today, is interesting.

Then and Now.—Then, the cost of packing a box of oranges and putting it upon the car was between 40 and 50 cents. Now the same service, better done, costs on the average 30 cents.

Then, the growers paid the California shipper 7 to 10 per cent on the gross proceeds for selling the fruit. Now, a better service is open to all growers for less than 3 per cent.

Then, the freight and refrigeration charge on a box of oranges averaged for the season $1. Now, the same service costs 90 cents.

Then, there was a customs duty on imported citrus fruits of less than 20 cents per box. Now, this duty is 65 cents per box on oranges and $1 on lemons.

Then, California oranges and lemons were sold in a few large markets to a very limited number of customers. Now, more than 1500 different jobbers in more than 600 different cities are assisting in distributing the 50,000 carloads that are annually produced.

Then, no systematic campaign of advertising or distribution was attempted. Now, a great sum is expended each year in placing the merits of California citrus fruits before the consumers and the distribution is even and continuous at all times.

The Results.—The net result of these changed conditions reduced to a money basis shows that the savings that have been made amount in themselves to much more than the growers now receive as interest on their investment, which demonstrates conclusively that without these savings through improved conditions brought about by co-operation, the citrus fruit business would be disastrously unprofitable.

It might be well to consider separately the different steps that the growers have taken in improving their condition.

Their Own Packing.—In doing their own packing at actual cost, and themselves being vitally interested in the success of the business, they have, at the suggestion of the Department of Agriculture at Washington, adopted careful methods of handling the fruit which have almost wholly eliminated loss from decay. They have also improved the appearance and character of their grade and pack, making both more uniformly good and dependable. By handling a large volume of business in each packing house, they have removed that unbusiness-like feature which formerly existed in unnecessary packing facilities, when each large speculative firm felt compelled to have a house at each important shipping point—many more than were required for handling the business, all maintained at great expense, for which the growers in the end had to pay. By buying supplies in large quantity, they are treated by the manufacturers as wholesalers. The result of all these things is a better and more attractive product and a great saving in packing costs.

Their Own Selling.—In selling, the growers early adopted the wise policy of establishing their own offices in the principal centers of distribution, with their own salaried men in charge. These salaried agents, as distinguished from brokers who sell all kinds of produce, are working all the time exclusively to extend the market for California oranges and lemons, and this fact, in connection with advertising, is largely responsible for the wide distribution and successful marketing of the present great output.

Their Own Advertising.—In advertising, more than in any other one thing, great benefit has come to the industry. During the season advertisements are carried in the daily papers, of practically all the consuming markets, calling attention to the fact that California oranges and lemons are good to eat and that they can be had at reasonable prices. Experience shows that consumption can be at least doubled in any section by judicious and extensive advertising. The Exchange is now expending nearly $200,000 per year for this purpose and is getting highly satisfactory results, yet its shipments are so great that even this large sum only means slightly more than a penny per box on a year's output.

Freights and Duties.—The growers have met the greatest difficulty in reducing freight and refrigeration charges to a reasonable basis, and have only been partially successful. Freights are now about 10 per cent lower than formerly, but still further considerable reductions will come before long.

In customs duty matters, an industry 2500 miles from the principal markets, employing the highest priced agricultural labor in the world, and handicapped with the risks attendant to the growing and shipping of a perishable article, can only exist with a duty imposed upon competing imported products that will in a manner equalize the difference in these varied costs between home and foreign production. Oranges and lemons have very nearly been accorded such protection under existing laws, and whether considered from a protective standpoint, or from a revenue standpoint, these duties are warranted. They have only been attained through the united action of the growers themselves, and cannot be maintained without vigilence on the part of all interested. This feature of the business, as well as freight rate matters, is well cared for by the Citrus Protective League, an organization composed of all Exchange growers and about one-half of those not in the Exchange.

A Summary of Results.—To sum up in a few words the accomplishments of the growers through co-operation in the Exchange, packing and selling costs have been reduced one-third, transportation charges have been reduced 10 per cent, customs duties on imported competitive fruits have been put on a fair basis; so that with advertising and distribution intelligently applied in a large way, a crop of 50,000 carloads annually is now successfully marketed as compared with the disastrous results obtained twenty years ago under old methods, with a crop of only 4000 cars, and the consumer gets better fruit at a lower price than ever before.

How It Works.—The California Fruit Growers' Exchange buys no fruit, and, in fact, actually sells none. It maintains at the highest state of efficiency possible a complete marketing medium through which its members conduct, each for himself, their selling operations. It is gathering market information in all markets every day in the year, which it immediately transmits to all shippers operating through it. The results of each day's business transactions in all markets are given all Exchange shippers daily in bulletin form, so that each is fully informed and can intelligently handle his own business of picking, packing, distribution and sale. In addition to this, the Exchange is instrumental in furnishing to the daily press in California, complete and accurate information of citrus fruit sales in Eastern auction markets, in this manner placing before all growers the actual condition in these markets.

What Can Be Done.—Co-operation can be extended by the fruit growers to other lines, and some successes have already been recorded in that direction; notably in the purchase of orchard supplies, such as fertilizers and materials for fumigation. So important is this matter of supplies, that the Exchange growers have seen fit to form a supply company, with a capital of one million dollars, the attention of which is all the time directed to the best and cheapest way in which to obtain all materials of common use in the packing house and orchard. The investment which the Exchange growers have made to date in packing houses and in their supply company, which they own in common, as distinguished from the individual ownership of their orchards, amounts to more than three million dollars.

With the notable increase in crops as the years pass along, the necessity for co-operation becomes more and more apparent, and without it every item of expense would rapidly increase and the whole industry would soon be involved in disaster. All difficulties have not disappeared, by any means, and there are at all times those interests which seek to break down the growers' organization for their own individual gain. In the Year Book of the Department of Agriculture for the year 1910, there appears, in an article on co-operation in handling and marketing fruit, the following paragraph, which, referring to the California Fruit Growers' Exchange, aptly illustrates the situation:

"Fewer serious efforts are made now to break down the co-operative principle among the growers. New schemes of fruit marketing are proposed from time to time, the organizations are frequently attacked in the courts under one guise or another, and other insidious movements are started, all having in view the possible splitting open of the co-operative organizations and a return to the methods of marketing which would destroy the systematic distribution and marketing now in operation and reinstate the chaotic speculative methods that were formerly in vogue. The co-operative movement in the citrus industry is the result of a slow, painful evolution, and the grower does not appear to be deceived by these efforts, no matter how ingeniously and artfully they are conceived."

Conditions of the Future.—In conclusion, a suc-

cessful future for the citrus fruit business in California is assured for many years to come, provided only:

First—That the growers continue to co-operate in the handling of these great problems, common to all.

Second—That they raise good crops of fruit of good quality.

Third—That the financial condition of the people of the United States and Canada continues to be such as will permit them to make fruits, as well as the actual necessities of life, a daily article of food.

In the Year Book of the Department of Agriculture for 1910, on pages 403-5 inclusive, is a very comprehensive article on "The Organization of the Citrus Fruit Industry in California." That article gives a detailed outline of the co-operative efforts of the citrus fruit growers, and all interested are referred to it for a full description of the operations of the California Fruit Growers' Exchange.

CULTURE AND CARE OF THE ALMOND.

To the Editor: My almond trees are now three years old, and having followed your advice (as contained in "California Fruits") in planting and pruning up to the present time, the result is an exceptionally fine lot of trees.

I would like your advice as to whether the main branches should be shortened in an almond tree. Of course, I intend to thin out the branches. Some growers here advise me to shorten the main branches; others say do not shorten them, as it tends to give the trees a brushy top.

I had good success with the peach trees which I grafted to almond last spring, getting about 95% of a stand, and many of the grafts now are 1½ inches diameter. In each of the trees I left about a quarter of the branches, to keep up the growing process of the tree. The universal practice around here in grafting is to cut the whole top off the tree at the time of grafting, but the increased growth and vigor of the grafts I have has proved to me and other growers around, that much better results are obtained by leaving part of the top on the tree at the time of grafting.

Is there any liquid spray I can use in my spray-pump that will kill the red spider without injuring the foliage of the almond? Up to the present I have used dry sulphur, applied with a "Vermorel" knapsack machine, but the trees are getting too high to reach them with this machine, and I cannot afford a power machine.

Does barnyard manure have any injurious effect on the vines if applied on my vineyard? One of my neighbors claims barnyard manure burned his vines so he got no crop wherever he spread the manure, and nothing would now induce him to use it again. I have been thinking of manuring my vineyard this winter, but will now wait until I get your advice on the matter. I thank you for kind advice received from time to time.

San Joaquin county. BEGINNER.

[It is not usual to cut back almond trees after they have reached three years of age and have assumed good form. Of course, if cutting back is done, the shoots coming from near the amputation must be thinned out to prevent the business which your adviser properly objected to. You did exceedingly well with your grafting, and we are glad to have the results of your experience. It seems a more rational way to proceed than by a total amputation.

A liquid spray for red spider is made by taking sulphur 30 pounds; lime (reduced to milk form by water), 15 pounds; water, 200 gallons; or use commercial lime-sulphur, 4 or 5 gallons to 200 gallons of water. These sprays can be applied without injuring the foliage. They are more expensive in labor cost than dry sulphuring, but are more effective.

Barnyard manure can be safely used in a vineyard at the beginning of the rainy season, working it in with the plowing, but not using too much. Wine grapes are sometimes injuriously affected in flavor by the use of such fertilizer, but the growth of the vine itself can be stimulated by the rational use of it. Your neighbor apparently either used too much or made the application at the beginning of the dry season or made some other mistake.—EDITOR.]

PEACH GRAFTING, ROOT KNOTS, ETC.

To the Editor: I have purchased a small fruit ranch here, which is planted in apricots and peaches, of all ages. Thus far I find no one here who seems to have knowledge of correct treatment of certain trees. May I trouble you therefore to enlighten me briefly upon these points:

(a) One young peach grove (three years) is grafted, or budded on apricot roots, and interspersed through the orchard are quite a number of young apricot trees, from half inch to inch and a half in diameter, which sprang from the root, the peach bud or graft having died. I budded these over to peaches in summer, but the buds all died for some cause. What is now the best course to transform them into peach of the cling variety? If a graft, what form of graft, and approximately when should it be made?

(b) In digging out some old peach trees, upon which an unsuccessful attempt has been made to graft apricots last year, I find now and then a tree affected with root knot, which by Mr. Wickson's treatise on California Fruits, I observe is infectious. I am burning the root, of course, but as these trees are scattered in the orchard, I wish to plant young trees in same locations, thus preserving the rows. Can new stock be safely put in the earth from which the old tree is removed? If treatment of the soil is essential, what is recommended?

(c) This appears to be a frosty section. The altitude is 1500 feet. I find no safe guide in local practice, as no two growers treat their orchards alike, even as to matters upon which there could not reasonably be a difference of opinion. Pruners are at work continuously from the time the apricots are harvested until spring arrives. From what is said in "California Fruits" I judge late winter pruning would be best for apricots and peaches. Am I correct as to the theory?

(d) If a whitewash spray is used to retard activity in the spring, as a frost preventive, approximately when should the spray be applied?

Hemet. NEW COMER.

[You can graft peach scions into your apricot stems by taking the peach scions of the varieties you desire while the tree is perfectly dormant, holding them in a cool place and putting in the grafts just as the buds are beginning to swell on the apricot stock. The scions can be buried in the earth in the shade of a fence or building, selecting a place, however, which is moist enough and yet where the water does not gather. The ordinary form of top grafting in stems an inch or more in diameter will work well. The half-inch stems can be whip-grafted successfully. In doing this work you will have to wax well and see that the wax coating is kept sound until the growth starts.

In planting new trees in places where knots have been found upon the previous growth, dig a good large hole, removing the earth, and fill with new earth from between the rows, and in this way healthy growth ought to be obtained, although there is always a disposition in some trees to put on knots. They should be looked at from time to time and all those affecting the larger stem should be removed and the wound painted with bordeaux mixture.

In frosty places it is often desirable to prune rather late, because the late-pruned tree usually starts later than the early pruned.

In whitewashing, to determine what advantage there is in it in retarding growth, the tree should be thoroughly sprayed with whitewash so as to cover all the wood some time before the buds swell. In fact, it is to prevent the early swelling of the buds that the whitewashing is resorted to. It is better to make the application, therefore, a little too early than too late. A specific date cannot be given for it that would be right in all localities. This method has not yet proved to be effective enough to warrant more than experimental use of it.—EDITOR.]

LARGE SCALE CANNING BERRIES.

It will interest our local growers of small fruits to know what the western Washington producers are doing. The Northwest Horticulturist reports a meeting at which Mr. W. H. Paulhamus, president of the Puyallup Valley Fruit Growers' Association, stated that during the past six years their Association had gradually developed a market for canned raspberries and blackberries until this year they were unable to fill anywhere near the numerous orders received from different Eastern cities. Near the close of the canning season about 4000 cases were on hand unsold. On advising a few wholesale firms handling this class of goods of that fact, prompt replies were received from four houses located in different States, each stating it would take the entire amount. One firm offered to take 8000 cases.

Mr. Paulhamus made a standing offer for his Association to take all the berries fruit growers in that vicinity would produce for the next five years, at the following prices:

Phenomenals, 3½ cents per pound.
Logans, 3¼ cents per pound.
Cuthbert Red raspberries, 4 cents per pound.
Blackberries, 4 cents per pound.

The amount of fruit canned the past season was about 75 carloads, and the speaker said that markets had already been developed for about twice that amount.

CLASSIFICATION OF NURSERY STOCK.

In order that both planters and nurserymen may have an understanding as to sizes of trees as designated by grades, the following classification has been adopted by the Pacific Coast Association of Nurserymen, as published by C. A. Tonneson, secretary of the Association. Those who specify in their orders that the trees must be No. 1, or No. 1 light, or No. 2, or No. 2 light, etc., may expect to receive from their nurserymen specific caliper and height as here specified:

No. 1 extra heavy—To measure not less than 4 feet and to caliper ¾ inch and up.

No. 1—Trees to measure from 4 feet up; caliper ½ to ¾ inch up.

No. 1 light—To measure 4 feet and up, and caliper 7/16 of an inch.

No. 2—To measure from 3 to 4 feet in height, and caliper ⅜ inch and up.

No. 2 light—To measure from 3 to 4 feet in height, and caliper 5/16 to ⅜ inch.

No. 3—To measure from 2 to 3 feet in height, irrespective of caliper. Measurements of height to be made from top of scion in grafted stock and from the bud in budded stock, and from the point where cut back in trees which have been cut back the previous year.

The Pacific Coast Association is now a strong and influential body, and it recognizes these grades as standard in the traffic of trees.

THE FEMMONZI PLUM.

To the Editor: The readers of the PACIFIC RURAL PRESS will be familiar with the name of Frank Femmons as being so long a grower at Ahwahnee, Madera county, as well as a general horticulturist with great love for the work and keenness of observation.

Some years ago he raised a particularly fine plum which he named the Femmonzi. This plum has been fruited near Vacaville, and one of the best known growers there exclaimed enthusiastically, after seeing the fruit on his own tree, "It's a crackerjack!" It is a very fine colored plum of enormous size and particularly sugary and rich. It comes in season following the earliest and is the largest plum at that time, if not the largest throughout the whole season. It carries remarkably well and may prove to be one of California's best shipping plums. LEONARD COATES.

Morgan Hill.

[Mr. Coates does not exaggerate the desirability of this plum. Perhaps Mr. Femmons will give us later an account of its origin and the efforts he made to demonstrate its claim to novelty, as well as his idea of its adaptation and value.—EDITOR.]

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Grus an Toplitz—blood red.
Rose of Killarney—rose pink.
Frau Karl Druschki—snow white.
Caroline Testout—clear delicate pink.

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Relation of County Commissioner to the Nurseryman.

(By County Commissioner A. R. Galloway, Santa Rosa, at the State Fruit Growers' Convention.)

My fellow commissioners as well as the nurserymen no doubt will agree with me that the subject assigned is a practical one that ought to be clearly understood by all the parties concerned, which necessarily includes the grower.

For a considerable part of the year our duties as commissioners bring us in more or less direct relationship with the nurserymen, not only of our respective counties, but with those of other counties, States and countries.

It is well that we consider carefully these relations existing between us in order that we as commissioners may perform our duties and discharge our obligations in a just and equitable manner to all concerned. In order to have a clearer understanding of these relations, let us consider briefly the work and duties of each party and what is reasonably expected and legally demanded of the nurseryman and the commissioner.

There can be no question as to the usefulness and necessity of the nurseryman in the promotion of horticultural interests. One of the first and most important requisites in starting an orchard is the proper nursery stock to plant, which the nurseryman is depended on to supply. It would be impractical and entirely out of the question for each fruit grower to undertake to produce his own nursery stock. Comparatively few fruit men are sufficiently skilled in all lines of nursery work to make a success of the business, even if they possessed the soil and the favorable conditions required for the best tree development. The nursery and the nurseryman sustains about the same important relation to horticulture, in the promotion of growth and development of plant life, that the home and nurse does in the nurturing, fostering, and training of infant life in the development of the human plant.

What is Demanded of the Nurseryman?—He is expected to furnish clean, healthy, and thrifty trees which are true to name. This requires that the stock must be free from all insect pests and plant diseases. He is also required by law, when shipping his stock, to plainly mark in a conspicuous manner on each package the name and address of the shipper, and the name of the party to whom it is shipped, and also the name of the place where grown.

In order to meet all these requirements, the nurseryman must be skilled in his business. He should be a soil expert so as to be able to select the soil best suited to his use, and then maintain its fertility by keeping it supplied with the plant food necessary for the normal and healthy development of his trees. He must know how to prepare his ground and keep it in the best condition for plant growth. He should have knowledge of how to plant the seed or the pits to produce the seedlings, or at least be a good judge of seedlings for use in the nursery. Then follows the transplanting into the nursery rows. Another important step in his work is the selection of buds or scions from which to produce his stock, followed by the skilled work of budding and grafting. After this has all been well done, comes the watchful care of the trained nurse necessary to promote health, growth and development. This care includes the keeping of the tender growing plants, root and branch, free from insect pests and plant diseases.

This is all followed by the proper digging or removing from the nursery, sorting, grading, culling, disinfecting, packing, labeling, and final distribution.

Duties of the Horticultural Commissioner.—Having outlined the work and obligations of the nurseryman and considered what is expected of him with the necessary steps to meet these requirements, we will in like manner consider the duties of the county commissioner, that we may discover the points of contact and better define the relations existing between us. It is admitted, to begin with, that there is a difference of understanding among us commissioners as to just what the nature of our duties and the limitations of our activities are. At some of our previous conventions there have been discussions in which widely divergent opinions were expressed in regard to the nature of our work. Some have taken the position that we are simply the administrators of the horticultural and quarantine laws and that our duties and obligations are confined to their enforcement, our position being that of tree policemen. While others hold that we are horticultural teachers and advisors, our duties being educational in nature, it being our business to give instruction in any department of horticulture when called upon for information. While our duties as prescribed by law appear to favor the first position most, it seems to me that the second is also clearly implied, so that both are included in what may be reasonably required of us. It should not be our policy to render as little service as possible, refusing to do anything that is not clearly mandatory, but rather to render the greatest possible service consistent with all our duties.

Laws and Ordinances.—The State law gives us full control over imported stock, affording our growers protection from the danger of introducing new pests from other countries on infested nursery stock which is subject to our inspection.

The county ordinances generally give the county commissioner absolute control over all nursery stock of every kind that may be shipped in from other counties or States.

The Sonoma Ordinance.—As an example of the county ordinances, I will give a part of ordinance 26, of Sonoma county, which places a quarantine on all nursery stock of every kind, for the protection of the horticultural interests of the county.

"Section 1.—No person, or persons, corporation, or corporations, either as owner, agent, factor, broker, servant, or employe, shall bring for delivery into Sonoma county, California, from any place or places, without said county, any trees, plants, vines, shrubs, scions, cuttings, or grafts, without giving notice of their arrival at their destination within 24 hours thereafter to the horticultural commissioner of said county, or to the local inspector of the district into which the same are so brought; nor shall either of the persons or parties above-named remove or use, or cause the removal of the same from the place of their arrival at their destination, until inspected as hereinafter provided."

Section 4 makes it the duty of the county horticultural commissioner to enforce the provisions of the ordinance, and authorizes him to make such rules and regulations as in his judgment is necessarys to make the ordinance effective.

Section 5 of the same ordinance makes the violation of any of its provisions a misdemeanor punishable by fine or imprisonment, or by both fine and imprisonment. The State law also makes it the

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duty of the county commissioner, whenever it is deemed necessary to cause an inspection to be made of any premises, orchards, or nursery, or trees, plants, vegetables, vines, or fruits, or any fruit-packing house, storeroom, salesroom, or any other place or article in his jurisdiction, and if found infested with any infectious disease, scale insects, or codlin-moth or other pests injurious to fruit, plants, vegetables, trees, or vines, or with their eggs, or larvae, or if there is found growing thereon the Russian thistle or other noxious weeds, to notify the owner or owners, or person or persons in charge that the same are infested with said diseases, insects, or other pests, and require such person or persons to eradicate or destroy the said insects or other pests within a certain time to be specified. From the provisions of the State law which has just been cited, we learn that it is the duty of the county commissioner to inspect the nurseries and every kind of nursery stock in his jurisdiction and wherever infectious diseases or insect pests are found to require the same to be eradicated or destroyed.

FOR PROTECTION AND PROMOTION.—A careful consideration of the duties of the county commissioner as defined by the laws governing our work in relation to the nurseryman makes it obvious that these laws were enacted for the express purpose of protecting the growers and promoting the horticultural interests of our respective counties. Since the duty of administering these laws and enforcing their provisions devolves mainly on us, we are required to stand between the nurseryman and the grower to see that the nursery stock furnished him is free from insect pests and plant diseases.

The county commissioner sustains a little different relation to the local nurseryman, in some respects, to what he does to the outsider who is shipping stock into his county. The nurserymen in our jurisdiction have the same claims on us for service that our growers have. They have the right to call on us at any time to inspect their nurseries or their stock, and if the same is found to be in satisfactory condition they may require us to furnish certificates for the stock inspected, and if found infested require us to direct the disinfection of the same, and in case of securing stock from other nurseries, to inspect it as we would for the orchardist.

The local nurseryman, in common with the growers of the county, are very much interested in preventing the introduction of more pests through infested nursery stock from outside sources. In considering these different relations between county commissioners and nurserymen, the question may arise, is there any real need, after all, of an inspection service? Would not the nurseryman furnish just as good stock without this extra expense and inconvenience?

That depends, to some extent, on how well inspectors do their duty. I have noticed—and no doubt many of you have—that after stock has been condemned a time or two from any given nursery for some particular cause, the following shipments are generally all right. There is no doubt that the nursery stock which is distributed, especially that which goes to other counties, averages much cleaner and healthier than it would if there were no inspection service at its destination.

NURSERYMEN'S TEMPTATIONS.—When we consider the cost of producing nursery stock and all the labor and pains required in getting it ready for distribution, and the necessary losses involved in careful culling and grading, we can easily understand the temptations to laxity in culling out all the defective and infested stock especially where the infestation is slight and rather difficult to

(Continued on Page 563.)

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Shade Tree Insects.

[By W. H. Volck, County Commissioner, Santa Cruz County, at the State Fruit Growers' Convention.[

This subject is of interest to horticulturists, but is of greatest concern to the growers of ornamental plants and gardeners. A broader view of the matter must change the title to that of Shade Tree Pests, or, better, Ornamental Plant Pests.

I might enlarge on the value of such cultures in maintaining more congenial surroundings for homes, parks and roadways, but these points are so generally conceded as to make such discussion unnecessary.

In the first place, the question arises, to what extent are infestations of shade trees detrimental to general horticulture? The public is familiar with an affirmative view of this matter, and, at times, disinfection of shade trees and garden shrubs is enforced on the grounds that a dangerous nuisance is being maintained. I wish, at the outset, to state that in the majority of cases such infections have no direct bearing on the condition of commercial orchards.

There are certain exceptions, such as the case in which large trees overshadow an orchard, peppers growing along a roadway may keep the adjoining orange orchard infested with black scale for a distance of several tree rows. Again, where the ornamental plants harbor a new pest, not generally distributed through the orchards, its presence may be considered a nuisance.

Then it is a matter of discretion and judgment on the part of the horticultural commissioners just what disinfection of ornamental plants shall be enforced under the horticultural laws. It is evident that such discretion is in practice, judging from the prevalence of infested shade trees in most of the counties.

On the other hand, the owners of these ornamental plants desire that they should present a clean and thrifty appearance, otherwise their beauty is largely destroyed. It is to offer such suggestions as may be helpful in maintaining ornamental and garden plants in good condition that this paper has been prepared.

Lice and Scales.—The insects to be dealt with belong largely to sap-sucking species, with scales and aphids in greatest abundance. This type of insects require treatment with contact sprays or fumigation. A number of these sap-suckers eject an excretion known as honey-dew. On this sweetish substance the black smut fungus thrives. For this reason many of our shade trees and ornamental shrubs become badly smutted at some time during the summer.

The blackening of the foliage and often the ground under the trees is the most noticeable symptom of insect infestation. However, when it is desired to control such insects the spraying or fumigation should be done before the blackening occurs, as at that time most of the injury has already taken place. A little close inspection will reveal the presence of green lice or scale long before the black smut fungus develops. It is upon such inspection and the prompt application of a remedy that effective treatment depends.

The plant lice or aphids are responsible for a large amount of damage to ornamental trees and shrubs. These insects are readily controlled by dilute solutions of nicotine, nicotine and soap, or nicotine and lye-sulphur. These mixtures make excellent combinations, for the presence of soap renders it more easy to wet the plants and the bodies of the lice.

Soap (whale-oil or common laundry soap)	3 lb.
Nicotine sulphate (Black Leaf 40)	½ lb.
Water	50 gal.

The soap is dissolved by boiling in a small quantity of water.

For black scale increase the soap to 7 or 8 pounds; the nicotine sulphate can also be doubled to advantage.

This formula will be effective against all kinds of plant lice when well applied. The trees should be drenched, and the application repeated whenever inspection shows that the lice are becoming dangerously abundant. Some years one spraying will be enough, but other seasons climatic conditions will be so favorable to insect life that three or four sprayings become necessary.

In the case of the black scale and most other scale insects, repeated applications are required. The old insects cannot be killed by dilute insecticides which are safe upon the foliage. The young are easily killed, but on account of the prolonged hatching cannot be controlled with one spraying. Systematic treatment every two or three weeks will keep all kinds of shrubs and trees free from the black and most other scales. In using these formulas, if there is any tendency to scorch foliage, reduce the percentage of soap to a point where no injury results. The amount of nicotine may be increased considerably without danger of injury.

When rose bushes and other plants affected with mildews are to be treated, it is well to have some surphur in the spray. Lye-sulphide is a good form of sulphur to use. Lye-sulphur may be easily prepared by mixing one part by weight of granu-

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lated lye with 1½ parts of sulphur. A little water is added to start the reaction which takes place without heating, or, at most, only gentle heating. The mixture soon boils violently from the heat of the reaction, and so should be prepared in a vessel with considerable extra space, to prevent boiling over. When the boiling has subsided, water to about double the volume should be added and thoroughly mixed. The mixture may then be filtered into a suitable container. Of this stock solution, about 1 quart in 50 gallons may be used, with or without soap, but, of course, containing nicotine in the proportions before stated. If there should be any burning of the foliage, reduce the lye-sulphur content.

Applications should be repeated whenever required. A point to be considered is that the systematic use of this formula over three or four weeks will prevent the occurrence of most insect and fungus troubles.

Numerous other contact mixtures might be mentioned, but I have confined my recommendations to nicotine-soap and lye-sulphur sprays, because of their general applicability and the fact that they may be effectively and safely handled by inexperienced people. Fumigation is a good method of handling pests on ornamental trees, but its application must be left to experienced parties.

For Leaf-Eaters.—At times the gardener may have to deal with chewing insects, such as caterpillars. These are usually too resistant to be killed with the contact sprays mentioned here. This class of insects is most readily controlled by the use of stomach poisons, such as paris green, arsenate of lead, and zinc arsenate. The last named arsenical is probably the best poison for gardeners' use. It may be dusted over the plants dry, or applied with water. As a liquid spray, one pound of zinc arsenite is about the right quantity for 50 gallons of water, paris green one-fourth this amount, and arsenate of lead as much as three pounds. All of these materials require constant agitation to keep the mixture uniform. Foliage injury may occur with paris green, but not nearly so frequently with lead arsenate or zinc arsenite.

Such insects as tent caterpillars and canker-worms may at times be troublesome on shade trees, and the live oaks are subject to defoliation by the California oak-moth. All such injury is easily prevented by spraying with a good arsenical.

How to Spray.—The use of spray materials implies some sort of a spray pump. Good hand pumps are now on the market, and every one who has to care for ornamental plants should be provided with at least a bucket pump. A good bucket pump that is quite generally handled by hardware dealers is known as the Myers pump. By closing the agitation vent at the base of the pump with a drop of solder and attaching a 10-ft. length of hose, with a 4-foot extension rod bent near the tip at an angle of 45 degrees, and completing the outfit with a bordeaux nozzle, a satisfactory equipment is obtained. One person can operate this pump, but better work is done when there are two people, one pumping and the other handling the nozzle.

The bordeaux nozzle can be adjusted to throw various volumes and qualities of spray, hence is adapted for close and distant work. By using the full-sized aperture and vigorous pumping, a stream can be produced that will reach the tops of tall shade trees. A little experience will enable one to thoroughly spray such trees with this outfit, but, of course, the work is more cheaply done with power pumps. Indeed, it would appear that there should be profitable work for a small power equipment in cities and towns. Such an outfit need not cost more than $150.

The one most important thing to remember about spraying is that it must be done thoroughly. The tree should be drenched and the spray applied from all directions. The 45-degree bend in the extension rod is a great advantage, as the direction of the stream can be changed by simply twisting the rod. To give some idea about the quantity of spray necessary, I will state that large shade trees will require 20 to 50, or even more, gallons.

Much more could be said about spraying, but I will conclude by mentioning a few other points which may be helpful. It frequently happens that badly infested trees are much better cleaned up if freely pruned. In cases where it is considered expedient to prune back severely and defoliate, it is possible to use much stronger insecticides. Dormant or defoliated trees may be sprayed or painted with a strong soap solution made by dissolving 1 pound of soap in a gallon of water. This mixture must be applied hot, as it jells on cooling. Practically every scale insect will yield to this treatment. Dormant trees may also be sprayed with 10% distillate emulsion.

If certain trees and shrubs prove especially difficult to keep clean, the best policy will be to remove them and replace with varieties which give less trouble. Walnuts are not good shade trees in the coast climates of California, for the reason that the walnut aphis will always give trouble. I would also advise that no more elms be planted, because of the certain spread of the European elm scale over the entire State. This scale will prove difficult to control.

Conifers, palms, and the various species of eucalyptus have so far proved the most free from pests and so are best adapted for roadsides. The pepper tree, while very ornamental, is not suitable for localities where the black scale is troublesome. Olives are in the same class, and the various species of acacia should be handled sparingly and with discretion on account of their being especially favored hosts of the cottony-cushion scale.

The county commissioners could perform a useful service by calling attention to such matters and publishing a list of trees best suited to the locality.

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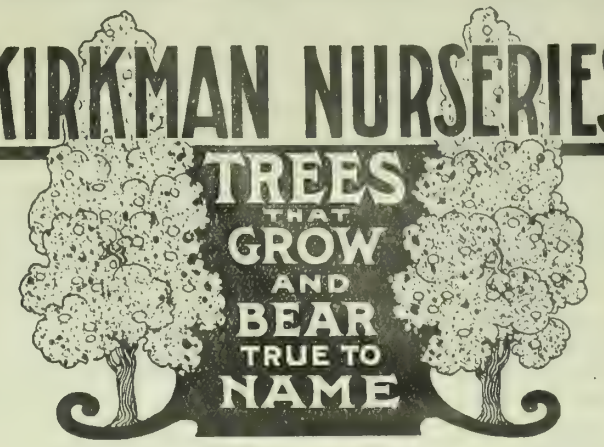
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AGRICULTURAL REVIEW.

With the Fruit Men.

Only a few scattered cars of oranges are to leave Tulare county from now on this season. About 1275 cars have gone out, few of which have netted less than $2 per box.

More raisins left Fresno as Christmas presents this year than ever before.

The Highgrove Orange Growers' Association of Riverside county is equipping a fumigating room and making other extensive alterations at its packing house.

A fruit cooling company has been organized at San Bernardino to establish pre-cooling plants at packing houses in southern California.

The 15-year-old orange orchard of Charles Johannes at Merryman station, Tulare county, produced 2½ packed boxes of oranges per tree this year.

Emperor grapes from the George C. Roeding ranch near Fresno, which had been packed in sawdust two months, sold at $2.55 and $2.60 per crate in New York, more than twice as much as fresh Emperors.

The Lindsay Gazette states that the Valencia grove of I. T. A. Lewis at that place has averaged $1505 per acre for the last five years.

At Banning, Riverside county, a 200-acre almond orchard is to be put out this fall.

John Linden of Strathmore, Tulare county, has harvested some well matured bananas this fall.

Commissioner Bloomer of Sacramento county estimates that 100,000 fruit trees will be set out in the county this season.

The olive crop of Spain is stated in consular reports to be almost three times the size of last year's crop. Reports of a large olive crop also come from Turkey.

The wine crush of the Fresno district, according to the internal revenue officials, has been a little less than that of 1910, although the brandy output is larger.

The total citrus shipments from Porterville this season were 1054 cars.

It is stated by J. H. Metzger, secretary of the Orange County Dried Fruit Association, that there are on the Coast only about 2500 tons of dried apricots unsold, against 8000 to 10,000 tons this time last year. The Orange county association is holding its apricots for 15 cents.

General Agriculture.

Spineless cactus on the A. E. Wilcox place near Orland, Tehama county, have grown three feet in height in one season.

C. R. McBride, horticultural commissioner of Solano county, has issued a circular dealing with the Centauris or star thistles in his county, one or two of which threaten to become very serious pests as weeds.

State Horticultural Commissioner A. J. Cook has sent out notices to all nurserymen asking them to eradicate pests in their nurseries whenever possible.

On the Paul Pfiister ranach near Paso Robles a newly sunk artesian well is producing 17,000 gallons of water per day.

Canners are attempting to sign up a larger acreage for tomatoes than usual.

Commissioner Cook has changed the previously announced arrangements regarding the eel worm quarantine, so that potatoes from all over Nevada may come in, but will be subject to inspection and rejection when the eel worm is found.

The Palo Verde, Riverside county, cotton crop has proved very satisfactory, about two bales per acre being harvested on some ranches.

The 2216-acre ranch of Maxwell & McKenzie in Pope Valley, Napa county, has been sold to Oakland capitalists, who will attempt to develop artesian water upon it.

The final estimates of the Crop Reporting Board give the corn crop of the country at 2,531,488,000 bushels, wheat 621,338,000 bushels, oats 922,298,000 bushels, rye 33,119,000 bushels, potatoes 292,737,000 bushels, and hay 47,444,000 tons. All of these are less than last year's crop, which of potatoes was 49,032,000 bushels, and hay 60,978,000 tons.

The Hamilton Sugar Co. has leased 700 acres of land near Grimes, Colusa county, from J. W. Browning and is preparing to plant beets upon it.

A new town, to be named Winton, is being established on the line of the Santa Fe railroad nine miles north of Merced. It will be the supply town for the Merced colonies in Merced county, and plans are being made to have it developed in as artistic and substantial a way as possible. A hotel, store building, church and school will be started very soon.

The destruction of squirrels in lower Alameda county is reported to have made the coyotes much bolder than usual, on account of cutting off their supply of food.

February 8 has been set as the date for the Livermore Poultry Show.

A site far a new branch of the Oregon Agricultural Experiment Station has been chosen near Medford. It contins 25 acres of land and includes four distinct types of soils.

The Farmers' Union of Napa is to hold a banquet on January 13, at which the newly elected officers will be installed and the members of the Rutherford Union will be guests.

The J. K. Armsby company has purchased 210 tons of beans in the Turlock district, Stanislaus county, this season.

A bulletin has been issued by the Agricultural Experiment Station at Berkeley upon plant diseases. It describes briefly every plant disease known to attack fruits and vegetables in this State and gives their treatment.

Dr. Friench Simpson, in charge of the squirrel eradication work in the southern San Joaquin, has completed an inspection of much of his territory and finds that there are much fewer squirrels than before.

It has been formally announced that the Alameda Sugar Co. will erect a large factory at Meridian, Sutter county, to be ready for the run of 1913, the Alvarado plant being dismantled by that time.

A resolution has been introduced in the legislature asking Congress to adopt the report of the California Debris Commission on the control of the flood-waters of the Sacramento river.

The Raisin City Improvement Association of Raisin, Fresno county, is to hold an old-fashioned rabbit drive New Year's Day.

A company is being organized at Oroville, Butte county, to arrange for the erection of a permanent building in which to hold the citrus and olive show.

The Farmers' Union of Los Gatos held recently a banquet in honor of H. G. Johnson, sales agent of the California Farmers' Union.

J. H. Shirk, of Tulare, is putting out seven acres to Brandywine strawberries. They will be irrigated from a six-inch artesian well. Mr. Shirk took four out of five prizes with his Coaldust strain of Black Langshan fowls at the Stockton show, and E. J. Geibe of Fresno purchased the pen that took the first prize.

The third big shipment of hops from the Fraser fields in Butte county, valued at about $50,000, left for England last week.



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Miscellaneous.

A site has been chosen at Exeter, Tulare county, for a new cannery of the Hunt Canning Company.

The manufacture of bags at the jute mill in the State prisons will be continued, in spite of the request of manufacturers of that product to the contrary.

A. Hodgkins, of Oakdale, Stanislaus county, is to raise Indian Runner ducks on a ten-acre tract near town.

The census of 1910 shows a decrease of almost 800,000 colonies of bees in the United States, owing to losses from foul brood. There is also a decrease in the number of farms keeping bees.

RELATION OF COUNTY COMMISSIONER TO THE NURSERYMAN.

(Continued From Page 559.)

detect. The same motive prompts the unscrupulous nurseryman to mix defective and infested trees or plants in with his good stock that influences the fruit grower, who purchases this infested stock to his lasting injury, when disposing of the products of his orchard to pack inferior and infested fruit for the market to the injury of the fruit industry, or to put the little green berries and culls on the bottom of the baskets, beautifully faced over with large, ripe, luscious berries well calculated to tempt the appetite and induce the unsuspecting consumer to pay for value he does not receive.

There is also a risk to be run in getting trees from the conscientious and reliable nurseryman, for it is impossible for him to do all his work or even oversee all the details of his business, so he must necessarily depend largely on his employees, and there are very few of them who are as careful and painstaking as their employers would have them to be.

Then there is the very common practice among nurserymen when they are unable to fill their orders from their own nurseries, to secure the stock needed from other sources where it can be most cheaply and conveniently obtained. On account of these and other dangers, it has been wisely provided by law that competent inspectors, who have no financial interest in the transaction, shall examine all nursery stock of every kind at its destination and shall allow no diseased or infested stock to be released from quarantine, to be planted, unless it is first thoroughly disinfected.

The position of the county commissioner in his relation to the nurseryman, being placed as he is by law, between him and the fruitgrower to safeguard the industry, is one of prime importance to horticultural interests, so that the Board of Supervisors, to whom he is required by law to make monthly reports, should keep in touch with the commissioner's office and see that he is sustaining the proper relations between the nurseryman and the horticulturists in protecting and safeguarding the industry.

IMPORTANCE OF A GOOD START.—The prudent farmer or gardener, before sowing or planting, is careful in the choice of seed and plants, realizing that very much depends on the selection of clean seed that will grow and produce crops of the best varieties of cereals, vegetables, or other annuals, where only one season's crop is involved. It is scientific as well as scriptural, that we shall reap whatsoever we sow, hence the importance of selecting good seed unmixed with anything foul or noxious in nature.

This being true of annual crops, how much more important it is in the planting of orchards where a term of years accompanied by toil and expense, is required before the grower can even begin to reap his reward which ought to be followed by decades of profitable harvests to repay him for the heavy expenses and long delay before he begins to realize on his investments. On this account we cannot fail to be impressed with the important position occupied by the county commissioner in his relation to the nurseryman.

CONFLICTS OF AUTHORITY.—Occasionally doubtful problems arise where there are wide differences of opinion known to exist in which the interest of the nurseryman is opposed to that of the grower. A case in point is with reference to the crown-gall, which, we have been informed by Government experts, is a bacterial plant disease resembling in some respects the malignant tumors of animals, and yet we find in the preamble to a resolution which was unanimously adopted by the thirty-fifth annual convention of the American Association of Nurserymen, held at Denver, Colorado, 1910, that it is set forth that "The hard or hairy form of root or crown-gall has not been found injurious or contagious to apple trees," and in the resolution that follows, the advisability of admitting such stock is strongly urged.

Wherever abnormal growths are found, caused by any disease, giving rise to a question as to whether the disease is injurious or not, there can be no doubt that the grower is justly entitled to the full benefit of the doubt, for the obvious reason that he has so much more at stake.

If by chance an occasional good tree should be condemned, and the nurseryman lose the value of his tree, is that not much better than to take the risk of the tree being infected with some contagious disease that will not only cause the grower to lose the cost of the tree, which is a small consideration compared with the ground allotted to its support, which is worth probably from 20 to 50 times the value of the tree? Not only that, but the possible menace an infected tree may be to the surrounding trees must be considered.

THE GOOD NURSERYMAN.—The more careful and painstaking the nurseryman, the more likely he is to favor a rigid inspection service and heartily co-operate with the county commissioner in his efforts to enforce the horticultural and quarantine laws. If he is careful to send out nothing but clean, healthy and thrifty stock, he has nothing to fear from inspection, no matter to what county it is sent; but this to gain, in that all infected and defective stock is eliminated from every other source, thereby reducing the supply that would take the place of better stock and consequently lessening the competition which he otherwise would have to meet.

The careful, conscientious nurseryman stands in the same relation to the county commissioner and his inspectors that the peaceable, law-abiding citizen does to the policeman and other peace officers, in that he has nothing to fear, but is benefited and safeguarded by the officers in their enforcement of the laws of the land.

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BERRY PLANTS

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Trying to Meet High Butter Prices.

Written for the PACIFIC RURAL PRESS
By D. J. WHITNEY

It has been realized since alfalfa began to be the main reliance of dairymen in the districts where it grows, that freshening the cows in the fall, just before a decided rise in the price of butter began, was a necessary way to secure the profits that the business should give, but this, unfortunately, is not as common as it should be. This is all the more important, now that the production of butter has fully caught up with the demand and an export business to other butter markets of the country begun. Dairymen in the coast counties, or where natural pasture alone is depended upon for food, will doubtless have to make the best of things and freshen the cows for times when the food is plentiful; but in alfalfa districts, September freshening, so that the calves could be weaned and out of the way before the price of their milk was too high, is the practice that is employed by the best dairymen. With many others, however, the cows are permitted to come in at any time that is most handy, or just when they happen to, which means spring freshening with a large part, and that only about 80% as much butter is made in the fall in creameries in the alfalfa districts as comes in the spring and early summer.

The actual practice in the majority of instances is somewhat similar to that of a dairyman who has kept an account of the number of cows milked every month of the year and the gross receipts from his dairy business, including cream check, sale of veal, hogs, etc. The fact that he kept accounts shows that he was an up-to-date manager, and this was verified by an examination of the dairy. The conditions are not exactly typical of the income from permitting the cows to freshen as they will, as he has been working toward fall freshening, and expects after a time to have the fall and winter become the largest of the year, to the profit of his pay check. For one or two of the months the returns were partly estimates, owing to incomplete bookkeeping, and the returns for December and the last week of November were estimates based upon the prices that were expected, combined with a knowledge of the way the cows were due to freshen and the amount they would give.

In January 26 cows were milked and $300 received; in February, 31 cows were milked, $385 received; March, 38 cows, $514; April, 44 cows; $611; June, 45 cows, $500; July, 44 cows, $400; August, 43 cows, $350; September 41 cows $300; October, 35 cows; $380; November, 31 cows, $400; and December, 34 cows, $450. The owner states that one reason for the big receipts during the spring and early summer was that milk was shipped to the city, during part of that time, at $2 per can, and more money received for it than would have been secured for the butter-fat it contained. It can be seen from the above that 47 cows were being milked during one month while butter prices were low, and only 26—but little more than half as many—in January, when prices were high. In December only two-thirds as many were due to be milked as in the spring. Besides this, the cows being milked in the spring were nearing their calving period and therefore giving more milk than when they had been fresh for six months or so.

The herd was composed mainly of grade Durhams, although headed by a thoroughbred Jersey bull of fine appearance.

Making due allowance for the amount of milk the average cow would be giving at the various times of year, due to nearness to freshening period, income received from sales of calves, hogs, etc., which would be most numerous at the time when the milk was most plentiful, the income per cow in the various months is instructive.

In January, with 26 cows and an income of $300, the receipts per cow were $11.55; in February, $12.40; March, $13.50; April, $13.90; May, $14.25; June, $11.11; July, $9.10; Aug., $8.15; Sept., $7.40; Oct., $10.85; Nov. $12.90; and Dec., $13.25. When the milk was not sent to the city the cream went to a creamery shipping to San Francisco, and the butter-fat prices were based on San Francisco quotations, plus the regular amount above quotation. The approximate monthly prices during these months in San Francisco were: January, 31c; February, 29c; March, 27.1c; April, 21.5c; May, 22.3c; June, 21.9c; July, 23c; August, 25.9c; September, 26.8c; October, 30.4c; November, 31.2c; and December (estimate), 32.5c. At different times during the year purchases and sales were made of cows, so that the total number of cows in the herd, milking and dry, did not remain constant. Fresh alfalfa and alfalfa hay made up the feed, except a small amount of grain in winter.

CURE FOR CALF SCOURS.

Calves at the University of Wisconsin farm are specially treated for calf scours. First, special care is taken to avoid sours by keeping the calves in clean, bright, well lighted and well ventilated quarters. They are fed regularly until four weeks old on two to six pounds of their mother's milk three times daily. Care is taken to have the temperature of the milk as near that of freshly drawn milk as possible and always to have the calf pail scrupulously clean.

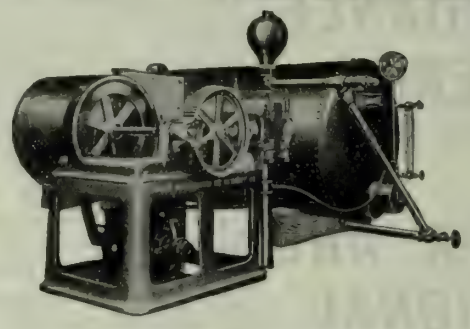
In spite of all precaution we now and then have cases of scours. For the past two years such cases have been treated as follows: As soon as symptoms appear, two to four tablespoonfuls of castor oil are mixed with one-half pint of milk and given to the calf. This is followed in four to six hours by one teaspoonful of a mixture of one part salol and two parts sub-nitrate of bismuth. It can also be given with one-half pint of new milk, or the powder placed on the tongue and washed down by a small amount of milk.

The salol and sub-nitrate of bismuth can be secured from any druggist mixed in the proper proportions at the time of purchase and thus have the powder readily available for use at any time. As an additional precaution against contagious scours, it is advised that the navel of the new-born calf be wetted with a 1 to 500 solution of bichloride of mercury (corrosive sublimate).

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Getting Into the Hog Game.

They seem to have had a great time running the demonstration train of the Oregon Agricultural College over the eastern part of the State which is so new and going ahead so fast. Good advice was given by the demonstrators in various lines. Professor Potter spoke wisely and conservatively about beginning with pigs, and his hints are just as valuable in this latitude:

SELECTING SOWS.—To the beginner in the hog industry the purchase of good thrifty grade sows is recommended rather than pure breds. They will be cheaper and for economical production for the market will do just as well. No beginner should start into the pure-bred hog business expecting to sell breeding stock until he has first thoroughly mastered the business of raising hogs for the market. In the first place, he should have this knowledge in order to be familiar with the demands of his customers, and in the second place, pure-bred hogs are expensive, and it is cheaper for the beginner to do his experimenting and make his mistakes with grades. He should not buy too many; four or five will be plenty. Many men have failed by plunging abruptly into the hog industry on a large scale. A large hog farm, like any other business, must be started modestly and built up from its own profits. One should not become excited about the stories he reads of the fabulous profits in hog raising. Hog raising is a good conservative and profitable business with a very bright future in this State, but it is not a "get-rich-quick" scheme.

If possible the first sows should be bought in the winter, already bred. In this way it will not be necessary to buy a boar the first year, especially with only a few sows, and at the end of a year it will be an easier matter to select the proper kind of a boar. The sow pigs will be old enough also to breed by that time, and may be bred to the new boar, whereas if they were his progeny it would not be desirable to breed back to him. Old sows are generally to be preferred to gilts, but the latter are usually much easier to obtain.

Uniformity in sows is also much to be desired. For these reasons it is preferable to select from the same blood lines and even from the same breeder. Some farmers select from widely different herds in order that their sows may not be in any way related, but this is a mistake. It is preferable that all stock be closely related except the boar, which should be of unrelated but similar blood lines. The points to be considered in the selection of individual brood sows are: An overfat condition should be avoided, but a marked readiness to fatten is always desired; length of body is considered an especially good point, but in general it must be remembered that any good qualities the pigs may have are to be inherited from the sows and the boar, and if the sows are coarse and roughly made the pigs are likely to inherit that tendency.

SELECTING THE BOAR.—In selecting a boar the best should be secured—a first-class pure-bred boar for the breed most suitable, and one good enough to head a pure-bred herd. Especial care should be exercised in selecting a boar suitable for the sows. If the sows have produced one litter their value as breeder can be easily determined. It is popular error to think that if the sows are faulty in some respect the boar should be the opposite extreme, if the sows are rangy and leggy the boar with which they are mated should be the extremely short, low down, blocky type. Boars should be selected which are as nearly perfect as possible in the points in which the sows are deficient, and not those which are just as bad in the other extreme. Perfection in any point is seldom obtained by breeding together two radical extremes.

A good thrifty early spring pig may be used for breeding to bring pigs in the following spring, but an older boar is preferable. If an old boar can be purchased, which some good breeder is about to discard, so much the better. A tried sire is always preferable to an untried one, and is usually purchased at less cost. A boar five or six years old should be just as good a breeder as he ever was, and even more sure, providing he is active. He may, however, be a little heavy to use on young sows, thus necessitating a breeding crate. By putting sows in this and carefully adjusting it to the size of the sows a very heavy boar may be used on light sows without danger. Some breeders use such a crate for all their sows.

Some farmers expect to get a boar for $12 or $15. Such breeders never get very far in raising good hogs. A boar that is not worth around $50 is not the proper kind. Plenty of boars can be bought for less, but not good ones. In buying sows, about the usual market price per pound is customary for grades. Nice pure-bred gilts run from $50 up in this State.

Many successful breeders prefer that their sows be pure or high grades of one breed, and that their boar be pure of another breed. The cross-bred pigs so produced are generally thrifty and easy to fatten. Such a practice has many points in its favor, but it is sometimes difficult and expensive to keep up a supply of sows of a different breed than the boar, and then some of the cross-bred pigs will look so fine that many farmers succumb to the temptation to keep them for breeding. Choice as they are for the market, they are not to be compared with pure-breds for breeding purposes.

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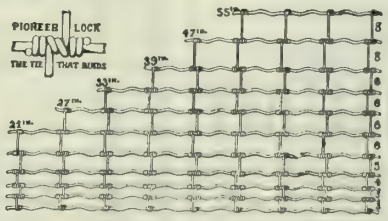
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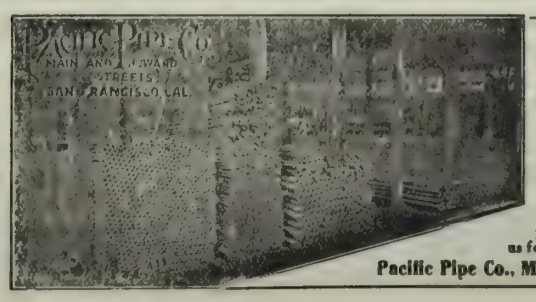
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A HOME-MADE CABLE BRIDGE.

To the Editor: I want to build a suspension bridge over a canal about 100 feet wide. I have sufficient 1-inch wire cable, but am uncertain as to the best way to construct the bridge. Can you advise me whether there is any Federal or State bulletin covering such matters?

Merced. P. M. L.

ANSWER BY C. R. SESSIONS.

There is no Federal or State bulletin covering this subject. With steel wire cable 1-inch in diameter, a suspension bridge having a span of 100 feet and a dip of 8½ feet can be built which will safely carry one or two men on horseback. Such a bridge would have two cables, one on each side, a floor about 4 feet wide, towers about 14 feet high, and suitable anchorages. By using four cables, two on a side, and by the use of a properly designed floor and rail, a bridge could be built which would safely carry a two-ton wagon and a team or a band of sheep or cattle.

San Francisco. C. R. SESSIONS

FEEDING LAMBS FOR THE MARKET.

B. E. Carmichael of the Ohio Experiment station gives the American Agriculturist some hints for handling range lambs so as to fit them for the best prices the butchers will pay:

Expensive and elaborate buildings, yards and racks are not needed for lambs. It is important, however, that the lambs be kept dry, underfoot as fell as overhead, and excessive drafts should be avoided. A good supply of fresh air is desirable, but it should be supplied under conditions that may be regulated at will. Racks should be so constructed as to prevent waste and the soiling of the food. Lambs are very dainty feeders, anad do not relish food that has been trampled under foot or in any other way rendered unpalatable. Bedding is not needed in large amount, but should be supplied in quantities to keep the lambs clean.

If the weather is suitable, and if pastures are available, a short run at grass is good for the lambs after being shipped to the farm for fattening. Grain should be supplied in very limited quantities at first, and the amount gradually increased until the lambs are on full feed, which may well be in two to four weeks from the time grain is first supplied. For lambs weighing around 55 to 60 pounds not far from 1½ pounds of grain and 1½ pounds of dry roughage daily per head constitutes a suitable full feed ration. From a quarter to four-tenths of a pound is a fair average rate of daily grain per head to expect for a 100 to 120-day feeding period. If alfalfa hay, clover hay, soy bean hay, or other similar roughage is available, the use of one or more of them is, under normal market conditions, advisable. With such roughages as the above, a grain ration made up solely of corn will bring good results. [It would probably be barley in California.—EDITOR.] With timothy hay, corn stover, or corn silage used as a part or all of the roughage, the use of soy beans, linseed oil meal, cottonseed meal, or other nitrogenous concentrate as a part of the grain ration is advisable.

Unless relatively cheaper than usual, oats and bran are rather too costly for use in lamb feeding. On account of its ordinarily being a relatively cheap feed, corn should usually be the chief grain ration, supplemented by a nitrogenous concentrate like the ones suggested above, if the roughage is not made up of alfalfa, clover, soy bean hay, or other material similar in composition. The feeder should not market the lambs too soon, for half-fat lambs are not in high demand, and consequently must be sold at a price considerably below that paid for well-fattened stock. It is not profitable to grind grain nor to cut or chaff hay for lambs, for they consume whole hay and grain readily and masticate their food very thoroughly.

HOW DAIRYING IS TAUGHT.

Leta M. Nevins, who has written much about Humboldt county dairying for Eastern journals, gives Hoard's Dairyman a sketch of the dairy teaching in the Ferndale Union High School which dairy residents of other school districts may take a hint from:

The school is supported by nine districts, all of which are largely given over to the dairy industry. In an endeavor to bring the High School more closely in touch with the life of the community, two courses have been introduced; one in general agriculture, the other a course in dairying, more technical and specialized than the course in general agriculture.

In the dairy course, after a discussion of the composition of milk, as given in Wing's "Milk and Its Products," the Babcock test is taken up in a practical way. Each student is given a chance to test for butter-fat. For this purpose the school has two testers; one an eight-bottle and the other a twelve-bottle machine. The separation of cream from milk is demonstrated in an efficient manner with the aid of a hand separator of medium capacity. Cream ripening and churning, washing, work and packing the butter, are fully discussed in class. Such discussion is supplemented by visits to

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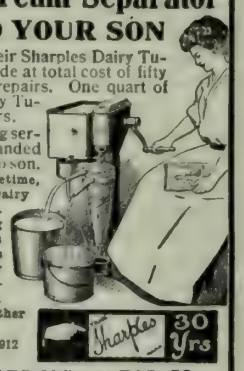
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a nearby creamery where these operations are nearly always in progress. Calibration of glassware is followed by practice in the determination of the specific gravity of milk with the aid of the lactometer; then a determination of the specific gravity of milk with the aid of the lactometer; then a determination of the per cent of acidity. These tests are used in the detection of adulterated milk. Later in the course a study of the effect of pasteurization, sterilization, and bacterial action upon the keeping qualities of milk are taken up. The work with bacteria consists largely of demonstrations by the instructor in making bacteria counts of milk kept under various conditions.

Three recitations and two laboratory periods a week are given to this course. All of the laboratory work is done in the chemical laboratory with small quantities of milk or cream, except when the separator is used, when a larger amount of cream is necessary. Farrington and Woll's "Testing Milk and Milk Products" is the laboratory manual used, and is well adapted to a course of this kind.

Bovine tuberculosis also receives attention. For this part of the work the bulletin published by the University of California, College of Agriculture, on this subject, is used as the basis of discussion in class. The pupils are then required to make a certain number of tests under the direct supervision of the teacher.

The course, as a whole, is well adapted to girls, especially those interested in domestic science. For a high school entertainment held in Ferndale recently, the dairy class made seven gallons of delicious ice cream, the girls in the class being largely responsible for the success of the undertaking.

COLOR-POINTS IN HOLSTEINS.

Mrs. M. E. Sherman of Fresno, one of our foremost Holstein-Friesian breeders, writes to the Holstein-Friesian Register these questions:

"I am one of those people who deplore the light-color idea in our black-and-whites. I have some cows that have only black tips to ears and one, two or three small black dots on their sides. The buyers exclaim over their beauty, but I cannot agree. I am putting at the head of the herd a bull that has only a white star, stomach, legs and tail, with a small stripe of white on side. I hope in this way to put more black on the offspring of my white cows. Can I do it in this way?

The editor of the Register replies as follows:

"The question of the distribution or the proportion of light or dark color in our black-and-white cattle should not be one of the whim or taste of the breeder, but of fidelity to the general scheme of color marking as seen in the original type of Holstein-Friesian cattle. The color marking of our animals may not be a most important characteristic, but it is important; and the original type of the Holstein embodies too much of general excellence, summed up, to be trifled with. The original type of Holstein was not a largely white animal.

One need only examine the photographs and read the descriptions of the great ones among the first importations to realize that; and in Holland today, according to Dr. Hubert Work of Pueblo, Col., who recently visited that country, the cattle to which our Holsteins trace "run darker in color than ours, usually having a band of white over shoulders and loins, with white belly and points." Dr. Work says that the Dutch are very frankly sarcastic on the American color-fad tendency which demands white Holsteins, and he, himself, regards it as dangerous to the family type. We should not make a plaything out of a first-class business proposition; we cannot afford to do so. The Holstein may be an ornament to the dairy fields of the world, but beauty is not her first "excuse for being."

If a sire is thoroughly well-bred and strong enough to impart his characteristics to all his offspring, he will very quickly and surely revolutionize the general standard, color markings included, of the herd. An intelligent and concientious breeder will select his herd sire with great care. A largely dark bull, however, if his ancestry on dam's side is largely white may beget light colored progeny. The dark bull must be backed by the right kind of breeding to accomplish the desired results.

Seasonable Hints on Hatching.

Written for the PACIFIC RURAL PRESS
By Mrs. S. SWAYSGOOD, Pomona, Cal.

The early education of the average middle-aged person has been such as to fill his mind with the idea of being ahead of time. "The early bird catches the worm" was dinged into children's ears half a century ago, almost to the exclusion of other things, perhaps more than was conducive to health and morals. Our forbears never once insinuated that it was possible for the early bird to get caught, but I am quite sure that it has happened just about as often as he caught the worm.

Anyway, California poultrymen seem to incline to the early worm theory, for everybody wants to get out early chicks. And there are cases where it is necessary, such as the fancier who wants a few birds for early shows, or the man engaged in raising broilers and roasters for market. In fact, these men must hatch just about in season and out, because they must take care of their trade.

But I have yet to see any gain from very early hatching, where the stock are to be kept for laying and for ordinary usefulness on farm or home grounds. If an egg ranch is being conducted, a few early pullets will perhaps help out when the hens commence to get a little tired and need rest. Anyway, I am going to give you all the help I can for both early and late hatching—then it is for you to decide when to hatch.

A good many breeders think it is necessary to hark back to the third generation in order to have good chicks; but given good, healthy stock for its immediate progenitors and a chick will do very well. It is, however, worse than useless to try to raise good chicks from unhealthy stock. And by *unhealthy* we do not mean *sickly* or *diseased* stock, as is generally understood.

I consider fowls unhealthy—that is, for breeding purposes—when they are overfat. I believe in good feed and even generous feeding, but draw the line on feeding breeders for fat. This is where so many poultry writers fail; they tell people what to feed, how much, etc., but never say that the quantity or kind of feed should be regulated according to breed. When a beginner, or even an old hand, who is not getting as good results as he wishes, commences to feed according to the law laid down, then when his chicks hatch out they live about four or five days and drop over to the beyond.

I say without fear of contradiction that 75% of the loss of chicks is due to improper feeding of the parent stock. In feeding for eggs—commercial eggs, I mean—you feed for quantity, as it is necessary to get the quantity to run a paying business. It is just as necessary in feeding for eggs for hatching that you ignore the quantity and feed for quality, and for quality alone. Never mind getting a lot of eggs so that you can boast what a lot you get from so many hens, and the chicks will boast for you later. So when you are feeding for hatching, choose those foods that will nourish but not fatten the hens, and this can only be done by the person who knows what breed he is feeding. What will keep one breed in good condition will lay fat on another, and so it is that so many mistakes are made in feeding.

There should not be too much meat or too much green feed when strong healthy chicks are wanted; one thing that is good, and that hens will stand more of than any other kind of feed, is sprouted oats. But this is only one item in the feed, as you must not confine them to a diet of oat sprouts entirely, but feed any good wholesome feed along with it.

THE EGGS.—If we have fed right and have every reason to suppose that the eggs will hatch good, strong, lively chicks, our next care must be to select and care for them until we are ready to set the hen or incubator, as the case may be. Very long eggs and those pointed at both ends should be rejected, as also those having ridges and bumps. Keep nothing but nice smooth eggs of moderate size, and as fast as they are laid, put them in a box, spread with nice soft hay, and keep a cover over them; just a cloth spread over evens up the temperature. While they should not be kept where it is too cold, neither should they be kept where it is too warm. They should be turned at least every third day and not kept longer than ten days at most, unless unavoidable. The fresher the eggs the better chance the chicks have for life, and that is what we are striving for.

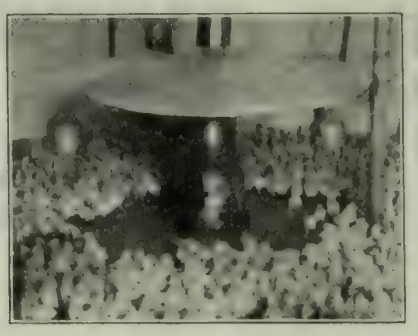
ALL ONE COLOR.—In setting an incubator, never make the mistake of mixing different breeds and colors. Brown eggs never hatch in the same time that white ones do. This is especially true of Leghorns. I have seen Leghorns when the heat has been run a little high that would hatch out on the seventeenth day—something no brown egg will ever do. Nineteen or twenty days is the average period of incubation, when hatched in a machine, for Orpington, Wyandotte, and other brown-egg breeds, and when under hens, twenty-one to thirty-three days. Rocks will come nearer than any of the brown-egg breeds to hatching out with Leghorns. When we know this, is it not the height of folly to mix eggs and then put the blame on the eggs or the shipper if we get poor hatches? It is far better to use good judgment and set eggs of one color only, than spend time, oil and eggs in an effort to beat nature.

If nature intended mixed eggs to be set together, we should find somewhere a breed that the hens lived up to the law by laying eggs of various colors, but so far, such a breed has not been found.

Now say we have our eggs ready for the incubator, that is, we have the right number of eggs carefully selected, and we want to start the hatch without delay. The next thing is the incubator; supposing that it was properly cleaned when last used, it can soon be made ready for use. Fill the lamp, put a new wick in the burner and trim, then light the lamp, close the doors, and let things get warm. If you are not quite sure of your thermometer, it is better to get it tested by some reliable man. After the egg chamber is well warmed up, take a wash-bowl with hot water made a milky color with creolin, then take a sponge or cloth and wash the ceiling, sides and every part well with the mixture; then take out the trays and do the same with them, also nursery drawers. Now close up the machine and let it run until you have it regulated. Better use a spirit-level and find out whether it is perfectly level before putting in the eggs. Many a good lot of eggs has been spoiled through the machine not being level, because it is next to impossible for the heat to be evenly distributed if the machine is not well balanced.

If all these details, which appear small, but which in reality cut a large figure in hatching, have been properly attended to, and the machine is running well enough to satisfy you, then you can prepare to put in your eggs. It is always best to put the eggs in a machine as early in the day as possible, so as to have time to watch and regulate it before night.

And here again we must take a lesson from nature. Under natural conditions



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a hen rarely leaves the nest the first two or three days. Instinct tells here that a very small thing will destroy the germ of life in the early stage, so she sits close until moved by hunger to leave the nest. Incubator eggs should be treated the same way; the heat should not vary a particle if we want the best results, and the eggs should not be disturbed at all until the third day. When the doors are opened, let it be only as gently as possible, so that no jar reaches the egg chamber; turn the eggs over as quickly as possible, and close the door; then treat the other trays in the same manner. The whole process should not take more than five minutes, and the heat should soon be regained. The time of keeping eggs out of the chamber should never exceed ten minutes until the tenth day, when it can be extended according to one's judgment and the weather. If the air is at all cold in the room where the incubator is, a flannel cloth thrown over the eggs during the time of airing will be found good. About the tenth day, instead of turning the eggs as usually understood, a really slow process when handled one at a time, I usually roll them around with the hand. This is not easily done on the corrugated-wire trays, but the eggs can be removed to a table and rolled. This rolling, together with an even temperature, will do away with all cripples. The embryo in the egg needs exercise quite as much as the parent stock. Anyway, if I ever omit the rolling process, I am sure of some cripples, and when I roll the eggs well, I never see one; so if it is not the exercise, what is it?

WASHING EGGS.—There are one or two items connected with incubating that should receive attention; although they should have been mentioned earlier, it is not yet too late. There used to be a sort of superstition regarding the washing of eggs that were to be incubated, and I have known people to actually scrape dirt off eggs to be set rather than wash them. But some brave soul with the right kind of mind had sense enough to come out openly and say that washing eggs was just as natural as washing any other article that was dirty, and that old saw had to go. While it is best to keep the eggs clean, if possible, if they are not clean it is best to wash them, and in washing eggs, do so in a weak solution of creolin and warm water. Don't wipe, but put in the incubator just as they drain. Give the eggs another bath of creolin and warm water just as you are about to return them to the incubator on the eighteenth day, if brown eggs, and the sixteenth day if they are white eggs. As for any further instructions about moisture, follow the directions given with the machine you are using. No one else understands that particular machine as well as the maker, and he is the one to tell you whether it needs moisture or not, and also the quantity to be used.

As the time draws near for the hatch to come off, we begin to give the eggs a longer airing and a little more rolling, as both conduce toward a better grade of chicks as far as health goes.

On the eighteenth day the machine should be closed up; it is best to secure the thermometer so that it can readily be seen without opening doors and where the chicks cannot knock it over.

Keep the thermometer as even as possible, but don't worry if it should run up a little. I would rather it should run up than down, for a chilled chick, even in the shell, is not much better than a dead chick, if any. To run down the last day or two is almost fatal, but a good reliable machine, up to date, will seldom play such pranks. A few years ago we though it was absolutely necessary to sit up and watch the thermometer during the hatch, but very few do so now. The only thing to guard against is opening the incubator before the hatch is through. Don't do it, either out of curiosity or a desire to help a few chicks out.

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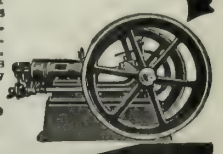
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The Home Circle.

A Perfect Christmas.

(Continued From Last Issue.)

It was getting dark when they reached the great front parlor, and the fireplace there was wonderful.

"Woof, woof, woof," barked Bush.

Bijah stood still in the door while Liph went near enough to give that fire a poke, and he could hear Grandfather Vrooman away back in the sitting-room:

"Now, my dear, we'll stick him away somewhere. Put him in one of the stockings and hang him up."

"That's me," groaned Bijah. "He's going to make a present of me to somebody. O, dear! I wish I could run away."

But he could not, for there was Liph and there was Bush, and it was growing dark.

"Now, my dear," went on grandfather, "I'll just light up, and then I'll go and meet that train. I'll bring Prue and her folks, and Pat'll meet the other, and bring Ellen and hers. Won't the old house be full this time?"

"He caught some more, somewhere," whispered Bijah to himself. "I wonder who'll get 'em? Who'll get me?"

That was an awful question, but Liph and Bush all but ran against him just them, and he heard grandmother say:

"You'll have to stick candles on the window-sills; I can't spare any lamps for upstairs."

"But, my dear, it's got to be lit up—every room of it. I want 'em to know Christmas is coming."

"That's what they were all saying at the 'sylum this morning," thought Bijah, "and here I am, right where it's coming to."

So he was; and he and Liph and Bush watched them finish setting the supper table, till suddenly Bush gave a great bark and sprang away toward the front door. Grandfather Vrooman had hardly been gone from the house an hour; and here he was, back again.

Jingle, jingle, jingle. How the sleigh-bells did dance as that great load of young folk came down the road; and what a racket they made at the gate; and how Bush, and Liph, and grandmother, and the rest did help them!

"He's caught 'em all," said Bijah, "but they ain't scared a bit."

No one would have thought so if they had seen Mrs. Prue Hopkins and her husband and her six children follow Grandfather Vrooman into the house.

They were hardly there and some of them had their things on yet, when there came another great jingle, and ever so much talking and laughter, down on the other road.

"He's caught some more. Some are little and some are big. I wonder who'll get the baby?"

Bush was making himself hoarse, and had to be spoken to by Mr. Hardy, while Mrs. Simpson tried to unmix her children from the Hopkinses long enough to be sure none of them had dropped out of the sleigh on the road.

Then Liph set to work to introduce his cousins to Bijah, and Bush came and stood by his new friend in gray, to see that it was properly done.

"Where'd you come from?" said Joe Simpson.

"'Sylum," said Bijah. "Where'd he catch you?"

"Catch what?" said Joe, but Liph managed to choke off the chuckle he was going into and to shout out:

"Why, Joe, we found him in the road today. He thinks grandfather's Santa Claus and this house is Christmas."

"So I am—so it is!" said Grandfather Vrooman. "We'll make him hang up his stocking with all the rest tonight."

Bijah could not feel scared at all with so many children around him, and he was used to being among a crowd of them. Still, it was hard to feel at home after supper, and he might have had a blue time of it if it hadn't been for Liph and Bush. It had somehow got into Bush's mind that the dot in gray was under his protection, and he followed Bijah from one corner to another.

All the doors in the "dark room" were open, and it was the lightest room in the house, with its big fire on the hearth and all the lamps that were taken in after supper; but there was not one thing hanging on the Christmas tree until Grandfather Vrooman exclaimed:

"Now for the stockings! It's getting late, children. I must have you all in bed before long."

"Stockings?"

They all knew what that meant, and so did Bijah, but it was wonderful how many that tree had to carry. Bob Hopkins insisted on hanging two pairs for himself, and Thad Simpson was begging his mother for a second pair when Liph Hardy came in from the kitchen with a great, long, empty grain-bag.

"What in the world is that for?" asked grandmother, perfectly astonished. "Why, child, what do you mean by bringing that thing in here?"

"One big stocking for grandfather. Let's hang it up, boys. Maybe Santa Claus'll come and fill it."

There was no end of fun over Grandfather Vrooman's grain-bag stocking, that was all leg and no foot, but Uncle Hiram Simpson took it and fastened it strongly to a branch in the middle of the tree. It was close to the trunk, and was almost hidden; but Liph saw Uncle Hiram wink at Aunt Ellen, and he knew there was fun of some kind that he had not thought of.

Grandmother Vrooman had been so busy with all those children from the moment they came into the house that she had almost lost her anxiety; but it came back to her all of a sudden.

"Sakes alive! Jane," she said to Mrs. Hardy, "every last one of 'em's got to be in bed before we can do a thing with the stockings."

Bijah heard her, for he was just beyond the dining-room door, with a cruller in each hand, and it made him shiver all over.

"I wish I was in the 'sylum. No, I don't either, but I kind o' wish I was."

Bijah was a very small boy, and he had not seen much of the world; but his ideas were almost as clear as those of the other children and Grandmother Vrooman for the next fifteen minutes. The way the Simpson and Kopkins families got mixed up, with Liph and Sue Hardy to help them, was something wonderful. Old Bush wandered from room to room after them, wagging his tail and whining.

"Mother," exclaimed Mrs. Hardy at last, "the bed you made on the floor in the store-room!"

"Just the thing for him. All the rest go in pairs. I'll put that poor little dear right in there."

So she did, and not one of her own grandchildren was tucked in warmer than was Bijah. He did not kick the bedclothes off the next minute, either, and he was the only child in the house of whom that could be said. Grandfather Vrooman paid a visit of inspection all around from room to room, and Bush went with him. It took him a good while. When he came to the store-room and looked in, Bijah's tired eyes were already closed tight, as were the fingers of the little hand on the coverlet, which was still grasping a cruller.

He was fast asleep, but Grandfather Vrooman was not; and yet when Bush looked up at him, the old man's eyes were shut, too, and there was a stir in his thick white beard as if his lips were moving.

Things got pretty still after a while, and then there began a steady procession in and out of the "dark room," which was not dark.

Boxes went in, and bundles, and these were opened and untied, and their contents spread out and looked at and distributed. It was no wonder Grandfather Vrooman's big sleigh had been so full, and the one Pat had driven, when they brought the Hopkins and Simpson families from the north and south railway stations.

Grandfather himself went away out to the barn once for something he said he had hidden there, and while he was gone Aunt Ellen Simpson and Uncle Hiram slipped a package into the grain bag, and grandmother handed Uncle Hiram another to slip in on top of it, and Uncle John Hardy and Uncle Martin Hopkins each handed him another, and the bag was almost half full, but you could not see it from outside; and then they all winked at each other when grandfather came in with a backload of sleds. Grandmother may have thought she knew what they were winking about, but she didn't, for Uncle Hiram whispered to Aunt Ellen:

"I'm glad it's a big stocking. One'll do for both of 'em."

It was late when they all went to bed, and there was so much fire in the fireplace they were half afraid to leave it, but Grandfather Vrooman said it was of no use to try and cover it up, and the room would be warm in the morning.

When they got upstairs the children must all have been asleep, for there was not a sound from any room, and the older people went to bed on tiptoe, and they had tried hard to not so much as whisper on the stairs.

Oh, how beautiful the country was when the graw dawn came next morning!—white and still in the dim and glowing light.

So still! But the stillest place was the one Bijah woke up in. He could not guess where he was at first, but he lay a while and remembered.

"Santa Claus' house, and they're all real good. He's going to give me to somebody as soon as it's Christmas!"

He got up very quickly and looked around him. It was not dark in the store-room, for there was a great square hole in the middle of the floor, and a glow of dull, red light came up through it which almost made Bijah feel afraid.

There was his little gray suit of clothes, cap and all, close by his bed on the floor, and he put them on faster than he ever had done it before.

"Where's my other stocking?"

He searched and searched, but it was of no use, and he said, "I can't run away in the snow with a bare foot."

He had been getting braver and braver, now he was wide awake, and he crawled forward and looked down the scuttle-hole. He knew that room in a minute, but he had to look twice before he knew the tree.

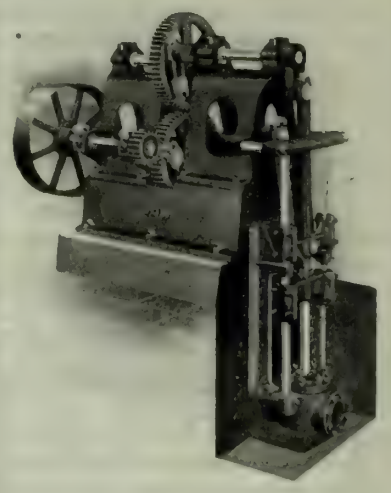
"Ever so many stockings! And they're all full. Look at those sleds! Oh, my!"

Whichever way he looked he saw something wonderful, and he began to get excited.

"I can climb down. It's just like going down stairs."

It was just about as safe and easy, with all those branches under him, and all he had to do was to sit on one and get ready to sit on the next one below him. He got about half way down, and there was the grain bag with its mouth wide open. Just beyond it, on the same bough, but farther out, there hung a very small stocking indeed.

"That's mine!" exclaimed Bijah. "It's cram full, too. They've borrowed it, after



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all theirs were full. I want to put it on now, but I can't reach it out there."

Just then he began to hear noises upstairs, and other noises in the rooms below—shouts and stamping, and people calling to one another—and he could not make out what they were saying.

"Oh, dear, they's coming. Santa Claus is coming. What'll I do?"

Bijah was scared; but there was the wide mouth of Grandfather Vrooman's grain-bag "stocking," and almost before Bijah knew what he was doing he had slipped in.

Poor Bijah! The moment he was in he discovered that he could not climb out. He tried hard, but there was nothing on the sides of the bag for his feet to climb on. Next moment, too, he wanted to crouch down as low as he could, for all the noise seemed to be coming nearer.

So it was, indeed, and at the head of it were grandfather and grandmother and the other grown-up people, trying to keep back the boys and girls until they should all be gathered.

"Where's Bijah?" asked grandfather, after he had counted twice around, and was sure about the rest.

"Bijah!" exclaimed Liph. "Why, I looked in the store-room; he isn't there."

"Hope the little chap didn't get scared and run away."

"Dear me—through the snow!" exclaimed grandmother.

"Of course not," said Aunt Jane. "He's around somewhere. Let's let the children in. They're all here."

"Steady, now!" said grandfather, as he swung open the door into the "dark room." "Don't touch anything till we all get in. Stand around the tree."

He himself stepped right in front of it, and he looked more like a great, tall, old Santa Claus than ever as he stood there. The children's eyes were opening wider and wider as they slipped around in a sort of very impatient circle; but grandfather's own eyes were shut for a moment. It was only for a moment, but when he looked around again he said:

"Now, children, wait. Which of you can tell me what child it was that came into the world on the first Christmas morning?"

They had not been quite ready to answer a question that came so suddenly, and before any of them could speak, a clear, sweet little voice came right out of the middle of the tree:

"I know. And the shepherds found Him in a manger, and His mother was with Him. He sent down after my mother last summer."

"Bijah!" exclaimed grandfather, but grandmother was already pushing aside the boughs, and now they all could see him. Only his curly head and his little shoulders showed above the grain bag, and Uncle Hiram shouted:

"Father Vrooman, he is in your stocking! Who could have put him there?"

"I think I know," said grandfather, in a very low, husky kind of voice; but all the Simpsons and Hopkinses and Hardy's broke loose at that very moment, and it took them till breakfast time to compare with each other the things they found in their stockings, and all the other wonderful fruits of that splendid Christmas tree.

Bijah was lifted out of the bag, and he got his stocking on, after it was empty. For some reason, he couldn't guess why, all the grown up people kissed him, and grandfather made him sit next to him at breakfast.

That was a great breakfast, and it took ever so long to eat it, but it was hardly over before grandmother followed grandfather into the hall, and they heard her say:

"Now, husband, what are you wrapping up so for, just to go to the barn?"

"Barn! Why, my dear, I'm going to town. I told Pat to have the team ready."

"To town? Why, husband—"

"Mother, there'll be stores open today. I can buy cords of toys and candy and things. When I get to the Orphan Asylum, to tell 'em what has become of Bijah, and why he won't come back there again, I'm going to have enough to go around the rest of 'em—I am, if it takes the price of a cow."

"Give 'em something for me."

Uncle Hiram heard it, and he shouted: "And for me," and Uncle John followed, and all the rest, till the children caught it up, and there was a contribution made by every stocking which had hung on that Christmas tree. They all gave just as fast as they understood what it was for, and the last one to fully understand was Bijah.

"You ain't going to take me?"

His lips quivered a little.

"No, Bijah, not unless you want to go. Wouldn't you rather stay here?"

"Course I would."

That was not all, for both his hands were out, holding up the store of things which had come to him that morning, and he added, "Take 'em."

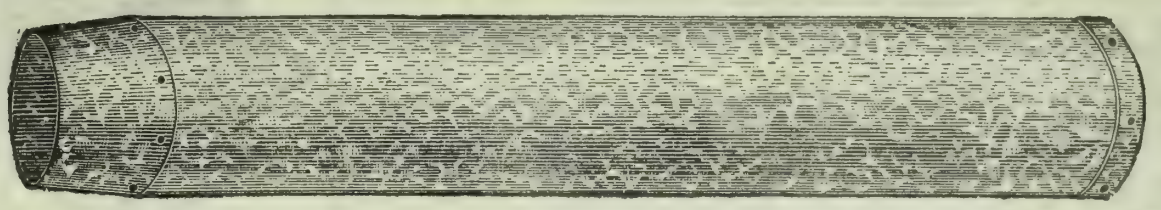
Something was the matter again with Grandfather Vrooman's beard, but he told Bijah he would get plenty of other things in town.

"Keep 'em, Bijah. Good-by, all of you. I'll be back in time for dinner. Children, you and Bush must be kind to Bijah. He came to use on Christmas morning, and he has come to stay!"

Bush and the children did their part, and so did all the rest, and so did Bijah, and so it was a perfect Christmas.—W. O. Stoddard in Young Folks.

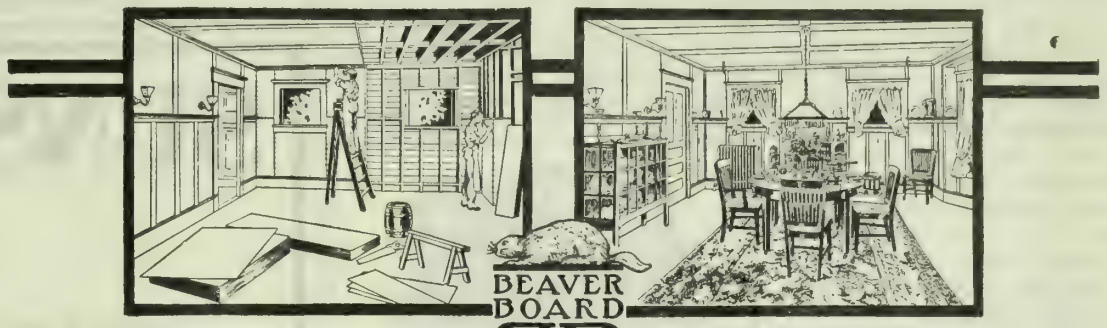
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Consul General Henry D. Baker, in New Zealand, sends the State Department this information:

In traveling through rural districts of New Zealand, especially in the South island, I have been impressed with the general use of canvas covers for horses and cows in cold or wet weather, and especially during the night time.

In New Zealand it is not customary for stock to be housed even in winter. Some protection, however, is deemed necessary for horses and cows, particularly when left out on pastures much exposed to severe weather. During winter the covers may be kept on these animals most of the time, but during spring and autumn they are put on at night and removed in the morning. The use of covers is so general and so important that it would seem to be worth the while of American manufacturers of canvas and cotton duck goods to cater for the New Zealand market, with a view to popularizing their goods as material for horse and cow covers.

Horse covers sell usually for about $4.86 apiece. Cow covers, as a rule, are smaller in size and sell for about 73 cents less. They are usually made up from imported material by saddlers, or by sail, tent, and tarpaulin makers. A certain amount of American cotton duck is used for this purpose, but most commonly a flax material, produced in England, is imported by local dealers and manufacturers of the covers.

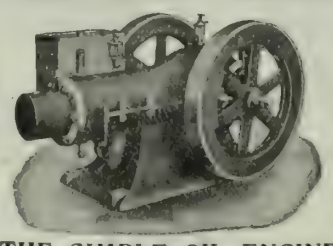
There are innumerable local designs and special fancies as regards horse and cow covers in New Zealand. Local dealers, as a rule, prefer not to keep many covers in stock, but to make the covers to order in accordance with special measurements and styles as desired by customers. Usually the covers, at least those for horses, have some woolen lining on the inside, and are trimmed with leather at the edges; they also have ropes or straps to prevent slipping. In all cases they must be waterproof and afford good protection from both rain and severely cold winds.

The recent pastoral census of New Zealand showed that there were 404,688 horses in New Zealand (including asses and mules) and 633,733 dairy cows. Most of these animals require covers, at least during the coldest part of the year, so it can be seen how important the demand must be for suitable material for covers.

THE GOOD IN A GOOD BURN.

Californians who have used fire in clearings and in disposing of straw and trash on gainfields will be interested in the following statement from an Australian exchange:

It is absolutely necessary to have a good burn to insure good results, particularly in a dry season. There was an instance in this district which conclusively proved this in which a crop of 200 acres is looking well and good enough for a hay crop. The ground was cleared by the merest accident, as a fire broke through at an opportune time and cleared the land thoroughly. This paddock, which of course cost nothing to clear, was drilled in, and at the present time the wheat would average about 3 ft. 6 in. in height all through. In an adjoining paddock where there was a bad burn and which was put in under exactly the same conditions and time, the crop is poor and not more than 7 or 8 inches high. There was another instance which showed the value of burning as against clearing without trying to burn. A farmer cleared a strip of land as stated, taking all the roots out of the ground. Adjoining this strip he put the land in in the ordinary way by first burning off. The result shows now that on the hand-cleared land the crop is very indifferent, while on the burnt land the wheat is of good height and looking well. The same condition applies to stubble burning, which in the majority of cases were bad this year. A good stubble burn undoubtedly enriches the soil and gives better yields. This year has proved the value of the mallee land. It is simply marvelous what this country can do with a light rainfall.



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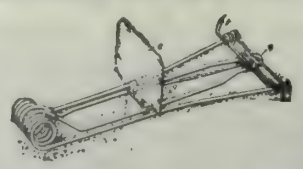
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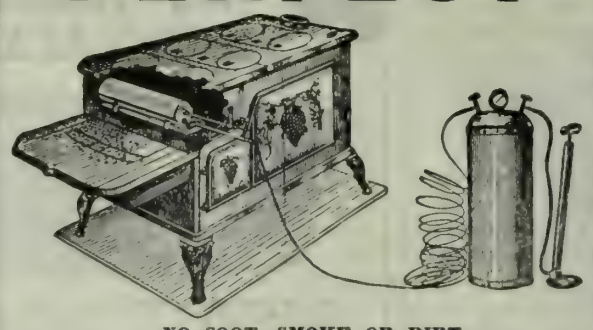
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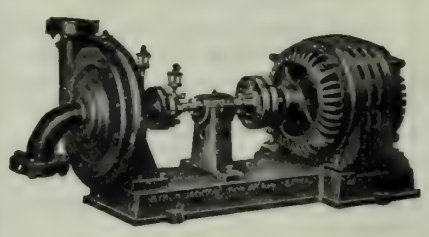
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The Fortieth Annual Fruit Growers' Convention.

The Fruit Growers' Convention which was held in Santa Rosa last week was notable for the steps that were taken to secure reforms in things that are of vital importance to the fruit industry of the State at large, and more attention was given to this phase of the subject than to the cultural problems of the individual grower.

As stated in the last issue of the RURAL PRESS, one of the first things that was done was to ask Governor Hiram Johnson to call a special session of the legislature to put the quarantine work on a firm legal basis. In the following sessions of the convention this subject was discussed thoroughly, and resolutions were passed requesting that the pests be kept out by Federal quarantine and regulations from foreign countries and other States at the same time that California was preventing their introduction on the Pacific side and their spread from one county to another.

One resolution asked for amendments to the bills now before Congress providing for inspection of mail carrying fruit, plants, seeds, or other material likely to carry insect pests or diseases, whether coming from other States, or foreign countries, and for a thorough national inspection of such material whether in personal baggage or commercial shipments. A second resolution asked the State legislature to memorialize Congress to pass these amendments, and to further assist in their adoption, and delegates were selected to be sent to Washington to personally interview representatives from California and other States regarding the law and its amendments. Both fruit growers, horticultural commissioners and nurserymen were a unit as to what was desired, in spite of the fact that there is usually a difference of opinion among nurserymen and commissioners as to what laws and regulations should be. In fact, all resolutions adopted at the convention were adopted without difference of opinion of any kind, and by a unanimous vote.

In connection with the quarantine work, the action of the State Horticultural Commission in assisting the Territory of Hawaii in fighting the Mediterranean fruit fly was indorsed, as this would help to insure the effectiveness of the quarantine work here. Both the State quarantine officer and the superintendent of the insecretary were indorsed for their efficient work in the positions they now occupy.

Another request that was made to the legislature was that a standardization law be passed so that the shippers that do standardize their fruit would be protected from the small percentage that pack poor and good fruit together. The legislature was also requested to pass such laws as would assist in having public school vacations come at those times that would enable the children to do much of the harvesting that is now done at great expense by alien labor. The above resolution was introduced by the late Homer A. Craig a few minutes before his deatn.

The Federal Government was requested to have the work of investigating thrips again taken up in Contra Costa county, as the investigations have proved of very great value to growers thus far, and the problem still requires much study before it can be satisfactorily solved.

At the close of an address by J. W. Jeffrey of the Deciduous Fruit Protective League upon that organization, a resolution was adopted indorsing its formation and the management of Mr. Jeffrey, and the promise made of the hearty support of the individual growers present in their respective districts. It was voted that the executive committee of the League should consist of members representing each shipping and fruit-growing interest.

In the transportation problem the freight rates committee, consisting of R. D. Stephens, M. E. Angier, and C. M. Hartley, submitted a report containing 24 pages of printed matter obtained and gotten out at their own expense, showing a number of needs of the fruit industry from the shipping side. Owing to the breakage of crates, the difficulty of refrigeration and of extending the markets properly with the 26,000-pound minimum for carload lots, it was voted that this minimum should be reduced to 20,000 pounds. The committee has obtained the assistance of the State Railroad Commission in preventing the continuance of the advance to the 26,000 pounds.

After an address by President Robert Newton Lynch of the California Development Board upon the work of that organization and upon the Panama-Pacific Exposition, the exposition was promised the hearty and enthusiastic support of the fruit growers present, and delegates were appointed to attend the Los Angeles meeting of the organizations interested in promoting the development of the State next month.

Owing to the nearness to the holidays, the attendance of fruit growers was slightly less than is customary. On the other hand, with few exceptions, all the county horticultural commissioners were present, and both the papers read and the discussions following showed the influence that the commissioners are exerting in the fruit industry and desire to co-operate together so as to make their work count the most possible. The evening sessions were given over to the Commissioners' Association, which also held informal meetings between the main sessions for the purpose of discussing problems coming up in their work. The former officers of this association were re-elected for the ensuing year.

Among the principal subjects discussed was the eel worm, which part of Nevada has been quarantined against, and it was decided for the time being to inspect in the individual counties all cars of potatoes coming from that State.

One of the pleasant features of the convention was the presence of Luther Burbank, who appeared on the platform by request and answered numerous questions concerning his methods and the plants that he had developed. Another thing the delegates enjoyed was an excursion Friday morning provided by the entertainment committee to Sebastopol and Forestville, into the Gold Ridge district of the county, for which and for the other pleasures of the week, the entertainment committee was given the unanimous thanks of the convention. On this excursion a demonstration of the use of dynamite in breaking up soil for orchard planting and in removing stumps was given.

It was decided to hold the summer meeting of 1912 at Santa Barbara, while Fresno received the indorsement for the fall meeting.

The Southern Pacific company has pleaded guilty in the U. S. Circuit Court to three suits for permitting cattle to remain in the cars for over 28 hours at a time without releasing them for exercise. When the plea was made it was stipulated that nine other cases would be dismissed. There is a penalty of $500 for each offense.

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the world-famed fruit tree spray is on sale in all parts of the U. S. and Canada. It is the household word among the fruit growers of the Nation. Now is the time to prune and spray your trees with REX to insure good, abundant and clean fruit for the coming season. Ask your dealer or write to our California headquarters at BENICIA.

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FARM BOOKS.

The following list of farm books are kept in stock and will be mailed on receipt of prices quoted:

Greenhouse Management, Taft	1.50
Mushroom Culture, Falconer	1.00
The Study of Corn, Shoesmith	.50
Plant Life on the Farm, Masters	1.00
The Hop, Myrick	1.50
The Book of Wheat, Dodlinger	1.50
Meadows and Pastures, Wing	1.50
Trees of California, Jepson	2.50
Asparagus Culture, Hexamer	.50
New Onion Culture, Greiner	.50
American Cattle Doctor, Dadd	1.00
Home Pork Making, Fulton	.50

Send remittances to
PACIFIC RURAL PRESS,
420 Market St., San Francisco.

THE MARKETS.

San Francisco, Dec. 27, 1911.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

While trading is naturally very quiet in all markets just at this time, there is a firmer feeling than for some time past, and supplies in the North are closely held, in anticipation of an increasing demand after the first of the year. Local quotations are higher on most descriptions.

California Club	$1.52½@1.57½
Sonora	Nominal
White Australian	1.67½@1.72½
Northern Club	1.52½@1.57½
Northern Bluestem	1.67½@1.72½
Northern Red	1.65 @1.70

BARLEY.

There is little movement just now outside of the small jobbing trade, though there is a good consuming demand for both feed and brewing grain. Prices are unchanged, but firmly maintained, with light offerings.

Brewing and Shipping	$1.95 @2.05
Choice Feed, per ctl	1.75 @1.85
Common Feed	1.65 @1.70

OATS.

Arrivals for the last week have been rather large, but there is a good demand all over the country, and prices are steadily held, though trading is limited at the moment.

Red Feed	$1.70 @1.75
Gray	1.70 @1.75
White	1.70 @1.75
Black	1.70 @1.80
Red Seed	1.95 @2.00

CORN.

Quite a bit of new Eastern corn is now coming in, but is not in very desirable condition, and the little that is moving sells considerably lower than old grain. There is a fair movement of California corn in the country.

Cal. Small Yellow	$1.80 @1.85
Eastern Yellow	1.85
Eastern White	1.90

RYE.

Prices stand as before, with very little movement.

Rye, per ctl	$1.65 @1.75

BEANS.

Business has been considerably interrupted by the holiday season, and no movement of any consequence is expected until after the first of the year. The year ends with conditions more favorable in most lines than had been counted on, the movement having been unusually active during the fall, and, from present indications, practically everything will be well cleaned up before the new crops begin to reach the market. The outlook for prices is also good. The only change this week is a slight decline in pink beans, which are now about the only weak item on the list, and even in this variety there are signs of improvement. White beans are very firmly held, offerings being comparatively light, and there should be no difficulty in cleaning up the small remaining supplies of limas, which, in spite of many gloomy predictions, have found an unprecedented demand.

Bayos, per ctl	$3.75 @3.85
Blackeyes	3.90 @4.00
Cranberry Beans	4.15 @4.35
Garvanzos	3.00 @3.50
Horse Beans	2.75 @3.25
Small Whites	4.10 @4.15
Large Whites	4.00 @4.10
Limas	6.00 @6.10
Pea	4.25
Pink	2.90 @3.00
Red Kidneys	5.10 @5.25

SEEDS.

If the present storm continues, a good demand is expected after the first of the year, but so far the movement has been confined to narrow limits. Prices are unchanged.

Alfalfa	17 @18 c
Broomcorn Seed, per ton	$28.00
Brown Mustard, per lb	5½c
Canary	4½c
Hemp	4½c
Millet	3 @ 3½c
Timothy	Nominal
Yellow Mustard	5¾c

FLOUR.

Both local and Northern millmen are quoting flour considerably lower than for some time past. Demand continues active, both locally and for shipment.

Cal. Family Extras	$5.20 @5.40
Bakers' Extras	5.20 @5.40
Superfine	4.30 @4.50
Oregon and Washington	4.50 @4.80

Hay and Feedstuffs.

HAY.

Arrivals here have been very light for the last week, and the demand is also light in San Francisco and all Bay towns, as buyers are apparently looking for a decline after a few weeks of wet weather. Dealers, however, appear confident that prices will keep up, and the local quotations on most lines have been advanced. The rain has held off so long that the green feed can hardly get a good start before spring, and meanwhile there is a very heavy demand through the country which is rapidly using up the small stocks in storage. Holders of alfalfa in the country are becoming very firm in their views, as stocks are light and this class of hay finds very good demand all over the country.

Choice Wheat	$20.00@22.00
Good Wheat Hay	17.00@20.00
Other Grade Wheat	13.00@16.00
Wheat and Oats	14.00@20.00
Tame Oats	14.00@19.50
Wild Oats	12.00@15.00
Alfalfa	11.00@15.50
Stock Hay	10.00@14.00
Straw, per bale	35@ 75c

FEEDSTUFFS.

Prices are unchanged, practically everything being firm in view of a strong consuming demand. Trading is naturally limited at present, most dealers being well supplied for the holiday period.

Alfalfa Meal, per ton	$17.00@18.00
Bran, per ton	26.00@27.00
Oil-cake Meal	Nominal
Cocoanut Cake or Meal	25.50@26.50
Cracked Corn	39.00@40.00
Middlings	34.00@36.00
Rolled Barley	38.00@39.00
Rolled Oats	37.00@38.00
Shorts	32.00@33.00

Garden Truck.

VEGETABLES.

Onions and garlic remain dull, with prices steady as last quoted. The situation in general garden truck, both of local and Southern production, is practically the same as a week ago, the only quotable change being a slight decline in string beans. Better prices were realized on Southern stock, however, just before the holiday, when the demand for all lines was extremely active. This week opened with a quiet market, but by this time supplies are cleaning up in good shape again. Arrivals of winter rhubarb have increased somewhat, and the market is rather weak, with lower prices in prospect. A lot of Mexican tomatoes in boxes has just arrived, being held at $1.50 to $1.75, but the stock is not especially attractive and receives little attention.

Onions: Yellow, ctl	$ 1.10@ 1.30
Garlic, per lb	3@ 4c
Tomatoes, per crate	75c@ 1.00
Cucumbers, per doz	25c@ 1.00
Cabbage	40@ 50c
Carrots, per sack	50@ 60c
Cauliflower, per doz	40@ 50c
String Beans, lb	7@ 10c
Lima Beans, lb	4@ 7c
Summer Squash, per crate	1.00@ 1.50
Eggplant, per lb (Southern)	4@ 7c
Bell Peppers, per lb	5@ 7c
Celery, per doz	25@ 50c
Rhubarb, per lb	5@ 6c

POTATOES.

The quarantine against Nevada potatoes has been raised, but so far no Nevada stock has appeared in this market, supplies of local and Oregon potatoes being ample for the present. Prices stand as before, with little demand, and no heavy movement is expected until after the New Year. Sweet potatoes of desirable quality are much higher, with diminishing supplies.

River Whites	$ 1.15@ 1.35
Sweet Potatoes, per ctl	2.50@ 2.65
Salinas Burbanks	1.65@ 1.90
Oregon Burbanks	1.50@ 1.65

Dairy Produce.

POULTRY.

The Christmas turkey market turned out a little better than was expected at the first of the week, fancy stock selling up to 28c. per lb., dressed, and while a good deal of stock was held over Saturday, it was well cleaned up at fair prices the following day. Values have fallen back a little this week, but there is hardly any dressed stock offering, and a fair demand is expected during the late winter. Chickens are a little easier, though no local stock is arriving, and the light shipments of Eastern poultry are cleaning up fairly well.

Large Broilers, per lb	25 c
Small Broilers, per lb	29 c
Fryers, per lb	18 c
Hens, extra, per lb	16 c
Hens, large, per lb	16 c
Small Hens, per lb	15 c
Old Roosters, per lb	12½c
Young Roosters, per lb	18 c
Young Roosters, full grown	16 c
Squabs, doz	2.00@ 3.25
Geese, per pair	2.50@ 3.00
Ducks, doz	4.00@ 9.00
Turkeys, live, per lb	21@24 c
do dressed	22@26 c

BUTTER.

Arrivals of fresh butter continue moderate, and the holiday demand sent prices up 1½c on extras. A further advance is noted this week, as a good many dealers have been short of supplies and the demand is strong. Lower grades show a slight advance, though storage stock is weak.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed
Extras	33½	35	35	—	35½	36
Prime Firsts	28½	30	30	—	30	31
Firsts	27½	29	29	—	29	30
Storage Extras	28	28	28	—	28	28

EGGS.

The price of extras dropped as soon as holiday requirements were satisfied, but the production the last few days has been light, and a sharp advance is noted. Selected pullets are in strong demand and have been gradually advancing.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	40½	40½	38	—	37	42
Selected Pullets	30	31	31	—	32	33½

CHEESE.

Prices on all grades are unchanged, new local flats remaining steady, while storage stock is weak. Monterey cheese is scarce and firm as before.

Fancy California Flats, per lb	15 c
Storage	15 c
Firsts	14 c
New Young Americas, fancy	16 c
Monterey or Jack Cheese	19 c

Deciduous Fruits.

FRESH FRUITS.

There was quite a heavy movement of apples for the holiday trade, and sales of grapes were also large, but the market in this line was disappointing, as offerings were quite large early in the week, and heavy shipments arrived at the last moment, causing a slump in prices. Supplies are still excessive, and values have not improved. Ordinary and Christmas apples are also a little lower, and easy prices are quoted on such cranberries as were held over from last week. Otherwise prices remain the same, but there is very little demand for anything in the fresh fruit line at present.

Cranberries—	
Eastern, bbl.	$10.00
Coos Bay, box	3.00
Apples—	
Fancy, box	1.00@ 1.50
Choice	75c@ 1.00
Christmas apples	1.00@ 2.00
Pears, Winter Nellis, box	1.50@ 1.75
Other varieties	1.00@ 1.25
Grapes—	
Box	25@ 40c
Crate	40@ 65c
Pomegranates, box	1.50@ 2.00
Persimmons, box	1.00@ 1.50

Dried Fruits.

Trading is naturally limited this week, but notwithstanding the holiday feeling, considerable demand is noted for several lines, and all indications point to a quick resumption of activity after the turn of the year. Evaporated apples are very firm, having found a good demand of late, while peaches and apricots are firmly held, but quiet. Prunes are closely cleaned up, and with a continued demand for all sizes for export there is an extremely strong feeling in regard to prices, and a premium over present quotations might be obtained for attractive lots. There is a little better feeling in regard to raisins, and while buyers appear in no hurry, they are taking on some stock all the time at the prices quoted. According to estimates by Fresno parties, the holdover at that point will amount to about 20,000 tons. The New York Journal of Commerce says:

"The last two weeks of the year are usually the dullest of the fifty-two, as with the annual inventory at hand no one wants to buy any more than is absolutely necessary to keep his line intact for the accommodation of his regular trade. That holds good in the present instance, except in the case of prunes, the strong statistical position of which, in connection with a belated consuming demand, is causing an unusually active demand for this time of the year. As Coast packers are reported to be closely cleaned up, and those who have any stock left are as a rule disinclined to offer now, looking for a higher market later on, the business in progress is confined to spot holdings here. Most of this business is of a jobbing character, though there is more or less demand from interior markets for carload lots or more at full quoted prices.

"There is little or no interest manifested in offerings of apricots or peaches from the Coast, but the f. o. b. market has a strong tone, as first-hand holdings are said to be light and well concentrated. On the spot here the market is seasonably dull, and prices are somewhat nominal.

"California raisins are not the subject of much attention from buyers at this end just now. Packers are not trying to force sales, as they look for an active demand from the Atlantic Coast markets when the spring trade opens, because of the small stocks carried by jobbers and retailers throughout this section. Recent sales of 3-crown muscatels were made at 6c delivered here, but that was said to be an exceptional price, the general market being at least ¼c above this figure."

Evap. Apples, 1911, per lb	8 @ 8½c
Apricots	12 @12½c
Figs	4 c
Calimyrna figs	6 c
Peaches	8½@ 9 c
Prunes, 4-size basis	6 @ 6½c
Pears	8 @ 9 c
Raisins—	
Loose Muscatels, in sweatbox	3 @ 3½c
Thompson's Seedless	5¼@ 5¾c
Seedless Sultanas	4 @ 4½c

Citrus Fruits.

Now that the holiday trade for oranges is past, the question of what the new year will bring to the growers is uppermost. Undoubtedly the fruit sent East from California for the holiday trade netted higher prices than in previous seasons, so that the growers in the early belts are well pleased. It is stated that the increase in average prices was about 40c per box this season over last. From the Porterville section we learn that practically all the navels have been shipped, there being less than 40 cars yet on hand, and the prices received were about $2 per box net. In the Salt River valley section in Arizona, citrus growers have had a very profitable season, as prices have been good and shipments large.

From southern California the shipments for the holiday trade have been less than usual, though prices were high. Some fruit was blown from the trees in certain sections there last week, and the heavy frosts that visited many points on Monday and Tuesday nights of this week will doubtless cut down shipments to some extent, but the amount of damage is not yet known. Most of the colder sections had their orchard heaters at work and thus averted much damage. The early estimates of 50,000 cars of citrus fruit from California will hardly be realized this year.

At San Francisco the only quotable change is on tangerines, which are a little lower. The demand for oranges for the holiday was fully up to expectations, and the heavy arrivals of last week were fairly well cleaned up. Arrivals since then have been large, and there is very little demand at the moment, but values are steadily held and no serious accumulation is expected.

Oranges: Navels, fancy	$ 2.00@ 2.75
Choice	1.75@ 2.25
Tangerines	75c@ 1.25
Grapefruit	2.50@ 3.00
Lemons: Fancy	3.25@ 3.75
Choice	2.50@ 3.00
Standard	1.25@ 1.75

Nuts, Honey, Hops, Etc.

NUTS.

There is practically nothing doing in the nut market at present. California almonds are pretty well cleaned up, and the holdover of Association walnuts is firmly held in anticipation of a better market during the spring.

Almonds:	
Nonpareils	18½c
I X L	17¼c

Ne Plus U		16½c
Drakes		14½c
Languedoc		14½c
Hardshells	8	@ 8½c
Walnuts, 191		
Softshell, No	13	@14 c
Hardshell,	12½	@13½c
No. 2		11 c
Budded		16½c

NEY.

All grades ull at present, white grades of bot b and extracted being scarce and ve , while dark honey is neglected.

Comb, white	13	@15 c
Extracted, wa ite	8	@ 9 c
Amber	7	@ 7½c
Off grades	5	@ 6 c

SWAX.

There is n ement of any consequence, prices ing as before.

The marke tinues quiet at unchanged quota

Light	28	@30 c
Dark	23	@26 c

PS.

The Coast m s are now pretty well cleaned up, a e movement is very light, spot pri anding as before. It is too early for great amount of contracting for n eason's crop, though some attractive s have been made by dealers.

1911 crop .....40@45c

Stock.

The only quot change is a slight advance in sheep gs are dull, but arrivals are held to about the current needs, and val are accordingly unchanged.

Gross weight:		
Steers: No. 1	5⅞	@ 6 c
No. 2	5	@ 5¼c
Cows and Heife No. 1	4¾	@ 5 c
No. 2	4¼	@ 4½c
Bulls and Stags	2½	@ 3½c
Calves: Light	6½	@ 6¾c
Medium	6	@ 6¼c
Hogs: Grain-fed avy		6¼c
150 to 250 lbs		6½c
100 to 150 lbs		6½c
Small prime wet	4	@ 4¼c
Large prime wet	4	@ 4¼c
Ewes	3½	@ 3¾c
Lambs	5	@ 5¼c

DRES MEATS.

Steers	8½	@ 9 ½c
Cows	8	@ 8½c
Heifers	8	@ 8 ½c
Veal, large	9½	@10½c
Mutton: Wethers	8	@ 9 c
Ewes	7	@ 8 c
Lambs	10	@11 c
Hogs, dressed	10	@10½c

WL.

The market on ifornia wool is at a standstill, and no isfactory movement is expected until th riff question is settled. Prices are no ally as before.

Spring Clip—		
Choice Southern, Y's sta-		
Northern, year's sta	14	@16 c
ple	10	@12½c
7 months	8	@11 c
Lambs, spring	8	@10 c
Fall Clip	5	@10 c

HID.

There is no busines any consequence at the moment, and es stand about as before, with a rather sy feeling.

Heavy Steers, over lbs..	11 c
Medium	10½c
Light Steers, under lbs.	10 c
Heavy Cows, over lbs..	11 c
Light Cows, 30 to lbs..	10 c
Kip	13 c
Veal	16½c
Calf	16½c
Dry—	
Dry Hides	18 @19 c
Dry Bulls	16 c
Dry Kip, 10 to 15	18½@19 c
Dry Veal, 5 to 10	20 c
Dry Calf, 7 down	23½@24 c
Sheep Skins—	
Long Wools	$ 0.85@ 1.25
Medium Wool, 6 to 9 m s	50@ 75c
Short Wool, 3 to 6 m	30@ 50c
Lambs	35@ 50c

HORSES

Quite a lot of horses ntinue to come out at local auctions, but he majority of offerings receive little att tion. The high price of feed apparently as a deterring effect on all buyers, but om present indications a better movem nt is expected within a few weeks, nd seasonable weather is expected to use some improvement in prices. A ecent offering of attractive trotting hors s in this market found ready sale, but he only other line receiving any attention is the heavy drafter class.

Desirable Drafters, 1700 lb. up..	$290@335
Light Drafters, 1500 to 1650....	200@225
Chunks, 1350 to 1500 lbs.....	175@200
Wagon Horses, 1250 to 1350 lbs.	125@175
Delivery Horses, 1050 to 1250...	110@125
Desirable Farm Mares.....	95@110
Old Mares	90@115

MULES.

1200 lbs.	$240@290
1100 lbs.	200@225
1000 lbs.	165@190
900 lbs.	140@165

THE LAW AND THE COUNTY HORTICULTURAL COMMISSION.

(Continued From Page 553.)

The time has passed when a fruit grower, nurseryman or anyone else can conduct his business in a manner injurious to others. When he deems it necessary, the commissioner can cause an inspection of orchard, nursery or other place to be made, and he can compel an attempt, at least, to be made to eradicate pests and diseases. Why not do it?

PUBLISHER'S DEPARTMENT.

A happy and prosperous New Year to our readers and patrons. Generally speaking, California experienced a very prosperous season during the year just closing and the outlook is very encouraging for 1912. With the PACIFIC RURAL PRESS the year has been one of prosperity in each department; gains have been made all along the line, and now we can say that it is carrying more business, subscriptions and advertising, than ever before in its history. We believe the coming year will give as good chances for advancement, and we trust that agricultural California will experience continued favorable conditions that make for the upbuilding of the Commonwealth and its people.

Aggelar & Musser Seed Co., of Los Angeles, have just issued their nineteenth annual seed catalogue, which they are anxious to send you. See their ad. in this issue.

The West Bros., of Nebraska and California, have just imported a bunch of Percheron and Belgian stallions and mares, which they have now at the farm of H. S. West, near Hamilton City. If you are in need of stock, write to the firm or visit the place at Hamilton, Cal. Read their ad.

Gustav De Brettville, who is advertising a fine ranch for sale in this issue, recently made the sale of the 5940-acre ranch near Rio Vista to Fred G. Cartwright and Jacob Samuels. This big place is to be subdivided into small tracts for colonists.

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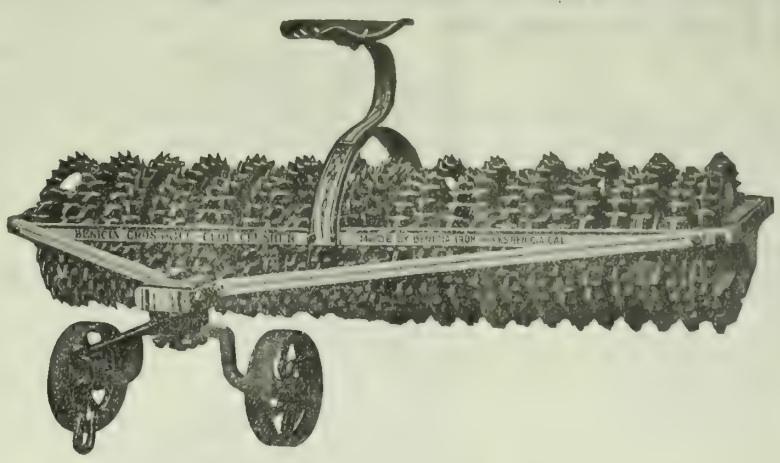
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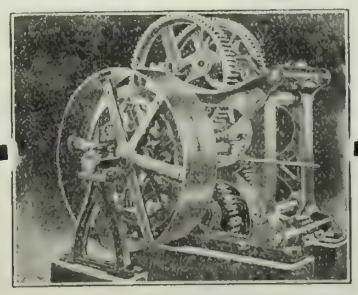
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